



**First Training
Workshop on
Integrated Solid
Waste
Management
(ISWM) based on
3R**

Proceeding

**Bahir Dar, Ethiopia
27-28 January 2010**

Organized by



Forum for Environment



UNEP
Division of Technology, Industry and Economics
International Environmental
Technology Centre

1. Introduction

The training workshop on Integrated Solid Waste Management (ISWM) on Reduce, Reuse, and Recycle (3R) approach was carried out in Bahir Dar, Ethiopia from 27th to 28th February 2010. The training is one activity of *the Development of an Integrated Solid Waste Management Plan for Bahir Dar* project. The 2-days training was designed to train the Local Technical Team (LTT); so that the trainees would be able to conduct the ISWM situation analysis and inventory of solid waste at Bahir Dar. The trainees would also be able to provide guidance for other partakers on the survey of solid waste survey based on UNEP's ISWM guidance. The training guided the participants on ISWM survey process, especially on the characterization and quantification of solid waste.

2. Objective

The overall objective of the training was to build the capacity of the LTT and thus develop resource persons who are capable of conducting the survey and situation analysis of solid waste generation at Bahir Dar.

3. Training Process and Structure

The training was prepared for experts from five local institutions who had basic knowledge and involvement on solid waste management in Bahir Dar town. The training was offered by Dr Mushtaq Memon who is a senior expert on ISWM and a programme officer at UNEP, Osaka office. The approaches applied for the training were:

- Interactive - participatory
- Sharing of experiences and knowledge
- Mixture of presentations, group and individual exercises
- Group discussions and the presentations of the group work

The 2-days training content was structured as:

First day: Overview of ISWM, waste characterization and quantification with projections

Second day: Situation analysis of existing SWM, and related issues and baseline reporting

Detailed plan of the training is attached in the Annex 1.

4. Training Participants

The training workshop was attended by 17 participants from six institutions. The institutions that participate in the project are: Bahir Dar City Administration (City Service); Amhara Bureau of Environmental Protection, Land Administration and Use; Bahir Dar University, Dream Light Plc.; Bahir Dar Forum for Environment and national Forum for Environment. List of participants is provided in Annex 2.



Picture 1 Group Picture of Training Participants

5. Training proceedings

First day: 27th February

The training started with welcome address by Mr Meskir Tesfaye, FfE representative and project coordinator. Then Dr Mushtaq started the training by introducing the training programme and overview of ISWM. The session also included the road map for data and sample collection and analysis, especially emphasizing the characterization and quantification of solid waste from different sources.



Picture 2 Presentation by Dr Mushtaq

Group work: 3 groups were formed and the groups exercised on zoning and identification of potential waste generators and waste types. The outcome of the group work were then presented by one of the team member and brought to open discussion the following day.



Picture 3 Participants attending lectures

Second day: 28th February

Second day started with the presentations of the outcome of the group exercises. The outcome of each group was shared among the participants through presentations by a member from each group and discussion on the presentations. Then Dr Mushtaq provided a series of lectures on situation analysis of existing waste management practices.

Presentation on the lectures covered following matters: financial mechanisms, institutions, regulations, roles, technology selection and experience of other countries.

Group work: 4 groups of were formed to analyze the financial mechanisms, institutions, regulations, roles and technology selections.

Group 1: deals with **Technology** and stakeholders participation

Group 2: deals with **Institution** and finance

Group 4: deals with **Stakeholder Participation** and Finance

FfE: deals with **Regulation**

Each group is assigned to the bold faced activity as its main task. The outcome of the group works will be presented by the team members on the next training session at the end of February.



Picture 4 A group presentation by Ms Atekelt

6. Summary of Group Presentations

Presentations on zoning and identification of potential waste generators covered following issues:
Group plotted representative map of Bahir Dar and identified different zones of waste generation.

Demography:

Population size estimate: 150-300,000

Generation Rate estimates: 0.25-0.3 kg/person/day

Daily Generation estimate: 67.5-75,000 kg

Potential Sources:

Residence
Commercial
Industrial
Health Care
Construction
Institutional
Street sweep/ yard waste

Types of waste:

Food
Paper
Plastic
Textile
Leather
Glass
Metal
Yard waste
Hazardous waste

7. Outline preparation

At the end of the workshop, discussion on an outline and how to proceed on the next activities of the project was conducted. During which, the local technical team expressed their commitments for the fulfillment of the project and formed a contact person from each institution to convey information and activities. Accordingly,

Mrs Belaymesh Melkamu	Bahir Dar City Administration
Mr Mengiste Abate	Bahir Dar University
Mr Getnet Hunegnaw	BoEPLAU
Mr Getachew Alemnew	Dream Light Plc.
Mr Dilnessa Simachew	FfE Bahir Dar



are assigned as contact persons for further works.

8. Closing

At the end one of the training Mr. Meskir, on the behalf of FfE, thanked UNEP and Dr Mushtaq for their financial and technical support and the local team for their support and active participation in ISWM Plan Bahir Dar project.

9. Achievement

The main achievements of the trainings were:

-  17 personnel were trained on ISWM on characterization and quantification of solid waste
-  built the capacities of LTT in regard to ISWM Plan preparation

- brought together LTT from various institution in one forum and shared the experiences and knowledge
- at large participants felt that the workshop was successful in meeting their expectations and were confident that they would be able to conduct the quantification and characterization and situation analysis tasks of the project.

