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Draft

GHANA

SECTOR WORK ON INTEGRATED COASTAL ZONE MANAGEMENT

May 1996 Stakeholder Workshop Process - Process Documentation

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Introduction

This document contains process documentation generated during the stakeholder workshop process that took place in Ghana in the period May 14-22, 1996. Information on a total of 9 workshops and meetings, here referred to as events, are included in this documentation.

For each event the mode of presentation used follows the same basic format, with the following items covered: (1) Place and Date(s); (2) Program; (3) Objectives of the Meeting; (4) Participants; (5) Product: Identification of Priority Areas, Specific Problems and Interventions; (6) Evaluation; and (7) and Process Notes. The events differed from each other in one way or another, and this is reflected in additional items that are added to the above ones.

The intention with the item "Process Notes" is twofold. First, and most importantly, it aims at presenting in some detail the actual workshop process, i.e. the organization of the discussion under various agenda items, and thus basically reflect the ideas of the person who functioned as facilitator. In the regional workshop the de facto facilitator was the EPA Regional Programme Officer. Secondly, beyond this, in addition to objective statements of process, this item will, to some extent, also contain evaluations of the event in question.

To enhance the learning experience, for the Ghanaian stakeholders as well as the World Bank team, understanding more about the participants' expectations as well as evaluations of the experience with participating in these events, is crucial. For this reason I suggested that such evaluations be included in the regional workshops. In the case of the final Accra workshop the facilitator prepared a draft evaluation form that we discussed and agreed upon.

As witnessed by the program, the format with group discussions on problems and priorities, followed by group discussions on interventions would seem to be a pattern that runs through several of the workshops. This would seem to point to the possibility that the EPA Regional Coordinators, prior to the workshops, met and exchanged ideas on how to organize these workshops, and possibly agreed on a rough framework.

I did not participate in the Central Region workshop, as it took place at the same time as the Volta Region workshop, and I have accordingly few details about what took place in this workshop.

The short-term intention with this document is to provide a complete collection of the primary data that were produced during this stakeholder workshop process, with the hope that it will provide a useful reference tool in connection with preparing the yellow-cover sector report. In addition, if I have time before the end of this FY, I would like write a process evaluation on the stakeholder workshop based on these data and the extensive notes I took.

The data presented, including names of the participants, have in most cases been double checked with regional EPA staff.

The EPA regional offices were instructed to prepare written reports on their involvement in the stakeholder workshop process, to be turned in two weeks after the final Accra workshop. These reports should contain additional information to complement and expand upon the information presented here. One unclear issue at this point is whether the identified environmental priorities that the various workshops and meetings identified were themselves prioritized. The regional reports will hopefully contribute to clarify this as well as other issues.

Lars T. Soeftestad
June 19, 1996

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1 Overall Workshop Programme

The overall workshop programme took place in the period May 14-22, 1996, and included workshop locations in Accra, the Central Region, Greater Accra Region, Volta Region, Western Region (Table 1).

Table 1 – Overall Workshop Programme

Day	Time	Item
Tuesday, May 14	am	World Bank team and EPA officials hold pre-workshop meeting in Accra
	pm	World Bank and EPA officials depart to the Western Region
Wednesday, May 15	am / pm	Stakeholder workshop in the Western Region
Thursday, May 16	am	Stakeholder workshop in the Western Region (cont'd)
	pm	World Bank officials leave for the Central Region and the Volta Region, respectively
Friday, May 17	am / pm	Stakeholder workshops in the Central Region and the Volta Region. The World Bank team in the Central Region returns to Accra
Saturday, May 18	am	Stakeholder workshop in the Volta Region (cont'd)
	pm	The World Bank team in the Volta Region returns to Accra
Sunday, May 19	am / pm	No program
Monday, May 20	am / pm	Stakeholder workshop in the Greater Accra Region
	pm	World Bank team and EPA officials hold discussions on the outcome of the regional meetings
Tuesday, May 21	am / pm	Plenary stakeholder workshop in Accra
Wednesday, May 22	am	World Bank team and EPA officials hold discussions on the outcome of the plenary workshop and short-term and longer-term follow-up

2 Western Region Workshop

A. Place and Dates

The workshop took place at the Alor Hotel, Tekoradi, May 15-16, 1996

B. Program

The program, which was prepared ahead of time, contained a detailed schedule for both days (Table 2).

Table 2 – Program for the Western Region Workshop

Day	Time	Item	
May 15	9:30 am	Opening prayer	
		Welcome and opening statement by the EPA Regional Coordinator for the Western Region	
		Election of two Rapporteurs	
		Presentation of the project processes of the World Bank - by the leader of the World Bank team	
		Presentation of the concept of Integrated Coastal Zone Management (ICZM) - by World Bank official	
		Presentation of the cultural aspects of ICZM - by World Bank official	
		Presentation of the background of the preliminary report and findings therein - by World Bank official	
		10:45 am	Tea break
		11:00 am	Group discussions on priorities outlined in the report
		1:00 pm	Lunch
May 16	9:30 am	Group presentations	
		Election of group representatives to attend the plenary workshop in Accra	
		Summary	
		Evaluation	
		Closing	
		1:00 pm	Lunch
			Departure

Notes: (i) Times were not added to the original program, and were estimated afterwards in consultation with the EPA Senior Regional Programme Officer; and (ii) As the program became delayed the times given above were departed from.

C. Objectives of the Meeting

[Ed. Comment: No information available]

D. Letter of Invitation Sent to Prospective Participants

25th April, 1996

Dear Sir,

COASTAL ZONE MANAGEMENT WORKSHOP 15-16 MAY 1996

The coastal zone of Ghana has undergone vast changes due to both natural and human activities. The zone is well drained and also endowed with natural resources which are exploited by different sectors of the economy. Fishing is a major primary activity of the zone. Other activities of great importance are agriculture, salt production, oil and gas exploration, sand and stone winning, recreational and industrial developments. With increases in population and exploitation of resources without an integrated management plan the present state of the zone would be worsened.

The environmental policy of the country aims at ensuring a sound management of resources and the environment, and avoiding any exploitation of these resources in a manner that might cause irreparable damage to the environment. The policy provides, inter alia, maintenance of ecosystems and ecological processes essential for the functioning of the biosphere and sound management of natural resources and the environment.

To further fulfill the aspirations of the National Environmental Action Plan, the Environmental Protection Agency (EPA) under the auspices of the Ministry of Environment, Science and Technology initiated the necessary process towards evolving a Coastal Zone Management Plan for the country starting from the grassroots. A number of studies have been conducted, consultations have been held at the local community level and District Assembly level for the coastal communities. With the assistance of the World Bank, the EPA is taking another step forward to present her finding to the general public.

You are therefore by this letter invited to attend a two-day workshop at Alor Hotel, Effiakuma-Takoradi. Full costs of boarding, lodging and transportation or participants would be borne by the EPA. However, transportation costs would be based on current GPRTU fares.

Participants are expected to arrive on Tuesday, 14th May 1996 at 6:00 pm and depart on Thursday, 16th May 1996 after lunch.

We are counting on your usual co-operation.

Yours sincerely,

James A. Anewenah, Regional Senior Programme Officer

E. Participants

A number of people, selected beforehand by the EPA office in the region to represent the overall population in the region, participated (see Table 3).

Table 3 – Participants in the Western Region Workshop

District	Name	Title, Organization, Location
	Nana K. Binna	Omanhene, Shama Trad. Area
	Mr. John Bosomefi Pegu	Chief Fisherman, Shama
	Nana Achampong	Chief Fisherman, Dixcove
	Mr. Francis Atsiatorme	Servant to the Omanhene, Shama
Jomoro	Mr. Emmanuel A. Agyekum	Plant Protection, Half Assini
	Mr. Charles H. Acquah	Ghana In-shore Fisheries Association, Sekondi
	Mr. Ben Kofi Stephens	Ankobra Beach Resort Ltd., Axim
	Ms. Vida Affum	National Council on Women and Development, Sekondi
	Mr. Lt. Commander Godson Zowonoo	Ghana Navy, Sekondi
Jomoro	Mr. Kingsley Arthur-Mensah	Member, Dt. Assembly, Half Assini
Jomoro	Mr. K. Owusu-Ansah	Environmental Health Unit, Dt. Assembly, Half Assini
	Mr. T. K. Insaideo	Regional Fisheries Office (MOFA), Takoradi
Ahanta West	Mr. E. K. Anaman	Member, Dt. Assembly, Agona-Nkwanta
Ahanta West	Ms. Stella Vida Jones	Member, Dt. Assembly, Agona Nkwanta
	Mr. D. A. Mevuta	Friends of the Nation, Takoradi
	Mr. K. Amuah	Volta River Authority, Takoradi
	Mr. John Kwamina Amos	Chief of Sanwoma, Axim
	Mr. Eric Annan	Secretary of fishermen, Upper Axim
	Mr. Nana Meiwihohor	Chief Fisherman, Upper Axim
Nzema East	Mr. Henry Afful	Member, Dt. Assembly, Axim
Jomoro	Mr. Joseph K. Kwah (Kwaw?)	Member, Dt Assembly (?), Half Assini

Notes: (i) The following EPA staff from the office in the Western Region also participated: Mr. James A. Anewenah (Senior Regional Programme Officer), Mr. Prosper Y. Nkrumah (Asst. Programme Officer), Mr. Prosper Budu-Biney (Asst. Programme Officer), Ms. Philomena Ampomah (Secretary) and Mr. Edward Ayensu (Driver).

F. Product: Identification of Priority Areas, Specific Problems and Interventions

1. Introduction

The Environmental Protection Agency with assistance from the World Bank organized a two-day workshop on an Integrated Coastal Zone Management Project from 15th - 16th May, 1996 at the Alor Hotel in Takoradi. A total of twenty-one participants drawn from the coastal districts of the Western Region, namely Jomoro, Nzema East and Ahanta West attended. Sadly enough, the Shama Ahanta Metropolitan Assembly failed to honor invitation. There were representatives from the National Council on Women and Development, Ghana Navy, Volta River Authority, Friends of the Nation (NGO), Fisheries Dept. of the Ministry of Food and Agriculture, Fishermen's Associations and traditional rulers.

The workshop was a follow-up of a World Bank study conducted late last year. The resource persons were Ms. Indu Hewawasam (leader of World Bank team), Lars T. Soeftestad, Olof Linden and David Moffat, all from the World Bank and Mr. James A. Anewenah of EPA, Western Region.

Opening the workshop the Regional Senior Programme Officer, Mr. James A. Anewenah welcomed both participants and resource persons, explained the purpose of the workshop and set out the agenda for both days.

In order to enhance the participatory approach, two rapporteurs were elected from among the participants to record proceedings.

