

Project References

Name of the Project: *Guidelines for Extended Producer Responsibility (EPR) Implementation for Plastics in Bangladesh’ under the project entitled “Integrated Approach Toward Sustainable Plastics Use and Marine Litter Prevention*

Client Department of Environment (DoE)

Description of work:

Under this project following activities are being performed:

1. Preparation of the “Extended Producer Responsibility (EPR)” guidelines for Bangladesh
2. Preparation of necessary policy draft on sustainable plastics management.
3. Analyze national and international legislation and policies related to environment, sustainability, quality etc.
4. Organizing Seminars, Training Activities recommendations, Stakeholders consultations, Coordination Meeting, Workshops and
5. Preparation of Minutes, Report and Proceedings and integrating public opinion into the policy Document.
6. Generate Monthly, half-yearly and yearly report on Policy Document
7. Submit report/s as may be required by DOE and UNIDO
8. Support preparation of end of proceedings report for NPD after every claim incident. Such report(s) shall be drafted professionally and would facilitate any other reviews. Provide support in litigations.
9. Gather and analyze all relevant policies, laws and regulations and provide inputs to the international experts to develop a policy for sustainable plastics use and marine litter prevention.
10. To coordinate with the relevant policy makers/workers/activists/NGOs/consultants for their participation in training, workshops, seminars, campaign and other project related activities

Location: Dhaka, Bangladesh

Period: January, 2024 – December, 2024

Name of the Project: *Integrated Urban Water Management at the Centre of Municipal Public Services*

Client Bremen Overseas Research and Development Association (BORDA) - Liaison Office (LO)

Description of work:

This project is based on replication, innovation, integration and dissemination. The partner towns for the project are Savar municipality and Kushtia municipality. The project would focus on solid waste and waste water management for both the municipalities. Apart from the partner towns there will be few associate towns in which the soft components are expected to take place. As in, replication of multiple tools, SFD/WFD, would be applied to associate towns. Climate Action Plan is a significant document for a disaster-stricken country like Bangladesh. Climate action plan for the partner towns would be prepared. This would identify the factors for making the municipality resilient to climate change. This would also take into account the issue of gender sensitivity.

Location: Bangladesh

Period: 2024-2026

Name of the Project: *Sustainable Waste Management and Improvement of Drainage System of Savar Cantonment and Savar DOHS*

Client Savar Cantonment Board (SCB)

Description of work:

Under this project following activities are being performed:

- 1) Digital Survey of the construction site and work plan
- 2) Detail Drawing, Design and Estimate of Waste Treatment Plant
- 3) Top Supervision of the construction work
- 4) Baseline survey and compositional Analysis of Waste
- 5) Development of Action plan for Sustainable Waste Management and Improvement of Drainage System.
- 6) Training and capacity building of the stakeholders.

Location: Savar Cantonment Board (SCB), Bangladesh

Period: 22 August 2023 - 22 August 2024

Name of the Project: *Methane Emission from Matuail and Amin Bazar Landfill Site and Options for Mitigation*

Client Department of Environment (DOE), MoEFCC

Description of work:

The objective of this study was to quantify the methane gas emission from the Amin Bazar and Matuail Landfills and differentiate it from the report published by GHGSat Inc. The primary goal of the project is to calculate landfill methane emissions using the First Order Decay Model (FODM). The methodology used in the study was centered around collecting these data from the two landfill sites, along with the values of the air quality index. A number of activities were carried out during the field survey; they are shown below:

- **Total Incoming waste:** Weighbridge data was collected from the landfills
- **Waste Composition Survey:** During the survey every day, about 12 Tons of municipal waste were collected from every 10th incoming truck coming to the Amin Bazar landfill site. Altogether, 600kg of samples were collected from 20 randomly selected incoming trucks. These 12-ton samples were extensively segregated and analyzed to distinguish between organic and inorganic waste.
- **Methane Concentration Measurement:** To assess methane emissions from the landfill, the GA 2000 Plus Landfill Gas Analyzer was used. Emissions data were collected from 27 locations over a period of three consecutive days.
- **Moisture Content Measurement:** Waste samples were collected from the landfill site and to the laboratory. The samples were oven-dried for several hours until any moisture was left in the waste.
- **Air Quality Measurement:** The Air Quality Index (AQI) in Amin-Bazar was measured across four buffer zones (200 m, 250 m, 500 m, and 1000 m) to assess various air particle concentrations, covering 12 distinct samples with Portable Multi-gas Detector

devices. Parameters included CO, SO₂, NO₂, NH₃, CH₄, PM_{2.5}, and PM₁₀, accounting for environmental factors like rainfall and wind direction.

Location: Dhaka, Bangladesh

Period: July 2023 to December 2023

Name of the Project: *TA-9590 SRI: Capacity Building for Secondary Towns and Strategic Cities*

Client: Asian Development Bank (ADB)

Description of work:

- Under this project following activities were being performed:
- Worked with PMU staff and other consultants to identify the waste management interventions for the project.
- Identified potential sites for implementation of the solid waste management sub-project.
- Led technical and socioeconomic analysis and prepared the waste management feasibility study.
- Identified appropriate interventions (both hard and soft) and proposed the implementation process
- Addressing climate-resilient integrated waste management.
- Prepared conceptual engineering design, drawings, cost estimates, operation, and maintenance arrangements.
- Proposed an institutional and implementation modality for construction and O&M, such as service contracts, build-operate, and performance-based contracts, with special attention to sustainability and the scope of private sector/community/NGO involvement.
- Closely worked with other experts, explored the viability, and developed an integrated waste Management facility taking into account the 4R (refuse, reduce, reuse, and recycle) strategy and considering the circular economy concept.
- Proposed an appropriate procurement mechanism for the waste management components.
- Led the design and cost estimate of a low-carbon and climate-resilient project aiming to attract climate and/or ocean financing, coordinating with PMU.

Location: Sri Lanka

Period: March 2023 to October 2023

Name of the Project: *Integrated Urban Water Management at the Centre of Municipal Public Services in Bangladesh*

Client Bremen Overseas Research and Development Association (BORDA)

Description of work:

The project was conceived and formulated by BORDA with funding from the German Federal Ministry for Economic Cooperation and Development (BMZ). The focus of this project is on promoting integrated and decentralized water and sanitation solutions for small municipalities in the South Asian region. Eight municipalities from three countries in this region, namely India, Bangladesh, and Nepal, were selected for interventions under this project. Therefore, the goal of the project is to contribute to improving the living conditions of people in small towns and reduce

the health and environmental risks associated with inadequate water supply and sanitation in this region. However, the meso/micro level project objective is to enable the provision of improved municipal water and sanitation services for the disadvantaged population of small towns. Therefore, the project's approach is to focus on strengthening municipal capacity for planning and management of integrated and decentralized solutions for water and sanitation challenges faced by small municipalities. Two municipalities were selected in Bangladesh for this project, namely Savar Municipality and Kushtia Municipality. A number of activities were planned and executed under this project, such as planning, design and implementation of various interventions, capacity building, and information dissemination or public awareness raising. Some demonstrative interventions were planned in selected municipalities. A few activities under the project are shown below:

- Design and Implementation Support for Shared Toilets in the Bede Para Slum of Savar Municipality
- Improvement of Public Toilet in Savar Municipality
- Faecal Sludge Transfer System for Bede Para Slum in Savar Municipality
- Design and implementation support for the construction of compost plant and pilot DEWATS in Savar Cantonment Board (SCB)
- Renovation of Three Public Toilets at Kushtia Municipality.
- Exposure visits and capacity-building training on municipal waste and medical waste management for municipal officials of Savar and Kushtia Municipality.
- Promotion of Source Segregation of waste in Kushtia and Savar Municipality.

Location: Savar and Kushtia Municipality, Bangladesh

Period: January 2021 to December 2023

Name of the Project: *Technical Assistance Project on Integrated Solid Waste Management Improvement Project (ISWMIP)*

Client Local Government Engineering Department (LGED) & Asian Infrastructure Investment Bank

Description of work:

Under this project, Waste Concern Consultants provided following services:

- Prepared Pre-feasibility Reports for USD 500 million; Policy Briefs on SWM; subproject selection criteria for ISWMIP; identification of Best Practicable Options (BPOs) in SWM for collection, transportation, processing and disposal; Sub-project identification screening, preparation of ISWMIP framework documents.
- Prepared Draft Feasibility Reports for each sub-project for USD 150 million (i): Conducting of local stakeholder analysis and consultation process, preparation of institutional strengthening plan, capacity assessment for the entire solid waste management chain and municipal waste management plans.
- Prepared Final Feasibility Reports.
- Prepared Draft Detailed Engineering Designs (DEDs) for USD 50 million. Preparing and delivering draft covering Part-B (3) containing DEDs and costs to PMCU of ISWMIP and AIIB.
- Prepared Final DEDs: Preparation and delivery final DEDs and preparation of procurement plan
- Prepared ESIA, ESMF, RPF, & Livelihood Restoration Plan
- Prepared Bid Documents, Procurement Plan, Project Administration Manual and Project Financial Manual

Location: 3 City Corporation and 23 Municipalities of Bangladesh

Period: March 2022 to June 2023

Name of the Project: *Study of Feasibility and Preparation of Designs for a Pilot Fecal Sludge Management System in Chattogram City*

Client The World Bank

Description of work:

The duties and responsibilities performed are as follows:

(1) Conducted a field assessment, including interviews of key stakeholders in Chattogram Metro, selected households, CWASA and City Corporation staff to identify the pilot study area; (2) Collected quantitative and qualitative data on FSM in the selected study area, with a focus on the quality of the existing FSM services, identifying the hurdles, gaps and bottlenecks to providing improved FSM service delivery; (3) Produced estimations of sludge quantities to be collected and treated, for the current situation and future scenarios; (4) Assessed prevailing service delivery models in Bangladesh and suggest appropriate adoption for Chattogram Metro based on critical analysis of merits and demerits of the prevailing models. Documented based on the available literature in print and electronic media the experiences of successful models in South Asia region and recommend a couple of models which could be adopted with modifications, if any, considering local context including policy, regulatory and institutional arrangements; (5) Recommended a treatment process for a fecal sludge treatment (comparison of different options) and provided preliminary and final design of a faecal sludge treatment plant; and (6) Developed standard Bills of Materials, Cost Estimates (at 2022 prices), Technical Specifications and the draft bidding documents for the (a) equipment for collection and transportation, as necessary, and (b) construction of the relevant infrastructure, such as fecal sludge (FS) transfer stations (TS) and FS treatment facilities. (7) Prepared ESIA and ESMF documents, (8) Prepared procurement plan and bid document.