10. Media Coverage

The local FM radio and the Regional TV recorded the event and on the occasion Mrs Belaynesh, Ms Atekelt, Dr Mushtaq and Mr Meskir were interviewed. The FM broadcasted its record on 1st and 3rd of February and the TV broadcast will be dispatched soon.

11. Lesson learnt

From the idea sharing made during the training and from the discussions carried out the following points was learnt:

- the local technical team should have been met before the start of the training so that common more understanding could be obtained in advance.
- group exercises are more effective in understanding and internalizing the information provided and increase in confidence and comfort of the LTT with ISWM quantification and characterization works
- it would be better if the examples during the lecture and presentation could be given in context to Ethiopia

12. General Assessment of the training workshop

The general assessment from the meeting and individual discussion with the participants revealed that in overall the training was successful in achieving its objectives. The major concern shown by some participants were how they could fully participate in the upcoming activities of the projects despite other engagements at their institution. In order to avoid this problem it was agreed to write a letter to the institutions for obtaining permission for the involvement of the trained experts.

On the whole the training workshop was successful in fulfilling its objectives. The training introduced

ISWM tools to the participants. The training was encouraging and motivating to introduce integrated solid waste management practices at Bahir Dar. The general perception on the prevailing conventional waste management practices (collect and dispose) was changed after the training.



Annex 1

UNITED NATIONS ENVIRONMENT PROGRAMME

Division of Technology, Industry and Economics

International Environmental Technology Centre

1st Training Workshop on

Integrated Solid Waste Management (ISWM) based on 3R

(27-28 January 2010)

Ethio Star Hotel, Bahir Dar, Ethiopia

AGENDA

Wednesday 27 January 2010

09 00 – 09 30	Registration	
09 30 – 09 50	Welcome Remarks	Forum for Environment
09 50 – 10 00	Opening Remarks	Mushtaq Ahmed Memon, UNEP
10 00 – 10 30	Pre-training Assessment Quiz	
10 30 – 10 45	Participant Introduction and Expectations	
10 45 – 11 00	Overview of ISWM Training	Mushtaq Ahmed Memon, UNEP
11 00 – 11 15	Tea Break	
11 15 – 11 45	Overview ISWM	Mushtaq Ahmed Memon, UNEP
11 45 – 13 00	Waste characterization & quantification with projections - Overview & MSW	Mushtaq Ahmed Memon, UNEP
13 00 – 14 00	Lunch	
14 00 – 15 30	Waste characterization & quantification with projections - Construction & Demolition - Healthcare & Industrial	Mushtaq Ahmed Memon, UNEP
15 30 – 16 00	Tea Break	
16 00 – 17 30	Waste characterization & quantification with projections - WEEE / E-waste & Waste Agricultural Biomass - How to develop Baseline Report	Mushtaq Ahmed Memon, UNEP
17 30	Close	

Thursday, 28 January 2010

09 00 – 10 00	Situation Analyses of Existing Waste Management System	Mushtaq Ahmed Memon, UNEP
10 00 – 10 30	Tea Break	
10 30 – 11 30	Regulations, Institutions and Stakeholders	Mushtaq Ahmed Memon, UNEP
11 30 – 12 30	Technology and Financing	Mushtaq Ahmed Memon, UNEP
12 30 – 13 30	Lunch	
13 30 – 15 00	Preliminary Data / Information of Bahir Dar	Mr Mekete (Bahir Dar University) Mr Getachew (Dream Light Plc)
15 00 – 15 30	Tea Break	
15 30 – 16 30	How to develop Baseline Report for Bahir Dar	Mushtaq Ahmed Memon, UNEP
16 30 – 17 00	Next Steps and Closing Remarks	Meskir Tesfaye (FfE)
17 00		

Annex 2
UNITED NATIONS ENVIRONMENT PROGRAMME
Division of Technology, Industry and Economics
International Environmental Technology Centre

Participants List

	Name	Organiza tion	Gender	Responsibility/ Position	email
1	Freweyni Abera	Dream Light Plc	F		Fruitmel_2008@yahoo.com
2	Tegist Solomon	Dream Light Plc	F		Gishasol_2007@yahoo.com
3	Teklegiorgis Hailay	Dream Light Plc	M		tekle_george@yahoo.com
4	Getnet Hunegnaw	BoEPLAU *	M	Expert	getnet.hu@yahoo.com
5	Woldegabriel Gebrekidan	FfE Bahir Dar	M		
6	Getachew Alamrew	BoEPLAU	M		Getachewal@yahoo.com
7	Tseay Fentahun	Bahir Dar City Service	F	Expert	Tsehayf@yahoo.com
8	Honelign Tilahun	Dream Light Plc	M		honnmis@yahoo.com
9	Belaynesh Melkamu	Bahir Dar City Service	F	Leader	belaynesh_melkamu@yahoo.com
10	Mekete Dessie	Bahir Dar Universit y	M	Lecturer	mekete95@yahoo.com
11	Atekelt Abebe	Bahir Dar Universit y	F	Lecturer, Sanitary Engineer	atiabe@yahoo.com
12	Tesfa Gedif	Bahir Dar City Service	M	Expert	

	Name	Organization	Gender	Responsibility/ Position	email
13	Dilnessa Simachew	Bahir Dar FfE**	M		dst767784@yahoo.com
14	Getachew Alemnew	Dream Light Plc		Deputy manager	weynye@yahoo.com
15	Mengiste Abate	Bahir Dar University	M	Director, Civil & Water Engineering school	mengisteaba@yahoo.com
16	Tsehay Kassa	FfE Bahir Dar	F		

*Bureau of Environmental Protection, Land Administration and Use

** Forum for Environment