The leader of the World Bank team briefed participants on the concept of Integrated Coastal Zone Management. She explained that the concept lays emphasis on participation of all stakeholders from all sectors of the coastal communities, as well as all levels of governmental structures. Participants were shown pictures of some existing environmental problems such as coastal erosion, over-crowded settlements, deforestation, sand winning, threats to mangroves and land degradation. Such problems could be aggravated by the year 2020 if concrete steps were not taken to arrest the situation.

A definition of the coastal zone was given as all areas within the 75 meter contour. And coastal zone management has therefore become a tool integrating multi-sectorial approach to planning and development which is being used in many countries.

On the concept of Integrated Coastal Zone Management (ICZM) instances of problems for South East Asia and other places in South America were cited. Issues of global concern which were greatly emphasized included threats posed by urbanization, fishing and other activities along the coastal zone. The picture in Ghana is such that it is estimated that by the year 2020 about 75 percent of the population would be living along the coast. The effect of this is that economic activities would have both direct and indirect impact on the environment. Activities with direct impact on the coastal environment include marine fishing, oil and gas exploration, port and harbor developments, coastal land reclamation, mangrove harvesting and tourism. Also significant human activities from the hinter land which

impinge on the coastal environment indirectly include upstream dam construction, deforestation, agriculture, urbanization, industrial development, etc.

The process through which the coastal zone could be managed includes proper planning, monitoring and evaluations at all levels of the economy. The complexity of the coastal zone calls for the use of policies prepared by both local and central government and other stakeholders.

Talking on the cultural aspects of coastal zone management, Lars T. Soeftestad stressed the need to observe the implications associated with land tenure systems in Ghana. He suggested that the existing cultural system could be improved to enhance the sustainability of the environment.

To round up the introduction of the workshop, David Moffat highlighted on the setting of priorities as compared to those staked in the draft report. This involved two major activities. The first being the processes to determine the priorities and, the other the identification of preliminary priorities. In this regard workshops were organized involving EPA, NGOs, communities, identifiable bodies at district, regional and national levels. At such workshop the following priority areas were identified in addition to the district plans and environmental profiles. The priority areas identified were: Wetlands, Forests, Water hyacinth, Fisheries, Erosion, Sanitation, Industrial pollution and Land degradation.

2. Group Discussions on Interventions and Strategies

In a bid to ensure effective deliberation the participatory approach was adopted. Participants were put into three groups to digest the draft document and identify priorities. The groups went to session again to deliberate on interventions and strategies before finally arriving at consensus, namely:

Wetlands. There should be a sustainable use of the wetlands for agricultural purposes in collaboration with Ministry of Food and Agriculture and other known experts (e.g. fish ponds, rice cultivation, wood lots, etc.)

The area should also be developed into tourism centers to generate income which can be used to manage the environment.

Traditional norms should be backed up by scientific ideas (e.g. taboos relating to groves must be carefully studied and observed).

Forests. The existing forest reserves should be preserved through education and enforcement of laws. Wood lot projects should be established at community levels to save the forests from depletion. There should be intensification of the research on Cape St. Paul's Wilt disease affecting coconut trees alongside alternative use of the land. There should be rigid enforcement of laws on afforestation with regard to timber merchants. Much awareness should be created among farmers in the field of agricultural extension services for the adoption of sustainable agricultural practices. The use of LPG system and alternative sources of energy should be speedily adopted.

Sanitation. There should be an intensive education and creation of awareness on environmental cleanliness in all communities through the DEMCs. Adequate toilet facilities should be provided in all coastal towns. All communities should be provided with waste disposal facilities such as refuse trucks, litter boxes, metal

containers, etc. Methods of waste recycling should be exposed to all industries to enable them to manage the environment in a clear way.

Beaches should be controlled by well-defined authorities in order to avoid further abuse.

Fisheries. Existing legislation on fishing should be carefully reviewed by Parliament and enforced. Those directly concerned with fish harvests should adopt sustainable means of preserving post harvests (e.g., cold storage, *chorkor* smokers). The research unit of the Fisheries Department should be strengthened to enable them to come out with useful findings. Generally, fishermen should be educated on fishery management. Inland fisheries and alternative sources of protein should be developed to reduce pressure on fish stocks (fish ponds, snail rearing, etc.).

Erosion. Afforestation practices should be greatly encouraged (grasses around buildings, trees, etc.). There should be proper supervision, education and control of sand winning, surface mining and tree felling, determination of other sites and preparation of EIA. There should be proper layout of coastal settlements including construction of sea defense walls where necessary. There should be a total ban on farming along river banks.

Industrial Pollution. Industrial waste should be properly managed by the industries themselves (recycling, waste disposal, etc.). Processing industries should be carefully sited so that waste can be properly managed. Cleaner agricultural production such as coconut oil production should be encouraged.

Water Hyacinth. Combined biological, chemical and mechanical control measures should be adopted in collaboration with Cote d'Ivoire to solve the problem.

3. Conclusion

Coastal environmental degradation has been identified as a key issue in Ghana. Nonetheless, the solution to this resource base, that is coastal zone management, all over the globe has the essential element of local stakeholder participation. It is against this background that one realizes the importance of this workshop as it sought to collate news from participants on the draft report for adoption by the World Bank.

Before the proceedings of the workshop came to an end, two participants in the persons of Mr. Joseph K. Kwasi and Miss Vida Affum of Jomoro Dt. Assembly and National Council of Women and Development, Sekondi, respectively, were elected to attend a plenary meeting in Accra on Tuesday 21st May, 1996.

G. Selection of Participants to the Accra Workshop

The following two persons were selected to attend the Accra workshop and present the overall discussion, conclusions and recommendations of this workshop:

1. Ms. Vida Affum (National Council on Women and Development, Sekondi),
and
2. Mr. Joseph K. Kwaw (Kwah?) (Member, Dt. Assembly (?), Jomoro District (?)).

H. Evaluation

The evaluation of the workshop took place at the very end of the workshop (Table 4). As I had left before this in order to travel to Keta in Volta region and prepared workshop there, I do not have any details on how this evaluation exercise was organized.

Table 4 – Evaluation of the Central Region Workshop

Aspect of Workshop	Value		
	Low	Rank (%) Medium	High
1 Relevance of workshop topic (ICZM) to the institution you represent?	5	21	74
2 Adequacy of materials used in presentation at workshop?	0	26	74
3 Levels of assistance of resource persons?	5	37	58
4 Overall usefulness of workshop to you?	5	26	69
5 Level of satisfaction with venue and catering facilities?	26	58	16
6 Would you like to attend a similar workshop on ICZM in the future?	Yes (100)		No (0)
7 What improvements can you suggest for such a workshop?	(a) Papers for discussion should be released to participants in advance for studying (b) More days should be spent to discuss issues fully (c) Daily meetings at workshops should start early to avoid possible rushing over issues (d) Field trips should be included in such a workshop (e) Use of film shows (i.e. documentaries) to highlight more on environmental impacts of man's activities as well as nature's (f) Workshop should be an annual affair		

Notes: (i) N = 19; and, (ii) Percentages are rounded to the nearest digit.

I. Process Notes

Ed comment: This event was possibly the most well-planned, structured and efficient of all events, certainly in comparison with the other three regional workshops (excluding the Central region event). The participants ranged very broadly in terms of background and institutional affiliations, and this may be one explanation why relatively few participants were very active.

3 Central Region Workshop

A. Place and Date

The workshop took place at the Savoy Hotel, Cape Coast, May 17, 1996

B. Program

The program, which was prepared ahead of time, contained a detailed schedule for the whole day (Table 5).

Table 5 – Program for the Central Region Workshop

Time	Item
10:00 am	Snack
10:30 am	Opening prayer
10:35 am	Self-introduction - participants / resource persons
10:45 am	Welcome address, Regional Programme Officer, Central Region
11:00 am	Presentation by World Bank officials
11:30 am	Question time
12:00 am	Group discussions - problems / priorities
2:00 pm	Lunch
3:00 pm	Group discussions – interventions
4:00 pm	Group presentations
4:30 pm	Question time
4:45 pm	Collation of group discussions / concluding remarks
5:00 pm	Closing

Note: (i) The program was prepared by the Regional Programme Officer for Central Region on my request some days after the workshop took place, and it may present a somewhat idealized picture of what took place; and, (ii) As the program probably became delayed (I was not present), the times given above would have been departed from.

C. Objectives of the Meeting

[Ed. Comment: No information available]

D. Participants

A number of people, selected beforehand by the EPA office in the region to represent the overall population in the region, participated (see Table 6).

Table 6 – Participants in the Central Region Workshop

District	Name	Title, Organization, Location
	Nana Kwesi Tandoh, IV	Ag. President, Edina Traditional Council; Elmina
	Ms. Aba Buduwa Acquah	National Council on Women in Development; Cape Coast
	Mr. Kodwo Asare	Member, Dt. Assembly; Abanze
	Mr. John Yalley-Anaman	Member, Dt. Assembly; Chairman, DEMC; Tourism and Environmental Sub-Committee of the Cape Coast Municipal Assembly (CCMA); Cape Coast
	Mr. J. H. Mensah	Member, Dt. Assembly; Ayensudo
	Paa Kofi Nyaarko	In charge of Environmental Programme Atlantic FM, University of Cape Coast
	Nana Kobina Essoun	Chief Fisherman; Elmina
	Nenyi Kweku Mbri, III	Chief Fisherman; Winneba
	Nana Kobina Ayer, VI	Chief Fisherman; Cape Coast
	Mr. Patrick E. Mensah	Member, Dt. Assembly; Repr. of sand winners; Komenda
	Mr. Alexious Aidoo	Member, Dt. Assembly; Moree
	Mr. Samuel H. Bainsong	Member, Dt. Assembly; Biriwa
	Mr. William Batch-Kofie	Member, Dt. Assembly; Komenda
	Mr. J. W. T. de Graft-Johnson	Community Environmental Management and Population Unit (CEMPU), Central Regional Development Commission (CEDECOM); Cape Coast
	Ms. Alberta Rachael Croffie	Patron, Friends of the Environment and Tourism, Adisadel College; Cape Coast
	Mr. George Christian	Member, Dt. Assembly; OLA Medina; Cape Coast
	Mr. Kweku Boateng	Repr. of sand winners; Cape Coast
Gomoa	Mr. Ekow Sackey	Member, Dt. Assembly; Chairman, DEMC; Apam
Mfantsiman	Mr. P. K. N. Acquah	Member, Dt. Assembly; Chairman, DEMC; Saltpond
	Ms. Martha Hackman	Fish monger; Anomabu
	Mr. Nkrumah Anderson	Chief Fisherman; Anomabu
Komanda-Edina-Efuafo -Abrem (KEEA)	Mr. D. G. Mensah	Member, Dt. Assembly; Chairman, DEMC; Elmina
	Mr. Okyeame Kojo Annan	Omanhene's linguist; Edina Trad. Council; Elmina

Notes: (i) The following EPA staff from the office in the Central Region also participated: Mr. Samuel Kyeremer (Regional Programme Officer), Mr. J. Boateng Addae (Asst. Programme Officer I), Mr. Eric Oteng (Asst. Programme Officer II), Mr. G. C. Hesse (Senior Clerk), and Mr. Dickson (Senior Driver); (ii) The following EPA staff from the office in the Western Region also participated: Mr. James A. Anewanah (Senior Regional Programme Officer); and (iii) The list of participants is copied from a typed list prepared by the EPA Central Region office.

