

**Sino-Danish CDM Capacity Building Focusing
On Biomass Projects In Guizhou Provinces**

Final Report

Guizhou CDM Technical Consultation

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1 Project Introduction

1.1 Project Objectives

The objectives of this project are as follows:

- (1) Organize trainings on CDM projects screening, development and management in biomass to improve the relevant personnel's ability.
- (2) Improve the national organizations' capabilities in developing biomass CDM projects by adopting CDM Baseline Methodology and monitoring method according to the situation in China, including the organizations of CDM project development and the ones which offer technologies. Develop some biomass projects PIN and PDD.
- (3) Organize trainings for government officials and research institutes in the demonstration provinces to improve their ability in identifying and developing CDM projects. Develop biomass projects PIN and PDD.

1.2 The Predicted Activities and Achievements of the Sino-Danish Biomass Projects in Guizhou Province

- (1) Training for officials and personnel of research institutes
Task: Introduce the basic concept of Climate Change and CDM, the procedures of CDM project development as well as relevant stipulations at home and abroad.
Training period: 0.5 day. 50 participants.
Achievement: (a) Training materials of these basic courses. (b) The name list of the participants. (c) The questionnaire of the courses.
- (2) Training of CDM Advanced Courses
Task: Introduce the content and problems of CDM project development, including CDM project procedure, the accreditation and verification procedures, the negotiation of project contract and relevant legal affairs, CDM project financing, which includes investment analysis method, the base rate of return analysis, the analysis of CER price's sensitiveness to project benefit and so on.

- Projects screening;
- Edit PIN;
- Edit PDD;
- Domestic approval;
- Accreditation and registration;
- Develop 1-2PDD.

The content includes preparing PIN and PDD, ways to accomplish each parts, solve problems, the selection of baseline and examples.

Training period: 1.5 days. 50 participants. To discuss about and improve PIN and PDD.

Achievements: (a) Training materials of the advanced courses. (b) The name list of the participants. (c) The questionnaire of the advanced courses.

(3) Training of Project Management

Task: Introduce the international and domestic experiences of biomass project development.

- Ownership: public, cooperation, enterprise and individual;
- Establish the organization for project management;
- Choose technologies;
- Consider about investment and operation cost;
- Project financing;
- Contracts signed with suppliers of raw materials and with the end-users (heat or power supply);
- The approval from government departments, including approval of environment protection;
- Choose contractors;
- Project construction, choose construction organizations;
- Trial operation of projects;
- Factory production and maintenance plan;
- Select project venue and make decision;
- Manage biomass resources.

The training is mainly about experiences of biomass project development and the frequent problems. Find out the possible problems of selecting projects.

Training period: 2 days. 50 participants.

Achievements: (a) Three sets of training materials. (b) Their name lists of the participants. (c) The questionnaire and its analysis to check whether the predicted aim is achieved. (d) Analyze the training effect through investigation and evaluation after three months.

- (4) Work out the potential of the main biomass resources in Guizhou province

Task: Investigate to know the potential of the biomass resources in Guizhou province, including the laws and regulations, utilization, environmental protection and economic benefit of resources, such as agricultural waste, forestry waste, energy plant/crop, landfill gas, animal manure reserve and so on.

Investigate different biomass resources as follows.

- The agricultural wastes, forestry waste, energy plant/crop, solid wastes in cities, waste water of light industry and so on;
- The burning features of different resources;
- The land usage in different areas;
- Annual output;
- Utilization ways (stick bundling, bulk stick, wood flour, particle, etc.)
- Transportation, store, etc.

Achievements: A report on resources.

- (5) The detailed evaluation of CDM capacity building demands

Task: Based on the current CDM project development in Guizhou province, investigate to find the problems, projects screening, PDD file design, project application, project approval, monitoring and so on.

Work out the demands and plan for capacity building.

Achievement: A report on evaluation of capacity building demands

- (6) Introduce the possibilities of CDM project to the local residents

Task: Print pamphlets, hold workshops, invite the representatives from local departments and residents to attend the workshops. Introduce the possibilities of CDM project to them and ask them to participate in and support the projects.

Achievements: Introduce the possibilities of CDM project to the local residents and make a name list of participants.

(7) Draw up the plan to attract the local residents to participate in the project and provide biomass materials.

