

GEF PROJECT ON MOKSHDA GREEN CREMATION SYSTEM FOR ENVIRONMENT AND ENERGY CONSERVATION

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1.0 Background

1.1 Estimates projected from the Census of India-2001 reveal that around 4.15 million tones of fuel wood is burnt annually in the cremation sector. There is no dedicated plantation for this use and as such the entire quantity of wood is obtained from forests only. It is estimated that about 40-50 million trees are deforested annually to meet the fuel wood requirement of this sector. Burning wood of this magnitude leads to emission of about 7.5 million tones of greenhouse gas (GHG) CO₂ annually. Due to prevailing socio-economic conditions and religious considerations, disposal of unburnt/half-burnt dead bodies into rivers is a common practice all over the country. People below poverty line often resort to this mode of disposal because of higher cost of cremation, which is mainly on account of wood. Thus, cremation sector puts considerable pressure on environment.

1.2 Conservation of forests and rivers are the thrust areas of the Ministry of Environment & Forests (MoEF). There are several ongoing programmes to address issues concerning these eco-systems. The National River Conservation Plan (NRCP) and the National Lake Conservation Plan (NLCP) are the mega initiatives of Government for conserving water bodies in India. The Forest (Conservation) Act 1980 governs regulatory measures for conserving forests. India has set a target to increase the forest cover from the present about 22% to 33% of its geographical area by 2012.

1.3 With a view to mitigating the impact of cremation activity on environment, MoEF supports installation of electric/gas or improved wood based crematoria (IWC) under NRCP. Past experience of these interventions has not been encouraging due to several reasons, of which, important ones are:

(i) Due to unscientific designs and poor quality of material of construction, IWC could not provide the expected level of reduction in wood consumption and air and water pollution. With low priority given to this sector by local bodies, lack of public awareness attention and high maintenance cost, these facilities went into disuse before long.

(ii) Utilization of electric or gas based crematoria has been very low through out the country due to high capital and running cost and non-availability of un-interrupted electric supply. More importantly, there as public mind set as these modes do not permit users undertaking traditional rituals.

1.4 These bottlenecks gave rise to the development of energy-efficient, user-acceptable and environment-friendly Mokshda Green Cremation System (MGCS) by the Mokshda Paryavaran Evam Van Suraksha Samiti (Mokshda PEVSS), an NGO working for the past 15 years under the aegis of MoEF. MGCS is basically a traditional IWC only capable of reducing fuel wood consumption up to 75%, minimizing air and water pollution in a significant manner and enables users to perform all traditional rituals.

1.5 Given the potential of MGCS to reduce GHG emissions and minimize air and water pollution, the Empowered Committee of MoEF approved formulation of a medium size project (MSP) under the Global Environment Facility (GEF) for installation of about 60 units of MGCS in 10 selected cities of India. The project falls under the GEF Operational Programme OP5 and Strategic Priority CC1.

2.0 Approval of PDF

2.1 Under the GEF Funding mechanism, a Project Development Facility (PDF) is available which supports development of projects from the conceptual stage to fully approved documents called the Project Brief. This is also called the project preparatory phase. PDF- Block A for this project was approved by UNDP, Delhi in January 2005. GEF contribution in PDF-A was US\$ 25000 and that of the project proponents, the Mokshda PEVSS as US\$ 3000 (in kind).

2.2 A Steering Committee was constituted to review the work plan and progress of PDF-A under the Chairmanship of Additional Secretary and Project Director, National River Conservation Directorate (NRCD), MoEF and representatives from UNDP, concerned Ministries and Mokshda PEVSS as members.

2.3 The first meeting of the Steering Committee was held on 19 April 2005 in Paryavaran Bhawan. The following decisions were taken in that meeting:

- (i) Approval of work plan and release of funds for PDF-A
- (ii) Number of towns to be covered was revised from 11 to 10.
- (iii) An Inception Workshop on the project to be held in Delhi to familiarize and hold consultations with the stakeholders about the development of energy-efficient MGCS and its adoption in the project area.

3.0 Inception Workshop

The Workshop was held on 13.5.2005. It was inaugurated by Additional Secretary and Project Director, NRCD, MoEF and, among others, attended by senior officials of the State Governments and local bodies, representatives of UNDP and other concerned Central Ministries and senior officials of NRCD, MoEF. The Workshop concluded with a positive note with all the participants appreciating the technology. The participants endorsed the view that the user acceptability of MGCS will not be a problem anywhere in the country as the system basically works on the conventional method only with necessary improvements. All the participants including the representatives of the State Governments and local bodies were of the opinion that on the lines of community toilets, IWC should also be maintained by NGOs with technical support towards repair and maintenance during the project, life cycle.

4.0 Surveys and Collection of Baseline Data

4.1 A team of experts was constituted to undertake surveys in the shortlisted 11 cities. With a view to providing an effective interface between the implementing agency and MoEF / UNDP on one hand and beneficiary local bodies and the State Governments on the other, a senior retired Government officer having experience in the field of environment conservation was included in the PDF team as Chief Consultant.

4.2 Surveys and field visits were started from 31.05.2005 with the first visit undertaken to Mumbai and completed on 20.08.2005 with the terminal visit to Kolkata. Thus, it took about 3 months to complete surveys and collection of baseline data.

4.3 A detailed questionnaire was prepared and sent to the Commissioners of all the local bodies fairly in advance to save time and to ensure quick collection of baseline data. For each cremation ground, an exhaustive data sheet was prepared and filled with the necessary information obtained from the officials of the local bodies and field staff. A daily activity report was prepared to document the current situation and observations on day-to-day basis.