E. Product: Identification of Priority Areas, Specific Problems and Interventions

The participants, organized in two groups that worked separately, prepared a detailed list of priority area, specific problems and interventions (see Table 7).

Table 7 – Product of the Central Region Workshop

Problem	Causes	Effects	Solutions / Interventions
Group no. 1			
1. Sanitation	(a) Poor waste management (b) Concentration of unauthorized buildings (c) Poor drainage system (d) Lack of education	(a) Epidemics (b) Poor health (c) High mortality rate	(a) Education (b) Provision of places of convenience (c) Law enforcement policies adherence (d) Management of infrastructure
2. Poor town planning / settlement	(a) Haphazard nature / siting of housing projects (b) Blockage of draining system by unauthorized authorities	(a) Poor health (b) Improper sanitary disposal	(a) Enactment and enforcement of law (b) Removal of unauthorized structures (c) Resettlement of people at a model site
3. Pollution	(a) Fish smoking (b) Car exhaust fumes (c) Poor drainage system (d) Lack of education	(a) Unhealthy situation (b) Outbreak of epidemics	(a) Properly constructed drainage system (b) Laws must be enforced (c) Education
4. Sand / stone winning	(a) Constructions (b) Building projects	(a) Environmental degradation	(a) Appropriate sites should be identified (b) These sites should be monitored and controlled
5. Land / sea erosion	(a) Human activities	(a) Environmental degradation	(a) Tree planting (b) Establishment of environmental clubs (c) Encouragement of coastal vegetation
6. Fishing	(a) Use of explosives / chemicals (b) Improper nets (c) Frequent unauthorized fishing activities	(a) Depletion of the fish (b) Pollution of waters	(a) Use of chemicals / explosives be banned (b) Coast Guard / Naval personnel to check contra-bands (c) Storage facilities be constructed (d) Fishermen caught to be persecuted [ed. comment: SIC!]
Group no. 2			
1. Sanitation	(a) Insufficient	(a) All kinds of	(a) Education

	functional places of convenience	diseases	(b) Provision of adequate functional places of convenience
	(b) Insufficient waste disposal sites	(b) Low productivity	(c) Provision of sufficient waste disposal sites
	(c) Inadequate facilities for waste management	(c) Pressure on national economy	(d) Provision of minor drains within settlement areas
	(d) Non-availability of minor drains within settlement areas	(d) Financial burden	(e) Provision of adequate management facilities
			(f) Strict enactment and enforcement of building regulations and bye-laws
			<i>By who:</i>
			(a) Dt. Assemblies
			(b) Traditional Councils
			(c) EPA
			(d) Ministry of Health
			<i>Target:</i>
			(a) Community
2. Land use planning	(a) No lay-out	(a) Over-crowding settlements	(a) Education
	(b) No adherence to lay-out plans and regulations	(b) Flooding - blocking water ways	(b) Provision of lay-outs
		(c) Spreading of communicable diseases	(c) Strict adherence to lay-out and land use plan
		(d) National disasters - fire	<i>By who:</i>
		(e) Environmental pollution	(a) Dt. Assemblies
		(f) Social problems - drug abuse	(b) Traditional Councils
			(c) All concerned agencies - T & C.P.
			<i>Target:</i>
			(a) Communities
3a. Sand / stone winning	(a) Real estate developers	(a) Coastline erosion	(a) Monitor activities of winners
	(b) Increase in population	(b) Damage of fish landing grounds	(b) Identify alternative sites for winners
		(c) Land degradation	(c) New technologies for real estate developers
		(d) Discourages tourism	(d) Population control
			<i>By who:</i>
			(a) Dt. Assemblies
			(b) Traditional Councils
			(c) All concerned agencies, e.g. Minerals Commission
			<i>Target:</i>
			(a) Real estate developers
			(b) Sand / stone contractors
3b. Mining (Galamsey)	(a) Economic hardship	(a) Land degradation	(a) Education
	(b) Unemployment	(b) Loss of productive lands	(b) Enforcement of mining laws
		(c) Air, water and land pollution	(c) Review mode of license by Govt. to involve all concerned parties
			<i>By who:</i>
			(a) Dt. Assemblies
			(b) Traditional Councils
			(c) EPA

			(d) Chamber of Mines (e) Minerals Commission <i>Target:</i> (a) Miners (b) District Assemblies (c) Traditional Councils
4. Wetlands	(a) Population pressure (b) Indiscriminate tree felling	(a) Destruction of habitat (b) Extinction of species within the habitat, e.g. shrimps, crabs (c) Destruction of tourist sites (d) Destruction of lagoons	(a) Education (b) Enforcement of land use planning (c) Identification and mapping of wetland areas <i>By who:</i> (a) District Assemblies (b) Traditional Councils (c) Fisheries Dept. (d) Ministry of Agriculture (e) EPA (f) Research institutes <i>Target:</i> (a) Dt. Assemblies (b) Developers (c) Traditional Councils
5. Drainage	(a) No proper lay-out (b) Financial constraint (c) Development on natural water-ways (d) No maintenance of existing drains	(a) Floods (b) Diseases (c) Deaths (d) Destruction of property (e) Reduction of economic activities (f) Financial losses	(a) Provision of proper lay-outs (b) Maintenance of drains (c) Budgetary allocation for construction of drains (d) Enforcement of building regulations <i>By who:</i> (a) Dt. Assemblies (b) Traditional Councils (c) NGOs (d) The World Bank <i>Target:</i> (a) Dt. Assemblies (b) Traditional Councils (c) Communities
6. Erosion	(a) Improper land use (b) Constant sweeping	(a) Land degradation (b) Destruction of life and properties	(a) Education (b) Encourage tree planting <i>By who:</i> (a) Dt. Assemblies (b) Traditional Councils <i>Target:</i> (a) Dt. Assemblies (b) Communities
7. Deforestation / mangrove degradation	(a) Fuel wood (b) Charcoal (c) Farming - poor agricultural methods (d) Economic hardships (e) Logging	(a) Land degradation (b) Ozone depletion (c) Destruction of water sheds (d) Destruction of habitat (e) Destruction of wind breaks	(a) Reforestation (b) Improve farming methods (c) Enforcement of logging laws (d) Alternative energy resources <i>By who:</i> (a) Dt. Assemblies (b) Traditional Councils (c) Forestry Department <i>Target:</i> (a) Dt. Assemblies (b) Traditional Councils

(c) Timber contractors

Notes: (i) The report's "priority areas" are here referred to as "problems;" (ii) The participants in this as well as the Greater Accra workshop differentiated between "causes" and "effects," something that was not done by participants in the other two regional workshops; (iii) as this report actually consists of two reports (from two groups), it is not one report representing the whole group; (iv) The priority area "poor town planning / settlement" corresponds to the priority area "unplanned settlements" as used in the Volta workshop; and (v) The identified problems (or priority areas) were themselves prioritized as follows: (1) Sanitation / drainage, (2) Poor town planning / settlements and land use planning; (3) Pollution; (4) Mining; (5) Wetland / mangrove degradation; (6) Erosion; (7) Fisheries; (8) Deforestation; (9) Tourism; and (10) Population / socio-economic.

F. Selection of Participants to the Accra Workshop

The following two persons were selected to attend the Accra workshop and present the overall discussion, conclusions and recommendations of this workshop:

1. Ms. Alberta Rachael Croffie (Adisadel College, Cape Coast) (?), and
2. Mr. John Yalley Anaman (Cape Coast Municipal Assembly, Cape Coast) (?).

G. Evaluation

[Ed. Comment: No information available]

H. Process Notes

[Ed. comment: No information available, I did not participate in this workshop as it took place at the same time as the workshop in the Volta region.]

4 Volta Region Workshop

A. Place and Dates

The workshop took place at Keta Beach Hotel, Dzelukope, May 17-18, 1996.

B. Program

The program, which was prepared ahead of time, contained a detailed schedule for both days (Table 8).

Table 8 – Program for the Volta Region Workshop

Day	Time	Item
May 17	8:30 am	Opening
		(a) Introduction
		(b) Welcome
	9:00 am	(c) Election of two Rapporteurs
		Our mission statement and Expectations
	0930 am	(a) Mission statement - EPA Regional Coordinator in Volta Region
		(b) Expectations - participants to write their views on slips of paper
	10:00 am	Presentation by the World Bank team
	10:30 am	Identification of problems (“everybody’s idea, Every idea is a good idea”)
	10:30 am	Snack
	11:00 am	Prioritization of ideas and sorting into groups
	12:00 am	Group formation and group work
	12:30 pm	Lunch
	2:00 pm	Group work (cont’d)
	3:30 pm	Coffee break
4:00 pm	Group presentations	
	Election of group representatives to attend the plenary workshop in Accra	
7:00 pm	Dinner	
May 18	7:30 am	Breakfast
	8:30 am	Review of yesterday’s output
	9:00 am	Regrouping into district teams and group work
	10:30 am	Snack
	11:00 am	Presentations of the district teams’ work
		Reporting to the Dt. Assemblies upon returning home
	12:00 am	Evaluation
1:00 pm	Closure / departure	

Note: As the program became delayed, the times given above were departed from.

C. Objectives of the Meeting

[Ed. comment: No information available.]

D. Participants

A number of people, selected beforehand by the EPA office in the region to represent the overall population in the region, participated (see Table 9).