Location: Chattogram, Bangladesh

Period: March 2022 to July 2023

Name of the Project: *TA 9347-REG: Pacific Urban Development Investment Planning and Capacity Development Facility*

Client Asian Development Bank (ADB)

Description of work:

Activities Performed:

Reviewed available data and documents, assessed gaps and opportunities to develop local or sub-regional SWM systems promoting 3Rs principles;

- Provided initial technical recommendations based on consultations, available information, and clearly stated assumptions;
- Worked with the established team to incorporate SWM options and recommendations into holistic urban and regional development initiatives, which included urban planning, economic development, sanitation, and environmental protection activities

- Identified knowledge gaps to be filled to inform decision-making
- Recommended high-level phased plan for introducing and improving SWM system, covering both physical and non-physical interventions
- Prepared and delivered presentations, provided advice and facilitated discussions.

Location: Solomon Islands.

Period: March 2022 to August 2022

Name of the Project: *Coastal Town Environmental Infrastructure Project*

Client Local Government Engineering Department (LGED).

Description of work:

Under this project following activities were performed:

- i) Prepared detailed engineering design and drawing for solid waste and sanitation infrastructure for Bagerhat and Patuakhali municipalities;
- ii) prepared estimates and BOQs;
- iii) prepared bid documents;
- iv) prepared O&M manual and v) prepared IEE reports.

Location: Bangladesh

Period: July 2021 to June 2022

Name of the Project: *TA 9781 REG: Developing South Asian Livable Cities Facility*

Client Asian Development Bank (ADB).

Description of work:

The duties and responsibilities being performed are as follows:

- i) Prepare solid waste management and faecal sludge feasibility study for Bagerhat municipality and preliminary engineering designs incorporating climate resilience and mitigation;
- ii) Identify, assess, and evaluate interventions (both hard and soft) stemming from climate-resilient integrated solid waste and faecal sludge management;
- iii) Lead technical analysis and preparation of necessary feasibility study for solid waste and faecal management in the project town of Bagerhat including an assessment of the landfill site considering Government of Bangladesh and ADB guidelines for landfills
- iv) Identify priority investment project including design, costs, capacity, and operation and maintenance arrangements including projection of operation and maintenance costs;
- v) Propose an institutional and implementation modality for construction and O&M, such as service contracts, design-build-operate, and performance-based contract, with special attention to technical and financial sustainability
- vi) Explore the viability of developing regional treatment and/or disposal facilities; &
- vii) Propose an appropriate procurement plan for the solid waste management components.

Location: Bangladesh

Period: October 2021 to May 2022

Name of the Project: *Opportunities for Canadian Clean Technology Companies in Bangladesh*

Client Canadian High Commission, Dhaka, Bangladesh

Description of work:

The scope of work is limited to the preparation of a brief clean technology sectoral report for Bangladesh focusing on renewable energy (solar, wind, hybrid etc), wastewater treatment, and waste management. The target audience of the report is Canadian companies and organizations interested in exploring business opportunities in Bangladesh in the aforementioned sectors.

Location: Bangladesh

Period: November 2020 to January 2021

Name of the Project: *Strengthening Medical Waste Management in the Greater Dhaka Area*

Client Foreign, Commonwealth and Development Office, Government of UK

Description of work:

Under this project, Waste Concern will carry out following activities:

- I. Preparation of awareness raising materials for hospitals and health care workers and organization of training focusing on all hospital waste management, including disposal of used PPE and samples of COVID-19 testing which are bio hazardous in nature.
- II. Supply shredders and sharps disposal containers in all hospitals and testing facilities. Priority should be given to all hospitals treating COVID-19 patients.
- III. Supply storage bins for PPE.
- IV. Supply of special medical waste collection vehicles for two City Corporations.
- V. Awareness raising amongst municipal workers and municipalities for segregated disposal of PPE and medical waste.
- VI. Supply of PPE for all municipal solid waste collection and disposal staff.
- VII. Supply of one intermediate secondary controlled landfill for disposal of medical waste as an interim facility one city corporation and installation of 1 (one) incinerator for biomedical waste treatment.
- VIII. Preparation of SOPs for medical waste management

Location: Bangladesh

Period: October 2020 to June 2022

Name of the Project: *SC 115370 BAN: Jessore Integrated Landfill and Resource Recovery Facility.*

Client Asian Development Bank (ADB).

Description of work:

The duties and responsibilities performed are as follows:

i) Identify demographic and socio-economic changes of Jessore since the design of the facility, and its consequence on the rate, amount, and composition of solid waste generation in Jessore and other pourashavas that being served by the facility; ii) Document the current institutional arrangement, business model and functional status including service coverage of the facility; iii) Review performance of the facility by taking account multiple factors (technical, legal, institutional, financial, economic, environment, and socio-economic) and identify additional support in awareness-raising activities for source segregation, small physical investments to improve functionality of the facility; iv) Assess the capacity building gaps in facility operation; v) Evaluate if there are bottle necks that have constrained the optimal operation of the built facility and provide recommendation on how to address identified gaps to make sure the operation of the facility could achieve sustainable waste service chain and demonstrate as model to replicate to other municipalities; vi) Identify lessons related design considerations, construction of facility, business model, operation and maintenance, local capacity, and inter-agency coordination and vi) Recommend implementation model of most suitable option for solid waste recycling/treatment/disposal for coastal towns of Bangladesh.

Location: Bangladesh

Period: October 2020 to July 2021

Name of the Project: *Design of Integrated Landfill and Resource Recovery Facility for Khulna City Corporation, Bangladesh*

Client City Region Development Project 2, Local Government Engineering Department (LGED) supported by Asian Development Bank (ADB)

Description of work:

i) Prepare a feasibility study for landfill and resource recovery facility in Khulna City; ii) Prepare detailed engineering design and BOQ for the proposed facility; iii) Support LGED to develop an EIA report and environmental management plan (EMP); iv) Prepare specifications for equipment required to operate the facility.

Location: Khulna, Bangladesh

Period: June 2020 to December 2020

Name of the Project: *Alternative Sanitation under the Dhaka Sanitation Improvement Project*

Client The World Bank Group

Description of work:

i) Identification of sites for implementation of DEWATS, Communal Improved Septic Tanks and Communal Septic Tanks by DWASA in the Pagla Catchment Area, ii) Preparation of bid Documents for DEWATS, Improved Communal Septic Tanks and Communal Septic Tanks, iii) Operation and Maintenance Guidelines for DEWATS, Improved Communal Septic Tanks and Communal.

Location: Bangladesh

Period: October 2020 to June 2021

Name of the Project: *Assessment of Solid Waste Management Opportunities in Bangladesh*

Client Asian Infrastructure Investment Bank (AIIB)

Description of work:

Under the project, Waste Concern Consultants provided the followings inputs:
(1) Prepared an overview of the solid waste management sector in Bangladesh and ii) identified possible financing opportunities and suitable structures for AIIB to consider based on relevant global practices and considering Bangladesh's context.

Location: Bangladesh

Period: November 2020 to April 2021

Name of the Project: *Promotion of 3R (Reduce, Reuse & Recycle) Principles in the Solid Waste Management Sector (SWM) in Bangladesh*

Client Department of Environment, Government of Bangladesh

Description of work:

Under this assignment provided following services: i) Supporting the Ministry of Environment Forests and Climate Change (MoEFCC) & Department of Environment (DOE) in finalization and approval of SWM Rules through consultative process involving relevant stakeholders; ii) To prepare a database on solid waste and its management practices in Bangladesh, iii) To map the stakeholders in SWM and recycling trade chain iv) To conduct an assessment study to identify feasible technological options for integrated solid waste management.

Location: Bangladesh

Period: February 2020- December 2023

Name of the Project: *Rapid Assessment of Plastic Pollution in Rivers and Canals around Dhaka*

Client The World Bank Group

Description of work:

Under this assignment, Waste Concern Consultants is carrying out the following activities:

- Task 1: Undertaking rapid assessment of plastic pollution along the banks of canals and khals in and around Dhaka city: Volume and composition of littered waste, environmental impact, economic losses, and value chain assessment etc.
- Task 2: Assessment of technologies tackling the problem of plastic pollution in rivers: option development.
- Task 3: Assessment of enabling environment to control the use of plastic: regulatory gap assessment.
- Task 4: Development of response strategy: Citizen awareness, policy intervention, long term investment plan etc.

Location: Bangladesh

Period: June 2020 to November 2020

Name of the Project: *Promotion of 3R (Reduce, Reuse & Recycle) Principles in the Solid Waste Management Sector in Bangladesh*

Client Department of Environment

Description of work:

Under this assignment, Waste Concern is undertaking (but is not limited to) the tasks described below:

Task 1: To support the Ministry of Environment Forests and Climate Change (MoEFCC) & Department of Environment (DOE) towards finalization and approval of SWM Rules through a consultative process involving relevant stakeholders.

Task 2: To prepare a database on solid waste and its management practices in Bangladesh.

Task 3: To map the stakeholders in SWM and recycling trade chain.

Task 4: To conduct an assessment study to identify feasible technological options for integrated SWM.

Location: Bangladesh

Period: February 2020 to December 2023

Name of the Project: *Baseline Survey for the Material Flow Analysis for Waste Plastics and Hotspots Assessment for Marine Plastic Debris in Bangladesh*

Client The World Bank Group

Description of work:

Under this assignment, Waste Concern Consultants is undertaking (but is not limited to) the tasks described below:

Task 1: Hotspots assessment for marine plastic debris.

Task 2: Waste composition and material flow analysis for waste plastics.

Task 3: Stakeholder analysis for Dhaka Metropolitan Area.

Task 4: Develop a framework towards a multi-sectoral, sustainable, plastic management plan.

Task 5: Informing and Influencing Decision-Making.

Location: Bangladesh

Period: November 2019 to October 2020

Name of the Project: *Mapping and Screening Study of Marine Littering Projects in Bangladesh*

Client The Royal Norwegian Embassy, Dhaka

Description of work:

The purpose of this consultancy work was to map and screen ongoing and/or potential new projects in Bangladesh connected to preventing or significantly reducing the extent of marine litter from major sources. Closely coordinated with the Government of Bangladesh's policies and plans, Waste Concern Consultants identified existing/ongoing cooperation projects as well as new but already planned projects. This assignment supported the Government of Norway in identifying and supporting the most appropriate and efficient projects that aim to prevent marine littering by:

- I. Mapping and ranking according to a long-list of potentially suitable projects;
- II. Identification of a short-list to include three projects to be agreed with the Embassy;
- III. Providing analysis of the short-listed projects

Location: Bangladesh

Period: November 2019 to December 2019

Name of the Project: *Design of Integrated Waste Management Facilities in Cambodia and Lao PDR*

Client Rambøll Denmark A/S

Description of work:

As sub-consultant of Rambøll Denmark A/S, Waste Concern Consultants (WCC) provided the following services:

- Design the master plan landfill sites.
- Prepare detailed design, BOQ and specifications for landfill site.
- Prepare design and BOQ for Material Recovery Facility (MRF) with specifications.
- Prepare the specifications for all equipment for the landfill sites and MRF.
- Prepare design of legacy based waste management in landfill site in Lao, PDR

Location: Cambodia and Lao PDR

Period: October 2019 to July 2020

Name of the Project: *Consulting Services on Non-network Sanitation in Pagla Catchment under the Dhaka Sanitation Improvement Project (DSIP)*

Client The World Bank Group

Description of work:

Under this assignment, WCC was involved in the planning and engineering design of interventions across:

- a) Faecal Sludge Treatment Plant (FSTP)
- b) Decentralized wastewater Treatment System (DEWATS) and
- c) Communal Septic Tank in the Pagla Catchment area of DSIP.

