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## Mission and Workshop report

A report on workshop and technical assistance submitted to Sri Lanka Carbon Fund

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## **MISSION AND WORKSHOP REPORT**

(A report on workshop and technical assistance submitted to Sri Lanka Carbon Fund)

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December 2009



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## **1. Background of the Mission and the Workshop on Programmatic CDM in Sri Lanka**

Sri Lanka has been active with CDM implementation and had 19 projects in the global CDM pipeline (by July 2009). Of these, 5 projects have already been registered by the CDM Board. Sri Lanka however has a much larger CDM potential. To further realize the potential the Sri Lanka government plans to promote CDM implementation in the country through Programmatic CDM projects in municipal waste and renewable energy sectors.

Programmatic CDM is the result of global efforts to expand the scope of a CDM project from emissions reduction in one or a few locations to sector-wide or region-wide transition to low-carbon technologies and practices. It has the advantage of reducing transaction costs, speeding up the process of addition of emissions reduction activities in the project, and encouraging countries with potential only for small projects and limited expertise to participate in CDM market. However, it should also be noted that P-CDM implementation is still new and so far world-wide, only 18 programs have been submitted for validation, of which 1 has been registered. As a new development in CDM, governmental agencies and private sector need capacity building and technical support on how to apply the P-CDM rules and guidance in their specific circumstances.

The UNEP Risoe Centre on Energy, Climate and Sustainable Development (URC) has implemented CDM capacity building in over 40 developing countries around the world and accumulated a strong base of knowledge and expertise on CDM capacity building, including Programmatic CDM.

A MoU was signed between UNEP Risoe Centre and the Sri Lanka Carbon Fund that stipulated URC technical support to the Sri Lankan effort to build capacity in the P-CDM area, including assistance in developing two P-CDM projects PINS and PDDs– one for renewable energy use and the other for management of municipal solid waste.

### **The Mission by Two Risoe Experts to Sri Lanka**

As part of the MoU, two Risoe experts are expected to make a week-long trip to Sri Lanka to give a 2-3 day P-CDM training workshop, do some site visits, and talk with local stakeholders and experts on the two sectors and the two programs to be developed. Accordingly, two URC experts, Jyoti Prasad Painuly and Xianli Zhu made the mission during 26 July to 1 August to Colombo, Sri Lanka to carry out the above activities, including lecturing at a two-day P-CDM workshop organised by the Sri Lanka Carbon Fund on 29-30 July 2009. This report is a summary about the mission and workshop and consists of the following main parts: section 2 offers a report of the 2-day P-CDM Workshop on 29-30 July; section 3 consists questions raised at the workshops and answers given by the UNEP Risoe experts and some detailed explanations

section 4 describes the two sessions of discussions with local stakeholders in renewable energy sector and municipal solid waste (MSW) sector on 28 July; section 5 reports the field visits on 27 July and in the afternoon on 31 July; and,. Section 6, also the last section of the report, is a summary of the mission and also some plans for the remaining work under the MoU, based on discussions and communications between the UNEP Risoe Centre experts and the local resource people. The report also has 3 annexes: Annex I is the agenda of the 2-day workshop, Annex II provides the list of participants to the workshop, and Annex III is the PIN template prepared by the two experts from the UNEP Risoe Centre for group work at the workshop.

## **2. Report of the Programmatic CDM Workshop; 29-30 July 2009**

### **2.1 Introduction**

The 2-day workshop took place at the Renuka City Hotel in downtown Colombo and lasted from 9:00 hrs to 17:00 hrs on both days. The detailed Agenda of the two-day workshop is attached as an Annex I to this report. More than 60 participants attended the workshop, including representatives from the relevant governmental agencies, experts on renewable energy development, municipal solid waste management, and CDM project development, and private sector companies. The workshop was mainly aimed at explaining the CDM EB-rules and procedures about P-CDM and discussing issues in developing P-CDM projects for renewable energy and MSW in Sri Lanka.

### **2.2 Presentations and discussions at the workshop**

#### **July 29, 2009; Morning Session**

The workshop started with an opening speech by Dr. W.L. Sumathipala, Director, Climate Change Division, Sri Lanka Ministry of Environment and Natural Resources. Dr. Sumathipala gave a brief introduction about climate change and CDM related issues and his opinion on the benefits of programmatic CDM. He welcomed the workshop as an important platform for the participants to learn about the P-CDM and explore the potential of implementing P-CDM in Sri Lanka.

This was followed by a short presentation by Ms. Xianli Zhu from UNEP Risoe Centre, Denmark introducing the Risoe Centre and its CDM capacity building activities to the participants. She also explained to the participants that purpose of the workshop was to: (a) Establish common understanding about the EB-CDM rules on P-CDM and existing progress of P-CDM implementation; 2) explore how these rules can be applied in the context of Sri Lanka for two areas- renewable energy and municipal solid waste; 3) exchange ideas on the two programmes

with the stakeholders; and 4) act as a platform for initiating the P-CDM work for the two programmes.

This was followed by an address to the participants by Ms. L. Padmini Batuwitage, Additional Secretary (Environment), Government of Sri Lanka. Three presentations that followed the address after a brief coffee break are discussed below.

**Presentation: “Programmatic CDM- what are its rules and procedures”, Xianli Zhu, UNEP Risoe Centre (URC)**

The following points were made; (a) Programme of activity (PoA) CDM, which is also known as Programmatic CDM (P-CDM) is defined by the CDM EB as a voluntary coordinated action by a private or public entity which coordinates and implements any policy/measure or stated goal that leads to real and additional emission reduction or emission removal via an unlimited number of CDM programme activities (CPAs). The possibility to register PoAs as a single CDM project was formally approved at COP/MOP1 in 2005, and since then every COP/MOP has included some aspects of P-CDM in its decisions. (b) The evolution of P-CDM rules: The CDM EB issued the guidance on PoA Registration as a single CDM project in July 2007 and updated the rules in May 2009. . The main provisions are that a PoA can cover more than one country, and that for an emission reduction project, a PoA can last a maximum of 28 years. A coordinating/managing entity, the main actor in a P-CDM project implementation, can be from the public sector or the private sector. A PoA can be registered in association with only one real case CPA, and an unlimited number of CPAs can be added to the registered PoA later.

A PoA needs to be validated by a DOE prior to registration by the EB. The managing entity is required to submit three documents along with request for validation of a PoA. These include- (i) PoA design document (PoA-DD), (ii) CPA design document (CPA-DD)–Generic and (iii) CPA design document (CPA-DD)-Specific.

To include a new CPA at a later date, the coordinating entity is required to give a CPA design document to any DOE, who checks the CPA design document against the registered PoA and uploads the CPA to a special interface on the UNFCCC website, if it finds the CPA meets the requirements. Once uploaded, the CPA automatically gets included in the PoA. As each CPA is equivalent to a single CDM project, such inclusion rules could significantly shorten the time lag between CDM project validation and registration, and lower the risks of project participants. The procedures of PoA registration, CPA inclusion, and CPA review and exclusion were also explained during the presentation. The EB guidance and procedures for applying more than one methodology under a PoA, the procedure for methodology revision, and some revisions to existing small scale methodologies for application under PoAs were also presented.

**Presentation: “Example of the Honduras Small Hydro P-CDM project”, Jyoti Prasad Painuly, URC**

This presentation was aimed at illustrating as to how the P-CDM rules can be implemented in practice and giving the participants some idea on how a P-CDM project looks like. So far 14 P-CDM projects have been submitted to the UNFCCC for public comments. The Honduras Small Hydro P-CDM project was chosen because it is relevant to the Sri Lankan Government's plan to develop a P-CDM project on renewable energy in the country. This proposed P-CDM project is for promoting run-off-river small hydro in Honduras. Like Sri Lanka, Honduras's dependence on fossil fuel has been increasing, up from 10% in 1993 to 64% in 2006. There is enormous potential for renewable energy development, but several barriers hinder development of renewable energy. The proposed P-CDM project will develop a platform for overcoming institutional, financial and structural hurdles for the construction of a series of small hydro projects. Each CPA will consist of some run-off-river small hydro projects with a total installed capacity no more than 15 MW and the electricity generated will be supplied to the grid. The PoA duration is 28 years starting from the PoA registration date. Environmental impact assessment will be conducted at CPA level. The presentation also showed the difference and similarities between the generic CPA DD and the specific CPA DD, and also provided information on the implementer, project location, and estimated annual emission reduction of the real-case CPA submitted together with the generic CPA DD.

**Presentation: “*Status of Waste Sector in Sri Lanka*”, Mr. Lal Fernando, Director, ‘Pilisaruru’ Project**

It was a comprehensive presentation on the Pilisaruru project and covered a wide range of issues, including the definition and sources of municipal solid waste, solid waste management at generation, storage, collection, transportation, processing and disposal stages. It also explained the status of MSW generation, MSW composition, collection rate and disposal practices, problems of MSW disposal facing Sri Lanka, the national and local laws and regulations, and recent government policies on MSW. Finally, information on the Pilisaruru MSW management program was provided; it seeks to achieve the following objectives: development of a national MSW policy and strategy, education and awareness of all stakeholders on MSW, facilitating local authorities in implementation of MSW programs, and strengthening legal provisions for effective law enforcement. Activities under the Pilisaruru MSW management program include building composting plants for MSW disposal, conducting MSW education in schools, training of stakeholders, and promoting home composting – government subsidized home composting equipment are distributed to households where no MSW collection service is available. It was stated the biggest barrier facing MSW management in Sri Lanka is ‘NIMBI (Not In My Back Yard)’ syndrome, as local residents strongly object to the building of any MSW management and disposal facility in their neighborhood.