Table 9 – Participants in the Volta Region Workshop

District	Name	Title, Organization, Location
Akatsi	Mr. James Yegbe	Presiding Member, Dt. Assembly
	Ms. Victoria Gidiglom	Dt. Chief Executive (DCE)
	Mr. Francis Agbamu	Member, Dt. Assembly
	Togbui Duklo Akamsa, VI	Chief, Akatsi Trad. Area
	Ms. E. A. Kumassah	Queen Mother
	Mr. Francis Abgozo	Member, Dt. Assembly; Chairman, DEMC
Keta	Ms. Agnes Nutsugah	Member, Dt. Assembly and DEMC
	Mr. N. J. K. Dogbatsey	Presiding Member, Dt. Assembly
	Mr. Francis Kpodo	Member, Dt. Assembly and DEMC; Chief Fisherman; Head, Canoe Fishermen Association
	Mr. G. K. Bonnedi	Member, Dt. Assembly; Chairman, DEMC
	Mr. Obed Nutsugah	Dt. Administration Representative
	Togbui Abogbogam, II	Chief Fetish Priest, Tegbui Trad. Area
	Togbui Tay Agbozo, IV	Chief / Trad. ruler, Tegbui Trad. Area
	Mr. Daniel Otoo	Dt. Environmental Health Officer*
	Ms. Mary Sappor	Dt. Public Health Officer*
	Mr. Paul Sebnava	Dt. Town Planning Officer*
Mr. Kofi Anoma	Ex-Sec., DEMC*	
South Tongu	Mr. G. A. Kwasiwayo	National Council for Women in Development
	Togbui Amusu IV	Chief
	Mr. A. K. Digbor	Fisherman
	Mr. S. K. Ayiku	Repr. of the Fetish Priest of the Korti shrine
	Mr. C. K. Sackley	Presiding Member, Dt. Assembly
Ketu	Mr. W. L. K. Akortiaa	Member, Dt. Assembly; Chairman, DEMC
	Togbui Sapey	Chief / Trad. ruler
	Mr. A. A. Mensah	Member, Dt. Assembly and DEMC; Dt. Town and Country Planning Officer
	Mr. Bertha Viera	Member, Dt. Assembly and DEMC; Member, 31st December Women's Movement
	Ms. Mama Nyagadzi	Queen Mother, Dzodze Trad. Area
	Mr. T. M. Kamasa	Member, Dt. Assembly and DEMC

Notes: (i) The following EPA staff from the office in the Volta Region also participated: Mr. William Owuzu Adjah (Senior Regional Programme Officer), Mr. Shine Fiagone (Asst. Programme Officer), Mr. Christian Apedzi (Driver) and Mr. Emmanuel Anum (Driver); (ii) The symbol "*" indicates that the person functioned as a facilitator; and (iii) The list of participants was copied from a handwritten list prepared by the EPA regional staff during the workshop, and corrected after consultations with staff at the EPA regional office in Ho on May 26, 1996.

E. Expectations

The evaluation exercise in this workshop was special in that it was preceded by an agenda item where the participants were invited to write down the expectations they had from the workshop. The evaluation exercise itself (see item I "Evaluation")

below), done at the end of the workshop, thus provided the participants with the possibility of measuring the real outcome against the expected outcome.

[Ed. comment: No information available]

F. Product: Identification of Priority Areas, Specific Problems and Interventions

The participants prepared a detailed list of priority areas, specific problems and interventions Table 10).

Table 10 – Product of the Volta Region Workshop

Priority Areas	Specific Problems	Interventions
1. Sanitation	Indiscriminate dry and wet waste refuse disposal	(a) Promotion of domestic and communal latrines (b) Acquisition of refuse disposal grounds
	Lack of treatment of wet and dry waste materials	(a) Acquisition of technical know-how on treatment of wet and dry waste refuse (b) Provision of treatment plants for the treatment of dry and wet waste materials (c) Provision of incinerators
	Inadequate number of cesspool emptiers / refuse trucks	(a) Provision of adequate cesspool emptiers / refuse trucks
	Lack of user / hygiene education	(a) Intensification of user / hygiene education (b) Training personnel in the community to sustain the hygiene education (c) Enforcement of bye-laws on sanitation by the District Assemblies
2. Erosion	Excessive sweeping on the grounds	(a) Growing grass to cover the ground
	Annual bush fires	(a) Education on dangers of bush fires (b) Formation of fire volunteer squads (c) Creation of fire squads (d) Bye-laws enforcement by the District Assemblies
	Sand winning / mining activities	(a) Education on the dangers of sand winning (b) Reclamation of land by contractors and miners / individuals (c) Enforcement through licensing and bye-laws
	Overgrazing	(a) Education of the public on overgrazing (b) Agro-silvo pastures
	Unplanned settlements	(a) Planned settlements (b) Education on advantages of planned settlements (c) Enforcement of bye-laws on building regulations
	Improper agricultural land use	(a) Education on proper agricultural land use
3. Fisheries	Poor fishing practices, e.g. use of deadly chemicals and under-size nets	(a) Education of the approved use of approved fishing nets (b) Enforcement of fishing laws

	Destruction of spawning grounds caused by unfriendly fishing habits	(a) Creation and protection of spawning grounds for breeding fishes (b) Promotion of aquaculture
	Destruction of trees along the river banks	(a) Encouragement of tree planting (b) Enactment of bye-laws
	Year round fishing in the lagoon	(a) Fishing season closed at the onset of the rains (b) Encourage fish farming (c) Enactment of bye-laws
	Population growth	(a) Education on other protein sources, e.g. animal / vegetable (b) Development of alternative protein sources (c) Intensification of education on family planning
4. Forests	Cutting of trees for fuel wood and charcoal burning	(a) Afforestation (b) Use of other sources of energy
	Shifting cultivation	(a) Improved permanent systems of farming (b) Use of fertilizers for farming activities
	Improper conservation of forests	(a) Preservation of sacred groves
	Bush fires	(a) Making fire belts around forests (b) Fire volunteers
	Extinction of some species of birds and animals	
	Timber industry	(a) Replacement of each tree cut
5. Aquatic weeds (incl. water hyacinth)	Water-borne diseases	(a) E.g. physical, biological [ed. comment: i.e. various means of fighting water borne-diseases] (b) Clearing of weeds on the river
	Pollution of the river	(a) Discouragement of bathing, washing of clothes, washing of vehicles, etc. in the river
	The building of Akosombo dam	(a) VRA to be consulted for help (b) VRA to mimic the flow of the river
	Slow flow of the river	(a) Dredging of the river basin (b) Checking of erosion through afforestation along the banks of the river
	Improper supervision of the river	(a) Enactment of enforceable bye-laws to check unhealthy activities along/in the river
6. Wetlands	Flooding	(a) Afforestation around wetlands (b) Building of dams to store water so that land would be created for farming
	Siltation	(a) Desiltation of wetland basin
	Migration of some species of birds and animals from wetlands	(a) Checking degradation of wetlands to restore habitation of the birds and animals found around the wetlands
	Cutting of mangrove trees	(a) Preservation of mangrove trees
7. Unplanned settlements	Absence of approved town development schemes and layouts	(a) Provision of approved town development schemes and layouts (b) Institutional strengthening of town and country planning and P.W.D.

		(c) Ensuring that building plans are followed
	Land disputes and conflicts	(a) Demarcation of town layouts
	Improper siting of facilities	(a) Environmental impact assessment of facilities
	Fire hazards	(a) Enforcement of building bye-laws
	Environmental degradation	(a) Proper maintenance of public facilities
	Unsanitary conditions	(a) Education on good sanitation (b) Accommodation of traditional beliefs in respect of clean-ups (c) Developing capacity within assemblies and communities to undertake regular clean-ups
	Poor drainage	(a) Clean-up campaigns and desiltation of drainage
8. Industrial pollution	Pollution of air and water by industrial chemicals and waste	(a) Provision of potable drinking water (b) Industrial laws to be enforced to reduce pollution
	Unsanitary surroundings resulting from industrial waste	(a) Recycling of industrial waste into irreducible minimum
	Ill-health through inhalation of industrial gases and dust	(a) Mandatory environmental impact assessment of industrial establishments (b) Proper siting of industries
	Decrease in fisheries	(a) Encourage fish farming by indigenous fishermen
	Destruction of flora and fauna	(a) Education on the environmental problems of pollution
	Migration and change of habitat	(a) Alternative occupation with the necessary training for the people
	Decrease in economic activity	(a) Alternative occupation with the necessary training for the people
9. Agr. land degradation & bush fires	Overuse of farm lands	(a) Proper agricultural practices
	Indiscriminate use of chemical fertilizers	(a) Crop rotation
	Destruction of flora and fauna	(a) Education on the hazards of bush fires
	Destruction of sacred groves	(a) Creating fire belts around settlements and farms
	Destruction of medicinal plants	(a) Creating fire belts around settlements and farms
	Settlements and properties are destroyed	(a) Afforestation
	Poverty and hunger	(a) Provision of relief items (b) Settlement of victims
	Destruction of wood resources	(a) Developing capacity for prevention and fire fighting (b) Fire fighting squads should monitor the situation
	Dryness of river or water resources	(a) Public education (b) Afforestation

Notes: (i) The priority areas are not themselves prioritized; (ii) under the priority "Fisheries" the following item was added, apparently to be understood as a cross-cutting item applicable to all priorities: "In all we need

financial support to train personnel to take up duties like e.g. afforestation and aquaculture”, (iii) The Akosombo dam was identified by all participants as a special issue that deserves special attention, obviously related to the environmental priorities discussed - even causing them, but still of a different order and magnitude; and (iv) The priority area “unplanned settlements” corresponds to the priority area “poor town planning / settlement” as used in the Central Region workshop.

G. Selection of Participants to the Accra Workshop

The following two persons were selected to attend the Accra workshop and present the overall discussion, conclusions and recommendations of this workshop:

1. Mr. Yegbe James (Presiding Member, Dt. Assembly, Akatsi District), and
2. [Ed. comment: No information available].

H. Evaluation

The evaluation process in this workshop was special, in that it included an agenda item where the participants were encouraged to write down the expectations they had from the workshop (see item F “Expectations” above). The evaluation exercise, done at the end of the workshop, thus provided the participants with the possibility of measuring the real outcome against the expected outcome.

The participants were asked to score on each of 10 questions, of which I wrote the first seven, and William Owusu Adjah, the EPA Volta Regional Coordinator, the remaining 3 questions. Scores were: Excellent – A, Good – B, Satisfactory – C, and Poor – D.^{1/} The questions were:

- (1) General: Evaluation results in relation to the expectations;
- (2) How was the topic presented?;^{2/}
- (3) How did you like to way of working, i.e. using colored slips of paper?;
- (4) Were your views reflected in the final result?;
- (5) What did you think of the role played by William Owusu?;
- (6) What did you think of the roles played by the World Bank, i.e. David and Lars?;
- (7) What is the most important lessons you will bring back to your village, in terms of: (i) increase in knowledge; (ii) understanding of a process of how to work together; and (iii) that different means have to be combined;^{3/}
- (8) The hotel: Hospitality and reception;
- (9) The hotel: Food and service; and,
- (10) Information given within your district on the invitation to participate in the workshop.

[Ed. comment: The results of the evaluation are not yet available.]

^{1/} The selection of the number of values, as well as their associated names is, from a methodological point of view, not well thought out.

^{2/} This question refers to the way in which the topic of the workshop was presented, i.e. the presentation by David Moffat.

^{3/} I had intended this question to be addressed in a qualitative way, and not as a multiple choice question. Unfortunately, it turned out to be difficult to do this, given the time at disposal as well as the character of the participants. This question was accordingly left out.

