

BUSINESS PLAN / WORK PLAN (2016 - 2019)

Name of Regional Centre: CSIR-National Environmental Engineering Research Institute (Stockholm Convention Regional Centre on POPs for Asia Region, India)

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This business/work plan covers the period from 01/01/2016 to 31/12/2019

Executive Summary

CSIR-NEERI has been serving different parties/countries in the Asia region under the banner of the Stockholm Convention Regional Centre (SCRC) on POPs. Besides India, CSIR-NEERI is serving 10 Asian countries which are; Bangladesh, Maldives, Mongolia, Myanmar, Nepal, Philippines, Thailand, Sri Lanka, UAE and Vietnam. Under the activity of SCRC, CSIR-NEERI has to help parties in their capacity building and transfer of technologies related to POPs and new POPs. The centre will also assist parties in fulfilling their obligations for implementation of the Stockholm Convention along with emphasis on Basel and Rotterdam Conventions. In addition the plan also addresses compliance to the Minamata Convention. During the past four years, CSIR-NEERI conferred technical assistance to the different parties by conducting various workshops, training and awareness programmes in India as well as in other countries. The centre is equipped with all latest and modern instruments along with expertise for the analysis of POPs and other hazardous chemicals/pollutants in various environmental matrices. Taking into consideration of these facilities, centre proposes following objectives into three broad areas to address the work plan as follows;

- Capacity building activities
- Monitoring and assessment of POPs in various environmental matrices
- Research activities for societal benefits

Each objective is comprised of different activities. In this four year work plan, centre proposes various projects corresponding to each activity (details provided under activities section). The centre also proposes possible funding sources for its activities. The proposal for the mentioned projects will be submitted to various

funding agencies. Based on funds availability, activities will be executed by the centre.

1. Introduction and Background

(What problem(s)/challenges relating to the implementation of the Convention(s) will be addressed under this plan? *Examples are given in the explanatory note located at the end of this template.*)

This work plan is developed to address the various problems and challenges identified and delineated as follows:

- Lack of precise information on the regional problems and issues thwarting the smooth implementation of Stockholm Convention
- Incomplete inventories of the POPs , including newly added POPs
- Lack of compiled technical information on the organic compounds/formulations that are proposed to be added to the list of POPs
- No reliable information on the health impacts of the newly added POPs and those proposed to be added to the list
- Lack of detailed study onto the environmental impacts of the POPs and the compounds proposed to be added to the list, especially migration in the environment, natural attenuation, degradation, bioaccumulation etc. under tropical climate like that in Indian subcontinent
- Lack of precision and accuracy in the analysis and monitoring of the POPs in the real environmental matrices with respect to POPs/ proposed POPs
- Poor information on the remediation of the resources contaminated by POPs
- Lack of capacity for sound management of POPs
- Need to build up the capacity in India and region to deal with technical issues pertaining to E-waste management as well as Minamata Convention

2. Goals and Objectives:

Goal/s

(What solutions you are offering to address the problems/challenges described above? *Examples are given in the explanatory note located at the end of this template.*)

The major goals of the centre focus on

- Creating a research space and relevant projects to deal with practical issues on Assessment, analysis, monitoring, treatment and disposal of POPs/ newly added POPs/ proposed POPs
- Creating elaborate database on the health and environmental impact of POPs under tropical conditions through research projects and interactions with relevant groups across the Region
- Creating and building up capacity in the region to deal with challenges related to E-waste management and Minamata Convention
- Technical assistance to the regional parties for the capacity building for effective implementation of BRS and Minamata Conventions
- Integrating the research groups in various Universities and research Institutions in the region for development of relevant projects and creating a reliable Data base.

Objectives

(What specific components constitute the solution? Such components should be Specific, Measurable, Achievable, Realistic and Time-bound. *Examples are given in the explanatory note located at the end of this template.*)

The goals addressing the various problems mentioned shall be met through conducting brainstorming sessions, workshops, site visits, trainings and pursuing relevant research projects. The various Universities and research Institutions shall be encouraged to develop good R&D projects related to the identified problems. The specific components leading to the desired solution are delineated as follows:

- Identification of the common problems in the region, which may retard the desired pace of implementation of the Stockholm Convention with reference to the National Implementation programs (NIPs) submitted.

- Updation of inventories of POPs in India and region, specifically, the new POPs added to the list.
- Updation of the technical information for the organic compounds/formulations that are proposed to be added to the POPs.
- Elaborate studies on the health impacts of the organic compounds/formulations proposed to be added to the list of POPs
- Environmentally sound remediation of resources contaminated by POPs
- Analysis and monitoring of various POPs in different environmental matrices
- Capacity building in the region for the environmentally sound management of POPs including assessment, inventory, treatment and remediation
- Capacity building in India for coping up the challenges in implementation of Minamata convention, specifically for analysis and speciation of mercury, inventory, monitoring and assessment, and control techniques.
- Environmentally sound management of E-waste (with respect to POPs) including inventory, reuse, recovery, and disposal

3: Constraints and Resources:

(What constraints or restrictions or hindrances have been foreseen that must be overcome with what resources in order to reach the objectives?)