The scope of work is detailed further as follows:

- Conceptual design of a faecal sludge treatment plant (FSTP) in Pagla catchment;
- Design of a DEWATS system
- Design of Communal Septic Tank; and
- Preparation of BOQ and design reports for FSTP, DEWATS and communal septic tanks.

Location: Bangladesh

Period: September 2019 to June 2020

Name of the Project: *Consultancy Services for Landscape and Renovation Work for Savar Residential Campus of BRAC University (sanitation, wastewater, rain water harvesting and solid waste component)*

Client Bengal Abashan Design & Research Limited / BRAC

Description of work:

Under this assignment Waste Concern Consultants is responsible for baseline survey of solid waste, liquid waste (black and gray water) and rain water generated within the BRAC University campus at Savar. Based on the survey responsible for preparation of design and estimate for decentralized waste water treatment system (for black and grey water), solid waste recycling system and rainwater harvesting system for the campus. Provide top supervision during construction work. Prepare O& M manual for the decentralized waste water treatment

Location: Bangladesh

Period: November 2017 to June 2018

Name of the Project: *Consultancy Services for Solid Waste & Faecal Sludge Management under the MDS Consultant, CRDP Project*

Client ADB/LGED

Description of work:

Under this project Waste Concern Consultants is responsible as sub-consultant of Hifab International AB for review of existing data on solid waste for selected cities and towns as well as identification of gaps in the service chain of solid waste management, identification of potential options for solid waste recycling, treatment, disposal and recommendation of best possible options for the selected cities. Moreover, under this project Waste Concern Consultants is responsible for engineering design of controlled landfill and resource recovery facilities and recommendation of most suitable options for implementation of the project involving the private sector. Apart from the solid waste, Waste Concern Consultant is also responsible for review of faecal sludge management services of selected cities as well as estimation of demand for faecal sludge collection and treatment and design of appropriate faecal sludge management system including preparation of business plan.

Location: Bangladesh

Period: August 2015 to April 2016

Name of the Project: *Consultancy Services for Solid Waste Management under MDS Consultant of City Region Development Project*

Client LGED/ADB

Description of work:

The main aims of the assignment were as follows: to identify the most appropriate intervention on solid waste management for the CRDP project; develop a detailed engineering design of the most appropriate intervention, and preparation of a contract document for the involvement of the private sector for O&M of the appropriate intervention.

Activities performed: Reviewed existing data on solid waste for selected cities and towns as well as identification of gaps in the service chain of solid waste management. Identified potential options for solid waste recycling, treatment, and disposal, and recommended the best possible options for the selected city for project implementation. Prepared the conceptual design and supervised the detailed engineering design and bill of quantity (BOQ) of regional controlled landfill and resource recovery facility for Jessore city (the selected city for intervention). Recommended the most suitable options for implementation of the project involving the private sector. Prepared the business plan, bidding document as well as contract document for the private sector for O&M of the landfill and resource recovery facility. Provided inputs for preparation of IEE report for the regional integrated landfill and resource recovery facility for Jessore city.

Location: Bangladesh

Period: May 2015 to April 2016

Name of the Project: *3R (Reduce, Reuse and Recycle) Pilot Initiative to Reduce the Impact of Greenhouse Gas (GHG) in Dhaka and Chittagong Cities (Phase 1)*

Client DoE, GoB

Description of work:

Preparation of detailed design of compost plants (capacity 20 Tons per day for each city corporation) for both the city corporations (DSCC & DNCC).

Activities performed: Under this project Waste Concern Consultants (WCC) provided the following technical supports:

- Prepared detailed technical architectural and structural design drawings for the construction of 2 (two) compost plants, 1 (one) in Dhaka North City Corporation (DNCC) and 1 (one) in Dhaka South City Corporation (DSCC).
- Prepared detailed technical architectural and structural design drawings for the construction of 4 (four) Transfer Stations for municipal solid waste, 2 (two) in DNCC area and 2 (two) in DSCC area.
- Assisted Department of Environment (DoE) to carry out capacity building training and income generating activities. Developed awareness generating materials for DoE to carry out awareness generation programs on waste recycling, composting and segregation of waste for citizens, local NGOs, CBOs and private sectors.
- Supported DOE to link the project under the existing 64 District CDM project of the Government.

Location: Bangladesh

Period: September 2016 to June 2020

Name of the Project: *TA-9546 BAN: Emergency Assistance Project - DPHE- Component*

Client ADB

Description of work:

Preparation of detailed design, bidding and contract documents for the waste management and faecal sludge subprojects for displaced persons from Myanmar in Cox's Bazar District. The project was aligned with accelerating the social recovery of displaced persons in Teknaf and Ukhia camps. It had the outcome of improving living conditions and resilience of displaced persons.

Activities performed: The duties and responsibilities being performed were as follows:

(i) Lead technical and socioeconomic analysis and preparation of solid waste and faecal sludge management feasibility study and identify the suitable/appropriate interventions (both hard and soft);(ii) Initiate the subproject selection and other engineering and safeguards due diligences, land acquisition, liaising with other development partners and ADB, for waste management subprojects;(iii) Propose the implementation process stemming from climate-resilient integrated waste management;(iv) Prepare detailed engineering design (in difficult terrain/slope etc.), specifications, drawings, and detailed cost estimates and operation and maintenance arrangements for solid waste and faecal sludge interventions;(v) Prepare drawing, specifications and bill of quantities;(vi) Prepare procurement packages, bidding document and conduct procurement;(vii) Propose an institutional and implementation modality for construction and O&M, such as service contracts, build-operate, and performance-based contract, with special attention to sustainability and the scope of private sector/community/NGO involvement;(viii) Work out a

strategy for community-based integrated waste management including collection mechanism particularly in low income areas; (ix) Prepare detailed cost estimates and specifications for proposed SWM and Faecal Sludge equipment (x) Explore the viability for developing regional treatment and/or disposal facilities involving towns and/or urban centers of near proximities; and (xi) Provide orientation and training to the concerned staff on waste management process, its socio economic viability, overall environmental improvement and importance from climate resilience aspects.

Location: Bangladesh

Period: October 2018 to June 2019 (Intermittent)

Name of the Project: *Pilot Project to Create a Scalable Model to Responsibly Manage Solid Waste and Expand Recycling in Argentina and Indonesia*

Client McKinsey.org, USA

Description of work:

Assist McKinsey, USA to establish a sustainable solution for source segregation of waste, collection and transportation of segregated waste along with promotion of composting & recycling of waste.

Activities performed: As a member of the global design team, responsible for designing the solution and guiding the implementation of specific portions of the project. The project's objective was to responsibly manage solid waste and expand recycling in Indonesia and Argentina while providing advice and guidance to McKinsey.org, and to any other partners determined by McKinsey.org in connection with the implementation of the project. At the initial stage, responsible for providing necessary inputs in locating infrastructures related to waste transfer stations and Integrated resource recovery centres using maps and satellite images. Also provided support towards preparation of architectural detailed designs for relevant infrastructures.

Location: Bangladesh, Indonesia, Argentina

Period: Aug 2018 to Aug 2019

Name of the Project: *Preparation for Environmentally Sound Management of Mercury Containing Lighting Sources with a Life-Cycle Approach*

Client DOE/UNIDO

Description of work:

Conducted baseline survey on CFL and preparation of revised guidelines on proper management of CFL in Bangladesh.

Activities performed: Under this assignment WCC updated the guidelines on the management of used compact fluorescent lamps (CFLs), prepared the national management plan to implement the guidelines and updated the legal framework for environmentally sound management of mercury waste for Bangladesh.

Location: Bangladesh

Period: May 2018 to May 2018

Name of the Project: *Consulting Service to Improve Slaughterhouse Waste Management Using Biogas Technology at Gazipur City Corporation*

Client GIZ

Description of work:

The main aim of the assignment was to manage bio-slurry from biogas digester along with introduction of sand filter, trickling filter and co-composting dry slurry with organic waste using aerobic composting technology.

Activities performed: Under this assignment, Waste Concern Consultants provided technical support to assess slaughterhouse waste management using biogas technology at Gazipur City Corporation and provided practical solutions to improve operational efficiency and the bio-slurry management system.

Location: Bangladesh

Period: May 2017 to October 2018

Name of the Project: *Consultancy Services for Disposal of Empty Pesticide Containers*

Client USAID

Description of work:

The main aim of the assignment was to identify proper procedures for cleaning and disposal of used empty pesticide containers.

Activities performed: Organized laboratory testing and data collection regarding use and disposal of empty pesticide containers. Prepared a plan for environmentally sound management of used pesticide containers.

Location: Bangladesh

Period: August 2016 to October 2016

Name of the Project: *Consultancy Services for Sanitation and Solid Waste Management under the DDS Consultant, Coastal Towns Environmental Infrastructure Project (CTEIP)* .

Client LGED/ADB

Description of work:

Identify the most appropriate intervention on sanitation, wastewater management and solid waste management for the CTEIP project; develop a detailed engineering design and estimate of the most appropriate interventions for sanitation, solid waste management and wastewater treatment, and preparation of a contract document for the involvement of the private sector for O&M of the appropriate intervention.

Activities performed: i) finalize sub-projects for implementation (integrated sanitation, wastewater and solid waste management facility at the landfill site), ii) preparation of detailed Engineering Design Reports, inclusive of preparation of the specifications, cost estimate, drawings and bill of quantities iii) supporting the DDS Consultants on preparation of bidding documents, DDR and IEE/EIA reports for the selected interventions for implementation.

Location: Bangladesh

Period: June 2016 to February 2017

Name of the Project: : *TA-8913 REG: Promoting Urban Climate Change Resilience in Selected Asian Cities - Developing Integrated Urban Development Plans in Selected DMC Cities Incorporating Urban Climate Change Resilience Principles (ADB TA-8913 REG)*

Client ADB

Description of work:

Prepare solid waste and faecal sludge management sub projects and feasibility reports for seven additional towns under UGIIP-3 and CTEIP of LGED.