**July 29, 2009: Afternoon Session**



It included two presentations and a group-work

**Presentation: “An Overview of Municipal Waste CDM Projects and Methodologies”, Jyoti Prasad Painuly, URC**

The presentation covered an overview of the existing approved CDM methodologies on MSW and the number of CDM projects applying each methodology, applicability conditions for each of the 4 large scale MSW methodologies and 4 small-scale methodologies, and their relevance to the Sri Lankan government’s plan to develop a program of MSW composting. Special emphasis was put on AMS-III.J., the methodology on biological treatment of MSW, which is the most relevant methodology for the proposed MSW composting program in Sri Lanka. The presentation ended with an example of Sri Lankan CDM project (in CDM pipeline) proposed by a private company to avoid methane production through composting. The main objective of the project is to reduce potential pollution of organic agricultural waste from a sugar factory by aerobic composting. This is a small-scale CDM project with expected average annual emission reduction at 40,483 tCO<sub>2</sub>e and uses methodology AMS-III.F. The project demonstrates its additionality by indicating that it faces several barriers. These include prevailing practice of treating the waste in anaerobic lagoons, which needs no additional investment, technical barrier since the project is first of its type in the country, and market barrier – chemical fertilizer is widely used and it will be difficult to persuade sugarcane farmers to switch to compost fertilizers.

**Presentation: “Designing a P-CDM Project for waste sector in Sri Lanka”, Xianli Zhu, URC**

The presentation covered the main issues that need to be considered and addressed in the process of designing a P-CDM project for Sri Lankan waste program, whose objective is to avoid methane emissions from open dumping of MSW through composting and using the compost generated as organic fertilizer in the country. In view of the key role of the coordinating entity in the implementation of a P-CDM project, the coordinating capability of the coordinating entity is crucial for the success of a P-CDM project. Proper designing of the program to attract required participation is another key issue, which depends on provision related to sharing of costs and benefits of the P-CDM activities among the coordinating entity, CPA implementers, government authorities, and other stakeholders. In this case, costs and benefits include CDM related transaction costs and benefits, the composting plant investment and operation costs, the compost marketing costs, and sales revenue. Other contents covered include PoA scope and duration, methodology selection, PoA additionality and CPA additionality, eligibility criteria for the inclusion of CPAs in the PoA, the monitoring and calculation of baseline emissions and project emissions, as well as environmental impact assessment.

**Group –work on P-CDM PINs for renewable energy development and MSW composting in Sri Lanka**

Although not a mandatory part of the CDM project cycle, PIN (project information note) is a useful tool in the screening and planning phase of a CDM project. A PIN provides a list of key questions a CDM project developer needs to consider when deciding about implementing a CDM project. It can also be used by the project participants to seek a no-objection letter from the host country DNA (if required), talk with potential investors and CER buyers, and involve other relevant actors.

Group work was useful as it gave the participants an opportunity to apply the P-CDM concepts presented at the workshop and helped them understand how to apply the rules and guidance in practice. As no PIN template for P-CDM projects had been developed until then, a P-CDM PIN template developed by the URC experts using the World Bank CDM projects PIN template was used for the group-work. The participants were divided into 3 groups to develop PINs for a P-CDM project for renewable energy and a P-CDM project for MSW.

URC experts provided support to the groups, whenever needed, during the PIN development group work. The results of the group work were scheduled for presentation the next day.

### **July 30, 2009: Morning Session**

This included the following four presentations;

#### **Presentation: *"The 12 Programmatic CDM Submitted as of July 2009"*, Xianli Zhu, URC**

As P-CDM is a market mechanism and projects submitted from different parts of the world have to follow the same rules to be accepted by the CDM EB for registration, examining how other similar projects have been developed offers some clues on how specific issues are addressed by different project developers. By the end of July 2009, 12 P-CDM projects had been submitted to the UNFCCC, 11 of which were still at validation stage, and the remaining one in the process of registration. The presentation offered an overview of the 12 P-CDM projects PoAs with some details for five typical PoAs. PoA submission has been gaining momentum, after the P-CDM rules were issued in mid 2007; one PoA was submitted in 2007, followed by six in 2008, and five PoAs had been submitted in the first 7 months of 2009. The 12 PoAs were from 12 different developing countries, and all applied small scale methodologies. Three of them were about solar water heating, three about efficient lighting, and the rest covered solar home systems, small hydro, energy saving at industrial facilities, renewable energy for irrigation, animal waste management, and MSW composting. The validation of these projects is being done by a few DOEs and PDDs for these programs have been developed by a few international consultancies. Most of the PoAs define the whole host country as their boundary and take 28 years lifetime – the maximum duration allowed by the rules. Five out of the 12 PoAs have public sectors as coordinating entities, while the other 7 have private sector. In the P-CDM, EIA can be done either at CPA level or at PoA level, as decided by the coordinating entity. Most of the 12 choose to do EIA at PoA level. Some more details were presented about the following; Solar Water

Heating PoA in South Africa, the efficient lighting PoA in India, the program for installing Solar Home Systems in Bangladesh, the program for methane capture and flaring from AWMS in Brazil, and Uganda Municipal Waste Compost Programme.

**Presentation: “*Status and Potential of Renewable Energy in Sri Lanka*”, P.G. Joseph, Ministry of Science and Technology, Sri Lanka**

The presentation started with an overview of the Sri Lanka energy sector, including the government agencies and organizations involved in energy sector governance. It is expected that the demand for electricity and petroleum in the country will grow at an average annual speed of 7-8% during the 2007-2015 period. Sri Lanka’s current energy supply is dominated by biomass (47%) and petroleum (43%), the balance coming from hydro (10%). About two-third of the biomass demand for energy comes from household and commercial sectors, and the rest from industrial sector. In response to high dependence on oil import, the 2006 government policy has set a target of meeting the increasing electricity demand mainly through building coal-fired power plants. As a result, it is projected that 54% of the country’s electricity will be produced from coal by 2015. Sri Lanka still has enormous potential for developing renewable energy from wind, hydro, solar, as well as from biomass residues from sugarcane, rubber plantations, sawdust, and coconut shells. The presentation also gave some recommendations to generate electricity through energy crops, especially using the local favorite tree species ‘Gliricidia’. The GHG mitigation potential of different renewable energy sources was also indicated.

**Presentation: “*Programmatic CDM on Renewable Energy – Views of Private Sector*”, Parakrama Jayasinghe, Bio Energy Association of Sri Lanka**

The presentation started with a few slides emphasizing the critical role of renewable energy in climate change mitigation, and then covered a briefing of various technologies eligible for CDM – renewable energy, fuel switching, energy efficiency, and energy plantations. It also provided a table on the annual potential emission reductions from hydro, solar, biomass and other technologies, indicating that Sri Lanka could earn 85 million Euros per year from selling CERs if the mitigation potential materializes fully. It was also pointed out that the country’s CDM project implementation has been facing a major problem of slow registration progress and identified some barriers responsible for that. It was concluded that P-CDM could help address some of the barriers. Finally, it called for help from the Sri Lanka Carbon Fund to facilitate CDM and P-CDM implementation in the country.

**Presentation: “*Renewable CDM Projects*”, Jyoti Prasad Painuly, URC**

The presentation first gave an overview of the approved large-scale CDM methodologies for renewable energy projects and the number of existing CDM projects applying each methodology. This was followed by a similar slide on small-scale CDM methodologies. The

presentation indicated that around half of the existing CDM projects are grid-connected electricity generation projects using renewable sources. The top three types of renewable CDM projects were identified as hydro, wind, and biomass. By the end of June 2009, 59% of the CDM projects were renewable energy projects but due to their small than average size, contributed to only 35% of the expected CERs until 2012. The presentation included some analysis of the existing 19 CDM projects from Sri Lanka. Most of these projects are from hydro and biomass sectors, and are still in the validation stage. This was followed by somewhat detailed information on two existing renewable CDM projects from Sri Lanka, one for switching from fossil fuel to biomass for industrial boilers, and the other a grid-connected wind project.

**Presentation: “Financing CDM Projects”, Jyoti Prasad Painuly, URC**

The presentation covered four main topics: (a) Global carbon market, which included a slide on developments of different carbon market segments from 2003 to 2008, followed by prediction of some analysts on carbon market in 2009 and until 2012. This part also included a graphical presentation about the developments of secondary CER prices in the EU-ETS market. It was mentioned that since a decline to around 9 Euros per tCO<sub>2</sub>e in February 2009, the market had recovered to around 13 Euros by the end June. (b) Project financing requirements: this part included introduction to conventional financing needs and CDM-related financing needs of a project during its planning, construction, and operation phases. It also covered changing risk profile of a project over time and various players involved in CDM project financing. (c) Estimates of various project costs during planning and operation stage were presented in this part and it was concluded that CDM can generally increase the IRR of a renewable energy project by 1-3%, and the IRR of a MSW projects by 5-10+%. (d) The last topic covered different types of financing available for CDM projects and a list of governmental carbon funds, multilateral carbon funds, and private carbon funds, including their details and the kinds of financial support they offer to CDM projects.

