

REPORT OF A WORKSHOP ON
MANAGEMENT OF THE ENVIRONMENT
FOR SUSTAINABLE DEVELOPMENT-
PRIVATE SECTOR FOCUS

HELD AT:

LAVICUS HOTEL-KUMASI

FROM:

25TH TO 27TH OCTOBER 2000

PREPARED FOR THE PRIVATE ENTERPRISE
FOUNDATION AND THE UNDP/GHANA
CAPACITY 21 PROGRAMME

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1.2 Training Methodology

Training was conducted using the following methodology:

- a) Lectures and passive learning with some guided interactive discussions;
- b) Open discussions at the end of each session;
- c) Practical applications of the learning through guided exercises;
- d) Participants presentation of their own experiences;
- e) Case studies.

2.0 GUIDING PRINCIPLES

The following principles guided the preparation of training materials and delivery of the course:

- a) Practical relevance to the needs of staff of the Private Sector in implementing effective environmental management policies, strategies and programmes;
- b) To be innovative, interactive and based on practical experience;
- c) To provide an environment for participants to contribute cases from their own business ventures and exchange information with colleagues from other businesses.

3.0 INPUTS

- a) Participation by 35 private sector operators from the 8 UNDP/Ghana Capacity 21 Programme Pilot Districts and relevant private sector organizations.
- b) Support from the Director-General of the Private Enterprise Foundation, National Co-coordinator of the UNDP/Ghana Capacity 21 Programme and staff of the Private Enterprise Foundation.
- c) Provision of facilities and equipment by the Private Enterprise Foundation for the training course.
- d) 30 days input by Short Term Experts for the preparation of training material and 3 days for the delivery of the training at Kumasi. ...
- e) Discussions, Group, exercises, and plenary presentation sessions involving participants.

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4.0 OUTPUTS

- f) Preparation and delivery of a three-day training course on Environmental Management for 34 private sector operators from the 8 UNDP/Ghana Capacity 21 Programme Pilot Districts and relevant private sector organizations during the period 25th to 27th October 2000 and to report on the preparation, conduct and evaluation of the course.
- a) A draft training manual including course materials, and handouts.
- b) Papers presented by resource persons copied and distributed to all participants.
- c) Working group session reports transcribed from flip chart sheets to A4 and Distributed to all participants during the course.

5.0 COURSE CONTENT

The course content covered the following topics:

- Overview of the UNDP/Ghana Capacity 21 Programme.
- Introduction to Agenda 21 and the concept of sustainable development- Relevance for the Private Sector.
- Environmental Quality Guidelines/Standards.
- Ghana Environmental Impact Assessment Procedure (EIA) – What every Business should know.
- Conduct of Environmental Assessment- Requirements for Existing Undertakings.
- EIA case studies (Wood processing, Cotton farming and Food processing projects in Ghana).
- Environmental Monitoring and Industry Assessment.
- Cleaner Production Technologies.
- Environmental Management Plans (EMPs).
- EMP case studies (Wood processing, Cotton farming and Food processing projects in Ghana).

6.0 COURSE PROGRAMME

DAY	MORNING	AFTERNOON
Wednesday 25th October 2000	<ul style="list-style-type: none"> Registration Opening ceremony Introductions and Administrative matters. Course overview/objectives, Participants' profiles, Participants' expectations and Fears. Introduction to Agenda 21 and the concept of sustainable development – Relevance for the Private Sector. 	<ul style="list-style-type: none"> Ghana Environmental Assessment Regulations (LI 1652). Ghana Environmental Assessment Administration system. Conduct of Environmental Assessment Requirements for existing undertakings
Thursday 26th October 2000	<ul style="list-style-type: none"> Environmental Quality Guidelines/Standards Environmental Monitoring and Industry Assessment Cleaner Production 	<ul style="list-style-type: none"> Group Exercise on Environmental Impact Assessment.
Friday 27th October 2000	<ul style="list-style-type: none"> Presentation of Group Exercise on Environmental Impact Assessment. Environmental Management Plans and Environmental Management Systems. Group Exercise on Environmental Management Plans. 	<ul style="list-style-type: none"> Presentation of Group Exercise on Environmental Management Plans. Workshop Evaluation Closing ceremony and Presentation of Certificates.