Activities performed: (i) Led technical and socio economic analysis and preparation of solid waste management and faecal sludge management feasibility study report and engineering designs for 2 CTEIP towns (Bagerhat and Patuakhali) and 5 UGIIP III towns (Cox's Bazar, Faridpur, Gopalganj, Kushtia and Mymensingh) under the project;(ii) Identified the suitable/appropriate interventions (both hard and soft) for the subject towns and propose the implementation process stemming from climate-resilient integrated urban planning;(iii) Identified priority investment projects including outlines for engineering design incorporating climate resilience into the designs, costs, municipal capacity, and operation and maintenance arrangements;(iv) Proposed an institutional and implementation modality for construction and O&M, such as service contracts, design-build-operate, and performance-based contract, with special attention to technical and financial sustainability and the scope of private sector involvement

Location: Bangladesh

Period: May 2016 to October 2016

Name of the Project: : *Pro-poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns*

Client UN-ESCAP

Description of work:

Provide advice and technical inputs to the implementation of pilot waste-to-energy projects in Indonesia, and the completion of Nationally Appropriate Mitigation Actions (NAMA) studies in Viet Nam and Sri Lanka.

Activities performed: In order to review and advise on project implementation arrangements, joined a technical assessment mission to the cities of Jambi and Malang Regency; prepared detailed designs of the waste-to-energy plant, including equipment requirements; reviewed designs adapted to local characteristics, and provided technical advice to local engineers. Supported the preparation and finalization of NAMA design studies for the waste sector in Sri Lanka (including feedback to the NAMA–design study prepared for Sri Lanka), especially in the application of the first order decay model (FOD model).

Location: Indonesia and Sri Lanka

Period: Mar 2016 to Jul 2016

Name of the Project: : *Consultancy Services for Solid Waste Management under MDS Consultant of City Region Development Project*

Client LGED/ADB

Description of work:

Identify the most appropriate intervention on solid waste management for the CRDP project; develop a detailed engineering design of the most appropriate intervention, and preparation of a contract document for the involvement of the private sector for O&M of the appropriate intervention.

Activities performed: Reviewed existing data and identified potential options for solid waste recycling, treatment, and disposal, and recommended the best possible options for the selected city for project implementation. Recommended the most suitable options for implementation of the project involving the private sector. Prepared the business plan, bidding document as well as contract document.

Location: Indonesia and Sri Lanka

Period: September 2015 to April 2016

Name of the Project: : *Preparation of Sanitation and Drainage Improvement Strategy and Master Plan Project for the City of Chittagong*

Client CWASA/The World Bank (WB)

Description of work:

Under this project Waste Concern Consultants is providing Senior Solid Waste and Sanitation Expert for the national and international consultants team (Grontmij, Aqua and IWM), for preparation of strategy, action plan and master plan for solid waste and faecal sludge management sub-component of the project. Providing input for design of a pilot faecal sludge treatment plant as well as collection option of faecal sludge. Moreover, also responsible for preparation of business plan for faecal sludge management. Also responsible for identification of solid waste management projects for collection, storage, transportation, recycling and disposal of

solid waste as well as sanitation projects and prepare capital cost and operational cost of different projects for financing by the World Bank

Location: Bangladesh

Period: January 2015 to June 2017

Name of the Project: : *Third Urban Governance and Infrastructure Improvement Project (ADB TA-8339 PPTA)*

Client LGED/ADB

Description of work:

Prepare sanitation action plans for 30 municipalities of Bangladesh, as well as undertake technology demonstrations on faecal sludge management in selected municipalities.

Activities performed: As a key member of the consultant's team, developed approach and methodology for collection of secondary and primary data from municipalities. Provided inputs for preparation of inception report, data collection and compilation. Prepared broad cost estimates and implementation strategies including development of business models for service delivery. Prepared pre-feasibility of different options for sanitation including faecal sludge management.

Location: Bangladesh

Period: 2015

Name of the Project: : *Preparation of Sanitation and Drainage Improvement Strategy and Master Plan Project for the City of Chittagong*

Client CWASA/World Bank

Description of work:

The main aim of the project was to prepare sanitation and drainage strategy and master plan for Chittagong City.

Activities performed: As a key member of the consultant's team, was responsible for preparation of strategy, action plan, and master plan for solid waste and faecal sludge management sub-component of the project. Provided input for design of a pilot faecal sludge treatment plant, co-compost plant, as well as collection option of faecal sludge. Also was responsible for preparation of business plan for faecal sludge management as well as identification of solid waste management projects for collection, storage, transportation, recycling, and disposal of solid waste. Prepared capital cost and operational cost of different priority projects on solid waste management for financing by the World Bank.

Location: Bangladesh

Period: 2015 to Present

Name of the Project: *Diagnostic of Biogas Efficiency in Camps and Guidance for Comprehensive and Environmentally Safe Waste and Faecal Sludge Management*

Client Action Contre la Faim (ACF)

Description of work:

Under this project Waste Concern Consultants provided technical support to improve the performance of the biogas plant and as well as designed the sludge drying bed, waste water treatment system and solid waste management system for the refugee camp..

Location: Bangladesh

Period: March 2015 to October 2015

Name of the Project: *Study on E-Waste in Bangladesh*

Client Re-Tem Corporation, Japan

Description of work:

Re-Tem Corporation, a large private reputed E-waste recycling company based in Japan. To establish e-waste collection and recycling business in Bangladesh, Re-tem engaged Waste Concern Consultants to conduct a feasibility study which was financed under SME promotion program for Japanese companies by JICA (Japan International Cooperation Agency). During the study 8 (eight) items from E-Waste were selected, they are mobile phones, computers & laptop, television, CFL, fan, refrigerator& deep Fridge and air conditioners. Under this assignment Waste Concern Consultants made the following assessments:

- Consumption volume of Bangladesh (Current, last 5 years, next 5 year
- E-Waste volume (Current, last 5 years, next 5 years)
- Sleeping stock.
- Details of brokers & repairers
- Information on E-Waste dealers

Location: Bangladesh

Period: April 2015 to June 2015

Name of the Project: *Survey on Soiled Packaging Poly Waste (PPW) and Existing Management Practice for Recycling Project*

Client GIZ

Description of work:

Under this project estimated the amount of soiled PPW coming to landfill sites and informal cleaning and recycling facilities located in landfill sites and older part of Dhaka city and its composition. Identification of the composition of different types of soiled PPW. Analyzed the existing process/value chain of soiled PPW. Assessed existing formal/informal facilities dealing with soiled collection, cleaning, drying and processing being carried out in Kamrangir Char, Matuail Dumpsite area, Amin Bazar and Tongi area of Dhaka city

Location: Bangladesh

Period: January 2015 to June 2015

Name of the Project: *Preparation of Business Plan for Production of Refuse Derived Fuel (RDF) from Municipal Solid Waste*

Client ICCO Cooperation, Netherlands

Description of work:

Under this project, Waste Concern explored the potential of production of refuse derived fuel (RDF) from the municipal solid waste and produced RDF and tested in the laboratory for the calorific analysis using different composition of solid waste. Prepared a business plan for RDF plant and explored potential markets for the use of RDF.

Location: Bangladesh

Period: December 2013 to October 2014

Name of the Project: *Showcasing Positive Economic and Environmental Impact of Improved Design of Pump*

Client Swiss Contact

Description of work:

Under this project Waste Concern Consultants is prepared a awareness materials on improved design of irrigation pump and organizing round table discussion on improved design of irrigation pumps.

Location: Bangladesh

Period: March 2013 to June 2013

Name of the Project: *Value for Waste*

Client Swiss Contact

Description of work:

Under this project Waste Concern Consultants is conducted baseline surveys on solid waste management in Gulshan, Banani and Baridhara area of Dhaka city and indentifying ways to promote source separation of waste as well recycling of waste.

Location: Bangladesh

Period: December 2012 to June 2013

Name of the Project: *Promotion of Green Jobs in Bangladesh*

Client: ILO

Description of work:

Under this project Waste Concern Consultants provided expert services for preparation of projects for scaling up green jobs interventions in Bangladesh in the renewable energy sector.

Location: Bangladesh

Period: August 2012 to September 2012

Name of the Project: *Bangladesh Green Development Programme*

Client: UNDP

Description of work:

Under this project Waste Concern Consultants provided services as National Expert, industrial pollution management and clean development mechanism. Identified and prepared projects for investment by UNDP for the Bangladesh Green Development Program.

Location: Bangladesh

Period: April 2012 to June 2012

Name of the Project: *Assess the Economic and Environmental Impact of Irrigation by Using More Efficient Pumps with Better Installation Technique.*

Client: Swiss Contact.

Description of work:

Under this project Waste Concern Consultants evaluated the economic and environmental impact of irrigation by using more efficient pumps with better installation technique in five districts of Bangladesh.

Location: Bangladesh

Period: March 2012 to June 2012

Name of the Project: *Carbon Foot Print Analysis and GHG Mitigation Strategy Development for IDLC*

Client: IDLC Finance Ltd.

Description of work:

Under this project Waste Concern Consultants identified carbon foot print of selected branches of IDLC in Dhaka and also prepared a strategy on how to reduce the carbon foot print of IDLC. Moreover, WCC will also advice IDLC on how to create shared value concept instead of CSR.

Location: Bangladesh

Period: February 2012 to June 2012

Name of the Project: *Programmatic CDM Project on Solid Waste Management for 64 Districts of Bangladesh*

Client (DoE)/GoB

Description of work:

Design and implementation of a Clean Development Mechanism (CDM) project based on waste composting and recycling in 64 districts of Bangladesh. Phase 1 of the project covers the areas of Narayanganj, Rangpur, Mymensingh and Cox's Bazar Municipalities. The projects aim to reduce greenhouse gas emissions by having an improved waste recycling system.

Activities performed: Provide technical advice to the DoE to prepare the Program of Activities (PoA) and CPA for programmatic CDM project for 64 districts of Bangladesh. Responsible for preparation of design as well as cost estimate of compost plants, waste collection system, biogas plants, and transfer stations. Preparation of Public-Private Partnership (PPP) documents. Preparation of Initial Environmental Examination (IEE)/Environmental Impact Assessment (EIA) reports for compost plants/landfills under the project. Capacity building of municipal officials during implementation of the project.

Location: Bangladesh

Period: 2011 to Present

Name of the Project: *Development Partnership Program for South Asia: Best Practices for MSWM in South Asia- A Knowledge Product*

Client: Asian Development Bank, Philippines

Description of work:

The primary objective of this assignment is to facilitate regional learning in organic waste management, a sub-area of municipal solid waste management, by documenting innovative and successful technological and management practices that are feasible for the South Asian context. The purpose is to help overcome municipal solid waste challenges by determining ways to scale up efforts in organic waste management in the four selected countries of South Asia. As more than 70 percent of municipal solid waste in this region is biodegradable (organic), an enormous

potential exists to improve existing operations and to provide positive economic and environmental benefits, including increased revenue generation through carbon co-financing and Clean Development Mechanism.