**July 30: Afternoon Session**

**Presentation: “Program of Activity CDM -Design Documents and Templates”, Xianli Zhu, URC**

The presentation introduced three documents that needs to be prepared for PoA registration: a PoA Design Document (PoA DD), a generic CPA Design Document (generic CPA DD) and a completed real case CPA DD. The PoA DD templates and CPA DD templates for large scale and small scale non-forestry P-CDM projects were issued in July 2007 by the CDM EB. The PoA DD templates for large scale and small scale PoAs are identical. While CPA DD templates are slightly different, the small scale CPA DD containing an extra section confirming non-existence of debundling. An overview of the different parts of a PoA DD was presented, with special focus and examples on three sections – demonstrating additionality of the PoA, eligibility criteria for the inclusion of CPAs, and operational and management arrangements. The main contents of

a CPA DD were covered after that. The presentation ended with a comparison of generic CPA DD and real case completed CPA DD.

**Presentation: “The PoA of Uganda Municipal Waste Compost”, Xianli Zhu, URC**

The existing PoA for Uganda was presented mainly because Sri Lanka plans to design and implement a PoA on MSW composting and the Uganda PoA offers a valuable reference in program designing and methodology application. Uganda faces the problem of urban population growth at 3.8% per year and a constant increase in generation of municipal waste. Eighty percent of the country’s waste is organic and the current MSW disposal practice is partially managed landfills. The PoA is aimed at reducing CH<sub>4</sub> emission from landfills through composting and using the compost generated as fertilizer. It will last 21 years from October 2007 and the geographic area covered by the PoA is whole of Uganda. The Uganda National Environment Management Authority (NEMA) is the coordinating entity. The World Bank is supporting the PoA through issuing some loans to the programme, offering the technology and know-how, as well as buying some of the CERs to be generated from the programme. The composting projects will be implemented by individual municipalities and each compost plant will be a CPA. NEMA will provide financial and technical support to help municipalities to set up and operate the composting plants. In return, the municipalities will transfer their CER rights to the NEMA. The PoA is additional because there is no mandatory requirement for MSW composting and the PoA is a voluntary action by the NEMA. In absence of the proposed PoA, the current common practice, dumping MSW in landfills, will continue. The CPA additionality demonstration includes investment analysis and technology barriers – there is no MSW composting facility in operation in the country. The PoA will apply a small-scale methodology; AMS-III.F. – Avoidance of Methane Emissions through Biological Treatment of Biomass. Details about the MSW contents, compost residue content, monitoring plan, CPA financial analysis, emission reduction estimates were also covered.

### **2.3 Group work Presentation and Discussions**

The participants carried out the group work on P-CDM PIN development in two groups, one group working on a PIN for a MSW P-CDM project, while the other working on a PIN for a renewable energy P-CDM project.

Workout Group-1 Presentation on MSW Composting P-CDM PIN: The PIN for MSW P-CDM project developed by the participants was to address the problem of increasing MSW through composting. The solution included a PoA that will last 25 years from Sept 2009 and the geographic area of the Western Province of Sri Lanka. The P-CDM project will aim at promoting segregation of MSW through: (a) collecting and transporting perishables to the compost yard; (b) distributing compost bins to the households not accessible to the waste collection service;

and (c) making communities aware of waste management practices. The technology to be adopted is manual windrow composting system and bin composting.

The coordinating entity will be the Sri Lanka Carbon Fund. One of the project participants in the PoA is the Western Province Waste Management Authority, whose role in the program includes that of an overall project in-charge, project operator, project advisor/consultant, and project investor. The team of the Pilisaru Project run by the government will also participate in the PoA as project advisor/consultant and project investor. The municipalities, which are in charge of the local waste collecting and disposal services, will own and operate the composting sites, receive the CERs, or subcontract such activities to businesses. The P-CDM project will apply AMS-III.F. and the PoA is additional because although National Policy on Solid Waste Management has emphasized the recycling of MSW into compost and many legal enactments have been made, implementation has not been successful.

Discussions: The PoA intends to cover two different types of activities: household composting and centralized composting. Although the EB rules do not forbid it, this type of P-CDM project does not exist yet. As composting at household level and composting at special facilities involve different baseline and additionality determination and monitoring approaches, a solution could be designing two different programs – one for household composting, and the other for centralized composting. Another approach is to include two types of CPAs under the PoA, some CPAs covering only household composting, and the other only centralized composting. This means that when submitting the PoA for registration, the Coordinating Entity needs to prepare two sets of CPA DDs, instead of one. As now the EB rules allow for using combining methodologies under a PoA and different methodologies have different regulations about baseline setting and monitoring plans, it can be deduced that including two types of CPAs under a PoA could be allowed. The most difficult part of the PIN to the participants was to properly and clearly define the role of different participants in the PoA, and in the operation and management arrangements. After discussion, the participants agreed that this will subject to agreement among the coordinating entity and the project participants.

Workout Group-2 Presentation on Renewable Energy P-CDM PIN: The PIN was for a P-CDM project coordinated by a private company, called Solar Company X, which distributed solar PV system at discounted prices. The geographic scope of the PoA is the 125,000 households, living in different parts of Sri Lanka, which neither have access to the grid nor are covered by the government plan for electrification in coming years. The PoA will last for 28 years, starting from January 2010. Due to high prices, solar PV systems are still beyond the affordability of many Sri Lanka households. By coordinating and implementing the program, Solar Company X will be able to supply 35 Wp solar systems, including solar panel, battery bank, wiring and lamps, to households. The company will also provide the solar PV system selling, installation and service. Therefore, it will be both the PoA coordinating entity and the implementer of CPAs under the

PoA. Solar Company X will own the CERs generated under the PoA. The P-CDM project will apply AMS-I.A. – electricity generation by the end user. Each CPA will have a crediting period of 7x3 years and the estimated annual emission reduction by a household from using solar PV, instead of kerosene for lighting, will be around 227.76 kg CO<sub>2</sub>/year.

Discussions: This program is relatively simple because only one private company is involved. However, one key question is the economic viability of such a program. As each household will generate less than ¼ tCO<sub>2</sub>e of emissions reduction per year and P-CDM implementation will involve some transaction costs, the private company coordinating and implementing the P-CDM project will not get any substantial additional revenues from CDM to enable it to sell solar PV systems at a price lower than the market price. Also, the battery will last only a few years and require regular replacement. This is another factor making solar PV systems an expensive option for rural electrification.

### 3. Question and Answer Session of the Workshop

**Q 1: If one activity under a programme is delayed or failed, what will happen to whole programme?**

**Answer:** CDM Program Activities (CPAs) are independent from each other. Therefore, if one of the CPAs under a Programme (PoA) fails or is delayed, other CPAs can continue their operation and generate CERs. However, to be included in a PoA, a CPA's starting date shall not be prior to the commencement of validation of the PoA, i.e. the date on which the PoA DD is first published for global stakeholder commenting. This means that if a project activity had already started (ordering equipment, starting construction, or starting operation), then it can't be included in a programme that is planned and will be submitted for registration later.

**Q2: If a project is at an initial stage, is there any notification required to be made by the project developer to start the project?**

**Answer:** The definition of "starting date" is set out in the *CDM Glossary of Terms* as follows:

The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins (*CDM Glossary of Terms*, Version 03). This definition was further discussed and clarified at EB 41:

*"In light of the above definition, the start date shall be considered to be the date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity. This, for example, can be the date on which contracts have been signed for equipment or construction/operation services required for the project"*

*activity*. Minor pre-project expenses, e.g. the contracting of services /payment of fees for feasibility studies or preliminary surveys, should not be considered in the determination of the start date as they do not necessarily indicate the commencement of implementation of the project. For those project activities which do not require construction or significant pre-project implementation (e.g. light bulb replacement) the start date is to be considered the date when real action occurs. In the context of the above definition, pre-project planning is not considered “real action”.

The CDM EB further noted that there may be circumstances in which an investment decision is taken and the project activity implementation is subsequently ceased. If such project activities are restarted due to consideration of the benefits of the CDM the cessation of project implementation must be demonstrated by means of credible evidence such as cancellation of contracts or revocation of government permits. Any investment analysis used to demonstrate additionality shall comply with the requirements of paragraph 7 of the "[Guidance on the assessment of investment analysis](#)" (EB 41, paragraph 67).

At the workshop, the local expert mentioned that due to the EB’s increasingly strict control on the quality of validation and verification by DOEs, some DOEs operating in Sri Lanka clearly indicate that they will not do validation of projects that have starting dates two years earlier than the validation. At the EB 41 meeting (held during 30 July to 2 Aug 2008) <sup>1</sup>, the CDM EB released a guidance on assessment and demonstration of prior consideration of CDM. To demonstrate additionality, CDM project participants need to provide evidence of their early consideration of CDM in the process of project investment decision making. For projects with a starting date after 1 Aug 2008, this could be done in the following ways: the project participant must inform a Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. Such notification must be made within six months of the project activity start date and shall contain the precise geographical location and a brief description of the proposed project activity. Such notification is not necessary if a PDD has been published for global stakeholder consultation or a new methodology proposed to the Executive Board before the project activity start date.

**Q3: If one company selects a 10 year credit period, can the same company get CERs after end of the crediting period?**

**Answer:** if a project proponent selects a 10-year crediting period for their CDM project, then they can only get CERs for the emission reductions they achieved during the crediting period.

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<sup>1</sup> [Annex 46 - Guidance on the demonstration and assessment of prior consideration of the CDM \(version 01\)](#)



The crediting period should start on the later one of the dates; the date on which the project is registered and the date on which the project starts operation, i.e. to generate CERs, a project needs to meet both criteria: being registered as a CDM project and starting operation and reducing emissions. In practice, if some projects started operation before their registration as CDM projects, they will not be able to get CERs for the period between their date of starting operation and their date of CDM registration. Whether the project participants can claim voluntary credits (VERs) for such emission reductions will depend on the detailed protocols followed by different segments of the voluntary markets. But generally, as the project still gets revenue from CDM, VER buyers may be unwilling to buy such credits.