7.0 OPENING CEREMONY

7.1 Chairman's Opening Remarks

Ohenaba Aduesi Poku, Akyampehene of Kumasi, opened the workshop at 9:00a.m. In his remarks he expressed his gratitude to the organizers for holding such a workshop at a time when the environment of Ghana and the world at large is in serious crisis. He said the Private Enterprise Foundation's focus on the role of the private sector in environmental management would help in good governance, which is the key to the consolidation of the country's market oriented policies. He also commented on how the forest eco-system has been abused adding, "if we fail to guard against our destructive practices all of Ghana's forest could be lost in the next 20 years".

He emphasised the need to step up monitoring and enforcement by regulatory agencies to make sure that people conform to laid down rules and advised that everyone should be a crusader for the EPA. He hoped that participants would put into practice whatever skills will be learnt at the workshop to recover our degraded environment for our benefit and that of future generations.

The chairman reiterated that the weather pattern is changing so fast and very soon it is likely there would be water shortages and this is also an area that needs close monitoring. He was however hopeful that the workshop would be interactive, useful and hoped participants would come up with good action plans that they can implement in their daily operations for the management of the environment. He encouraged participants to adopt good farming practices, good sanitation practices, efficient waste management, and soil conservation measures.

7.2 Welcome Address by the Director-General of PEF

In welcoming participants to the workshop, Mr. Kwasi Abeasi, Director-General of the Private Enterprise Foundation (PEF), said that as they ground to intervene on behalf of the private sector, topics like management of the environment hasn't been of much

Interest to people, since they either think it is very expensive to run or it is taken for granted. He was therefore happy that this time round more people had turned up for the workshop. Every business he said depends on the environment for its resources thus it is important for everyone to help in the crusade of sustaining the eco-system so 'We can continue to derive benefits from the environment.

The Director General deplored the rather casual attitude of Ghanaian towards environmental management. He cited an example of Malaysia where oil palm cultivation and processing is conducted in a more sustainable way than what pertains in

Ghana and attributed this to their use research findings. He therefore urged participants To help in the crusade of environmental conservation.

The Director General noted that the EPA has put in place the Environmental Impact Assessment (EIA) which regulates the conduct of economic operators to ensure sustainable production practices, and what is more important now is for EPA to further strengthen its capacities in the districts and rural areas. He urged participants to contribute immensely by sharing their specific experiences during the group work, discussions and encouraged them to draw up good action plans for improving environmental performance in their operations.

He therefore thanked the UNDP/Ghana Capacity 21 for collaborating with PEF and providing financial and material support for the workshop. He mentioned that it is good a workshop like this has been organized since the state of Ghana's natural resources is at a critical stage now. He further stated that policies put in place by government in the past few years have provided good foundation for partnership between the public and private sector. Even though some growth has been achieved out of these policies the expected level of growth has not been attained due to a number of problems, such as lack of adequate credit, high cost of credit, high rate of inflation and the rapid Depreciation of the cedi. These conditions sometimes make business operators relegate the issue of sustainable environmental management to the background.

7.3 Address by National coordinator of the Ghana Capacity 21 Programme

The National coordinator of the Ghana Capacity 21 Programme, Mr. S. O. Saaka apologized on behalf of the Chief Director of the Ministry for Environment Science and Technology for his inability to be at the workshop due to other equally important engagements. He said, it has been about a year since PEF began planning for this workshop and the UNDP/Ghana Capacity 21 Programme assisted in organizing their focal persons in the various districts to be part of this workshop. He lauded PEF's efforts in going beyond Accra and Kumasi and to the remote parts of the country to draw participants for this workshop.

The UNDP/Ghana Capacity 21 Programme has been established to encourage the national efforts in the pursuit of sustaining development initiatives and it is aimed at strengthening the capacities of institutions involved in the environmental management and development planning at the district, regional and national levels.

The programme also seeks to strengthen the role of science and technology in the sound management of environmental resources. In order to achieve this the outfit organizes training programmes, which include sensitization workshops, basic computer appreciation training, workshops on environmental management and development planning among others. The largest target group for such programmes have been the district/municipal/metropolitan assemblies.