I. Process Notes

This event appeared not to have been planned much at all. As an example, the program for the two-day event was only prepared the first morning. As it turned out, however, the Senior Regional Programme Officer, as facilitator, had very clear views on what he wanted to do, how he wanted to do it, and how he wanted to achieve it. In this, this event differed from all other events. A ZOPP inspired approach was utilized, where differently colored pieces of paper were handed out to participants to write their views, comments and concerns on. All comments were pasted with pins on a wall, and discussed and rearranged. After some initial uncertainty, the participants fast adjusted to this way of working, and in fact everybody in this way got involved in the work (including the chiefs, who, based on fundamental norms governing their role in society, usually do not participate in verbal discourse).

The participants in this event were more homogenous on terms of age, training, status and institutional affiliation (mainly politicians and/or bureaucrats), and this may have contributed to the overall level of involvement and participation.

5 Greater Accra Region Workshop

A. Place and Date

The workshop took place in Kingsby Hotel, Achimoto, May 20, 1996.

B. Program

The program, which was prepared ahead of time, contained a detailed schedule (Table 11).

Table 11 – Program of the Greater Accra Region Workshop

Time	Item	Resource Persons
8:15 am	Registration	
8:30 am	Brief background information on coastal zone management	World Bank representatives
8:50 am	Introduction	Mr. Ernest Fynn-Williams, EPA Regional Programme Officer
9:00 am	Group work / identification of problems of the coastal zone and its causes	EPA Regional Programme Officer, Assistant Programme Officers Mr. I. C. Acquah and Ms. Edem Tagboto
10:30 am	Snack break	
10:45 am	Group work / discussion on possible solutions and interventions	Regional Programme Officer, Assistant Programme Officer
1:00 pm	Lunch	
2:00 pm	Group presentation	Regional Programme Officer, Assistant Programme Officer
3:00 pm	Snack break	
3:15 pm	Group presentation	Regional Programme Officer, Assistant Programme Officer
4:00 pm	Closing	Mr. Dan Amlalo, EPA Assistant Director

Notes: (i) As the program became delayed, the times given above were departed from; and (ii) Mr. Dan Amlalo did not attend the meeting.

C. Objectives of the Meeting

[Ed. comment: No information available.]

D. Participants

A number of people, selected beforehand by the EPA office in the region to represent the overall population in the region, participated (see Table 12).

Table 12 – Participants in the Greater Accra Region Workshop

District	Name	Title, Organization, Location
Ga	Mr. Osei Comfort	Asst. Planning Officer
Ga	Mr. G. G. Ackah	District Planning Officer; Amasaman
Dangue East	Nene T. P., IV	Chief; Amasaman
Dangue East	Mr. Kofi D. Gorni	Member, Dt. Assembly; Big Ada
Dangue East	Mr. R. A. Glover A.	Fisherman; Ada
Dangue East	Mr. Agbakla Theo A.	Member, Dt. Assembly; Ada
Accra	Mr. Emmanuel A. Manu	President, Sand & Stone Winning Association; A.N.T.
Accra	Mr. Ransford K. Ayisi	Sand & Stone Winning Association; A.N.T.
Ablekumah	Ms. Yeyera Sarah	Member, Dt. Assembly; Mamprobi
Ablekumah	Ms. Felix Addico	Member, Dt. Assembly; Mamprobi
Ablekumah	Mr. Jacob H.	Member, Dt. Assembly; Accra
Ablekumah	Mr. Joseph Noeh Nash	Fisherman; General Secretary, ? Fisherman Association; Accra
Kokrobitey	Nii Asase Ayitey	Chief
Ga	Nii Adaweh Tettey	Chief Fisherman
Ga	Nii Ardeansah, II	Fisherman
Ablekumah	Comfort Sachey	Mamprobi Youth Environmental Club
Tema	Mr. E. A. Mba	Environmental Health Unit; Mamprobi
Tema	Mr. A. A. Coffie	Waste Management
Ga	Mr. Nu Tettey	Environmental Health Unit; A.
Ga	Mr. J. A. Aruaah	Chief Fisherman, Oshiye
Tema	Mr. A. F. Pobee-Oleans	General Environmental Health Officer; Tema
Tema	Mr. Theaphileus Anguah	Fashion Designer; Representative of the Chief (Mantse?); Tema
Ga	Mr. S. N. A. Attoh	Member, Dt. Assembly; Chairman, DEMC; Amasaman
Ashiedu Keteke	Mr. Briscoe Addo	Canoe owner; Fisherman Association H/no.D153/7
Ashiedu Keteke	Mr. Osear Okine	Chairman; A. M. A.
South Ablekumah	Mr. Joseph N. Nortey	Fisherman; AR.

Notes: (i) The following EPA staff from the office in the Greater Accra Region also participated: Mr. E. Fynn-Williams (Regional Programme Officer), and ??; (ii) Representatives from all the districts in the region were invited to the workshop, and not just from the 5 districts defined by the sector work as being coastal districts, that is, Accra, Dangbe East, Dangbe West, Ga and Tema Dt.; (iii) There were no representatives from Dangbe West Dt., the reason being that because of the short notice given for organizing the workshop there was not time to contact them in person (in other words, invitation by letter only is not considered to be enough, especially when a very short notice is given – in such cases an invitation is only taken serious if it is handed over personally); and (iv) The original typed list was prepared by an employee at the Kingsby hotel, and contained a lot of mistakes, most of which should have been corrected with the help of staff at the EPA regional office.

E Product: Identification of Priority Areas, Specific Problems and Interventions

The participants prepared a detailed list of priority areas, specific problems and interventions Table 13).

Table 13 – Product of the Greater Accra Region Workshop

Problem	Causes	Effects	Solutions / Interventions
1. Domestic Sanitation	(a) Inadequate sanitary facilities	(a) Facilitate spread of diseases	(a) Public education and awareness creation
	(b) Indiscriminate defecation particularly along the beaches	(b) Disincentive to tourism promotion	(b) Introduction of recycling of waste
	(c) Unplanned settlements	(c) Causes frequent flooding	(c) Dt. Assemblies and NGOs to encourage and also in the provision of household toilet facilities
	(d) Low levels of education	(d) Atmospheric and waste pollution	(d) Enforcement and compliance of environmental bye-laws
	(e) High rate of population growth		
	(f) Inefficient drainage system		
	(g) Inadequate arrangements for treatment and disposal of sewage and domestic waste		
2. Industrial Pollution	(a) Improper disposal of untreated industrial waste	(a) Constitutes a health hazard	(a) Treatment and proper disposal of industrial waste
	(b) Wrong siting of some industries	(b) Causes of atmospheric and water pollution	(b) Effective monitoring and enforcement of environmental management plans
	(c) Employment of obsolete industrial plant and equipment	(c) Land degradation	(c) Organization of periodic workshops on industrial waste management
3. Erosion	(a) Indiscriminate sand winning and stone quarrying activities	(a) Siltation and flooding	(a) Adoption of appropriate farming techniques
	(b) Natural causes, e.g. tidal waves	(b) Creation of stagnant water	(b) Establishment of appropriate wood lots and afforestation
	(c) Use of inappropriate farming methods	(c) Reduction in soil fertility	(c) Public education campaign on indiscriminate tree felling
	(d) Poor drainage systems	(d) Degradation of settlement	(d) 1. Erection of sea defense walls, and 2. Legislation and enforcement of environmental laws
4. Fisheries degradation	(a) Employment of inappropriate fishing methods	(a) Water pollution	(a) Public education and awareness creation
	(b) Use of chemicals and explosives	(b) Depletion of fish stocks	(b) Dredging of silted lagoons and rivers
	(c) Unorthodox methods for fishing, e.g. Atidza	(d) Destruction of habitat for aquatic life	(d) Law enforcement and compliance
	(d) Overfishing		
	(e) Overgrowth of weeds in fresh water bodies, e.g. Panicum Maxima, Water Hyacinth		
	(f) Dumping of waste		

	material into water bodies particularly sewage materials		
5. Wetlands and mangrove degradation	(a) Encroachment for physical development (b) Excessive fuel wood extraction	(a) Depletes natural habitat for wildlife (b) Gradual extinction of wildlife	(a) Education and awareness creation (b) 1. Compliance and enforcement of bye-laws, and 2. Planting of mangroves (afforestation)

Notes: (i) The report's "priority areas" are here referred to as "problems;" (ii) The participants in this and the workshop in the Western Region differentiated between "causes" and "effects," something that was not done by participants in the other two regional workshops; and, (iii) Presumably the order of the priorities indicates an internal ranking, note also that only five priorities are identified.

F. Selection of Participants to the Accra Workshop

The following two persons were selected to attend the Accra workshop and present the overall discussion, conclusions and recommendations of this workshop:

1. Mr. G. C. Ackah (Ga Dt. Assembly, Amasaman), and
2. ?. [Ed. comment: No information available].

G. Evaluation

[Ed. comment: No information available]

H. Process Notes

This event was originally planned, then left out, only to be resurrected about one week before the actual date it took place on. This placed a heavy burden on the Regional Programme Officer in terms of organizing it in a very short time. Also, this event lasted one day only. As it turned out, these issues did not at all affect the deliberations. This was clearly a very structured and focused event, in no small part due to the characteristics of the participants, which turned out to be especially astute in environmental matters. Clearly, the urban factor must be invoked to understand the very high level of competency among the participants. As a result, the alternation between plenary sessions and group work went very smoothly.

6 Pre-Plenary Workshop Meeting

A. Place and Date

The workshop took place at the EPA Headquarters, Accra, May 20, 1996

B. Program

Table 14 – Program for the Pre-Plenary Workshop Meeting

Time	Item
5:00 pm	Welcome statement
?	Self-introduction
?	Report from the regions
?	The way forward
?	Any other business

Note: As the program became delayed, the times given above were departed from.

C. Objectives of the Meeting

The objectives were, first, to allow participants in the regional workshops to exchange views on what happened in the four workshop, second, to inform them about the plans for the Accra workshop (to take place the following day), and discuss certain details in this connection.

D. Participants

The following categories of people participated: (1) EPA Regional Programme Officers, (2) representatives of the participants in the regional workshops, (3) EPA HQ staff, and (4) the World Bank team.

E. Product: Identification of Priority Areas, Specific Problems and Interventions

[Ed. comment: No identification of priority areas, etc. took place]

F. Evaluation

[Ed. comment: No evaluation took place]

G. Process Notes

The EPA Director opened the meeting and participated in the first half of the meeting. Representatives from the four regions gave brief reports on the regional workshops. The facilitator for the Accra workshop briefed the audience about the plans for the Accra meeting.

7 Plenary Workshop

A. Place and Date

The workshop took place at Labadi Beach Hotel, Accra, May 21, 1996

B. Program

Table 15 – Program for the Plenary Workshop

Time	Item
10:00 am	Welcome address, by Dr. Peter C. Acquah, Executive Director, EPA
10:10 am	Presentation by the World Bank team
10:40 am	Regional reports (Western and Central Regions)
11:10 am	Coffee break
11:30 pm	Regional reports (Volta and Greater Accra Regions)
12:00 am	Questions
12:30 pm	Group discussion: Environmental priorities
1:15 pm	Lunch break
2:15 pm	Group discussion: Possible interventions
3:15 pm	Report to plenary
4:15 pm	Coffee break
4:30 pm	Wrap-up and closing remarks

Note: As the program became delayed, the times given above were departed from.