Location: Bangladesh, India, Sri Lanka and Nepal

Period: January 2010 to April 2016

Name of the Project: *Pro-poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns*

Client: UNESCAP, Thailand

Description of work:

- a) Provide advice/guidance in participating towns in refining and operationalizing Integrated Resource Recovery Center (IRRC) approach.
- b) Provide advice/guidance in participating cities on developing town wide strategy on municipal solid waste management based on up-scaling of IRRC, recover capital costs through carbon credits
- c) Piloting of co-composting technology in one city for management of human excreta
- d) Piloting of biogas to electricity and bio diesel technology
- e) Organizing of training programs on solid waste management, sanitation, business plan preparation, CDM for local government and NGOs/private sector of Asia and the Pacific Region.

Location: Vietnam, Sri Lanka, Nepal, Bhutan, Cambodia & Indonesia

Period: November 2009 to April 2016

Name of the Project: *Assessment of Green Jobs in Bangladesh*

Client: ILO

Description of work:

Detailed assessment of Green Jobs in three sectors, i.e., waste management, renewable energy and construction to identify intervention points of promoting green jobs

Location: Bangladesh

Period: May 2009 to December 2010

Name of the Project: : *Pro-poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns*

Client UN-ESCAP

Description of work:

The project was comprised of strategy development as well as pilot interventions for solid waste management to reduce the greenhouse gas emissions from solid waste management. The following countries were involved: Vietnam, Sri Lanka, Bangladesh, and Indonesia.

Activities performed: Provided advice/guidance to the participating towns towards operationalizing the Integrated Resource Recovery Center (IRRC) approach. Developed town-wide strategies for municipal solid waste management based on the up-scaling of IRRC, including recovery of capital costs through carbon credits. Prepared engineering design and cost estimates for waste management treatment plants (compost, biogas, biodiesel, co-composting/faecal sludge treatment, and refuse derived fuel plants), as well as different options for waste collection and transportation.

Location: Vietnam, Cambodia, Sri Lanka, and Indonesia

Period: 2009 to 2017

Name of the Project: *Preparation National 3 R Strategy for Waste Management in Bangladesh*

Client: UNCRD and IGES, Japan; Department of Environment, Govt. of Bangladesh

Description of work: **Serving as National Collaborating Center for** formulation of the National 3R Strategy of Bangladesh for waste sector.

Location: Bangladesh

Period: March 2008 to July 2010

Name of the Project: *Inventory of Green Jobs in Selected Sectors*

Client: ILO

Description of work: Preparation of An Inventory Documenting Who Is Doing What in terms of Existing Green Jobs Initiatives in Renewable Energy, Waste Management and Construction Sector in Bangladesh.

Location: Bangladesh

Period: December 2008 to February 2009

Name of the Project: *Prefeasibility Study of Power Generation from Sewerage of DWASA Through Biogas Generation Project*

Client UN-ESCAP

Description of work:

The prefeasibility study explored the potential of energy generation from septic tank and pit latrine sludge as a climate change mitigation option. Moreover, the prefeasibility also explored the potential of refuse derived fuel from sludge of Pagla Sewerage Treatment Plant of DWASA.

Activities performed: Designed the experiment in a biogas plant using faecal sludge as feed stock. Collected data on gas generation as well as electricity generation. Analyzed feed stock in

terms of chemical composition as well as calorific value. Prepared the pre-feasibility report including business plan for a pilot project.

Location: Bangladesh

Period: 2015

Name of the Project: : *Pro-poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns Project*

Client UN-ESCAP

Description of work:

The project activities comprised of the following: baseline survey, design and support in relation to the operation and treatment of the faecal sludge management system, and development of business plan and policy document on faecal sludge management.

Activities performed: Conducted a baseline survey on the sanitation situation in Kushtia municipality and designed a faecal sludge collection, treatment, and recycling system. Prepared cost estimates for the project. Monitored the performance of the faecal sludge collection and treatment system. Monitored laboratory analysis of the treated wastewater. Prepared policy paper on faecal sludge management. Prepared business plan for faecal sludge management for Kushtia municipality.

Location: Bangladesh

Period: 2012 to 2013

Name of the Project: : *Coastal Towns Infrastructure Improvement Project (ADB TA-8128 BAN)*

Client LGED/ADB

Description of work:

The main aim of the project was to prepare a sanitation action plan for four coastal towns of Bangladesh.

Activities performed: As a Sanitation Planning Expert, prepared sanitation action plan for 4 coastal towns of Bangladesh. Sanitation action plan included business strategy for sustainable O&M faecal sludge management facilities. As part of the action plan, conducted a baseline survey on sanitation situation and willingness to pay survey for improvement of sanitation. As part of the business plan, prepared a capacity building program for implementation of such plan, and prepared model contracts for collection and treatment of faecal sludge. Prepared basic engineering design for the faecal sludge management system for the four towns, as well as cost estimates for the intervention. Identified priority interventions for the project.

Location: Bangladesh

Period: 2013 to 2014

Name of the Project: : *Municipal Services Project, Phase II*

Client Bangladesh Municipal Development Fund (BMDF)

Description of work:

The assignment aimed to ensure effective and efficient identification and implementation of the sub-projects on solid waste management by assisting the BMDF and participating City Corporations and Municipalities.

Activities performed: Identified and prioritized projects for investment by the BMDF/World Bank in the solid waste sector in Chittagong, Rajshahi, Rangpur, and Patuakhali municipalities using PPP approach and carbon financing. Conducted field survey on solid waste management. Identified scope for improvement of solid waste management system (collection, storage, transportation, recycling, and disposal), as well as identified and prioritized projects for investment. Prepared investment costs for different intervention.

Location: Bangladesh

Period: 2012

Name of the Project: : *19 Towns Solid Waste Management Project*

Client UNICEF

Description of work:

The assignment comprised of preparation of an action plan for solid waste management for 19 secondary towns of Bangladesh. Based on the action plan, UNICEF and DPHE selected 6 towns for priority project intervention and implementation.

Activities performed: Prepared action plan for solid waste management in 19 towns of Bangladesh based on 3R (Reduce, Reuse, and Recycle) principle and carbon financing options. Conducted detailed survey in all the 19 towns regarding different aspects of solid waste management in order to identify areas of improvement. Prepared investment plan for six municipalities as well as engineering designs and bill of quantity.

Location: Bangladesh

Period: 2009 to 2012

Name of the Project: : *Feasibility Study for Health Care Waste Management Project*

Client Government of Nepal / UNDP

Description of work:

The project included preparation of a feasibility study for establishment and operation of a common central treatment facility (CTF) for health care waste under PPP financing arrangements in Nepal's Pokhara city.

Activities performed: Responsible for project management, including preparation of the feasibility study for the establishment and operation of a common CTF for health care waste. Investigation of PPP financing options.

Location: Nepal

Period: 2011

Name of the Project: : *Desk Study for Organic Waste Management Project in South Asia*

Client ADB

Description of work:

The desk study investigated options for management of organic wastes in South Asia.

Activities performed: Prepared a technical report on organic waste management for South Asian cities, comprising identification of appropriate waste management options given the specific regional and local contexts of each South Asian country. The report also included summary findings of CDM financing options for waste management projects.

Location: Bangladesh, Sri Lanka, Nepal

Period: 2010 to 2011

Name of the Project: *Waste Recycling in American International School (AISD), in Dhaka*

Client: AISD, Dhaka, Bangladesh

Description of work:

- a) Conducted Waste Audit
 - b) Detail architectural and engineering design drawing for the compost plant.
 - c) Construction supervision.
 - d) Awareness training for the AIS/D staff and students for successful operation of the plant.
 - e) Hands on training for the in house plant operators.
 - f) Monitoring of green house gas emission reduction through composting at AISD
- Prepared waste management plan for the AISD

Location: Dhaka

Period: May 2008 to May 2009

Name of the Project: : *3R Modules for Waste Management and Development of National 3R Strategy for Waste Management*

Client Institute of Global Environmental Strategies/UNCRD

Description of work:

The objective of the assignment was to prepare 3R (Reduce, Reuse, Recycle) Modules on 5 (five) key sectors, including: (i) Municipal Waste; (ii) Business & SMEs; (iii) Hospital & Medical Sectors; (iv) Agricultural Waste; and (v) Hotel & Tourism

Activities performed: Prepared 3R (Reduce, Reuse, and Recycle) Modules covering the 5 (five) key sectors. Drafted the National 3R Strategy of Bangladesh focusing on waste management.

Location: Bangladesh

Period: 2008 to 2010

Name of the Project: *Environmental Plan for Tabani Beverage Company Limited*

Client: Coca Cola, South Asia

Description of work:

- Waste Water: Collection of Waste Water Flow data for
- identification of EPIs
- Hazardous Waste:
 - Collection of data regarding sludge generation as well as
- non hazardous waste generation;
 - Development of sludge disposal system;
 - Development of septic tank cleaning system using vaccu-tag
- and proper disposal of faecal sludge from septic tanks;
 - Development of waste disposal system of used oil and paint;
 - Development of waste recycling system for broken glass and
- bottles;
 - Development of proper signage system for containers with
- hazardous materials;
 - Development of asbestos management system.
- Inspection of Pressure Vessels and Safety Valves
 - Development of annual inspection procedure as well as
- emergency response plan;
 - Collection and maintenance of data; and
 - Inspection of pressure vessels;
- Emergency Response Procedure (ERP) For the Ammonia
- Refrigeration System
 - Development of ERP for refrigeration system;
 - Development of asbestos management system; and
 - Development of annual inspection procedure system.
- Legal Compliance
 - Assist TBCL to prepare all necessary documents for
- Environmental/legal compliance;
 - Preparation of Environmental Management Plan (EMP) for Tabani Beverage Company Limited

Location: Dhaka

Period: January 2008- May 2008

Name of the Project: *Technical Advisory Services for the Implementation of the Community based Composting Project in Bangladesh*

Client: Institute for Global Environmental Strategies (IGES)

Description of work: Construction of one community-based composting plant (1.5 ton capacity) in Kushtia Municipality in Bangladesh integrated with house-to-house waste collection. Green house gas emission reduction from the project will also be evaluated along with promotion of source separation of waste in the municipality. Waste Concern shall carry out a baseline study, prepare IEE report as well as technical design and drawings along with cost estimate and tender documents. Moreover, a publication on the project will also be prepared by Waste Concern.

Location: Kushtia Municipality

Period: October 2007 to June 2008

Name of the Project: *Promotion of Organic Cotton in Bangladesh*

Partners: *Bangladesh Cotton Development Board, Government of Bangladesh: Waste Concern - Baraka Agro Products, Bangladesh, and a social business enterprise: Waste Concern, Bangladesh, a not for profit research organization: People Tree UK, a social business enterprise: Mohipur Agriculture Training Institute (MATI), Bogra, Bangladesh:*

Description of work: Waste Concern, for the first time in Bangladesh took an initiative to promote sustainable organic cotton production and marketing in Bangladesh with minimum green house gas emission. Using the concept of public-private partnership, Waste Concern brought Cotton Development Board of the Government of Bangladesh along with a number of national and international (both private and research bodies) organizations to a common platform to start organic cotton production.