In concluding, Mr. Saaka assured participants that the 3-day training programme will help widen the dimensions of the programmer's activities and he hoped that the private sector will come out with initiatives on the basis of which the sector can continue to network with the Capacity 21 Programme. He also reiterated that apart from training through seminars the programme could consider proposals for the application of basic appropriate science and technology techniques in support of sustainable development.

7.4 Statements by Participants

The Chairman of the opening ceremony invited participants to make comments and the first person agreed with the Director-General of the PEF that the attitude of Ghanaians to the environment is the biggest problem. He went further to say that environmental issues are very important for the next generation and he is happy that the district assemblies are incorporating environmental concerns into their development planning and urged all participants to come up with good ideas to enable them have fruitful deliberations. Another participant appealed to the PEF to lease with government in reducing the current high interest rates, which adversely affect private sector operations and environmental management.

8.0 PRESENTATIONS BY RESOURCE PERSONS AND DISCUSSIONS

8.1 Introduction to Environmental Management

The purpose of environmental management is to achieve maximum benefits of development while minimizing any adverse environmental effects and ensure the efficient use of natural resources. This requires the application of certain tools including, environmental legislation, environmental assessment, regulations, licenses and permits. During discussion time the following issues were raised:

- + The negative attitude of Ghanaians towards the environment constitutes a major problem that has to be addressed through education programmes;
- + There is a big -gap between knowledge and practice in this country. There are adequate documents on the environment of Ghana but many of such recommendations are yet to be implemented;
- Private sector organizations focus more on manufacturing and profit-making and very little attention is given to the environment.
- The top management of private sector organizations would be actively involved in Environmental management if sustainable development is to be achieved.



- Attitudes take long time to change hence the results of environmental education/awareness programmes may take some time to yield the required results.
- Although the EPA is the principal government agency responsible for the

Environment every citizen of the country has a role to play in the enforcement of environmental regulations. Participants can therefore contribute to enforcing environmental regulations by reporting people who abuse the environment to the EPA and other regulatory agencies.

8.2 Agenda 21 and the Concept of Sustainable Development – Relevance for the Private Sector

The aims and objectives of the UNDP/Ghana Capacity 21 Programme include the following:

- Strengthening the capacities of national institutions involved in environmental management and development planning to support district, regional and national planning in a sustainable manner.
- Strengthening the role of science and technology for sound environmental and natural resource management.
- Development of the capacity to integrate environmental considerations into district Level planning.
- Establishment of cross-sectorial programmes of awareness creation on sustainable development.
- Establishment of the capacity of decentralized organizations to promote sustainable development and establish a management information system to support Sustainable development.
- Enhancement of the capacity to manage sustainable development activities in Ghana.

8.3 Environmental Impact Assessment (EIA)

EIA is an environmental planning tool, which is applied to ensure that development projects are conducted in an environmentally sound manner. In Ghana environmental

Assessment is governed by the Environmental Assessment Regulations, 1999 (L I 1652). It is applicable to new, existing and expansion/rehabilitation of existing projects. It is concerned with identifying, predicting and evaluating the foreseeable impacts, both beneficial and adverse of private and public development initiatives to ensure that the options selected are those that generate minimal negative impacts on the environment. EIA should be an integral part of the feasibility studies of any project and should be conducted before the commencement of construction works. The process may include a public hearing, which allows the public and specific stakeholders to express their concerns about the project and ensure that the necessary modifications are made to ensure that the project is beneficial to affected communities. The following issues were raised during discussion time:

- EIA is applicable to both private and public projects. In the past some government projects were not subjected to EIA, but this situation has changed. Many donors actually insist on environmental assessment as a condition for the release of funds for projects. Thus road construction projects, which usually generate significant adverse environmental impacts, do undergo EIA.
- Delays in processing EIA applications are caused by inability of proponents to provide the needed information on time as well as the EPA's centralization of the approval process. However the EPA has initiated plans to decentralize the approval of some categories of development projects to the regional level.