**Q4: Could Project Additionality be proved in parallel with project execution? / Whether additionality has to be proved before the execution of the project?**

**Answer:** A CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (3/CMP.1, Annex, paragraph 43). In other words, additionality is the requirement that the greenhouse gas emissions after implementation of a CDM project activity are lower than those that would have occurred in the most plausible alternative scenario to the implementation of the CDM project activity. To register a project as a CDM project, the project proponent needs to demonstrate in the PDD that the proposed project activity would not take place without CDM due to different barriers or economic reasons, and the DOE doing the validation and the CDM EB will check the additionality demonstration of each proposed project. Only those projects that give satisfactory additionality demonstration will be able to pass validation and get registered as CDM projects. Therefore, additionality demonstration is a part of the PDD preparation, which usually takes place before project implementation. For a project that has already started construction or operation for some time, there are strict rules on how to prove that CDM is a critical factor in the investment decision making of the project.

**Q5: CDM eligibility when a host country has its own prevailing policy and Legal instruments to reduce emission**

**Answer:** For climate change mitigation, energy security through diversification, local air pollution control and other considerations, many developing countries have enacted or plan to enact various laws, policies, and measures that lead to lower emissions. While for CDM, there is the additionality demonstration requirement, for programmatic CDM, there is clear rule about such policies:

“A PoA shall comply with all current guidance by the Board concerning the treatment of local/regional/national policies and regulations. PoAs addressing mandatory local/regional/national policies and regulations are permissible provided it is demonstrated that these policies and regulations are systematically not enforced and that noncompliance with those requirements is widespread in the country/region. If they are enforced, the effect of the PoA is to increase the enforcement beyond the mandatory level required.”

**CDM EB rules on treatment of National Policies:**

A baseline scenario shall be established taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector (EB 22, Annex 3).

*In addition, the EB has created exceptions for the following types of mandatory national and/or sectoral policies (EB 22, Annex 3):*

- a. National and/or sectoral policies or regulations that give comparative advantages to more emissions-intensive technologies or fuels over less emissions-intensive technologies or fuels [so-called Type E+ policies].*
- b. National and/or sectoral policies or regulations that give comparative advantages to less emissions-intensive technologies over more emissions-intensive technologies (e.g. public subsidies to promote the diffusion of renewable energy or to finance energy efficiency programs) [so-called Type E- policies].*

Only Type E+ policies implemented before 11 December 1997 can be taken into account when developing the baseline scenario. If such national and/or sectoral policies were implemented after the adoption of the Kyoto Protocol, the baseline scenario should refer to a hypothetical situation without the national and/or sectoral policies or regulations being in place.

Only Type E- policies being implemented before 11 November 2001 needs to be considered in baseline establishment. The E- policies that have been implemented since the adoption by the COP of the CDM M&P (11 November 2001) need not be taken into account in developing a baseline scenario (i.e. the baseline scenario could refer to a hypothetical situation without the national and/or sectoral policies or regulations being in place).

**Q6: Issues related to crediting periods**

**Answer:** The crediting period for a CDM project activity is the period for which reductions from the baseline are verified and certified by a designated operational entity for the purpose of issuance of CERs (CDM Glossary of Terms Version 03). The crediting period for a CDM project

activity is selected by the project participants, and may be either: 1) A 7-year crediting period, renewable twice; or 2) A single 10-year crediting period. The length and starting date of the crediting period need to be indicated in the PDDs. For P-CDM projects, the PoA duration can be a maximum of 28 years. Each CPA shall have its own crediting period with starting and ending dates. The crediting period of all CPAs under a PoA shall not start before the starting date of the PoA, and end no later than the ending date of the PoA.

**Q7: How can CERs be divided among the coordinating body and project proponents?**

**Answer:** How CERs shall be distributed among the coordinating entity and the participants/ implementers of a PoA is a business decision and hence an agreement to be reached between the parties. Among the existing 13 PoAs already submitted to the UNFCCC, some programs provide that the CPA implementers will transfer their rights to CERs to the coordinating entity in return for some other benefits, like initial investment or subsidies, while other programs indicate that the CERs will belong to the CPA implementers. Under the existing EB rules, all the EB communications concerning the PoA, including all CPAs under the PoA and CER distribution, will be made through the coordinating entity.

**Q8: Issues of ODA funding**

**Answer:** ODA (Official Development Assistance) is a category of development aid which flows from members of the OECD's Development Assistance Committee (developed countries) to countries in the Part I List of Aid Recipients (developing countries). In the case of CDM, countries agreed that public funding for CDM projects from Parties in Annex I should not lead to the diversion of ODA and is to be separate from and not counted towards the financial obligations of Parties included in Annex I (17/CP.7, preamble). Therefore, any public funding for a CDM project activity is required to be disclosed in the project design document (PDD): *"Information on sources of public funding for the project activity from Parties included in Annex I which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties (3/CMP.1)".* In practice, it is interpreted that ODAs can be used for CDM-related capacity building activities in developing countries, but can't be used to buy CERs.

**Q9: The CPAs covered under a PoA are very similar projects. Once a PoA is registered, along with one real-case CPA, more CPAs can be added with much lower CDM-related transaction costs. Since the coordinating entity bears almost all the CDM related transaction costs, what should be the basis for cost sharing?**

**Answer:** Under a P-CDM project, the coordinating entity prepares the PoA DD, CPA DDs, pays

the transaction costs of PoA registration, undertakes the registration risks, and makes other operational and management arrangements. Once the PoA is registered, other project proponents/CPA implementers can participate and their CPAs do not need to go through the time-consuming registration process and they do not need to pay the high CDM transaction costs. How the costs and benefits will be shared between the coordinating entity and the CPA implementers is subject to business negotiations. In some situations, the coordinating entity coordinates a PoA for non-business purposes – for example implementing some government policies or their public image. In such cases they may be willing to bear the costs internally and give the majority of the CER benefits to the CPA implementers. Other coordinating entities may coordinate the PoA mainly for business purposes, and they may ask the CPA implementers to share some of the transaction costs or ask for ownership to a part of or all the CERs from the CPAs in return for other financial support to the implementation of the CPAs.

#### 4. Report of the stakeholder discussions

Developing P-CDM projects is a business activity and requires good familiarity with the local policies, regulations, knowledge of relevant sectors, as well as the concerns and positions of different actors in the sectors. Hence, one important task of the URC mission was to consult with various stakeholders in the renewable energy and the municipal solid waste sectors and exchange ideas with them on development and implementation of P-CDM in Sri Lanka. For this purpose, two stakeholder consultation sessions were organized on 28 July at the Climate Change Division of the Ministry of Environment and Natural Resources (MENR). The sessions were organized by the MENR and stakeholders from relevant sectors were invited for discussions with URC. These have been summarized below.

##### 4.1 Discussions with Stakeholders from the Renewable Energy Sector in Sri Lanka

**Time:** 9-11 am, 28 July 2009

**Location:** Climate Change Division of the Ministry of Environment and Natural Resources

##### List of local stakeholders who participated in this session

No.	Name	Institute	e-mail	Telephone/Fax
1	P. G. Joseph	MOST	<a href="mailto:josephpg@sltnet.lk">josephpg@sltnet.lk</a>	Tel: + 94 11 2810947 Mobile: +94 716912480
2	Thushara De Silva	CEB	eegpl@ceb.lk	0112434866

3	Rohithe Guawathere	CEB		
4	Aswan Thodowewatte	Carbon Asia Pacific (Pvt) Ltd	ashan@carbonasia.com	0777370069
5	Avanthi Jayatilake	EML Consultants (Pvt) Limited	avanthi@emlconsultants.com	0777311032
6	Mr.Parakrama Jayasinge	BEASL	parajayasinghe@cureka.lk	0777269970
7	Dr. Lalani Samarappuli	CDM consultant	<a href="mailto:Lalanis57@gmail.com">Lalanis57@gmail.com</a>	0777416462
8	Wikon Kaluarachchi	Hayleys	Wikon.kaluarachchi@industrial.heyday.com	0773963114
9	Prof. Hemanthi Ranasinghe	University of Jayawardenapura	hemanthir@sltnet.lk	0714478756

The discussions were coordinated by Mr. P. G. Joseph. To begin with, Xianli Zhu from URC gave a short presentation on Programmatic CDM to familiarize the participants with the session theme. This was followed by Sri Lankan experts introducing the Sri Lanka Carbon Fund (SLCF). SLCF is a public-private partnership with the proposed fund size of 100 million Sri Lanka Rupees, 51% of which will come from the government and the rest 49% will be financed by private sector. The Fund was launched in April 2008 by the Sri Lanka Ministry of Environment and Natural Resources and its mandate is to provide technical and financial support for CDM project implementation in Sri Lanka.

An issue raised by stakeholders was about non-availability and / or difficulty in getting reliable information to calculate grid emission factor and hope that the Sri Lanka Carbon Fund would be able to help resolve the issue and come out with a reliable emission factor for the grid. This is important considering that there is only one grid, and hence all the grid-connecting CDM projects from the country should use the same emission factor. But due to non-availability of data in the public domain, project developers end up using different emission factors in their PDDs. This causes delays during validation by the DOEs and the EB in the course of registration. Another issue raised is related to the need for demonstration that without CDM revenue, the project will not be implemented due to lower than acceptable/benchmark internal rate of return. Large enterprises often have their own benchmark IRRs, but small companies have some difficulty in deciding on that. This is specially the case in first project by a small company; for example, if a small company wants to implement a small hydro CDM project, which is the first and only such project they have, what benchmark IRR they should use? They felt that some guidance on benchmark IRR can help resolve this issue. Some project developers wanted the Sri Lanka Carbon Fund/CED to issue some official benchmark IRR for different type of CDM

projects in the country. Some stakeholders point out that in Sri Lanka, feed-in tariffs are fixed by the government based on costs of some typical projects plus a profit rate. They wanted to know if such a profit rate will be automatically used in calculation of benchmark IRRs for relevant project types. Project developers could use this profit rate as a reference rate while setting their benchmark or working out IRR acceptable to them.