Task: Set up biomass development projects and guarantee plan of raw materials supply according to the situation in Guizhou province. The collection, transportation and storage of raw materials are included. The collection of raw materials includes the collection range / radius and technical and economic evaluation. The application possibilities of other potential utilization methods. How to stipulate the long-term, stable and attractive stimulating policies to guarantee the supply of raw materials.

Achievements: Encourage the local residents to participate in the preparation of project plan.

(8) Projects identification and screening.

Task: Screen the potential biomass projects according to the situation in Guizhou province and decide the alternative projects.

Achievements: One report on tool software. Select one project.

(9) Have trainings on biomass capacity building

CDM projects training.

Task: The training is mainly about editing PIN and PDD, the problems and skills in project development. The main task is editing PDD, domestic approval, registration procedure and problems. Develop one PDD.

Training period: 2 days. 50 participants.

Achievements: (a) Training materials. (b) The name list of the participants. (c) There should be five PINs in each province. (d) There should be at least one PDD in each province. (e) The questionnaire and its analysis to check whether the predicted aim is achieved. (f) Analyze the training effect through investigation and evaluation after three months.

2 Project Achievements

2.1 The Technical Progress and Activities Completed

July 2007 – March 2008

Project Activities

Main Tasks

The main contents of this project are as follows:

- Accomplish the assessment report on the potential of the main biomass resources in Guizhou province.
- Accomplish the detailed evaluation report on capacity building demand.
- Carry out trainings to government officials and relevant personnel of research institutes and units engaging in biomass resources as well as CDM project developers and other personnel concerned in Guizhou province.
- Provide advanced courses on CDM project to introduce the relation between CDM project and biomass in order to develop one biomass PDD and five PINs.
- Introduce the opportunities of CDM project to the local residents.
- Draw up the plan to attract the local residents to participate in the project and provide biomass materials.
- Identify and screen projects.
- Carry out trainings about CDM.
- Carry out trainings on the management of biomass building projects.

Project Progress and Tasks Completed

- Accomplished the expert consultation of biomass type and the distribution features of materials.
- Investigating the biomass materials to know the potential of the main biomass materials in Guizhou province.
- Investigate the variety, distribution feature, conservation, usable amount of biomass resources in Guizhou province through on-site investigation, interview and measurement.
- Complete the preparation of training courses, including the publication and propaganda of training materials, making the name list of training

participants, inviting the participants, organizing meetings, inviting the local government departments to prepare and print the training materials, meeting agenda and questionnaire.

April 2008 – June 2008

Project Activities

Main Tasks

The main contents of this project are as follows:

- Accomplish the assessment report on the potential of the main biomass resources in Guizhou province.
- Accomplish the detailed evaluation report on capacity building demand.
- Carry out trainings to government officials and relevant personnel of research institutes and units engaging in biomass resources as well as CDM project developers and other personnel concerned in Guizhou province.
- Provide advanced courses on CDM project to introduce the relation between CDM project and biomass in order to develop one biomass PDD and five PINs.
- Introduce the opportunities of CDM project to the local residents.
- Draw up the plan to attract the local residents to participate in the project and provide biomass materials.
- Identify and screen projects.
- Carry out trainings about CDM.
- Carry out trainings on the management of biomass building projects.

Project Progress and Tasks Completed

- Investigated the biomass materials to know the potential of the main biomass resources in Guizhou province.
- Accomplished the survey report on biomass resources in Guizhou province in both Chinese and English versions. The report is being proofread by the experts.
- Accomplished the evaluation report of capacity building demand in Guizhou province in both Chinese and English. The report is being proofread by the experts.

- The training on capacity building was held from April 22 to 25, the training effect was analyzed, the report on questionnaire of advanced courses was completed, the summary report in both Chinese and English was submitted to the National Development and Reform Commission of the People's Republic of China.
- Decide the PDD and PIN development projects through on-site investigation. Preparing for the following work.
- The Chinese report on raw materials supply plan is completed through on-site questionnaire and interviews. The report is being proofread by the experts.
- Completed the preparation for introducing the opportunities of CDM project to the local residents.
- Preparing the training materials of the CDM project and designing the questionnaire for the CDM project training.