8.4 Group Exercise on EIA - Impact Identification, Checklist/Matrix

(a) Impact Identification

One of the important steps in any environmental impact assessment is the identification of environmental impacts. Participants at the workshop were divided into three groups for the above exercise. They were required to identify the potential environmental impacts associated with the development and operation of the under listed projects. At least one positive and negative impact for the construction, operation and

Decommissioning phases of the selected project should be indicated.

- I. Group one Wood Processing
- ii. Group Two Cotton Farming and Processing
- iii. Group Three Expansion of an existing Food (Gari) Processing Plant

(b) Reporting Impacts using Checklist and Matrix

One of the important aspects of Environmental Assessment is determining the most significant environmental impacts of a particular activity in an objective manner and displaying this information in a form that will enable the review team to understand the methodology used. The following project actions were to be considered:

(c) Construction Phase

- I. Opening of access roads
- ii. Clearing of site
- iii. Transportation of construction materials to the site
- IV. General Construction activities
- v. Connection of Services (Water, Electricity etc.)

(d) Operational Phase

- I. Solid waste generation
- ii. Liquid waste generation
- vi. Drainage (Surface collection system)

(e) Environmental Characteristics

Physical media: soil, water and air
biotic media: Fauna and flora
Anthropogenic media: Cultural psychological, landscape, health, traffic, housing,
 Patrimonial values, employment generation, agriculture.

(f) Checklist (Group One)

It should include all project actions stated above and only the main fields of each environmental characteristic.

(g) Matrix (Groups Two and Three)

The following conventions was to be used:

- + =Positive impact
- = Negative impact
- H = High significance
- M = Medium significance
- L = Low significance

It should include all actions and environmental characteristics presented above. Each group will consider a different project and use a matrix or a checklist method.

(h) Presentation

1. Prepare a checklist or a matrix for one of the project.
2. Indicate using one of the above methodologies the two most positive and negative impacts.
3. Suggest at least two mitigation measures.

The following outputs were obtained from the three groups:

8.4.1 Group One (Wood Processing)

(a) Positive Impacts

- Saw Dust as a source of manure
- Fuel wood from waste wood
- Employment for the local! Community
- Processed wood for roofing, furniture etc.
- Opening up of the area through provision of infrastructure facilities and services.

(b) Negative Impacts

- Saw Dust can be injurious to health
- Land degradation through tree felling
- Destruction of flora and fauna
- Air pollution from saw dust
- Noise pollution from equipment

(c) Constructional Phase Impacts

- Positive: Employment Generation
- Negative: Land degradation during site preparation

(d) Operational Phase Impacts

- Positive: Saw dust as a source of manure and briquette manufacture
- Negative: Noise pollution by heavy machines and equipment.

(e) Checklist (Wood Processing)

Items	Nature of Likely Impacts				
	Adverse			Beneficial	
	ST or LT	Rev. / Irrev.	Local/ wide	ST or LT	Sig./not Sig.
Soil	LT	Rev.	Wide	LT	Sig.
Water	LT	Irrev.	Wide		
Air	LT	Irrev.	Wide		
Flora & Fauna	LT	Rev.	Wide		
Cultural & Psychological	LT	Irrev.	Local	ST	Not Sig.
Health	LT	Irrev.	Wide	LT	Sig.
Employment	ST	Rev.	Local	LT	Sig.

LEGEND

ST = Short Term Impact

LT = Long Term Impact

Rev. = Reversible Impact

Not Sig. = Not a Significant Impact

Irrev. = Irreversible Impact

Sig. = Significant Impact

8.4.2 Group Two (Cotton Farming/Processing)

(a) Positive Impacts

- Income generation
- Employment Creation
- Development of infrastructure

(b) Negative Impacts (Construction)

- Soil degradation
- Deforestation
- Process ploughing (air, water and noise pollution & generation of waste)

(c) Operational Phase Impacts

Positive: Employment, Promotion of high food crop yields (fertilizer & Knowledge)

Negative: Water Pollution (Agro-chemicals), Health Hazards, Farming (destruction of untargeted life).