A government decision to use a specific IRR as a benchmark for a particular type of project can create problems for others, who may have valid reasons for using a different IRR. IRR captures a variety of factors, including risk perception; cost of capital, efficiency, scale of operations and so on and hence may vary across project developers. Although a range of possible IRRs (making the assumptions on parameters explicit) can be provided, it actually indicates need for capacity building of project developers on project financing and appraisal.

Another issue discussed included ODA funding of the CDM projects. It was clarified that ODA – such as the World Bank loans could be used for a CDM project, so long the ODA is not used to buy CERs and it can be demonstrated that even with the ODA, the project will not be implemented in the absence of CDM due to existence of various barriers.

Stakeholders identified various opportunities for P-CDM implementation in the country, which included wind, hydro, solar, street lighting based on solar and wind. A stakeholder from the Construction Association suggested that new solar technologies in building construction – such as lighting, heat generation, insulation, passive cooling etc., could also be developed into CDM or P-CDM projects. Another promising area for P-CDM implementation indicated was promoting fuel efficient vehicles.

Considering good solar energy radiation in Sri Lanka, when asked about the potential for solar water heating as a CDM project, stakeholders responded that a few manufacturers are marking SWH in Sri Lanka and most new houses install SWHs. The potential for SWH could be explored further. Stakeholders also mentioned that a Korean company had been demonstrating some solar pumps for irrigation in agriculture. Usually farmers use diesel pumps. Solar pumps tend to involve very high upfront costs, but are cheaper during operation.

On the issue of general progress of CDM project development in Sri Lanka in recent years, stakeholders pointed out that the CDM projects developed in the country are very small in size. One of the biggest barriers is reluctance of developers to take the risk and spend money on the upfront costs of CDM project development. They want the CERs buyers and consultants to bear all the CDM-related costs. So far 26 projects had been submitted to the UNFCCC, of which 7 were rejected, 6 have been registered, and the rest are still in validation stage.

It was noticed among the 6 projects registered from Sri Lanka, 3 projects' registration took place in 2005, 1 in 2006, and another 2 in the first 11 months of 2009. In the three years from 2006 to 2008, only 1 project from the country was registered. According to the local

stakeholders, this is because in the early days of CDM, the CDM EB was relatively lenient with project registration. Declining CER prices was another issue of concern to stakeholders, especially project developers, as they observed CER prices coming down drastically from 20 Euros per CER level. They also mentioned that the local banks do not consider potential CER sales revenue as a bankable income, making it difficult for project developers to get loans to finance their CDM costs. It was also pointed out that some DOEs operating in the country had been blacklisted by the CDM EB. Moreover, CDM methodologies also keep changing with newer versions issued every few months. All these factors were responsible for making registration of the Sri Lankan CDM projects slow in the last three years. But it was stated that things were changing, 72 PINs had been developed, and a number of CDM projects were under development.

On taxation of CDM revenue, it was pointed out that the local taxation policy treats and taxes the CER sales revenue as a part of the normal business revenue, and hence it is subjected to the corporate income tax rate of 30%. However, renewable energy projects are tax-free for the first five years.

One promising source for renewable energy in Sri Lanka is biomass, which includes not only biomass residues from wood processing, agricultural activities, and from the regular trimming and cutting of rubber plantations and tea plantation, but also energy plantation. In Sri Lanka, there is some potential for projects involving switching from fossil fuel to biomass for industrial boilers.

Energy plantations could be a must for large scale development of biomass for electricity development. Sri Lankan renewable energy expert (Mr. Joseph) pointed out that large areas of waste land, and land from rotating cultivation could be used for energy plantation. Still, the land requirements for generating electricity from biomass can be huge, which may not be possible to support. He also gives some estimate about the biomass productivity of planting *Gliricidia* for a biomass power plant generation. One hectare of land can generate 30 tons of biomass per year, each hectare of land can have 800 to 1000 trees, and each tree can give 4 kg of dry wood per year on average.

Companies have option to implement biomass-based electricity generation by buying idle land from households and using it for commercial plantations, or buying biomass from the energy plantations of households. Companies generally prefer the first option as it offers them greater control over costs and quantity of biomass supply. But the problem is in acquiring land by private sector for energy plantation. The renewable energy expert also explained issues related to the plantation of the energy crop *Gliricidia*, a species of tree with high biomass productivity and multiple uses (the leaves can be feed to animals). The branches can be cut at chest height every few months as they grow quite fast. *Gliricidia* can be grown along with some other crops, like corn. When branches are cut, corn can be planted, as it can be harvested in two or three

months, before the branches of Gliricidia grow big enough to block the sunlight. The expert also pointed out that for electricity generation from biomass, in addition to CDM, companies will also need to consider other sources of income to make their projects financially attractive.

Some participant queried on implications of changes in project specification; for example that if a project indicated a power generation capacity of 10 MW in the plan or the PDD but during implementation, the installed capacity is increased to 10.5 MW or 11 MW due to technical reasons. It was suggested that project proponent needs to keep the actual installed capacity at the level indicated in the PDD registered with the EB, otherwise it will lead to a deviation from the registered PDD, for which they will need to ask for EB approval. If the PDD is not registered, they may choose to write a new version of PDD, so as to indicate the installed capacity in line with the project reality.

#### 4.2 Discussions with Stakeholders from the Municipal Solid Waste Sector in Sri Lanka

**Time:** 11 am- 1 pm, 28 July 2009

**Location:** Climate Change Division of the Ministry of Environment and Natural Resources

##### List of local stakeholders, who participated in this session

No.	Name	Institute	E-mail	Telephone/Fax
1	Dr. Dr.Lalani Samarappuli	Consultant SLF	Lalanis57@gmail.com	077416462
2	P.G. Joseph	MOST	josephpg@sltnet.lk	Tel: + 94 11 2810947 Mobile: +94 716912480
3	Samantha Kumarasena	NCPC (National Cleaner Projection Centre, Sri Lanka)	Samantha@ncpcsrilanka.org	+94 11 2369601-2
4	Mr. Lalith Wasantha	NCPC	wasanatha@ncpcsrilanka.org	0777132686 236963
5	Prof. Hemanthi Ranasinghe	University of Jayawardenapura	hemanthir@sltnet.lk	0714478756
6	Gamini Lakshman	Ministry of Environment, Policy Planning Division	lakshmansuba@yahoo.com	0718-293737 0721-6127047
7	Mrs. G L Pilapitiya	BOI	hiroship@boi.lk	0777286631
8	M.J. Jayavilal Fernando	Pilisar Project	jayavi@cea.lk	2872409



The discussions were coordinated by the Dr. Lalani Samarappuli, the Sri Lankan expert with CDM and the waste sector experience. Below is a brief summary of the discussions.

The workshop started with a presentation by Ms. Xianli Zhu from URC on P-CDM rules. Then Dr. Lalani made a presentation on MSW in Sri Lanka. About 6400 tons of waste per day is generated in Sri Lanka every day with per capita waste generation at 0.4 – 0.85 kg per day. The MSW collection rate is low in the country – even in Colombo – the country’s capital, the MSW collection rate is only 44.3%. A large share of the MSW is organic in nature and most of the collected waste is disposed through dumping somewhere. There are four major deep waste dumps in Colombo, with average height of the dumps over 5 meters. Local authorities lack the funding and technical capacity to switch to more environmental friendly waste disposal practices.

In recent years, the Sri Lankan government has been promoting climate friendly waste management through aerobic treatment of organic wastes (composting). The Pilisaru program, an umbrella project covering several municipalities in Sri Lanka with the theme of “garbage free Sri Lanka by 2012”, is being implemented by the MENR to promote MSW composting. The Program will cover 50 out of the 331 local authorities in the country. The 3-year program provides financial and technical support to local authorities and the total government budget for the program is 100 million Sri Lanka Rupees. So far the program has implemented 13 waste projects in the country and will continue to facilitate as many as possible. After the 3-year Pilisaru project ends, the composting facilities will be transferred to local authorities.

Before the introduction of composting practices, MSW was not sorted. To enable composting, local authorities have to encourage households to separate their waste and some separation is also carried out manually before the collected MSW is sent to the composting sites. There is a good market demand for plastics and some other recyclable items. The composting technology used is windrow composting, which is very labor intensive. The compost generated is sold as fertilizer to rice growers and to rubber and other plantations. Compost plants are usually located at the same site as the dumping sites so that residues from the composting process could be dumped.

Some of the composting facilities are built and run by the private sector through contract arrangements with local government authorities, while others are run by the municipalities themselves. An environmental conservation levy is being collected, which will offer financial support to waste disposal with a part of the levy expected to go to MSW composting. Currently, such a levy is charged on mobile phone users every month.

Since 2002, some household composting bins have been marketed in Sri Lanka. Plastic modules and cement modules are available for composting activities at household level. The cement bins usually have a composting capacity of 200 liter while the plastic ones have a capacity of 160 liter each. The composting process takes around 2 months: waste is added from the top and the compost is obtained from the bottom of the bins. Such composting bins can help solve the waste disposal problems of a family of 4-5 people- the organic and decomposable part is composted, and the rest combustible part is burned. The Pilisaru program has so far distributed 30,000 such household composting bins. Some (4 to 5) private sector manufacturers are also selling the same type of bins.