C. Objectives of the Meeting ^{4/}

- (1) To provide input into the ongoing exercise on Integrated Coastal Zone Management, in particular the draft report “Towards an Integrated Coastal Zone Management Strategy for Ghana;”
- (2) To provide a forum for all stakeholder groups in the coastal zone to discuss common problems; and
- (3) To contribute to the overall dialogue between Ghana and the World Bank on potential project identification based on stakeholder participation and consultation.

D. Participants

Information is, first, provided on whom invitations were sent out to, and, second, who actually participated.

Invitations were sent to a large number of relevant stakeholders, both organizations and individuals (Table 16).

^{4/} In this connection it should be mentioned that a form was prepared on which participants could write questions, interventions and suggestions, for submission to the organizers. The form was prepared by the facilitator. I am not aware that anybody used it.

Table 16 – List of the invitations that were sent out

Name	Title, Organization, Location
	The Honorable Minister, Ministry of Food & Agriculture, Accra
	The Director, Fisheries Department, Ministry of Food & Agriculture
	The Director, Crops Services Department, Ministry of Food & Agriculture, Accra
	The Director, Water Resources Research Institute (WRI), Council for Scientific and Industrial Research (CSIR), Accra
	The Director, Institute of Aquatic Biology, CSIR, Accra
	The Honorable Minister, Ministry of Tourism, Accra
	Chief Wildlife Officer, Wildlife Department, Ministry of Lands & Forests, Accra
	The Honorable Minister, Ministry of Environment, Science & Technology, Accra
	The Honorable Minister, Ministry of Local Government, Accra
	The Executive Director, Minerals Commission, Ministry of Mines & Energy, Accra
	The Head of Department, Department of Oceanography, University of Ghana, Accra
	The Executive Director, National Development Planning Commission (NDPC), Accra
	The Director, Town & Country Planning Department, Accra
	The Director, Architectural Engineering Services Corporation, Hydrological Section (AESC - Hydro), Accra
	The Chief Conservator of Forests, Forestry Department, Accra
	The Honorable Minister, Ministry of Finance & Economic Planning, Accra
	The Secretary, National House of Chiefs, Accra [comment : is located in Kumasi]
	The Secretary, Chieftaincy Secretariat, Accra
	The Director, Friends of the Earth, Accra
	The Director, Ghana Wildlife Society, Accra
	The President, 31 st December Women's Movement, Accra
	The President, Green Forum, Accra
	The President, Green Earth, Accra
	The President, Gender Foundation for Women in Environment, Accra
	The Director, Extension Services, Ministry of Food & Agriculture, Accra
	The President, National Association of Canoe Fishermen, Accra
	The President, Ghana Association for Farmers and Fishermen (GAFF), Accra
	The Secretary General, Trade Union Congress (TUC), Accra
	The Head of Department, Department of Geography, University of Ghana, Accra
	The Managing Director, Tema Oil Refinery, Tema
	The Director-General, Ghana Ports & Harbours Authority, Tema
	The President, Association of Ghanaian Industries, Accra
	The Executive, Ghana National Petroleum Corporation (GNPC),

Accra
The President, Association of Private Hoteliers, Accra
The Resident Director, Food & Agriculture Organization, Accra
Chief Engineer, Waste Management Department, Accra
Metropolitan Assembly, Accra
The Resident Director, Danish International Development Agency (DANIDA), Accra
The Director, Institute of Social, Statistical and Economic Research (ISSER), University of Ghana, Accra
The Resident Representative, World Bank Mission, Accra
The Director, Remote Sensing and Applications Unit, University of Ghana, Legon
The Director, Canadian International Development Agency (CIDA), Accra
The Resident Representative, United Nations Development Programme (UNDP), Accra
The Resident Representative, United States Agency for International Development (USAID), Accra
The Resident Representative, Overseas Development Administration (ODA), Accra
The Chairperson, National Council of Women in Development
The Secretary, National Association of Local Authorities of Ghana (NALAG), Accra
The Secretary, Ghana Association of Private Voluntary Organisations in Development (GAPVOD), Accra
The Managing Director, Shell Ghana Ltd., Accra
The Managing Director, Ghana Oil Ltd. (GOIL), Accra
The Managing Director, MOBIL, Accra
The Managing Director, ELF, Accra
Hon. Joseph E. Ackah, Parliament House, Accra
Hon. Member of Parliament, Nzima East Constituency, Parliament House, Accra
Hon. Francis Fynn, Parliament House, Accra
Hon. Richard Dornu Nartey, Parliament House, Accra
Dr. Ato Quarshie, Parliament House, Accra
Hon. John Ernest Ekuban, Parliament House
Hon. Cecilia Akua Edu (Mrs.), Parliament House, Accra
Hon. D. Abaka Quansah, Accra
Hon. Comfort Owusu (Mrs.), Parliament House, Accra
Hon. Ama Benyiwa-Doe (Mrs.), Parliament House, Accra
Hon. Francis Kow Bortsie-Ansah, Parliament House, Accra
Hon. Dr. E. A. Ayirebi-Acquah, Parliament House, Accra
Hon. James Eric Nkrumah, Parliament House, Accra
Hon. Nii Okai Parbey, Parliament House, Accra
Hon. Madam Victoria Adjetey, Parliament House, Accra
Hon. Nii Adjei Larbi, Parliament House, Accra
Hon. Gladys Boateng, Parliament House, Accra
Hon. Joseph Teye Tetteh, Parliament House, Accra
Hon. Member of Parliament, Dangbe West, Parliament House, Accra
Hon. Member of Parliament, Dangbe East, Parliament House, Accra

	Hon. Amoo Lawerh Buerthey, Parliament House, Accra
	Hon. Jacob Aplerh Tawiah, Parliament House, Accra
	Hon. Stanley Basil Bade Gaboo, Parliament House, Accra
	Hon. Ishmael Tetteh Aryeetey, Parliament House, Accra
	Hon. Dr. Mac Graniky Quaye, Parliament House, Accra
	Hon. George Quaynor Mettle, Parliament House, Accra
	Hon. Adam Baako Northey Yeboah, Parliament House, Accra
	Hon. Ishmail Bawa, Parliament House, Accra
	Hon. Said Sinare, Parliament House, Accra
	Hon. Nii Adjei-Boye Sekam, Parliament House, Accra
	Hon. Yahaya Seidu, Parliament House, Accra
	Hon. Franklin Winfred K. Aheto, Accra
	Hon. Emmanuel Oscar Ameyedowo, Parliament House, Accra
	Hon. Dan Abodakpi, Parliament House, Accra
	Hon. Wisdom Tsidore Seyena-Susu, Parliament House, Accra
	Hon. Modestus Y. Z. Ahiabile, Parliament House, Accra
	Hon. Clend Mawuko Kwasi Sowu, Parliament House, Accra
Mrs. E. Appiah	Ministry of Justice, Accra
Mr. G. A. Dapper	Department of Zoology, University of Ghana, Legon
Dr. A. Ofori-Quaah	Ghana National Petroleum Corporation (GNPC), Accra
Mr. Kwa Wurodo	Meteorological Services Department, Accra
Mr. C. A. Biney	Institute of Aquatic Biology, CSIR, Accra
Ms. E. Annang	Ministry of Food and Agriculture, Accra
Dr. D. K. Dodoo	Department of Chemistry, University of Cape Coast, Cape Coast
Mr. S. L. Anthonio	Water Resources Research Institute (WRRI), CSIR, Accra
Mr. E. K. Lamptey	Regional Maritime Academy, Nungua-Accra
Mr. S. K. Amedofu	Geological Survey Department (GSD), Accra
Mr. J. A. Addo	Architectural Engineering Services Corporation - Hydrological Section (AESEC - Hydro), Accra
Mr. Marcus Tabil	Survey Department, Accra
Mr. B. A. Mohammed	Ministry of Land and Forestry, Accra
Mr. M. A. Odei	Deputy Director General, Council for Scientific and Industrial Research (CSIR), Accra
Dr. Chris Gordon	Volta River Research Project, University of Ghana, Legon
Dr. Yaa Ntiamo-Baidu	Zoology Department, University of Ghana, Legon
Dr. P. W. K. Yankson	University of Ghana, Legon
Dr. A. Dzieror	Soil Science Department, University of Ghana, Legon

Note: The list was prepared by EPA.

A number of the persons and organizations that received invitations did participate in the workshop (Table 17).

Table 17 – List of the participants in the workshop

Name	Title, Organization, Location
Ms. Alberta Rachael Croffie	Adisadel College, Cape Coast
Mr. John Yalley Anaman	Cape Coast Municipal Assembly, Cape Coast
Dr. M. A. Odei	Council for Scientific and Industrial Research (CSIR), Accra
Mr. Philip Titriku	Department of Crop Services, Ministry of Food &