(d) Processing Phase Impacts

Positive: Employment, Development, Use of waste as manure, Socio-cultural (Enlightenment)

Negative: Dust Emissions, Occupational hazards, Solid waste generation, Socio-cultural

(e) Matrix (Cotton Farming/ Processing)

Environmental Characteristics	Soil	Water	Land	Air	Flora/ Fauna	Socio-cultural	Health	Empl- oyment	Income
Project Actions									
Opening access Roads	L/-		L/-	L/-	L/-		L/-	+	H/+
Clearing of site	H/-		H/-	L/-	H/-		L/-	H/+	
Transport of materials	L/-							H/+	
Gen. Construction	H/-	L/-	H/-	L/-		H/-+	L/-	H/+	
Solid waste	L/+	L/-	L/+	H/-			L/-		
Liquid waste									
Gaseous Emissions									
Use of chemicals	H/-	H/-	H/-	H/-	L/-		H/-	L/+	

8.4.3 Group three (Food Processing Plant)

(a) *Constructional Phase Impacts*

- Clearing
- Land site
- Transport

(b) *Operational Phase Impacts*

- Solid waste/liquid waste
- Chemical
- Health & Social factors

(c) *Expansion Plan*

The existing plant capacity is 50,000 tons per annum using fossil fuels and wood as source of energy. The main objective of the expansion is to increase existing capacity by 100% to 100,000 tons per annum, and change from fossil fuel to Liquefied Petroleum Gas and the main factors considered include the following:

- + Land requirements for the expansion programme,
- Labour for the construction and operational phase of the expanded plant,
- Equipment requirements,
- Capital,
- Market for the product,
- Acquisition of new technology,
- Increase in raw materials (mainly cassava),
- Increased demand for service such as water and electricity.

(d) Summary of Environmental Impacts

Item	Positive Impacts	Negative Impacts
Land	Increase in income for land owners, increase in value of land for community	Interference with the eco-system of the area. Disruption of existing economic activities
Labour	More jobs for men and women, acquisition of skills, increase in other commercial activities, increase in social services	Displacement of existing labour, increase in health hazards, cultural differences between local labour and imported labour, pressure on existing health facilities
Equipment	Increase in new skills and productivity	Increase in emissions (air pollution & land oil), decrease in unskilled labour
Capital	More money in the system	Possible inflationary tendency
Marketing	Increase in skilled personnel	More use of fuel for transportation resulting in pollution of environment
New Technology such as LPG and Fertilizer	Increase in production, efficiency; possibly lower price of gari and increase in yield	Contamination of land, long term on soil
Peels	Animal feed, soap Manufacturing, starch for beverage and pharmaceutical industries	None
Raw materials	More money for cassava growers	Soil depletion
Utility services	More labour, increase in structures	More water and electricity will be required from community supplies
Gas	By-product oil, environmentally friendly	

(e) *Matrix (Food Processing)*

Environmental Characteristics/ Project Actions	Soil	Water	Land	Air	Flora/ Fauna	Socio- cultural	Health	Employ ment
Opening access Roads	-/H	-/M	+/M	-/H	-/H	+/H	+/M	+/H
Clearing of site	-/H	-/M	-/H	-/M	-/M	+/L	+/M	+/L
Transport of materials				-/M	-/L	+/H	-/L	+/M
Gen. Construction	-/L	-/L	-/M	-/L	-/M	+/H	-/L	+/L
Solid waste	+/L	-/M	-/M	-/L	-/M	-/H	-/H	+/L
Liquid waste	-/H	-/H	-/M	-/L	-/H	-/L	-/M	-/L
Gaseous Emissions				-/L	-/L	-/L	-/L	
Use of chemicals	+/	-/H	+/		-/H		-/H	+/L

8.5. Environmental Quality Guidelines/Standards (EQG)

Environmental Quality Guidelines/Standards are used to control emissions and discharges into the environment from human activities. The EPA has been working closely with various agencies to develop relevant guidelines/standards for application in the country including the following:

- Mining and Environment Guidelines
- Draft National Environmental Quality Standards Regulations
- Guidelines for the development and management of landfills in Ghana
- Draft guidelines for the management of biomedical waste in Ghana.