The problem for CDM project implementation in the MSW sector faced by local stakeholders include high transaction costs and high fixed costs for small projects, considering that many of the local projects with high sustainable benefits are small. P-CDM could play an important role here, as it is designed for distributed activities and can cover small activities easily. Many small MSW composting sites in Sri Lanka could be covered under a PoA, instead of each MSW composting site applying independently for registration as a CDM project.

A stakeholder from the Cleaner Production Centre mentioned that industrial enterprises in Sri Lanka landfill their waste and collect the biogas for energy use. The stakeholders also wanted the Sri Lankan government to integrate CDM in their policy making and offer better support to CDM project activity development in the country.

## 5. Report of Site Visits

The site visits were carried out mainly to get firsthand experience of current status and practices of municipal solid waste disposal in Sri Lanka and also look at the types of renewable energy and composting activities the Sri Lanka government intends to implement as P-CDM projects. The site visits mainly took place on two days, 27 July and 31 July 2009.

### 5.1 Site visits, July 27, 2009

The Sri Lankan experts, Mr Joseph and Dr Lalani were a part of the team to the site visits. Three open MSW dumping sites in Colombo and a plant, run by a local entrepreneur, using saw dust and coconut shells as fuel to generate steam and supply it to Unilever plant, were visited on 27 July. Each site is described below.

**Blumendhal (Two waste dump sites):** Both were open dump sites and poorly managed. Both sites are located in downtown Colombo, the first one in the vicinity of a slum. Continued waste

disposal at the site had made it look like a small hill, with shrubs growing in many places where dumping had stopped. The locals confirmed that it was a flat area before the MSW dumping had started. The large amount of garbage in the dump site has sometimes caused fire and even minor explosions due to generation of methane. The site emitted bad odors with papers and plastic bags scattered all over. One could also observe flies, stray dogs, and birds etc. thriving at the site.

The second site is located very close to a busy road. It also looks like a small hill. As in case of the first site, a huge amount of MSW (some 2-3 million tons) seems to have been dumped there. As the site had reached its full capacity, no more new waste was being dumped at this site. It also has some shrubs growing on the top. Sri Lankan experts informed that the local governmental authorities plan to move the waste to some other site, but finding an appropriate location is a big problem. Colombo is a big city and there is strong opposition to building any waste dumping site near any human settlement.

**Sedawatt (Third open waste dump):** This site is still in operation and trucks were seen transporting fresh waste and unload that at the site. Some workers were doing the waste separation at the site. A machine was also in use to move the waste and level the waste dump. The waste from trucks was simply dumped on the ground and there was no land filling involved. . The waste dump is open without any roof. Obviously, it smelled bad in and around the site. Some black leachate was seen accumulated in the ditches next to the dump site. The site also attracted birds in search of food.

### **Biomass for industrial boiler project, supplying steam to Unilever Sri Lanka**

This is an industrial facility with a boiler that combusts saw-dust and coconut shells to generate steam and supply it to Unilever Sri Lanka. The operator is an independent contractor to Unilever Sri Lanka. Before the facility started operation early in 2009, Unilever Sri Lanka used to combust fossil fuel to generate steam. The first sight outside at the facility is heaps of processed coconut shells in small pieces and heaps of saw-dust. The manager explained that saw-dust is the main biomass they use, and when Unilever Sri Lanka needs more steam than normal usage level, they use coconut shells, which have higher energy content. Big wood residues are separated from the saw dust first manually, and then with a strainer, before the saw dust is fed into the boiler. They supply steam to Unilever at around 400 °C. The facility is new equipped with control panels indicating the pressure, temperature and other boiler parameters constantly. Except for biomass transportation and residue separation, little manual work is involved. The waste gas from the boiler is used for preheating the water for steam production.

It can be seen at the UNFCCC CDM website that this project has already applied to be considered as a CDM project and it was open for public comments from 16 June 2009. More information about this project can be found in the PDD of this project at UNFCCC CDM website.

### **5.2 Site visits, July 27, 2009. Visit to a compost plant under the Pilisaru project**

During the workshop, it was mentioned that in order to handle the problem of disposing ever-increasing municipal solid waste and the environmental problems of open site dumping, the Sri Lankan Ministry of Environment and Natural Resources had launched the 3-year Pilisaru Program about 2 years ago. Some government budget was allocated to support local authorities to build and operate MSW composting facilities. The compost from the facilities is used as fertilizer. As none of the three open dump sites visited had composting facilities, the visit to composting site was made to get information on how the operations are carried out at the site.

The compost site is located more than 100 km outside Colombo. It is operated by the local government authority. The facility has around 12 labours working there. Before composting, the labours do some sorting – mainly to get rid of plastic bags and other materials that cannot be composted. The organic waste, mainly kitchen waste and garden waste, are then put in small heaps, each heap around 1 or 2 tonnes. The composting process takes around 8 weeks. During the first two weeks, the waste heaps are kept under a roof, and afterwards they are left in open. The heaps are marked with small number plates and grouped according to how many weeks of composting they have undergone. The heaps become smaller as they become older and composting has started. After 8 weeks of composting, the compost becomes relatively dry. It is grinded in a grinder and then screened with a simple strainer machine to separate out stones and other residues. The fine compost is put into 5-kilo bags and sold for use as gardening soil or fertilizer.

The composting plant is located with homes and other buildings no more than 200 meters away from it. But there is little odour and hence there is no complaint from the local residents.

The waste collection rate is only about 40% in Sri Lanka. The waste from a large number of households outside cities is not collected. To reduce the pressure on the waste collection and disposal service, the Pilisaru Program also distributes some small composting containers to local households outside the waste collection area. These include both plastic and cement type waste composting bins. Households can put their kitchen waste and garden waste into the composting bin from the top and after 8 weeks, the waste turns into compost and becomes ready for use. The compost can be taken out from bottom of the container.

## 6. Brief Summary of the Workshop and next steps

Around 60 local participants attended the two-day P-CDM workshop. The presentations, among others, included on EB-CDM rules and procedures for the P-CDM project development, the current status and development trends of MSW sector and renewable energy sector in Sri Lanka, overviews on CDM methodologies for renewable energy projects and municipal solid waste projects, and current status of CDM implementation in renewable energy sector and MSW sector. The 12 programs submitted to the UNFCCC as of July 2009 were presented. Of those, two P-CDM projects, one for small hydro from Honduras and the other for MSW composting in Uganda were presented in details during the workshop to illustrate how the P-CDM rules and CDM methodologies have been used in these projects, and how these can be applied in the case of Sri Lanka. The PIN preparation exercise generated a lot of interest and stimulated the participants to think as to how P-CDM projects could be designed in Sri Lanka. All the presentations were followed by animated discussions, indicating the heightened interest of stakeholders in the topics. The workshop also served as a platform for the participants for exchange of opinions and experiences with CDM implementation. It also gave them opportunity to bring out the issues relevant to CDM- grid emissions factor and support needed from the Sri Lanka Carbon Fund to facilitate CDM project development in Sri Lanka for example. A quick feedback survey of the participants towards the end of the workshop indicated that they were satisfied with the contents of the workshop and think it benefitted them a lot.

To take the stock of the remaining work as per the MOU, discussions were held with between URC and the Sri Lanka Carbon Fund and the two Sri Lankan experts (Mr. Joseph and Dr. Samarappuli) deputed by the LCF, who would also be developing P-CDM for the two sectors; Renewable Energy and MSW composting, under discussions in Sri Lanka. Considering the timeframe of the MOU, it was agreed that the two local experts will finish the preparation of PoA DDs and CPA DDs work by the end of September 2009 and send the same to URC for comments. PoA DD and CPA DD templates and documents of the 12 P-CDM projects in the CDM pipeline were also given to the Sri Lankan experts for their reference.

Discussions were held with the Sri Lankan experts on issues concerning the two proposed P-CDM projects in Sri Lanka, including on the methodology tools for calculating emission reductions for MSW composting. Some ideas were also exchanged on the proposed renewable P-CDM project; these included on the tariff for electricity from wind, hydro, biomass, and wave. The Sri Lankan renewable energy expert also suggested developing a renewable energy P-CDM project for switching from fossil fuel to biomass residues in the industrial boilers, since energy

plantation involves the complicated issue of land tenure. This may hold some potential and these and other issues will be discussed by the stakeholders in Sri Lanka in the coming days.