In order to test the feasibility of growing organic cotton commercially in Bangladesh, a pilot project has been initiated. The project will be implemented using public-private partnership approach. The basis of partnership is that “all the risks and benefits of the project will be shared by all the partners”. The roles and responsibilities of the project partners are as follows:

Location: Bangladesh

Description of work:

- *Bangladesh Cotton Development Board, Government of Bangladesh:* They will provide land, good quality cotton seed as well as required manpower for the pilot project. They will also monitor results of the crop yield during the period.
- *Waste Concern - Baraka Agro Products, Bangladesh, and a social business enterprise:* They will partially bear the cost of the pilot project and will invest in commercial production using Fair Trade Standards and contract farming approach.
- *Waste Concern, Bangladesh, a not for profit research organization:* They will provide compost to the pilot project; also develop a CDM project and bring carbon investors for the project.
- *People Tree UK, a social business enterprise:* They will provide technical assistance in growing organic cotton by providing/arranging training and will ensure purchasing the cotton products at a premium price under an exclusive agreement with Waste Concern-Baraka Agro Products. They will also assist in implementing Fair Trade standards in cotton production.
- *Mohipur Agriculture Training Institute (MATI), Bogra, Bangladesh:* Mohipur Agriculture Training Institute (MATI) founded in 1996 at Mohipur, under Sherpur Upazilla, Bogra. The Institute is also

linked with farmer's community and other organizations under its Farmers' support Service and Research and Development Division.

Period: August 2007 to August 2008

Name of the Project: *Managing Hazardous Waste*

Location: Bangladesh

Name of Client: Asian Development Bank (ADB), Manila, Philippines

Project Background: In many developing countries, including Bhutan, Bangladesh, Nepal, and India, increased economic activity causes negative impacts on the environment. Economic activities associated with industry, agriculture, health services, and other service sectors generate chemical and hazardous wastes, which if left unmanaged, can lead to serious environmental problems that threaten public health and endanger economic sustainability.

In this backdrop, Regional Technical Assistance (RETA) on Managing Hazardous Wastes, previously known as Review of Regulation on Hazardous Wastes for Bangladesh, Bhutan, India, and Nepal (BBIN), was proposed by the Environmental Working Group of South Asia Sub-regional Economic Cooperation (SASEC) at its special meeting in 2002, and endorsed at the Country Advisors Meeting in 2005. RETA is included in the regional cooperation strategy and program (RCSP) for 2006–2008. Considering the range of issues, problems, degrees of effort, and the immediate needs for managing hazardous wastes, RETA will serve as a basis for strengthening cooperation among the four countries.

Objectives of the Project:

1. To carry out inventory of hazardous wastes
2. The consultant will work closely with the international consultant in developing guidelines for management of hazardous wastes and undertake inventory of wastes

Tasks Under the Project:

- Assisting Department of Environment (DOE) to update the inventory of hazardous wastes, as a basis to formulate the hazardous wastes management regulation;
- Reviewing the present studies on hospital wastes and lead batteries, as well as POP;
- Identifying key industries to be included in the survey; preparing an approach and designing a survey for collecting primary data;
- Assisting the DOE in conducting workshops with the Chamber of Commerce and Industry and other relevant sectors to test the survey tools; and
- Undertaking the survey; and analyzing the results of the survey and making predictions about waste generation for the next 5 to 10 years.

Duration of the Project: August 15, 2007 to August 31, 2008

Name of the Project: : *Capacity Development for CDM Project*

Client UNEP Risoe Centre

Description of work:

The project supported capacity building on CDM project development in Bangladesh.

Activities performed: Responsible for improving Bangladesh's institutional preparedness for hosting CDM projects, including capacity building of the Designated National Authority (DNA) enabling it to efficiently approve CDM projects consistent with the country's sustainable development priorities. Capacity building of local experts in key sectors with regard to identification, design and implementation of CDM. Capacity building of relevant institutions in appraising, funding, and promoting CDM projects and carbon offset investments in Bangladesh. Support the development of a pipeline of actual CDM projects.

Location: Bangladesh

Period: 2008 to 2009

Name of the Project: : *Environmental Management Plan (EMP) for Industries*

Client Local Enterprise Investment Center (LEIC) under IIDLC Finance Ltd

Description of work:

The project supported development of EMPs in Bangladesh.

Activities performed: Prepared environmental plan for 20 industries which included waste and energy management action plans as well as pollution mitigation strategies for the industries.

Location: Bangladesh

Period: 2008

Name of the Project: : *Prepare Interactive User's Manual on Decentralized Composting and Paper on Financing, Up-scaling & Replication of Community-based Solid Waste Management*

Client United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), Bangkok, Thailand

Description of work:

The UNESCAP project on Solid Waste Management, under the supervision of the Chief of the Poverty Reduction Section (Poverty and Development Division), has adapted the innovative community-based composting model of Waste Concern (Bangladesh), and is currently testing it in two pilot schemes in Quy Nhon, Vietnam and Matale, Sri Lanka. The aim of the project is to provide towns across the Asia-Pacific region with an innovative, replicable model of community-based solid waste management, as well as with financing options for the model's implementation, replication and up-scaling using carbon trade.

The objectives of the consultancy are twofold. Firstly, it aims to provide stakeholders in towns across the UNESCAP region with an interactive user's manual on community-based solid waste management which portrays step-by-step this innovative, environmentally friendly, socially beneficial and cost-effective approach currently piloted by UNESCAP. Secondly, it aims to produce a research paper on the potential of carbon trading to finance the implementation, replication and up-scaling of this community based solid waste management approach enabling towns across the region to derive benefit from the best practice.

Tasks Under the Project:

Prepare an "Interactive User's Manual on Decentralized Composting for Cities of Low-and Middle-Income Countries" in the format of a camera-ready CD-ROM; and

Prepare a research paper on "Financing, Up-scaling and Replication of Community-based Solid Waste Management Using Carbon Trading" as an input to a policy seminar on innovative financing for community-based solid waste management, scheduled to be held in the last quarter of 2007.

Location: Bangladesh, Vietnam and Sri Lanka

Period: August 1, 2007 to October 12, 2007

Name of the Project: *Initial Environmental Examination (IEE) Report for CDM Based Compost Project located at Roopganj, Bulta, Dhaka*

Client: WWR Bio Fertilizer Bangladesh Ltd., a Dutch-Bangladesh Joint Venture company

Description of work: The CDM based 700 ton/day capacity compost project aims at establishment of a number of composting plants near the capital city of Dhaka in the Peoples Republic of Bangladesh. The current IEE deals with the first stage of the first composting plant with a capacity of maximum 130 ton/day. Here compost will be produced from the organic component of municipal waste collected mainly from vegetable markets of Dhaka city. This project has been approved by the National CDM Committee and CDM Board of the Government of Bangladesh and already registered with as a CDM project with the UNFCCC. A number of tasks carried out during this examination.

Tasks Under the Project: A number of activities were carried out during the study, such as: Screening was done, existing environmental conditions (land-use, water quality, noise, climatic condition, terrestrial flora and fauna, aquatic flora and fauna, traffic volume) determined, identification and evaluation of potential impacts, disaster management plan and monitoring scheme has been developed.

Location: Roopganj, Bulta, Dhaka, Bangladesh

Period: June 2007 to July 2007

Name of the Project: *Technical Support to the Staffs of Better Business to Improve Physical & Environmental Condition of Small and Medium Size Enterprises (SMEs)*

Client: Swisscontact- Katalyst

Objectives of the Project: The main objective of this assignment is to provide technical support for improvement of the working condition of SMEs located at old part of Dhaka

Description of work: Most of the time SMEs in Bangladesh do not comply with healthy and environmental-friendly practices in their workplaces. The hazardous and risky operational practices not only higher the health risks of workers but at the same time reduces productivity of the workplace. There is a need to improve the present Safety, Health and Environment (SHE) condition of SMEs. To improve this situation

Tasks Under the Project: Improvement of SHE condition of SMEs in Bangladesh. So far, 2 (two) small manufacturing industries and 1 (one) multi-purpose buildings located in Dhaka were taken under the project.

Location: Dhaka, Bangladesh

Duration of the Project: April 2007 and April 2011

Name of the Project: *Feasibility Study on Scaling-up of Compost Production and Distribution in Rangpur and Dinajpur District of Bangladesh*

Location: Rangpur and Dinajpur, Bangladesh

Name of Client: Swisscontact-Katalyst

Objectives of the Project: The broad goal of this study is to come with two major outputs, one is to get an actual overall picture of raw material supply for composting and demand for compost in the Rangpur and Dinajpur and the other one is to prepare an effective business plan to promote sustainable agriculture in Bangladesh. This study will enable to assess the feasibility of compost production, marketing and its use in agriculture in urban and peri-urban areas of greater Rangpur region.

Duration of the Project: November 2006 to March 2007

Name: *Preparation of Environmental Plan for CAD Production Ltd.*

Client: Andersen Consult, Denmark

Tasks Under the Project:

- Identify local environmental rules and regulations applicable to the operations of CAD;
- Identify environmental aspects related to the proposed operations of CAD;
- Identify proper mitigation plan of environmental aspects;
- Prepare a tentative budget for implementation of environmental aspects;
- Identify training needs to implement the environmental plan; and
- Prepare an Environmental Plan for CAD in line with ISO-14001

Location: Dhaka, Bangladesh

Period: September 15, 2006 to October 7, 2006.

Name *Intervention on Promoting Sustainable and Efficient Waste Recycling*

Client: Swisscontact

Description of work:

- Creating awareness among plastic pallets' and goods' manufacturers for cleaner production by establishing Environmental Management System (EMS) in their facilities.
- Promoting awareness on source separation of waste to make plastic recyclables cleaner and un-soiled.
- Demonstrating source-separation of waste by piloting waste segregation activity within a

community in DCC area.

- Providing input for policy reform to improve the plastic waste recycling industry

Location: Bangladesh

Period: May 2006 and March 2008

Name: *Study on Composition of Plastic Waste and Market Assessment of the Plastic Recycling Sector in Dhaka City*

Client: Swisscontact- Katalyst

Description of work:

- Conduct waste generation and physical composition survey in the high, medium and low income group of households of Dhaka City.
- Conduct physical and questionnaire survey in the waste collection points in high, medium and low income areas and market areas.
- Conduct survey among different actors involved in the waste recycling trade chain.
- Data analysis and preparation of report based on the survey.

Location: Bangladesh

Period: August 15, 2005 - December 31, 2005

Name: : *Capacity Building for Composting Activities under Special Programme for Food Security Project in Chak Singa, Bagha, Rajshahi*

Client: FAO

Description of work:

The main objectives of the project are to provide following services:

- Conducting training sessions (compost unit construction, compost process control);
- Conducting field survey on availability of biomass for composting as well as soil quality;
- Providing periodical supervisions to ensure quality output;
- Preparation of following materials:

- i) Script for capacity building of trainers and farmers, based on which PMU will prepare a Video-CD;
- ii) Written manual for farmers;
- iii) Written manual for trainers, describing how to facilitate farmers to process composting and utilize the produced compost; and
- iv) Posters, particularly on raw material selection and process control.