The following issues were discussed after the presentation:

- + Participants were requested to report cases of noise pollution to the nearest EPA Office for investigation and necessary action.
- + Selected staff of Assemblies in the Greater Accra Region have been trained in noise monitoring and it is hoped that the various districts would take charge of issues that come up.
- + On the issue of the operation of corn mills in residential areas, it was suggested that The AMA has some guidelines on the operations of corn mills that could be adopted by other districts.
- + The impact of noise from aircraft would be reduced when the runway extension Works are completed.
- + The problem of high fluoride levels in groundwater in the Bongo district has been researched extensively including an EPA study. The Bongo District Assembly should therefore intensify efforts to implement the recommendations of these various studies.
- + The disposal of hospital waste would be improved through the application of the Current draft EPA guidelines for the management of biomedical wastes.

8.6. Cleaner Production Technologies

A video documentary on "Cleaner Production" was shown prior to the presentation and the discussions covered the following issues:

- + Some industries in Ghana have limited space and resources to accommodate environmental improvement projects. Many of such industries never considered environmental issues in their design and construction.
- + Private sector operators are encouraged to get involved in waste management as a Means of improving the service.
- + Some cleaner production techniques are not expensive and only involve minor changes in operational procedures or substituting some raw materials. In cases where investment costs are high the payback periods are low and the other benefits are significant.

8.7. Environmental Management Plans (EMPs) and Environmental Management Systems (EMSs)

The essence of EMPs is to translate mitigation measures into activities that can be monitored. The contents of an EMP may include the following:

- Statement of environmental policy;
- Designation of person responsible for overall implementation of the plan;
- Schedule of tasks to comply with the recommendations of the EIA report;
- Training requirements;
- Costs of implementing the plan;
- Monitoring activities to ensure that the EMP is on course.

8.8 Group Exercise on Environmental Management Plans (EMPs)

Participants working in the same groups were requested to prepare EMPs to address at least three of the most critical adverse environmental impacts associated with the respective projects that were considered during the EIA exercise conducted in section 8.4. They were required to include the following details:

- The specific management activities/projects to be undertaken
- The time frame within which the activities would be conducted
- The inputs/resources (including human resources) required for the implementation of the plan.

The outputs of the exercise presented by group representatives is as follows:

8.8.1 Group One (EMP for Wood Processing Project)

Impact	Objective	Activity	Resources	Time
Deforestation through tree felling	Afforestation through tree planting	Establish nurseries, train staff	Shovels, wheelbarrows, watering cans, wire mesh, plastic bags, cutlasses, seeds & labour	November 2000 to April 2001
		Transplanting of tree seedlings and cassava cuttings	Labour	April 2001 to October 2001
		Maintenance of plants and trees	Labour, funds	On- going
Soil erosion and impoverishment	To conserve the soil through cover cropping	Afforestation	As above	On-going
Health hazards	To mitigate health hazards	Reduce air pollution in the working environment	Masks, gloves, ear-protector & first aid box	On-going
		Provision of safety devices and methods	Provision of chimney stack	2002
		General environment		
		Improve the disposal of w-dust		

8.8.2 Group two EMP for Cotton Farming/Processing

Impact	Measures	Time frame	Inputs
Use of chemicals	Selection sites properly, Train staff and farmers, Acquire approved chemicals, Acquire protective clothing, Conduct monitoring, Ensure environmental friendly disposal of chemical containers, Encourage scouting before spraying	March/April May -June April/May May June- Oct Dec All season	Farming Money " " " funds -
Deforestation	Encourage tree planting, Minimize clearing of new land, Reduce mechanization, Do not clear economic and known medicinal trees	Annually " " "	Seedlings Equipment " -
Dust	Install dust control units, Monitor dust levels, Provide protective clothing	During processing Nov- March	Money Money
Risk/occupational hazards	Occupational health policy, Train staff, Provide fire extinguishers and hydrants	Ongoing Before & during processing All season	

8.8.3 Group three EMP for Food Processing

Impact	Activity	Time Frame	Input/Resource
Pollution by liquid waste (Cyanide)	Check toxic quantity Construct tank for recycling	Jan- March 2000	Capital budget for expansion
Solid waste (domestic)	Train staff in waste disposal, assist local community to construct KVIP	Jan – June 2000	Communal labour and capital budget
Chemical pollution (fertilizer/weedicides)	Seek Technical advice, Train staff on safe handling of chemicals	Jan- March, 2001	Agricultural extension/crop research officers

9.0 WORKSHOP EVALUATION

The workshop was evaluated using the following procedure:

- On the first day of the workshop participants were requested to introduce themselves and provide information on their professional backgrounds, the departments within the respective industry that they worked; an indication of any previous participation in environmental management training courses and other information that will assist the resource persons meet their expectations in the current training programme.
- At the end of the workshop, participants were made to complete a questionnaire (See also Annex B) to value various aspects of the workshop.