	Agriculture, Accra
Mr. Jacob Gyamfi-Aidoo	Remote Sensing Application Unit, University of Ghana, Legon
Mr. Ing. Sgn. Ldr. Clend Sowu	Parliament House, Accra
Ms. Emelia R. Anang	Fisheries Department (MOFA), Tema
Mr. Ronald Abrahams	Wildlife Department, Accra
Ms. Gladys Asiana	MLGRD, Accra
Ms. Esther Cofie	Chieftaincy Secretariat
Mr. Emmil Nana Mensah	Gender Foundation for Women in Environment, Gij
Mr. Charles Sedem Etse	Department of Agricultural Extension Services, Accra
Ms. Vida Affum	National Council on Women & Development (NCWD-W/R), c/o Western Regional Administration, Sekondi
Ms. Catherine Asante-Poku	Tema Oil Refinery, Tema
Mr. Alphonso Okai, Jr.	Elf Oil Ghana Ltd., Accra
Ms. Nanaa Entsua-Mensah	Institute of Aquatic Biology, Accra
Mr. Samuel Kofi Nyame	Ghana Wildlife Society, Accra
Ms. Patience Dampsey	MEST, Accra
Captain E. D. Zein	Ghana Port & Harbours Authority, Tema
Mr. Godson Amekuedi	Ghana Association of Private Voluntary Organisations in Development (GAPVOD), Accra
Mr. Joshua Awuku-Apaw	Green Earth, Accra-North
Mr. J. Wellens-Mensah	Architectural Engineering Services Corporation, Hydrological Section (AESC - Hydro), Accra
Mr. Seth A. Larmie	Water Resources Research Institute, CSIR, Accra
Ms. Estelle Appiah	Ministry of Justice Attorney, General's Department, Accra
Nii Tetteh Otu, II	National House of Chiefs, Kpone-on-Sea
Mr. James Hagan	Mobil Oil Ghana Ltd., Accra
Mr. E. K. Agyapong	Friends of the Earth - Ghana, Accra
Mr. E. K. Lamptey	Regional Maritime Academy, Accra
Dr. Kwabena Osei-Bonsu	National Development Planning Commission (NDPC), Cantonments Accra
Nii Adjei Larbie	Parliament House, Accra
Mr. Marcus Amos Tabil	Survey Department, Accra
Dr. G. T. Agyepong	RSAU, Legon
Mr. J. A. Addo	Architectural Engineering Services Corporation, Hydrological Section (AESC - Hydro), Accra
Mr. Professor A. K. Addie	GNPC, PMB, Tema
Mr. C. K. James	Ghana National Petroleum Corporation, PMB, Tema
Mr. Stephen Anthonio	Water Resources Research Institute, Accra
Mr. Joseph Yaw Aboagye	Minerals Commission, Accra
Ms. Margaret Abowen	National Association of Local Authority of Ghana (NALAG), Accra
Mr. Adam Alhassan	Green Forum, Gij, Accra
Mr. George A. Darpaah	VBRP / Zoology Department, University of Ghana, Legon
Mr. Professor E. Ofori-Sarpong	Department of Geography, University of Geography, Legon
Mr. A. K. Armah	Department of Oceanography & Fisheries, University of Ghana, Legon
Mr. Kwa Wurodu	Meteorological Services Department, Accra
Dr. Akrofi Dzietror	Crop Science Department, University of Ghana, Accra
Mr. Joseph K. Kwaw (Kwah?)	Jomoro Dt. Assembly (?), Half Assini, Western Region
Dr. Gina Porter	Department of Geography, University of Durham,

	Durham, England
Mr. Gilbert K. Bonuedi	Keta Dt. Assembly, Denu, Volta Region
Mr. J. B. Yegbe	Akatsi Dt. Assembly, Akatsie, Volta Region
Mr. Anderson Nachia Blay	Waste Management Department, Accra
Mr. Edward A. Mba	Tema Municipal Assembly, Tema
Mr. J. E. Ackah	Parliament House, Accra
Mr. Richard Nartey	Parliament House, Accra
Ms. Gladys Boateng	Parliament House
Dr. Chris Gordon	Volta River Research Project, University of Ghana, Legon
Mr. H. R. Dankwa	Aquatic Biology, Achimota
Mr. G. C. Ackah	Ga Dt. Assembly, Amasaman
Mr. Abdullah Iddrisu	MEST, Accra
Mr. John Kitpillah	Parliament House, Accra
Mr. James Ackah Cobbinah	Parliament House, Accra
Hon. James Eric Nkrumah	Parliament House, Accra
Mr. Kris Kapoor	Duwkwa Continental Goldfield LMT, Airport, Accra
Ms. Runku Kapoor	Duwkwa Continental Goldfield LMT, Airport, Accra
Mr. George Ahadzie	National Union of Environmental NGOs (NUENGO), Accra-North
Mr. K. Hagin	GIMPA
L. Afriatorme	?
Mr. Eric Agyere	?

Notes: (i) The following EPA staff also participated: Dr. P. C. Acquah (Executive Director), Mr. Dan S. Amlalo (EPA HQ), Ms. Alice Adarkwa-Dadzie (EPA HQ), Mr. William Owuso Adjah (Senior Programme Officer, Volta Region), Mr. James A. Anewenah (Senior Programme Officer, Western Region), Mr. Samuel Kyeremeh (Programme Officer, Central Region), Mr. E. Fynn-Williams (Programme Officer, Greater Accra Region); (ii) Facilitator during the workshop was Mr. ?; (iii) The list was prepared by EPA, based on a registration form filled in by the participants; and (iv) Names of World Bank staff and consultants, included in the list of participants prepared by EPA, have been omitted.

E. Opening Address by Dr. P. C. Acquah

Mr. Chairman,
The Chairman of the Board of Environmental Protection Agency
Honorable Ministers of State,
Honorable Members of Parliament,
Invited Guests,
Participants,

Ladies and Gentlemen.

It gives me great pleasure to welcome you all to this very important one-day conference on Coastal Zone Management in Ghana.

Ghana as you might know has a coastline stretching approximately 550 kilometer. The resources of the coastal zone have for ages had profound influence on the socio-economic well-being and health status of not only the immediate communities but also those far removed from them.

The Ghana Environmental Action Plan has identified environmental degradation of the coastal zone as one of the very serious issues in Ghana that require urgent attention. Indeed this topic has received some attention in the past months. Two conferences were held, one was the presentation of research work and coastal zone problems for the West African region. The second conference was a

training workshop for experts selected from the West African region on Integrated Coastal Zone Management.

The resources in the coastal zone are diverse but very sensitive. They are at different levels of exploitation and human impact.

To place the coastal zone of Ghana into proper perspective, it represents 6.5 percent of the total area of Ghana yet it is inhabited by 25 percent of the nation's population.

With 21 administrative districts, two of these host over 60 percent of the industries in the country.

The area is well drained, however, most of the rivers which drain the inland areas virtually deposit all their contents in the coastal zone.

Until recently, customary laws have regulated the use of the resources of the coastal area including use of water for domestic needs, fishing, salt extraction, agriculture activities, etc. For instance, water is considered as a common property and therefore no individual could appropriate it for his exclusive use.

With population increases and technological and industrial advancement the impact of an activity by an individual could significantly affect this common property. Taboos which kept the integrity of resources no longer hold.

Environmental protection involved wise use of resources, and to achieve this purpose the EPA was set up.

To set the pace, the Environmental Protection Agency initiated the necessary moves towards evolving a Coastal Zone Management Plan for the country starting from the grassroots. Much has been done to document activities in the coastal zone by many institutions, however, what has been lacking is effective coordination.

A large number of studies have been conducted. Consultations have been held with a large number of stakeholders along the entire coastline and other including government agencies, Chiefs, communities, non-governmental organizations, academics and members of the private sector.

The experiences of a team of World Bank experts and staff of the EPA have yielded a draft report which will be discussed this morning. This report was discussed by selected stakeholders from all the coastal districts at workshops held in the past 10 days. Their reports, priorities and proposed interventions from the grassroots will also be presented. Let me stress that a cross-section of the population has been invited to participate in this conference.

We are grateful to you for responding to our invitation to discuss this very important subject.

On behalf of the management and the staff of EPA, I welcome you all. I am certain that your contributions shall be important to the evolution of a Coastal Zone Management Strategy for Ghana.

Thank you.

F. Presentations From the Regional Workshops

F.1. Presentations From the Regional Workshops - Volta Region

[Ed. comment: No information available] ^{5/}

^{5/} The presentation was a compressed version of the wall charts that each group prepared during the workshop in Keta, and it was given orally, based on hand-written notes. The reason for this could be: (i) that the

F.2. Presentations From the Regional Workshops - Central Region

1. Sanitation

- Awareness creation - education;
- Adequate toilet facilities;
- Waste disposal facilities;
- Adequate waste management facilities and personnel; and,
- Strict enforcement of building regulations and bye-laws

2. (a) Lack of Land-use Planning, (b) Poor Town Planning / Settlements

- Provision of layouts;
- Strict adherence to layout and land use plans;
- Enactment and enforcement of laws;
- Resettlement on model site; and,
- Managerial board set up

3. Pollution

- Construction of drainage system;
- Provision of proper layouts; and,
- Enforcement of laws

4. Mining - Sand & Stone

- Appropriate sites identified; and,
- Sites monitored and controlled

5. Wetlands / Mangrove Degradation

- Education;
- Enforcement of land use planning;
- Identification and mapping of wetlands;
- Reafforestation and improved farming methods; and,
- Alternative sources of energy to be identified

6. Erosion

- Education;
- Encourage tree planting;
- Enforce laws on proper land use;
- Environmental and Green Clubs set up; and,
- Coastal vegetation encouraged

7. Fisheries

regional workshop finished only 2-3 days before the Accra workshop, with a weekend in between and no time to prepare a presentation; and (ii) what is more likely, a feeling that the wall charts (which were displayed during the Accra workshop) presented the culmination of such a thorough discussion that it would suffice to summarize them briefly.

- Explosives;
- Proper net use; and,
- Coast Guard and Navy involved

8. Deforestation

- Land use planning / laws put in place and enforced;
- Reafforestation and improved farming methods encouraged;
- Enforcement of logging laws, and alternative sources of energy identified; and,
- Bush burning checked by the Dept. of Forestry, Dt. Assemblies, etc., and more stringent penalties against culprits

9. Tourism

- Maximum security;
- Health of tourist; and,
- Accommodation facilities improved

10. Population

- Check rural-urban migration;
- Provision of social amenities and jobs in the rural areas; and,
- Education through the Planned Parenthood Association of Ghana (PPAG)

F.3. Presentations From the Regional Workshops - Western Region ^{6/}

1. Wetlands

There should be sustainable use of wetlands for:

- (a) Agricultural purposes;
- (b) Recreational centers;
- (c) Establishment of wood lots; and,
- (d) Strengthening of traditional norms on wetlands backed by scientific ideas.

2. Forests

- (a) Existing forest reserves should be maintained and preserved through education and enforcement of laws;
- (b) Community wood lots should be established;
- (c) Intensification of research on Cape St. Paul Wilt disease alongside alternative use of land;
- (d) Rigid enforcement of laws on afforestation by timber merchants;
- (e) Need for awareness creation through education on sustainable agricultural practices; and,
- (f) Expansion of LPG distribution system and other sources of energy.

3. Sanitation

- (a) Intensive education and awareness creation, on environmental cleanliness;
- (b) Provision of adequate toilet facilities in all coastal towns;

^{6/} The presentation by the Western Region actually exists in two versions, one simple bullet-type version, and the other a more comprehensive version. The latter version is included here.

- (c) Provision of waste disposal facilities, e.g. litter boxes, refuse trucks, metal containers, etc.;
- (d) Specified demarcation for waste disposal;
- (e) Waste recycling; and,
- (f) An institution should be charged to control abuse of beaches.

4. Fisheries

- (a) Existing legislation on fishing should be reviewed by Parliament;
- (b) Development of inland fisheries, e.g. fish ponds, shrimp farming;
- (c) Alternative sources of protein should be developed to reduce pressure on fish stocks, e.g. snail rearing;
- (d) Adoption of improved technology for fish preservation, e.g. cold store, chorkor;
- (e) Research unit of Fisheries Dept. should be strengthened;
- (f) Education for fishermen on fisheries management; and,
- (g) Establishment of fisheries monitoring unit.

5. Erosion

- (a) Activities like sand winning and surface mining should be encouraged, but under strict supervision and education, e.g. environmental impact assessments;
- (b) Encourage afforestation;
- (c) Sea defense walls;
- (d) Proper planning/layout for coastal settlements;
- (e) Total ban on farming along streams; and,
- (f) Planting of coconut trees along beaches.