## Annex I - Agenda of the Workshop

Wednesday 29th July, Venue: Renuka City Hotel, No.328 Galle Road, Colombo		
<b>SESSION 1</b>	<b>Registration and Inauguration</b>	
0830 - 0900	Registration	
	Opening Ceremony	
0900-0910	Welcome address to participants	Dr.W.L.Sumathipala, Director,Climate Change Division, MENR
0910-0935	Introductory Remarks and purpose of the workshop	Xianli Zhu, URC
0935-0945	Address	Madam L. Padmini Batuwitage, Additional Secretary/MENR
0945 -1000	Tea Break	
<b>SESSION 2</b>	<b>P-CDM and Opportunities -1</b>	
1000 -1130	Programmatic CDM- what it is, rules, procedures	Xianli Zhu, URC
	Example of the Honduras Small Hydro P-CDM project	Jyoti Prasad Painuly, URC
1130-1200	Status of Waste Sector in Sri Lanka	Mr. Lal Fernando, Director, 'Pilisaru' Project
1200-1230	Discussions	
1230 – 1330	Lunch	
<b>SESSION 3</b>	<b>P-CDM and Opportunities – 2</b>	
1330 – 1430	An Overview of Municipal Waste CDM Projects and Methodologies	Jyoti Prasad Painuly, URC
	Designing a PCDM Project for waste sector in Sri Lanka	Xianli Zhu, URC
1430-1500	Discussions	
1500 – 1515	Tea Break	
<b>SESSION 4</b>	<b>Workout Groups</b>	
1515 – 1615	Preparing PINs	URC and Local Experts
1615- 1700	Workout groups (Municipal waste & Renewable energy)- PINs preparations	All
<b>END OF DAY 1</b>		

<b>Thursday 30th July, Venue: Renuka City Hotel, No.328 Galle Road, Colombo</b>		
<b>SESSION 1</b>	<b>P-CDM and Opportunities- 3</b>	
0900-0945	Programmatic CDM projects in pipeline	Xianli Zhu, URC
0945- 1015	Status of Renewable Energy Sector in Sri Lanka	Mr.P.G.Joseph, Director, M/Science & Technology
1015-1030	Tea Break	
1030-1100	Perspective on Renewable Energy Sector (Private sector / NGO)	Mr.Parakrama Jayasinghe
1100-1130	Renewable Energy CDM Projects	Jyoti Prasad Painuly, URC
1200-1230	Financing CDM Projects	Jyoti Prasad Painuly, URC
1230-1330	Lunch	
<b>SESSION 2</b>	<b>P-CDM Project Development – documents to be prepared and an example</b>	
1330 -1430	Work-out group on PINs (continued from Day 1)	All
1430- 1500	Templates and preparation for P-CDM project design documents	Xianli Zhu, URC
1500-1530	The Uganda P-CDM project on Municipal solid waste composting	Xianli Zhu, URC
1530-1545	Tea Break	
<b>SESSION 3</b>	<b>PIN Presentation and Discussions</b>	
1545-1700	Workout group presentations about the PINs and Discussions	All
<b>END OF THE WORKSHOP</b>		



## Annex II - List of the Workshop Participants

<b>Participants from From SLCF</b>			
No.	Name	Designation	Contact Details
01	Mr.M.A.R.D.Jayathilake	Secretary, MENR Chairman/SLCF	0112877290, secoffice@menr.lk
02	Dr.Suren Batagoda	Board of Director/SLCF	0777751824
03	Mr.Wasantha Kumara	Board of Director/SLCF	0776973174,0112484947, wasantham@ped.treasury.gov.lk
04	Dr.Lalani Samarappuli	Local Expert	
05	Mr.P.G.Joseph	Local Expert	
06	Mr.Parakrama Jayasinge	Resources Person	
<b>Participants from MENR</b>			
No.	Name	Designation	Contact Details
01	Ms.L.P.Batuwitage	Addl.Secretary	
02	Dr.W.L.Sumathipala	Director/Climate Change	0112824718
03	Ms.Anoja Herath	Asst.Director/Climate Change	0112824718
04	Ms.Chamika Iddagoda	Pro.Asst./Climate Change	0112824718
05	Ms.Thiris Inoka	EMO	0112824718
06	Ms.Surani Pathirana	EMO	0112824718
07	Ms.Kema Kasturiarachchi	EMO	0112824718
08	Ms.Nirosha Kumari	EMO	0112824718
09	Mr.L.H.Aourasha	Project Assistant	0112824718
10	Mr.Sirisena	K.K.S.	0112824718
<b>From CDM Centers</b>			
No.	Name	Designation	Contact Details
01	Dr.S.P.Nissanaka	Senior Lecturer,U/Peradeniya	0777801903,spn@pdn.ac.lk, F:0812388239
02	Dr.Suren Wijekoon	Senior Lecturer,U/Moratuwa	0112640340, suren@chemg.mrt.ac.lk
<b>From CEA &amp; "Pilisaru Project</b>			
No.	Name	Designation	Contact Details
01	Mr.Lal Fernando	Director,"Pilisaru" Project	
02	Mr.Gamini Subasinghe	Project Officer	
<b>From SEA, Mahaweli Authority, CEB</b>			
No.	Name	Designation	Contact Details
01	Mr.Harsha Wickramasinghe	Deputy Director General(Strategy), SEA	T:2677445, F:2682534
02	Ms.K.K.Asamya Kahaduwa	Professional Finance Grade II, SEA	T:2677445, F:2682534
03	Mr.M.M.R.Pathmasiri	Director (Energy Management), SEA	T:2677445, F:2682534

04	Mr.K.S.Kithsiri,	Head (Energy Efficiency Services), CEB	T:2677445, F:2682534
05	Mr.M.M.S.R.Perera	Director,Environment & Natural Resources, Mahaweli Authority	T:2687491,F:2687240
06	Eng.(Mrs.) P.Thalagala	Dy.Director,Dam safety Management, Mahaweli Authority	T:2687491,F:2687240
07	Mr. I.G.Madduma Bandara	Agriculture/Environment Officer, Mahaweli Authority	T:2687491,F:2687240
08	Ms. W.M.T.D.Weerakoon	Environmental Officer, Mahaweli Authority	T:2687491,F:2687240
09	Mr. V.K.Pemadasa	Electrical Engineer (External Training), CEB	T: 2329629
10	Prof. Hemanthi Ranasinghe	University of Jayawardenapura	
<b>Other Government Agencies</b>			
No.	Name	Designation	Contact Details
01	Mr. R.P.Samarakkody	Director, WMA-WP	
02	Mr. Saman Leelaratne	WMA-WP	
03	Mr. Loganathan	WMA-WP	
04	G.H.P. Dharmaratne	Director General, Department of Metrology	T:2694104,F:2698311
05	Eng. Jayantha A.Guruge	CMC	
06	Eng. H.M.U.Seneviratne	CMC	
07	Ms. Mangalika	Director, National solid waste Management Support Center, Ministry of local government and Provincial Councils	
<b>Other Agencies (Private Sector,NGOs)-Charge</b>			
No.	Name	Designation	Contact Details
01	Mr.Channa Fernando	EML/Chief Executive Officer	No.68, Davidson Road, Colombo-04 T.P.0094-11-5535880 or 2559109 Fax; 5535877, <a href="mailto:eml@sltnet.lk">eml@sltnet.lk</a>
02	Mr.Asanka Herath	EML	No.68, Davidson Road, Colombo-04 T.P.0094-11-5535880 or 2559109 Fax; 5535877, <a href="mailto:eml@sltnet.lk">eml@sltnet.lk</a>
03	Mr.Anura De Silva	General Manager, Infrastructure Development, Hayleys Limited	No.25, Foster Lane, Colombo-10 T.P.0094-11-2674573 Mobile – 0094-777-343751

			<a href="mailto:Anura.desilva@infrastructure.hayleys.lk">Anura.desilva@infrastructure.hayleys.lk</a>
04	Mr.Leel Wickramaarachchi,	Director,	27-02,East Tower, world trade centre,Colombo 01 0773486666
05	Dr.M.P.S.P.Muthunayake	Chairman Minimizing Global Warming International (Pvt) Ltd.	No.2 Kiriwanpola Marachchimulla Allawa 0722304023 agalгим@yahoo.com
06	Mr. Lahiru Chaminda	Vidullanka PLC	278, Union Place Level 4, Access Towers Colombo 02 0773028756,4760000 (Ex 230)
07	Mr. Anil M. Weerasooriya	Unilever Sri Lanka Ltd.	No.256, M.Vincent Perera Mawatha Colombo 14 4700800/2445213
08	Mr.Wikum Kaluarachchi	Head-Wind Power, Hayleys Industrial Solutions Limitad	25,Foster Lane,Colombo 10 Tel: 2699100/2699241, 0773963114 Fax: 2699246 Email:wikum.kaluarachchi@industrial.hayleys.com
09	Mr.Sudarshan Senaratne	Managing Director, Development Concept (Pvt.) Ltd.	27,Galapotta Road,Nawala,Rajagiriya Tel: 0777480321,0777706221 sudarshansenaratne@yahoo.com
10	Mr.Kumar V.Deivanayagam	Director, Bio Power Lanka (Pvt.) Ltd.	No.125,St.Michel's Road,Colombo 03 Tel: 4611080 Fax: 4611081 Email: kumar@biopowerlanka.com
11	Mr.Salinda Kandapola	Agricultural outstanding Manager, Tokyo Cement Company (Lanka) Ltd.	4691/1,Galle Road, Colombo 03 Tel: 2500466,2587619 Fax: 2500897 Email:tokyogm@slt.net.lk
12	Ms.Samitha Liyanage	Diesel & Motor Engineering Co.Ltd.	P.O.Box 339, 65, Jethawana Road,Colombo 14. Tel: 2449797,0773124835 Fax: 2449080 <a href="mailto:Sarani.wijeratne@dimolanka.com">Sarani.wijeratne@dimolanka.com</a>
13	Ms.Ishani Ratnayake	Diesel & Motor Engineering Co.Ltd.	P.O.Box 339, 65, Jethawana Road,Colombo 14. Tel: 2449797,0773124835 Fax: 2449080
14	Ms.Amali Gomez	Diesel & Motor Engineering Co.Ltd.	P.O.Box 339, 65, Jethawana Road,Colombo 14. Tel: 2449797,0773124835 Fax: 2449080
15	Mr.Dulsha Hansanee	Agriculturist, Soil Tech (Pvt.)	No.352,Rajagiriya Road,Rajagiriya