Location: Rajshahi, Bangladesh

Period: October 2005 and July 2006

Name: *Feasibility Study for Employment Generation Activity Through Solid Waste Collection, Composting and Recycling*

Client: UNCHS- UNDP

Description of work: This study was carried out under the project entitled Local Partnerships for Urban Poverty Reduction Project UNDP/UN-HABITAT/LGED PROJECT BGD/98/006. The executing agent is the Local Government Division of the Bangladesh Ministry of Local Government, Rural Development and Cooperatives and the Government implementing agency is the Local Government Engineering Department (LGED). The major output of the study was to come up with a economic feasibility study for a business based on solid waste management in three community cluster of three wards in three towns.

Tasks Under the Project:

- Conduct Physical and questionnaire survey among households to estimate the composition and quantity of waste generation on a daily basis.
- Estimation of cost of collection, sorting and processing of waste including the cost of equipment required;
- Estimation of expected profit from sale of compost and recyclables and house to house waste collection fee
- Identification of site required for composting and recycling waste.
- Development of management and business plan of the waste collection, composting and recycling scheme in three towns.

Location: Narayangang Municipality, Mymensingh Pourashava and Bogra Pourashava of Bangladesh.

Period: June 1 to July 31, 2005

Name: *Replication of Barrel Type Composting System in Slums Located in Dhaka City*

Client: Probono Service provided to Dushtha Syasthya Kendra (DSK)

Tasks Under the Project:

- Waste Concern will assist DSK to replicate Waste Concern's Community Based Composting model with necessary technical supports in the slums of Dhaka city.
- Waste Concern will provide software and hardware trainings on Waste Concern's model to DSK in mutually agreed dates.

Location: Dhaka, Bangladesh

Period: March 2005 to March 2006

Name: *Training Manual on Environment Friendly Poultry Waste Management for Small, Medium Sized Poultry Farm Owners.*

Client: Pro bono service provided to Agriteam Canada Consulting Ltd.

Description of work: Agriteam Canada Consulting Ltd. with Bangladesh Poultry Sector Development Project of the Government of Bangladesh in partnership with Waste Concern took the initiative to develop training manuals that would help small and medium poultry producers to develop sound environmental management practices.

Tasks Under the Project:

- Preparation of 2 (two) four colored training manuals on composting poultry waste in Bengali language. Technology and management practices used in these manuals are suitable and affordable for small scale producers and the approach is appropriate for women. Presentation materials are specially designed to be easily understood by illiterate or semi-literate farmers.

Location: Bangladesh

Period: November 2004 to December 2004

Name: *Preparation of Sanitation Master Plan for Eight Towns in Bangladesh*

Client: Asian Development Bank (ADB), Philippines

Description of work:

Action Plans for sanitation to build upon detailed identification and evaluation options undertaken during review and strategic planning stages and requirements of the agreed strategy are to include but not be limited to:

- Institutional strengthening Action Program addressing responsibilities and arrangements for all bodies involved in sanitation, private sector involvement, detailed capacity building requirements, arrangements for licensing etc.
- Evaluate legal and regulatory requirements at various Government levels;
- Economic assessment of alternative strategies, indicative investment plan, indicative recurrent funding plan, sources and uses of funds (cash flow analysis during implementation and initial years of operation), proposals for physical and financial indicators to measure performances during and after strategy implementation.
- Propose detailed program for public awareness and education program and implementation schedule, where the main objectives are to inform the public of hygienic sanitation methods and requirements, gain public support for initiatives and improve sanitation profile.

Location: Bangladesh

No. of person-months provided by Waste Concern: 4 man-months

Period: November 2004 – March 2005

Project Name: *Preparation of Action Plan for Sanitation and Solid Waste Management for 8 Secondary Towns under STIFPP-II Project*

Location within country: Bangladesh

Name of client: LGED/ADB

Duration of the Project: 2004 to 2005

Description of work:

The project supported the preparation of action plans for 8 secondary towns with regards to solid waste management.

Prepared solid waste management action plans and assessed alternative technical options for improvement of solid waste management value chain. Estimated the quantity of waste generated in each of the 8 secondary towns. Projected future need for waste management over a 10-year period, considering short- and medium-term investments required. Evaluated the opportunities for CDM in waste management in the 8 towns.

Project Name: *Intervention to Improve Existing Composting Technology of a Local Compost Producer "Annapurna Agro Service" Based at Domar, Nilphamari, Bangladesh*

Location within country: Dinajpur, Bangladesh

Name of client: Winrock International, Business Development Service (BDS).

Duration of the Project: September 2004 to December, 2004

Narrative description of project and services provided

- Assess the facilities, raw material and process analysis of a compost fertilizer producer in the greater Rangpur area;
- Analysis of raw materials and present compost produced by them;
- Facilitate to improve/develop the composting technology for good quality compost production;
- Prepare an economic analysis on the cost and benefit of using identified appropriate and affordable composting technology;
- Analysis of finished compost produced by the semi aerobic composting technology;
- Recommendation of compost use in agriculture;
- Build up capacity of the local service provider to produce quality compost followed by appropriate composting technology to cater the need of the farmers;
- Prepare on economic analysis on the cost and benefit of using the identified appropriate and affordable technology of composting; and
- Recommend application dose of compost along with other chemical fertilizers for maize production in greater Rangpur.

Name: *Preparation of Case Study on the Experience of Waste Concern with Community Based Decentralized Solid Waste Management in Dhaka, Bangladesh.*

Client: UNESCAP Bangkok, Thailand

Description of work: Preparation of best practice documentation of Waste Concern's model of Solid Waste Management.

Location: Bangladesh

No. Of person-months provided by Waste Concern: 1 man-months

Period: July 2004 - August, 2004

Name: *Implementation of Two CDM projects (landfill gas recovery with power generation and composting of organic waste) in Dhaka, Bangladesh.*

Client: World Wide Recycling (WWR), Netherlands

Description of work:

Providing technical assistance in design implementation of landfill gas recovery project including height increase of landfill site, leachate treatment and composting of organic waste. Also providing assistance in preparation of methodology for the meth panel of UNFCCC.

Location: Dhaka, Bangladesh

No. of person-months provided by Waste Concern: 4 man-months

Period: March 2004 – December 2004

Name: *Promote and Support ISO 14001 (EMS) Among Business Sector in Bangladesh*

Client: British High Commission in Dhaka

Description of work:

- Preparation of information resources on ISO 14001.
- Acting as Resource Person in the workshops for business groups interested in ISO 14001 certification.
- Assessment of industries interested in ISO 14001.
- Development of environmental management systems (EMS) for selected industries.

Location: Bangladesh

Period: August 2003-July 2005

No. of person-months provided by Waste Concern: 24 man-months

Name: *Enriched Compost Demonstration on Different Crops Production in Eco-villages of Tangail under Ecological Village Development Component of Tangail Infrastructure Development Project (TIDP) Phase-III*

Client: GITEC CONSULTANT, Germany

Description of work:

- Demonstrated to farmers in five eco-villages on 19 demonstration plots the technique of applying enriched compost.
- Carried out field visits to all demonstration plots and documented the intermediate results.
- Organized farmers meetings in all the villages and practically demonstrated the difference between farmers' practice and enriched compost plots, and to motivated them to switch over to enriched compost in future.
- Prepared a photo-illustrated report on all findings of the assignment, including methodological aspects and possible shortcomings.

Location: Bangladesh

No. of person-months provided by Waste Concern: 2 man-months

Period: November 2002-May 2003

Name: *Capacity Building Training for the elected Municipal Officials of Punjab Province of Pakistan at Lahore on Solid Waste Management with Emphasis on Recycling and Composting.*

Client: UNESCAP Bangkok, Thailand

Description of work: Preparation of training material on waste management and delivery of lectures on the subject.

Location: Pakistan

No. of person-months provided by Waste Concern: 1 man-months

Period: October 2002- December 2002

Name of the Project: : *Development of an Interactive User's Manual on Community-Based Solid Waste Management*

Client UNESCAP

Description of work:

Preparation of an interactive user's manual on community-based solid waste management as well as a research paper on carbon trading and financing options for SWM.

Activities performed: Prepared an interactive user's manual on community-based solid waste management approach of Waste Concern. Prepared a research paper on the potential of carbon trading to finance the implementation, replication, and up-scaling of this community-based solid waste management approach.

Location: Bangladesh/Thailand

Period: 2007

Name of the Project: : *Inventory of Hazardous Waste in Bangladesh*

Client ADB/DOE

Description of work:

Preparation of an inventory of Hazardous Waste in Bangladesh.

Activities performed: i) Updated the inventory of hazardous wastes, as a basis to formulate the hazardous wastes management regulation; ii) Reviewed the present studies on hospital wastes and lead batteries, as well as POPs iii) Identified key industries to be included in the survey; iv) Prepared an approach and designed a survey for collecting primary data; v) Assisted the DOE in conducting workshops with the chamber of commerce and industry and other relevant sectors to test the survey tools; and v) undertook the survey and analyzed the results of the survey and made predictions about waste generation for the next 5 to 10 years.

Location: Bangladesh

Period: 2007

Name of the Project: : *Promoting Sustainable & Efficient Waste Recycling Project*

Client Swisscontact-Katalyst

Description of work:

The project was aimed at promotion of sustainable and efficient waste recycling systems in Bangladesh, particularly plastic wastes.

Activities performed: Responsible for promotion of Environmental Management Systems (EMS) amongst the plastic industries. Supported awareness campaign for source separation of plastic. Management of pilot intervention for collection of sources separated plastic waste in residential areas of Bangladesh. Development and implementation of capacity building training programs and policy intervention for efficient plastic waste recycling in Bangladesh.

Location: Bangladesh

Period: 2006 to 2007

Name of the Project: : *Adaptation of Model for Decentralized Solid Waste Management and Composting for Qui Nhon City, Vietnam, Matale City, Sri Lanka*

Client UN-ESCAP

Description of work:

The assignment set out to adapt and implement the 'Waste Concern Model' for decentralized solid waste management and composting.

Activities performed: Responsible for assisting in adapting the 'Waste Concern Model' for decentralized solid waste management and composting to fit the context of Qui Nhon City and Matale City. Conducted pre-feasibility study for establishment of a community-based solid waste management and composting system for the 2 cities. Conducted a pre-feasibility study for primary collection of waste.