July 2008 – September 2008

Project Activities

Main Tasks

The main contents of this project are as follows:

- Accomplish the assessment report on the potential of the main biomass resources in Guizhou province.
- Accomplish the detailed evaluation report on capacity building demand.
- Carry out trainings to government officials and relevant personnel of research institutes and units engaging in biomass resources as well as CDM project developers and other personnel concerned in Guizhou province.
- Provide advanced courses on CDM project to introduce the relation between CDM project and biomass in order to develop one biomass PDD and five PINs.
- Introduce the opportunities of CDM project to the local residents.
- Draw up the plan to attract the local residents to participate in the project and provide biomass materials.
- Identify and screen projects.
- Carry out trainings about CDM.

- Carry out trainings on the management of biomass building projects.

Project Progress and Tasks Completed

- Accomplished the survey report on biomass resources in Guizhou province in both Chinese and English based on the experts' revisions. The report was reviewed by the experts and was finalized.
- Accomplished the evaluation report of capacity building demand in Guizhou province in both Chinese and English based on experts' revisions. The report was reviewed by the experts and was finalized.
- Translated the project screening software. The application report of this software is being compiled.
- Accomplished the on-site measurements of PDD datum. Edited PDD with the help of the experts invited from Beijing.
- Compiled and printed pamphlets. Coordinate well with the local government authorities.

September 2008 – December 2008

Project Activities

Main Tasks

The main contents of this project are as follows:

- Accomplish the assessment report on the potential of the main biomass resources in Guizhou province.
- Accomplish the detailed evaluation report on capacity building demand.
- Carry out trainings to government officials and relevant personnel of research institutes and units engaging in biomass resources as well as CDM project developers and other personnel concerned in Guizhou province.
- Provide advanced courses on CDM project to introduce the relation between CDM project and biomass in order to develop one biomass PDD and five PINs.
- Introduce the opportunities of CDM project to the local residents.
- Draw up the plan to attract the local residents to participate in the project and provide biomass materials.
- Identify and screen projects.

- Carry out trainings about CDM.
- Carry out trainings on the management of biomass building projects.

Project Progress and Tasks Completed

- Accomplished the survey report on biomass resources in Guizhou province in both Chinese and English based on the experts' revisions. The report was reviewed by the experts and was finalized.
- Accomplished the evaluation report of capacity building demand in Guizhou province in both Chinese and English based on experts' revisions. The report was reviewed by the experts and was finalized.
- Accomplished the PIN screening by adopting the screening tool developed by Danish experts and the translation of the screening tool software. Translated the project screening software. Accomplished the application report of this software in both Chinese and English.
- Compiled and printed pamphlets. Delivered pamphlets and introduced and publicized CDM as well as paid repeated visits with the assistance of the local government authorities.
- Completed the Materials Supply Plan in both Chinese and English.
- Compiled the training materials for CDM projects and made the name list of the participants, prepared the questionnaire, held successfully the workshop on CDM project in the venue from Nov. 20 to Nov. 21.
- Accomplished the on-site measurements of PDD datum. Edited PDD with the help of the experts invited from Beijing.

January 2009 – March 2009

Project Activities

Main Tasks

The main contents of this project are as follows:

- Accomplish the assessment report on the potential of the main biomass resources in Guizhou province.
- Accomplish the detailed evaluation report on capacity building demand.
- Carry out trainings to government officials and relevant personnel of research institutes and units engaging in biomass resources as well as CDM project developers and other personnel concerned in Guizhou

province.

- Provide advanced courses on CDM project to introduce the relation between CDM project and biomass in order to develop one biomass PDD and five PINs.
- Introduce the opportunities of CDM project to the local residents.
- Draw up the plan to attract the local residents to participate in the project and provide biomass materials.
- Identify and screen projects.
- Carry out trainings about CDM.
- Carry out trainings on the management of biomass building projects.

Project Progress and Tasks Completed

- Accomplished the survey report on biomass resources in Guizhou province in both Chinese and English based on the experts' revisions. The report was reviewed by the experts and was finalized.
- Accomplished the evaluation report of capacity building demand in Guizhou province in both Chinese and English based on experts' revisions. The report was reviewed by the experts and was finalized.
- Accomplished the PIN screening by adopting the screening tool developed by Danish experts and the translation of the screening tool software. Translated the project screening software. Accomplished the application report of this software in both Chinese and English.
- Compiled 5 PINs, which are
The biogas utilization project of the Breeding Farm of Xing Wang Well-bred Pigs in Weng'an County,
The biogas utilization project of the Pig Farm of Xing Ye Animal Husbandry Development Co.,Ltd in Weng' an County,
The biogas utilization project of the Hong Da Livestock Breeding Farm in Kaili City,
The biogas utilization project of the Tai Wan Livestock Breeding Farm in Zunyi City
The biogas utilization project of the Huaxi Leizhuang Livestock Breeding Farm of Guizhou Sunshine Jian Te Rou Food Co.,Ltd,
- Compiled and printed pamphlets. Delivered pamphlets and introduced

and publicized CDM as well as paid repeated visits with the assistance of the local government authorities.