4.4 Opportunity was availed to visit a few other towns in the vicinity of the shortlisted 11 cities, e.g. Vadodra near Ahmedabad, Pondicherry near Chennai and Indore near Ujjain. A kickoff meeting with the Commissioners generally preceded with the visits to important cremation grounds in each city. Apart from traditional wood based system, electric, gas and gasifier based cremation systems were inspected wherever such facilities were in operation. The observations emerging from site visits were

discussed in detail vis-à-vis the advantages and merits of MGCS in a wrap up meeting with the respective Commissioners and other senior officials. In terms of the decision taken in the Inception Workshop, commitment of the respective local bodies to share 10% of the project cost was obtained. Wherever opportunity permitted, meetings were held with the Heads of the local bodies and Departments in the State Governments, e.g. Minister of Urban Development, Government of West Bengal, Chief Executive Officer, Kolkata Metropolitan Development Authority, Mayor, Allahabad Municipal Corporation, Director, Department of Municipal Affairs, Government of Karnataka, Collector, Bangalore Urban Districts and Project Officer DRDA, Pondichery. In Chennai, discussions were also held with an NGO of international repute dealing in operation and maintenance of some of the cremation grounds in the city.

4.5 Major observations and decisions emerging from the visit of each city were documented as minutes of discussions duly authenticated by the respective Commissioners or the next designated officer.

4.6 Both print and electronic media extensively covered the GEF project supporting this energy efficient and environment friendly technology.

5.0 Baseline Scenario

5.1 The current population of the towns covered under PDF is 40 millions, which is about 14% of the total urban population of India (Census of India-2001-ratio of urban to rural population is 27:73). The projections made from the baseline data generated from the PDF phase indicate that only 11% of the urban population uses electric or gas based crematoria. Due to poor utilization, local bodies largely subsidize the operation of electric crematoria. For instance, in Bangalore, the Corporation provides a subsidy of INR 2.3 million (US\$ 52200) annually on each electric crematorium. On the other hand, 89% of the urban population still uses wood based system in some form or the other. For the rural population, which accounts for 73% of India's population, conventional cremation system is the only available option. The baseline data also indicate that the average current level of wood consumption per cremation in wood based systems is about 400 kg. Availability of wood is fast becoming a major constraint in mega cities. In cities like Mumbai, Chennai, Hyderabad and Bangalore, where cremation grounds are close to thick habitation, there are regular complaints of air pollution from public. In Mumbai, the Municipal Corporation has provided sophisticated and cost intensive flue gas scrubbers to minimize the impact of air pollution in the area. Even as the Corporation incurs high operation cost, these scrubbers have not been able to reduce pollution to the expected level.

5.2 There is too little awareness amongst the stakeholders about the availability of fuel-efficient cremation systems like MGCS. As such, the response of all the local bodies/agencies to MGCS was positive and encouraging. All the local bodies agreed to share 10% of the project cost as their contribution in the project.

6.0 Review of Progress of PDF

The progress of PDF was reviewed by the Steering Committee at its 2nd meeting held on 19.10.2005 under the Chairmanship of Additional Secretary and Project Director, NRC in Paryavaran Bhawan. The following decisions were taken in the meeting:

- (i) Hardwar may be included as an additional town in the project.
- (ii) The cost sharing should be in the ratio of 30:60:10 amongst GEF, MoEF and Local Bodies. To that extent, the project size should be curtailed.
- (iii) Mokshda PEVSS would submit the MSP Brief to UNDP for onward submission to the Empowered Committee along with the DPR of the full project.

- (iv) On receipt of the DPR, MoEF would consider obtaining the approval of the competent authority of the project cost.

7.0 Submission of Project Brief and Project Approval

7.1 On the basis of baseline data collected during PDF-A and review by the Steering Committee, Project Brief on the proposed MSP was prepared and submitted to UNDP in February 2006. Quarterly Operational Reports were submitted as per the GEF guidelines.

7.2 Meanwhile, the Empowered Committee of MoEF endorsed the MSP at its meetings held on 16-03-07. Government re-endorsed the project the letter dated 18.09.06 and confirmed that the project addresses National Climate Change Priorities. Government has also agreed to allocate USD 1.0 million of the GEF climate change fund available to India through the GEF Resource Allocation Framework for this project. Final approval from the GEF Secretariat is awaited.

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Our Environment

The Earth is facing unprecedented desertification due to global warming and deforestation. Whole regions of the Earth are turning into arid and desolate landscapes, supporting little life and causing political and social instability. Deforestation and global warming are causing millions of people in the world to suffer from water shortages, floods, and other climatic nightmares. The problem of pollution is increasing day-by-day. Areas, which were once lush and green, are now hot, dry, deserts.

Who is responsible for all these problems? Yes! the answer is- Human. Nobody wants to understand that what is the result of these acts. They are continuously cutting down trees and now pollution takes a giant face and destroying our survival. It is time to do something for our planet, for next generation, for our survival.

I am glad to know that Mokshda Paryavaran Evam Van Suraksha Samiti is doing something for our survival and wants to save trees that will be helpful for healthy environment. I am very happy to see that somebody is here to give us a meaningful world, somebody is here to give us the opportunity to correct the mistakes our elders have done in the past.

I am thankful to Mokshda PEVSS for doing something to conserve environment. In fact, it is not the Mokshda's responsibility only but we also have to contribute meaningfully in this initiative. We cannot be a silent spectator when our survival itself is at stake. It is time now to act and rectify the wrongs done earlier. Let us resolve that we shall work together with Mokshda to save our trees, our life and our Earth. It is my privilege that I am doing work with Mokshda through Mokshda Green Club.

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