Location: Vietnam and Sri Lanka

Period: 2005 to 2006

Name: *Assist Qui Nhon City of Vietnam and Matale city of Sri Lanka in adapting the Waste Concern model of solid waste management including CDM*

Client: UN-ESCAP, Bangkok, Thailand

Description of work:

Prepare detailed work plan for providing advisory services to the two participating towns

- Visit Qui Nhon City and Matale to prepare pre-feasibility report on community based solid waste management and small-scale CDM projects on waste sector (landfill gas recovery, composting, biomethanation etc)
- Assist in developing a preliminary planning and implementation schedule for each demonstration project in consultation with each participating town.
- Indicate possible sites for the demonstration project.
- Identify possible private sector partners.
- Recommend approximate dates for implementation of each demonstration project.

- Assist each town in estimating the inputs that they could provide and specify inputs, both financial and technical needed from ESCAP and other technical assistance providers.
- Outline possibilities for using CDM for financing solid waste management in each town.

Location: Vietnam and Sri Lanka

No. Of person-months provided by Waste Concern: 1 man-months

Period: November 2004- January 2005

Name: *Pilot Projects on Solid Waste Management of Environmental Sanitation, Hygiene and Water Supply in Urban Slums and Fringes*

Client: UNICEF Dhaka, Bangladesh

Description of work:

- Baseline survey and research on waste generation rates in 14 municipalities ;
- Development of training manual on community mobilization on solid waste management;
- Training of local NGOs and municipal staff on proper disposal of waste, recycling and involvement informal sector on waste management;
- Supervising and providing on-job training to local GO/NGO staff on community mobilization for proper solid waste management;
- Preparation of engineering design of community based solid waste recycling and composting plant for 14 municipalities;.
- Preparation of engineering design of composting toilet, rainwater collection and wastewater recycling system for the composting plants;
- Promotion and marketing of compost; and
- Monitoring performance of composting units

Location: Bangladesh

No. of person-months provided by Waste Concern: 27 man-months

Period: August 2002-September 2005

Name: *Rural Waste Recycling and Industrial Pollution Mitigation under Eco-villages Ecological Village Development Component of Tangail Infrastructure Development Project (TIDP) Phase-III*

Client: GITEC CONSULTANT, Germany

Description of work:

- Evaluated existing database of five ecological villages with regard to waste and industrial pollution related issues
- Analyzed and classified different types of waste produced in their villages and the ways of disposal
- Carried surveys in five villages to identify current waste generation
- Identified ways and means to reduce waste production, to recycle or re-use waste or to improve disposal practices
- Identified technologies, techniques and practices suitable to maintain or improve the waste balance in the villages and prepared detailed proposals for implementation under TIDP
- Prepared proposals for improving environmental awareness of villagers regarding waste
- Prepared detailed analysis of the ten most polluting industries in villages
- Prepared recommendations for mitigation of environmental pollution.

- Participated in village meetings to present and discuss the proposals with the industry representatives and villagers

Location: Bangladesh

No. of person-months provided by Waste Concern: 4 man-months

Period: August 2002-October 2002

Name: *Assessing the Feasibility of Composting of Poultry Manure*

Client: CIDA, Canada

Description of work:

- Carried out research trials to determine best practices for composting of poultry manure
- Analyzed the final nutrient value of poultry compost
- Determined market potential of poultry compost
- Recommended appropriate method for composting of poultry manure.

Location: Bangladesh

No. of person-months provided by Waste Concern: 4 man-months

Period: July 2002 - February 2003

Name: *Develop a comprehensive Gender Strategy and Action Plan for Bangladesh*

Client: Royal Netherlands Embassy, Dhaka.

Description of work:

- Liaison with LGED and other key stakeholders
- Provided data related to rural and urban infrastructure and water resources development and identified areas for involvement of women in these infrastructure developments.
- Co-facilitated for national workshop and some local workshops
- Contributed to all consultancy outputs (gender strategy and action plan)

Location: Bangladesh

No. of person-months provided by Waste Concern: 2 man-months

Period: April 2002-May 2002

Name: *Conceptual Design and Operationalization of WasteNet, Bangladesh*

Client: WSP-South Asia Dhaka, Bangladesh

Description of work: Responsible for identification of stakeholders working in the field of solid waste management. Prepared newsletter and leaflets organized training programs as well as disseminated information on waste management to the WasteNet members.

Location: Bangladesh

Period: May 2001- February 2002

No. of person-months provided by Waste Concern: 3 man-months

Name: *5926-REG/ Public-Private-Community Partnership in Urban Services for the Poor.*

Client: Asian Development Bank Manila, Philippines

Description of work:

- Analyzed the current development patterns, future trends, and strategic focus in water supply, sanitation, and solid waste management sub sectors in Bangladesh. Reviewed the national and local policies and plans for private sector participation in the provision of urban services, particularly with regard to the urban poor;
- Reviewed overall the status of privatization programs and related laws and regulations in Bangladesh. Examined the funding mechanisms for urban infrastructure and proportion of financial participation by the private sector;
- Examined the modalities and contractual arrangements for private sector participation in water supply, sanitation and solid waste management. In particular assessed the contracts relating to public-private-community arrangements designed to make services available to the poor communities;
- Recommended institutional and contractual arrangements likely to enhance private sector participation in urban services;
- Consulted with relevant government officials, investors, private companies, NGOs, CBOs in Bangladesh to assess the benefits and problems concerning private sector participation in urban services for the urban poor; and
- Participated in the inception workshop and regional forum as a Resource Person.

Location: Bangladesh

No. of person-months provided by Waste Concern: 1 man-months

Period: January 2001-June 2001

Name: *Community Based Solid Waste Management in Bangladesh*

Client: RUDO/USAID- South Asia, India

Description of work: preparation of training modules and designing and delivering twelve training programs on solid waste management, composting and recycling for municipal officials, NGOs, CBOs in different cities and towns of Bangladesh.

Location: Bangladesh

No. of person-months provided by Waste Concern: 4 man-months

Period: October 2000- December 2001

Name: *Composting Techniques in Khulna City*

Client: SDC, Switzerland

Description of work:

- Test technical and commercial viability of composting and to demonstrate model and process of decentralized composting in Khulna and elsewhere in Bangladesh. As part of the assignment:
- Prepared a detailed engineering design (structural) for the pilot composting plant at the landfill site.
- Supervised the installation of the composting plant
- Advised and provided hands on training and guided Prodiapon (an NGO) and municipal staff to operate the composting plant.
- Advised on marketing strategy of compost.

Location: Bangladesh

No. of person-months provided by Waste Concern: 2 man-months

Period: January 2001-June 2001

Name: *Low Cost Pilot Solid Waste Management Program in Two Slums of Dhaka city.*

Client: Oxfam-UK

Description of work: Design and implementation of low-cost and environmentally sound solid waste management system with focus on resource recovery in two slums of Dhaka.

Location: Dhaka

No. of person-months provided by Waste Concern: 4 man-months

Period: April 2000- March 2001

Name: *Resource Recovery from Solid Waste in Khulna City of Bangladesh*

Client: Water and Sanitation Program South Asia - The World Bank

Description of work:

- Assessed the waste generation rate of Khulna city and potential of resource recovery;
- Conducted a pre-feasibility of composting; and
- Designed a pilot composting plant.

Location: Bangladesh

No. of person-months provided by Waste Concern: 3 man-months

Period: January 2000 – March 2000

Name: *International Workshop on Community Based Solid Waste Management.*

Client: RUDO/USAID South Asia

Description of work: Organizing international workshop on solid waste management in Bangladesh as well as preparation of seminar proceedings.

Location: Dhaka

Period: December 1999 - February 2000

No. of person-months provided by Waste Concern: 2 man-months

Name: *Identification of Potential Sites for Community Based Composting in Dhaka*

Client: RUDO/USAID, South Asia

Description of work: Prepared a report on potential sites for community based composting in Dhaka, Bangladesh.

Location: Dhaka

No. of person-months provided by Waste Concern: 3 man-months

Period: April 1999 – August 1999

Name: *Barrel Type Composting in Two Slums of Dhaka city*

Client: LIFE-UNDP

Description of work: Design and implementation of barrel type composting technology in two slums of Dhaka. The assignment also included community mobilization, capacity building of community groups on environmental issues as well as operation and maintenance of composting barrels.

Location: Bangladesh

No. of person-months provided by Waste Concern: 6 man-months

Period: November 1998 - February 2001

Name of the Project: : *Dhaka Community-Based Urban Solid Waste Management under Sustainable Environment Management Program (SEMP)*

Client Ministry of Environment and Forest (MoEF) / UNDP

Description of work:

The assignment included laying out national waste management rules, as well as design and implementation of pilot schemes.

Activities performed: Drafted rules on solid waste management, hospital waste management, and battery waste management for Bangladesh. Designed and implemented pilot solid waste and hospital waste collection, treatment and recycling (composting projects) in Dhaka

Location: Bangladesh

Period: 1998 to 2005

Name of the Project: : *Pilot Projects on Solid Waste Management of Environmental Sanitation, Hygiene and Water Supply in Urban Slums and Fringes*

Client DPHE / UNICEF

Description of work:

The project included capacity building on waste management, baseline survey, and research on waste generation rates in 14 municipalities.

Activities performed: Carried out a baseline survey on waste generation in 14 municipalities. Developed training manual on community mobilization on solid waste management. Imparted training to local NGOs and municipal staff on proper disposal of solid waste, recycling, and involvement of informal sector on waste management. Supervised on-the-job training of local GO/NGO staff on community mobilization for proper solid waste management. Prepared engineering design of community-based solid waste recycling and composting plant for 14 municipalities. Prepared engineering design of composting toilet, rainwater collection, and wastewater recycling system and ecological toilets for the composting plants. Promoted marketing of compost. Monitored performance of composting units.

Location: Bangladesh

Period: 2002 to 2004

Name of the Project: : *Capacity Development for CDM in Bangladesh under Sustainable Environment Management Program*

Client MoEF / UNDP

Description of work:

The project supported the development of an institutional framework and capacity building for implementation of CDM projects in Bangladesh.

Activities performed: Developed policy guideline and institutional framework for implementation of CDM projects in Bangladesh. Drafted National Strategy for CDM. Developed the structure of the Designated National Authority (DNA) for CDM projects in Bangladesh. Developed CDM project approval process as well as sustainable development criteria for project evaluation and CDM strategy. Organized training programs on CDM for government and private sectors on potential CDM projects. Assisted in development of baseline and preparation of a business plan for a Landfill Gas Recovery (LFG) project in Dhaka. Developed awareness raising materials on CDM.

Location: Bangladesh

Period: 2002 to 2003

Name: *Study of Potential of Waste Recycling, Composting in the city of Jessore, Bangladesh.*

Client: UNIDO & UNDP

Description of work:

- Assessed the volume of rubbish collected and collectable by the Municipality of Jessore and convertible into compost & dry fertilizer;
- Studied the state of art of waste composting in Dhaka;
- Obtained from Jessore the basic statistics on current rubbish disposal practices & volumes; and
- Prepared a brief pre- feasibility report of waste conversion into compost for the area of Jessore.

Location: Bangladesh

No. of person-months provided by Waste Concern: 1 man-months

Period: April 1, 1997 – April 30, 1997