Constraints:

(Examples are given in the explanatory note located at the end of this template)

The major constraints foreseen pertain to lack of expertise and experience in the region, inadequate information on the environmental and health impact, social apathy, poor infrastructure, and extremely inadequate finances. These are specifically delineated as follows:

- Difficulty in swift communication with the regional Parties.
- Lack of awareness on the need of the monitoring programme.
- Lack of awareness on the toxic UP-POPs like dioxins, furans and new POPs, their monitoring and analysis.
- Lack of expertise on dealing with various issues of POP management

- The situations in the region such as economic development, legal system, and language sometimes cause inconvenience and difficulties during consultation and activities undertaking.
- Most of the region suffers lack of data on concentrations of POPs in the environmental matrices. This absence of information is preventing the local authorities from taking adequate actions to protect people and the environment. Therefore, this activity needs attention in the region.
- A large amount of funding will be required to achieve the goals, so CSIR-NEERI centre will try to find/ approach more financial agencies to support the work plan.

The Centre proposes to develop the network of experts, network of research groups to coordinate the scattered research endeavours to meet the desired goals, create data bank, and a network for proper funding arrangements.

Resources:

(Examples are given in the explanatory note located at the end of this template)

- Advantages being a part of CSIR-National Environmental Engineering Research Institute (NEERI)
 - CSIR-NEERI is the premier research institute dealing in environmental science and engineering in India. The institute comprises research departments dealing with various components of environment. The role of the institute is to provide scientific and technical information and services to the various authorities and industries and promote planning, policy and management strategy for the regional environmental efforts in India as well as overseas. More than 300 scientific and technical staff members make NEERI a highly qualified partner contributing analytical facilities and extensive knowledge on various aspects of environment.
- Adequate skills and knowledge
 - Among the various environmental domains, the Institute is dealing with wastewater, solid and hazardous waste management for last four decades. The institute has assisted various regulatory agencies viz. Ministry of Environment and Forests, Central and State Pollution Control Boards, Municipal Corporations, State

Industrial Development Corporations and the numerous industries on various aspects of waste management. CSIR-NEERI has developed its expertise in monitoring and analysis of POPs in various environmental matrices during the development of NIP of India. CSIR-NEERI has an adequate knowledge on BAT/BEP; waste management and analysis. Several awareness programmes related to POPs have been organized by CSIR-NEERI at various parts of the country. The institute is having collaboration with various international institutes as well as experts for knowledge exchange. The Institute is playing a major role in designing secured landfills for hazardous waste disposal in India. CSIR-NEERI is involved in R&D and consultancy projects and demonstrated competence in the management and safe disposal of hazardous waste including POPs. Recently, CSIR-NEERI has also developed expertise in analysis of new POPs especially PBDEs in various matrices. CSIR-NEERI has demonstrated its capacity and expertise internationally and organized a training programme on the synergistic implementation of BRS Conventions in Sri Lanka in collaboration with the Ministry of Environment and Renewable Energy, Sri Lanka. The international collaborations also help in updating of the methodologies for analysing various contaminants in different matrices.

- Professional staff

- The entire Hazardous waste Management Division of CSIR-NEERI is involved in the activities of the centre. The staff includes 8 scientists supported by project assistants at various levels of seniority and experience. The expertise pertains to chemical engineering, chemistry, environmental sciences, microbiology, soil sciences and applied engineering. In addition CSIR-NEERI has elaborate MoUs with IITs, NITs, and reputed National and International Universities.

- Equipment and Analytical facilities

The institute is equipped with highly skilled manpower and the latest analytical facilities viz. GC, HRGC-MS, GC-MS, HPLC-MS, ICP, AAS, IR,

TCLP, Bomb Calorimeter, Flash Point Apparatus, XRD, SEM etc. making it highly competent in undertaking centre activities. This has facilitated successfully sampling and analysis of POPs. The institute has a basic infrastructure to perform all types of physico-chemical analyses, microbiological and parasitological tests, toxicity and mutagenicity bioassays, toxicological analyses, sampling and field analyses of all kinds of environmental matrices. Pesticide Residue Laboratory of CSIR-NEERI has been accredited by NABL for trace level analysis of pesticide residues in environmental samples. The centre will utilize all the resources to carry out activities on the management of POPs to promote and support the implementation of the Stockholm Convention obligations in the region and also strengthening the synergies among BRS Conventions.