9.1 Evaluation Results

Participants graded the sessions presented during the workshop on the basis of the following grading system:

1 = Very good, 2 = Good, 3 = Moderate, 4 = Not good, 5 = Not good at all

The results of the course Evaluation Form completed at the end of the workshop by 33 of the participants were as follows:

Table 1: Participants Evaluation of Course Content

Aspect	Grade					Total
	1	2	3	4	5	
The explanation of concepts and practices	18	14	1			33
The linking of theoretical and practical aspects	9	20	4			33
Exchange of views/new insights	12	17	4			33
Quality of handouts/sheets	11	15	7			33
Encouragement to participate	13	19	1			33
Meeting of the course objectives	16	17	2			33
The relevance of the exercise	15	16	2			33
Time division between the separate modules	7	16	10			33

In general the participants were satisfied with the various aspects of the course content. They however complained of that the three days allocated for the programme was inadequate and strongly recommended a follow-up workshop. The poor grading of the time division aspect of the workshop confirm this.

Table 2: Participants Evaluation of the Performance of Resource Persons

Resource Person	Topic(s)	Grade					Total
		1	2	3	4	5	
John A. Pwamang	Introduction to Environmental Management	25	8	3			33
	Agenda 21	16	17				33
	Environmental Impact Assessment	23	10				33
	Environmental Management Plans	23	10				33
Lambert Faabeloun	Environmental Quality Guidelines/Standards	16	10	7			33
	Environmental Monitoring	15	15	3			33
	Cleaner Production	18	12	3			33

All the participants graded the two course facilitators Mr. John Pwamang and Mr. Lambert Faabeloun very highly. Mr. Pwamang however obtained higher grades than Mr. Faabeloun.

Table 3: Participants Evaluation of Facilities during the First Week of the Course

Aspect	Grade					Total
	1	2	3	4	5	
Conference room	18	9	4	6		33
Catering	5	9	1	2	---	3
Accommodation	14	12	7			33

The conference room obtained the highest grade among the three facilities evaluated and the catering services received the worst grade. Specific comments on all aspects of the Organisation and conduct of the course are presented below.

9.2 General Comments and Recommendations by Participants

As part of the evaluation Participants were requested to provide general comments and recommendations for improving future training workshops. Some of the comments and recommendations include the following:

- The workshop itself was very useful and the timing was just right but in the future field trips must be included in the workshop to acquaint participants with good Environmental practices including cleaner technologies.
- The course content was very technical and loaded, but the resource persons made impressive presentations and managed to explain the concepts clearly to the Understanding of all participants.
- The three days was too short a time for a detailed workshop like this. It is recommended that in future the duration should be about one week and there should be provision for follow up trips to the various districts to see if what was learnt at the workshop is been put into practice.

- O It was recommended that the presence of the regulatory authorities including the EPA should be felt in the districts. Ideally the EPA should be one of the decentralized departments at the district level. In the meantime full time environmental officers should be appointed for the districts and resources from central government should be made available for environmental programmes.

- O The private sector enterprises should be given incentives including tax breaks to induce them to adopt cleaner technologies, especially those involving new capital outlays.

- O The Ministry of Environment, Science and Technology (MEST) should institute annual Environmental Awards as done for the Tourism sector to increase awareness, induce best practices and reward compliance.