	Rajathewa	Ltd.	Tel: 2861818,0722360000 Fax: 2861271
16	Mr.Krishan Weerawansa	Director-Research & Innovation, Stretchline Holdings-Global R&D Centre	Lot 89,Biyagama Export Processing Zone Walgama, Malwana Tel: 4827720,0777718070 Fax: 4817621 Email: krishanw@stretchlinesl.com
17	Mr.Shehan Thambimuttu	Stretchline Holdings-Global R&D Centre	Lot 89, Biyagama Export Processing Zone Walgama, Malwana Tel: 4827720,0777718070 Fax: 4817621
18	Ms.Chamari	Didul (Pvt.) Ltd.	
19	Mr.Dhammika	Didul (Pvt.) Ltd.	
20	Mr.Buddika De Silva		
21	Mr.Sunil Kulasekara	General Manager (Engineering),Kotagala Plantation PLC	0777260660
22	Nishantha Jayasooriya	Relationship Manager - Corporate Banking National Development Bank PLC	No 40, Navam Mawatha Colombo 02 TP : 0112 448448 Ext 3397 0773 694584
23	Ms. Dulani Rodrigo	National Development Bank PLC	No 40, Navam Mawatha Colombo 02 TP : 0112 448448 Ext 3397 0773 694584
24	Wanasarana Thurulatha Society		
25	Mr.Dhammika Aponso	Senok Trade Combine (Pvt.) Ltd., Colombo 05	

## **Annex III. PIN Template for P-CDM projects prepared for group work at the Workshop**

### **PROJECT IDEA NOTE (PIN)**

**Name of Programme:** \_\_\_\_\_

**Date submitted:** \_\_\_\_\_

#### **Description of size and quality expected of a PIN**

Basically a PIN will consist of approximately 5-10 pages providing indicative information on:

- the type and size of the program
- its location
- the anticipated total amount of GHG reduction compared to the “business-as-usual” scenario (which will be elaborated in the baseline later on at PoA DD and CPA DD level)
- Duration of the program and crediting period of the CPAs under the Program
- the estimated CER price in US\$/ton CO<sub>2</sub>e reduced
- the financial structuring (indicating which parties are expected to provide the project's financing)
- the project's other socio-economic and environmental effects/benefits

**While every effort should be made to provide as complete and extensive information as possible, it is recognised that full information on every item listed in the template will not be available at all times for every project.**

## A. Program Description, Type, Boundary and Schedule

<b>Objective of the Programme</b> <i>(Describe the policy/measure or stated goal that the PoA seeks to promote)</i>	
<b>Program Description and Proposed Activities</b> <i>(About ½ page)</i>	
<b>Technology to be Employed</b> <i>(Describe in not more than 5 lines)</i>	
<b>Type of Program</b>	
Greenhouse gases targeted CO <sub>2</sub> /CH <sub>4</sub> /N <sub>2</sub> O/HFCs/PFCs/SF <sub>6</sub> <i>(mention what is applicable)</i>	
<b>Boundary of the Programme</b>	
The boundary for the PoA in terms of a geographical area	
<b>Duration of the Program</b>	
Starting Date	
Duration/Length	
<b>Program Coordinating/managing Entity</b>	
Name of the Coordinating Entity	
Confirm that the program is a voluntary action by the coordinating/managing entity	
Organizational category (private entity or public entity)	
Summary of the relevant experience and capability of the Coordinating Entity <i>(Describe in not more than 5 lines)</i>	
<b>Host Parties</b>	
<b>Program Participants</b>	
Name of the Project Participant	

Role of the Project Participant	<ul style="list-style-type: none"> <li>a. Project Operator</li> <li>b. Owner of the site or project</li> <li>c. Owner of the emission reductions</li> <li>d. Seller of the emission reductions</li> <li>e. Project advisor/consultant</li> <li>f. Project investor</li> <li>g. Other, please specify: _____</li> </ul>
Organizational category	<ul style="list-style-type: none"> <li>a. Government</li> <li>b. Government agency</li> <li>c. Municipality</li> <li>d. Private company</li> <li>e. Non Governmental Organization</li> <li>f. Other, please specify: _____</li> </ul>
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	
Name of the Project Participant	
Role of the Project Participant	<ul style="list-style-type: none"> <li>a. Project Operator</li> <li>b. Owner of the site or project</li> <li>c. Owner of the emission reductions</li> <li>d. Seller of the emission reductions</li> <li>e. Project advisor/consultant</li> <li>f. Project investor</li> <li>g. Other, please specify: _____</li> </ul>
Organizational category	<ul style="list-style-type: none"> <li>a) Government</li> <li>b) Government agency</li> <li>c) Municipality</li> <li>d) Private company</li> <li>e) Non Governmental Organization</li> <li>f) Other, please specify: _____</li> </ul>
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	
<i>Please insert information for additional Project Participants as necessary.</i>	
<b>Operational /management arrangements</b>	

Operational and management arrangements between the coordinating entity and the participating organisations	
<b>Expected Schedule</b>	
Earliest Program starting date <i>Month/Year in which PoA will be operational</i>	
Expected first year of CER delivery	
Lifetime of the CPAs <i>Number of years</i>	
For CPAs: Expected Crediting Period <i>7 years twice renewable or 10 years fixed</i>	

## **B. Methodology and Additionality of the Programme of Activities**

<b>Sector Background</b> Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector (e.g. any law/regulation on waste disposal or renewable energy targets)	
<b>Description of a typical CPA</b> (activities and measures to be covered, e.g. a MSW site or multiple MSW sites in a city)	
<b>Eligibility criteria for CPAs</b> (Define the eligibility criteria for inclusion of a project activity as a CPA under the PoA, which shall include, as appropriate, criteria for demonstration of additionality of the CPA, and the type	



and/or extent of information that shall be provided by each CPA in order to ensure its eligibility)	
<b>Methodology</b> (to be applied by all the CPAs)	
<b>Baseline Scenario</b> PoAs must result in GHG emissions being lower than “business-as-usual” in the Host Country. At the PIN stage questions to be answered are at least: <ul style="list-style-type: none"><li>• Which emissions are being reduced by the proposed PoA?</li><li>• What would the future look like without the proposed PoA?</li></ul> <i>(About ¼ - ½ page)</i>	
<b>Additionality</b> Please demonstrate that in the absence of the CDM either: (i) the proposed voluntary measure would not be implemented, or (ii) the mandatory policy/regulation would be systematically not enforced and that non-compliance with those requirements is widespread in the country/region, or (iii) that the PoA will lead to a greater level of enforcement of the existing mandatory policy /regulation. This shall constitute the demonstration of additionality of the PoA as a whole;	

### C. Real Case CPA - Description, Type, Boundary and Schedule

<b>Title of the CPA</b>	
<b>Description of the CPA</b> <i>(Describe in not more than 5 lines)</i>	

<b>Greenhouse gases targeted</b> CO <sub>2</sub> /CH <sub>4</sub> /N <sub>2</sub> O/HFCs/PFCs/SF <sub>6</sub> <i>(mention what is applicable)</i>	
<b>Boundary of the CPA</b>	
The boundary for the CPA in terms of a geographical area	
<b>Crediting Period of the CPA</b>	
Starting Date	
Duration/Length	
<b>Entity/individual responsible for the CPA</b>	
Name	
Role of the Entity/individual	
Organizational category	
<b>Eligibility of the CPA</b> (Justify why the CPA is eligible to be covered under the PoA)	
<b>Baseline &amp; Additionality</b> Please demonstrate that in the absence of the CDM, the proposed CPA will not be implemented.	
<b>Expected Schedule</b>	
Earliest CPA starting date <i>Month/Year in which the plant/project activity will be operational</i>	
<b>Estimate of GHG Abated/CO<sub>2</sub> Sequestered</b> <i>In metric tons of CO<sub>2</sub>-equivalent, please attach calculations</i>	Annual (if varies annually, provide schedule): ___ tCO <sub>2</sub> -equivalent Up to and including 2012: ___ tCO <sub>2</sub> -equivalent Up to a period of 10 years: ___ tCO <sub>2</sub> -equivalent Up to a period of 7 years: ___ tCO <sub>2</sub> -equivalent
<b>No double-counting</b> Confirm that the CPA is neither included in any other PoA nor registered as a CDM project	

## D. Finance

### D1. Finance at PoA Level

<b>Total Cost Estimate</b>	
Subsidies/incentives to the CPAs (if any)	___ US\$ million (Feasibility studies, resource studies, etc.)
Management/operational costs	___ US\$ million (Property plant, equipment, etc.)
CDM transaction costs (PDD preparation, validation, registration etc)	
Total costs at PoA level	___ US\$ million(Feasibility studies, resource studies, etc.)
<b>Sources of Finance to Be Sought or Already Identified</b>	
<b>Public Funding and ODA</b> (In case public funding is used a confirmation that official development assistance is not being diverted to the implementation of the PoA)	

### D2. Finance of the Real Case CPA

<b>Total Estimated Costs</b>	
Capital investment	
Management/coordinating costs	
Operational costs	
Other costs	
Total	
<b>Sources of Funding</b>	
Support from Coordinating/managing entity	
Equity	
Short-term debt	
Long-term debt	
Carbon finance (confirmed or estimated CER sales revenue, price per CER)	
Public fund (indicate whether public fund is used for the CPA)	

or not. If yes, confirm whether any Official Development Assistance has been diverted for the implementation of this CPA	
--	--

**E. Expected Environmental and Social Benefits** (In Programmes of Activities CDM, Environmental Analysis can be conducted at PoA level or CPA level, subject to decision by the Coordinating/managing entity and the national regulations)