4: Activities and Strategies

(List the individual project activities including beneficiaries, budget, funding sources, partners and time frame. *Examples are given in the explanatory note located at the end of this template*)

Activities:

Name of the Project/activity	Convention			Beneficiary Party (ies)	Estimated budget (US\$)	Funding source(s)	Time frame (Year)
	BC	SC	RC				
Establishment of project management team	√	√	√	NA	NA	NA	NA
Information dissemination for public awareness (various languages)		√		All parties within the region	\$ 75,000	In kind/ MoEF, Govt. of India	Continu-- ---ous activity
Strengthening the analytical facilities of the centre		√	√	All parties within the region	\$8,00,000	In kind/ partial funding from project funds.	Continu-- ---ous activity
Regional awareness workshops on POPs for capacity building of the stakeholders w.r.t. <ul style="list-style-type: none"> • Problems and constraints • Assessment , analysis, and Monitoring • Treatment, remediation, 	√	√	√	All parties within the region	\$3,50,000	BRS Convention/ UNEP/ Ministry of Environment & Forests, New Delhi, Govt. of India	Within 04 Years

Name of the Project/activity	Convention			Beneficiary Party (ies)	Estimated budget (US\$)	Funding source(s)	Time frame (Year)
	BC	SC	RC				
and disposal							
Updation of Inventory for new POPs and development of data base, especially PBDEs and PFOS and to study their potential alternatives		√	√	All parties within the region	\$3, 00,000	Proper funding source/industry	03 Years
Research on environmental and health Impacts of New POPs/ proposed POPs		√	√	All parties within the region	\$5, 00,000	Proper funding source/industry	03 years
E-waste Related <ul style="list-style-type: none"> • Inventory • Analysis of POPs in E-waste • Reuse and recovery • Management 	√	√	√	All parties within the region and India	\$4,00,000	BRS Convention/ GEF BRS Convention	Within 04 Years Within 04 Years
Undertake studies on pesticides residues in environmental matrix (CSIR-NEERI, Pesticide Residual Lab is NABL accredited)	√	√	√	India	\$70, 000	Division of Agricultural Chemicals, Indian Agricultural Research Institute, New Delhi, India	04 Years
Study toxicological effects of POPs pesticides		√		All parties within the region	\$70,000	Department of Biotechnology, New Delhi,	03 Years
Capacity building for Minamata Convention (Mercury) <ul style="list-style-type: none"> • Products and processes • Inventory and analysis, speciation • Control and remediation 				India	\$1,00,000	MEFCC/UNEP/GEF/Industry	04 years

Strategies:

Strategies	What will be done	By when (timeline)
<p>Endorsement/involvement/need identification of the beneficiaries (list applicable activities/projects or entire plan)</p> <p>Workshops/ Training programmes/ Conferences/ Brainstorming sessions would be planned in order to discuss the project proposals with parties and get endorsed by them.</p>	<p>What will be done to involve/ get endorsement from the beneficiaries?</p> <p>All the parties served by the centre will be invited to submit their needs and priorities to meet BRS obligations, based on which project proposals will be formulated.</p>	<p>(Timeline: As desired)</p>
<p>Identification of potential donors/funds/agencies</p> <p>The potential funding agencies will be identified to support the proposed activities.</p>	<p>What will be done to identify the potential funding sources?</p> <p>The project proposals will be formulated on the basis of proposed activities and will be submitted to the various donors. (CSIR-NEERI has vast experience to work with various Ministries, Industries and other donors). The proposal will be submitted to the relevant funding agencies. Some projects are also carried out on the basis of request received from various funding agencies (Ministries and Industries).</p>	<p>(Timeline: June,2017)</p>
<p>Preparation of grant proposals</p> <p>Different project proposal corresponding to the proposed objective in the work plan will be prepared by various experts/ Scientist of CSIR-NEERI on the basis of their expertise and experience.</p>	<p>(List the area in which project proposals will be prepared and submitted)</p> <p>Environmental impacts of new POPs/ proposed POPs in tropical climate</p> <p>Monitoring and assessment of POPs in various environmental matrices</p> <p>Health impacts of POPs in</p>	<p>(Timeline: June 2017)</p>

	tropical climate Remediation contaminated sites	of	
<p>Any other activities...</p> <ul style="list-style-type: none"> • A project proposal entitled “Development of mercury emission inventory and estimation of its release from select coal based thermal power and cement plants of India” has been submitted to MoEF & CC, Govt. of India, for approval. (Project cost: \$1,00,000) 	<ul style="list-style-type: none"> • Inventorization of Mercury emission from coal based thermal power and cement plants in India. • Background data collection on production, raw material used etc. • Identification of mercury emission source point and estimation of release. • Compilation of inventory data in form of report. 		Proposed duration : 04 years

5. Evaluation Plan

Describe in brief your evaluation plan, how frequently you intend to evaluate and update it. (*Examples are given in the explanatory note located at the end of this template*)

The centre proposes to evaluate the plan every six months based on the following criteria:

- Intensive interaction between working group and members and the general consensus
- Fund availability and positioning
- Suggestions from selected peers
- Progress of the work and constraints

The plan shall be updated accordingly