ANNEX A: LIST OF PARTICIPANTS

NO.	NAME	ORGANISATION	ADDRESS	TEL/FAX
1	VINCENT MALM	NKULENU IND.	BOX 36, LEGON	500923
2	GLOTHILDA ATAMPUGBIRE	FARMER	DIST ASS. BONGO	
3	SAKA ISSIFU KAWRA	PUNCH COMPANY	TOLON/KUMBUGU	
4	FREDUA AGYEMAN	N.M.W.P.	MAMPONG	
5	A. K. OSEI	COM. FARMER	BOX 4 ADEEMA AF/PLAINS	0848-22038
6	SAMUEL BADUN		BOX 224, BOLGA	
7	ERNEST SAMANI	BONGO DIST.ASS.	BOX 1 BONGO	072-22019
8	FRANCIS ABOFRA	DODOWA	BOX 38 DODOWA	021-767475
9	B.N.APPERKON	"	BOX DD 142	
10	EDWARD ABAZING	TKDA	BOX 1, TOLON	071-23657
11	CLEMENT ABUDULAI	TKDA	"	
12	ATO ROCKSON	BRM TIMBERS -	BOX 27 ABURA DUNKWA	042-33946
13	VIVIEN BENTOOM	APANGA LTD	"	
14	ERIC ADOMAKO	A.A.K. DIST. ASS.	"	
15	MFUM JOSEPH	CBA	BOX25 MAMPONG	
16	MATTHEW ODIKO	ONYAME TUMSO SAWMILL	BOX 115 MAMPONG	0561-22341
17	AKWASIABOAGYE	SAND/STONE	MAMPONG	
18	IDDI-MANZAH MAHAMA	MANIMAH ENT	BOX 764 TAMALE	071-23242
19	NAOMIADANTEY	GECCA	DODOWA	

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20	PROSPER DOH		BOX 61 DODOWA	667245
21	VICTOR SABOG	APDA	BOX 1 DONKORKROM	0848-22017
22	E.E.K ACQUAH-MOSES	AGI	BOX 1552 KUMASI	051-21707
23	K. ADU BAFFOUR	DIST. ASSEMBLY	BOX 25 MAMPONG	051-22239
24	G. D.ODUM	UNILEVER GEA	BOX 2616 ACCRA	021-230449
25	DR JOSEPH NSOR AZUNRE	GHANA COTTON CO	BOX 371 TAMALE	22241,23719
26	MUSAH ALI	MUSBAMUS VENTURES	BO 75 ABURA DUNKWA	042-33900
27	JOHN B NAVAII	CHARCOAL BURNER	MAMPONG	
28	NABA THOMAS AZUBIRE	FARMER	BONGO	
29	IMORO YAKUBU	CHARCOAL BURNER	BONGO	071-23657
30	DAVID NSOR	MALIGU FARMERS ASS.	BOX TN 1 TOLON	
31	CLEMENT A ADONGO	C.C.F.I.	BONGO.	
32	ABRAHAM T. APPERKON	GECCA	BOX 18 DODOWA	
33	AUGUSTINE ADONGO	FAGE	BOX M24 ACCRA	021-232726
34	BISMARCK CASH ABBEY	ASSI	BOX MP 1126 ACCRA	042-33784
35	MOSES AGYEMANG	PEF	BOX CT 1671 CANTONMENTS	771504-6

ANNEX B: WORKSHOP EVALUATION QUESTIONNAIRE

Please mark the box that is closest to your opinion according to the following rating:

1 =Very good

2 =Good,

3 =Moderate

4 =Not good

5 = Not good at all

Please give your opinion about the **course content** by marking the boxes below.

Should you mark "not good" or "not good at all", please give an explanation in the Space below this table.

	1	2	3	4	5
The explanation of concepts and practices					
The linking of theoretical and practical aspects					
Exchange of views/new insights					
Quality of handouts/sheets					
Encouragement to participate					
Meeting of the course objectives					
The relevance of the exercises					
Time division between the separate sessions					

Do you have any other comments on the course content?

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- ;> Please give your opinion about the **performance of the resource persons** by marking the boxes below. Should you mark "not good" or "not good at all", please Give an explanation in the space below this table.

PERSON		1	2	3	4	5

- ;> Do you have any other comments on the performance of the resource persons?

- ;> Please give your opinion about the **facilities** by marking the boxes below. Should you mark "not good" or "not good at all", please give an explanation in the space below this table.

	1	2	3	4	5
Classroom					
Catering					
Accommodation					

- ;> Do you have any other comment on the facilities?