- Completed the Materials Supply Plan in both Chinese and English.
- Compiled the training materials for CDM projects and made the name list of the participants, prepared the questionnaire, held successfully the workshop on CDM project in the venue from Nov. 20 to Nov. 21.
- The biogas utilization project of the Tai Wan Livestock Breeding Farm in Zunyi City was selected as the demonstration project. Accomplished the on-site measurements of PDD datum. Edited PDD in both Chinese and English with the help of the experts invited from Beijing.
- Improved all documents of the Sino-Danish project, typed out and bond all the final version of the documents.
- Sorted out all payment bills of the Sino-Danish project for the audit in the future.

2.2 Overall Project Expenses

Financial Report

Period	July 2007- Mar. 2008	April - June 2008	July-Sept. 2008	Sept.- Dec.2008	Jan.-Mar. 2009	Sum
Expenditure (RMB yuan)	213,384.00	471,211.00	343,959.00	347,045.00	47,081.00	1,422,680.00
Income (RMB yuan)	56,132.40	166,774.78	461,688.21	343,958.82	347,044.48	1,375,598.69

2.3 Experiences Accumulated

We accumulate a lot of experiences in biomass CDM through implementing the Sino-Danish project. The experiences are as follows. Editing PIN and PDD, solving problems occurred in project development, doing PIN screening by adopting the tool developed by Danish experts, understanding the current biomass power-generation and heat utilization technologies and biomass conversion technology at home and abroad,

understanding the investment and analysis methods of CDM projects, the base rate of return analysis, the analysis of sensitivity of CER price to project benefit, understanding the potential of the biomass resources in Guizhou province, including the laws and regulations, utilization, environmental protection and economic benefit of resources, such as agricultural waste, forestry waste, energy plant/crop, landfill gas, animal manure reserve and so on.

We exert impact on decision-makers and scientific research personnel of the People's Government of Guizhou Province, the enterprises of CDM project, research and consultant organizations as well as those in the energy, environment and economic fields. Their ability in identifying and developing CDM projects and their ability in developing biomass CDM projects by adopting the CDM baseline methodology are improved through the trainings.

The experts introduced the background, identification, screening and development of biomass CDM project, foreign advanced technologies and the biomass resources in Guizhou province. The final achievements have played an important role in ecological environment construction and born great economic benefit, played a critical part in economic development. The development and utilization of biomass has become important new industry, plays an important role in guaranteeing energy safety, adding employment, fostering agricultural development, ensuring the harmonious development of energy and environment. The CDM capacity building in Guizhou province will be improved and lay foundation for developing CDM project in future.

2.4 The Difficulties met in the past

- (1) Edit PDD. The additionality, the determination of baseline and other problems were difficult for us.
- (2) We met difficulties in collecting datum and raw materials.

3 Suggestion

We met some difficulties when we implemented the Sino-Danish biomass project. The project was completed effectively in the stipulated period through the experts' analysis and discussion. We understood the inadequacy and demand of CDM, especially in human resource and methods. We wish to get improvement in these aspects. In addition, almost all of the biomass projects in Guizhou province are in small scale, therefore, the costs are comparatively high, the achievements are less. We wish more small buyers could invest.

Moreover, we can organize some training. More experts, buyers and professionals will have opportunities to discuss and research together. Each and every project can be completed well. The friendly cooperation of the parties will be fostered.

The concrete policies and measures should be set up for biomass development and utilization. While the development and utilization of biomass can increase energy supply and protect environment, it can develop rural economy as well. We suggest the relevant departments set up policies and measures for biomass development and utilization from national energy development strategy and resolve the San Nong issues, which concern agriculture, countryside and farmers, as well as exert more effort on equipment manufacturing and the expansion of the market for biomass utilization. China is rich in biomass resource, especially in the remote rural areas where biomass is the main energy. However, the biomass is utilized in the traditional and less efficient ways with few technologies and of serious resource waste. We should establish the feasible plan for biomass development and utilization to foster its sound development.