6. Industrial Pollution

- (a) Industrial waste should be managed by industries concerned - recycling, etc.;
- (b) Local industries should be sited away from settlements;
- (c) Adoption of appropriate technology;
- (d) Central sewerage system / plant should be installed;
- (e) Educate farmers on proper use of chemicals; and,
- (f) Alternative use of agricultural waste should be found, e.g. waste from coconut oil extraction.

7. Water Hyacinth

- (a) Both biological and mechanical means should be adopted. However, use of chemicals should be friendly to aquatic life; and,
- (b) An international approach should be adopted to solve the problem.

Western Region Priorities^{7/}

- (a) Sanitation
- (b) Forests
- (c) Wetlands - lagoons, lakes, marshlands, swamps, streams, mangroves
- (d) Fisheries

^{7/} Even though these priorities are not numbered, they would seem to represent a prioritized list of which priorities are most--and accordingly least--important. [Ed. comment: cf. with statements on this elsewhere]

- (e) Coastal Erosion
- (f) Industrial Pollution
- (g) Water Hyacinth

F.4. Presentations from the Regional Workshops - Greater Accra Region

[Ed. comment: No written presentation is available]

G. Product: Identification of Priority Areas, Specific Problems and Interventions

A number of groups were formed by self-selection to discuss several environmental priorities identified by the workshop: (1) Fisheries Depletion; (2) Unplanned Settlements; (3) Deforestation; (4) Wetlands Degradation; (5) Industrial Pollution; (6) Sanitation; and, (7) Erosion. Each group discussed one priority, following a common set of cross-cutting issues used to structure and focus the discussion.

The cross-cutting issues (also referred to as “prioritized issues”) were: (1) Policy; (2) Education; (3) Projects; (4) Compliance and Enforcement; and, (5) Institutional Arrangements.

The result of the discussion in the groups are presented below, that is, the workshop did not arrive at a joint resolution or set of agreed upon priorities (something that would have been impossible, and also was not the aim of the group discussion). The group presentations are not listed in any particular order.^{8/}

1. Fisheries Depletion

Policy Exploitation of fishery resources for domestic consumption and exportation on sustainable basis.

- Aqua-culture development on private basis.

Education Education on:

- Fisheries laws (intensified);
- Illegal use of chemicals and explosives; and,
- Illegal use of under-mesh size nets.

Regular interaction with stakeholders^{9/}

Projects

- Stock assessment of pelagic and demersal stock;
- Development of brackish and fresh water aquaculture;
- Monitoring, control and surveillance; and,

^{8/} The groups wrote their reports on large sheets of paper that were used during the group presentations. EPA staff typed this up and the group presentations as they appear here are copied from these documents. By comparing the EPA version with one of the original group presentations (I copied the presentation by the group who worked on fisheries), it would appear that the EPA version is marred by a large number of mistakes. I will refer to some of these mistakes in footnotes for the presentation on fisheries. This large number of mistakes is rather unfortunate.

^{9/} The presenter, a staff member of Dept. of Fisheries, specified that “stakeholder” in this connection should be understood to mean primarily canoe fishermen (or ‘artisanal fishermen’), who take around 70 percent of the total catch in Ghana.

- Fish processing and storage.

Compliance & Enforcement of Fisheries Law by:

Enforcement

- Monitoring;
- Controlling; and,
- Surveying activities of the various fishing fleets.

Institutional Arrangements

- Fisheries Dept. (patrol near shore);
- Navy (patrol outer waters);
- Institute for Aquatic Biology (involved in aquaculture);
- Universities;
- Dt. Assemblies;
- Ministry of Transport and Communication;
- Ghana Ports and Harbours Authority;
- Police Service;
- Fisheries Commission (a coordinating body for all fisheries activities); and,
- EPA.

2. *Unplanned Settlements*

Policy	Settlements that do not conform to statutory regulations, so lack counter-productive to good environmental maintenance. Land use: (a) Review existing policies and strict enforcement; and, (b) Modify existing policy to involve private physical planners and surveyors in preparation of town sheets and layouts. Such layouts should be approved by Town and Country Planning.
Education	Developing awareness of people on advantages of planned settlements; Developing awareness of people on hazards of unplanned settlements; Developing knowledge on laws and regulations on planning; Developing attitudinal change towards illegal developments in settlements; and, Compile aspects of laws into educational package on development procedures.
Projects	Infrastructure: <ul style="list-style-type: none"> • Roads; • Drainage; • Waste Management; • Potable Water; • Toilet facilities; and, • Urban Renewal.
Compliance & Enforcement	<ul style="list-style-type: none"> • Review existing laws and regulations to ensure deterrence, and • Participatory enforcement mechanism at the community level.

Institutional Arrangements

Multi-disciplinary and inter-sectional collaboration to address problems of unplanned settlements. This should include:

- Town and country planning - layouts;
- Survey department - base maps;
- Dt. Assemblies - to initiate and implement infrastructure and sanitation facilitation for unplanned settlements;
- Dt. Assemblies should ensure that decentralized departments are operational; and,
- Capacity building;
 - Continue training of personnel;
 - Encourage trained personnel to produce base maps and town sheets; and,
 - Encourage use of local experts in developing town plans and ensure that force in experts have their local counter-parts in such programs.

3. Deforestation

Policy

- There should be a national policy on coastal forestry in the form of a law;
- District Environmental Committee (in an integrated approach) at the Dt. level playing a supervisory role; and.^{10/}
- Unit, Zonal Committee, Chiefs, other identifiable groups should be empowered to act at the local level (legislation, resources, knowledge, skills and ability. Dt. Assemblies must enact the relevant bye-laws.

Education

- Awareness programs should be linked to the needs and daily lives of the people;
- Use of innovative techniques in transmitting environmental protection messages; and,
- Use of NGOs women's groups, local authorities, etc.

Projects

- A well planned and targeted camping at the local level;^{11/}
- Reforestation and conservation of forest lands;
- Promoting sustainable eco-tourism; and,
- Establishing community agro-forestry projects;

Compliance & Enforcement

- Use of rewards/sanctions, and punishments;
- Legislation on forest conservation should be enforced by traditional authorities, Dt. Assemblies, forest guards, all working in harmony; and,
- Review of laws on forestry (e.g. fires)

^{10/} This is most likely a reference to the Dt. Environmental Management Committee (DEMC).

^{11/} The word "camping" is clearly a misspelling, and the correct work is most likely "campaign."

Institutional Arrangements

- Dt. Assemblies – highest authority, and,
- Local chiefs, women groups, NGOs, unit committees, etc.

4. Wetlands Degradation

Policy

- Ramsar convention (including non-Ramsar sites); and,
- National policies (mangroves, fisheries, salt winning, eco-tourism, agriculture, etc.).

Education

- Education programs on policies in schools, churches, organizations, durbars, seminars, workshops, etc.; and,
- Educating law enforcement agencies.

Projects

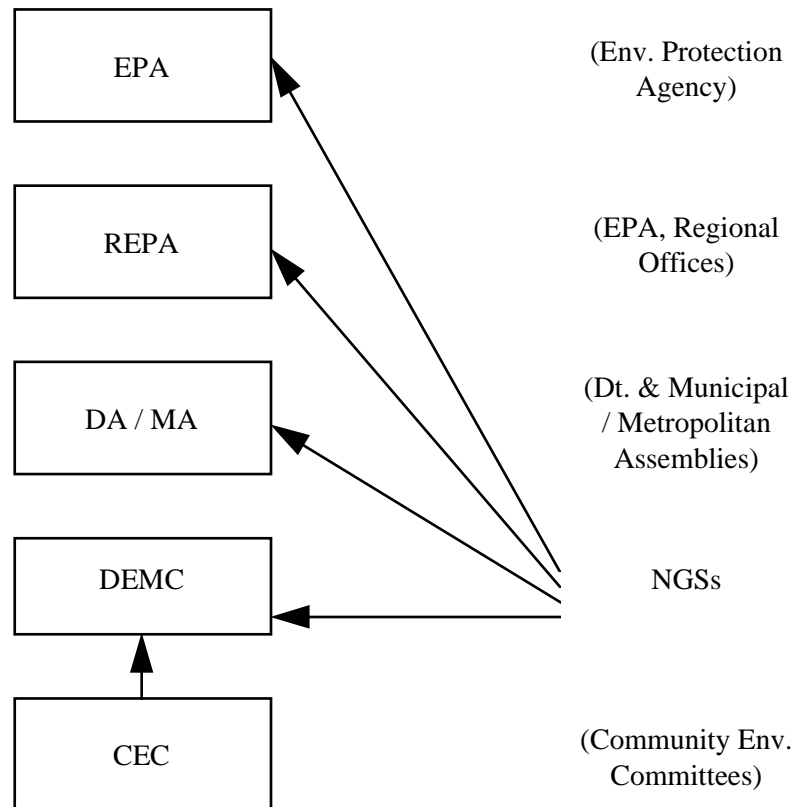
- Afforestation;
- Habitat development and improvement;
- Bio-diversity conservation;
- Socio-economic studies; and,
- Salutation (dredging, deepening to improve fish stock)
- Integration of salt winning with aquaculture;
- Eco-tourism development; and,
- Recycling of waste material (use of incinerators, biogas production).

Compliance & Enforcement

- Enforcement of traditional laws and regulations;
- Enactment of bye-laws/regulations by Dt./Metropolitan Assemblies; and,
- Players - traditional priests, chiefs, police, local/urban councils, Wildlife Dept., EPA, opinion leaders.

Institutional Arrangements ^{12/}

^{12/} The meaning of the abbreviation “NGSs” is not clear.



5. Industrial Pollution

Definition The release into the environment in the form of fumes, gas, heat, liquid, or solid waste that has adverse effect on the environment.

Policy ^{13/}

- Acknowledge existing policies and guidelines;
- However these have not been standardized; and,
- The group therefore called for standardization of the level of pollutants and waste that could be released into the environment.

Education

Agencies responsible:

- EPA; and,
- NGOs.

Beneficiaries:

- Investors;
- Importers; and,
- Communities where the industries are sited.

Structure:

- EPA EPA Regional Representative Dt. Assembly.
Communities where the industries are located.^{14/}

^{13/} The EPA version prefixes the three listed items here with the sub-heading "A)", indicating that most likely further items under heading "B)" etc. were left out.

Forms:

- Seminar, public hearing, local FM stations (EPA has been doing well in these areas).^{15/}

Projects

- EPA to establish basic laboratories to monitor, and analyze pollutants; and,
- Strengthen existing institutions to assist EPA.

Compliance & Enforcement

- Existing guidelines are not being complied with; and
- Call for standardization of the level of pollutants or effluent that could be discharged into the environment.

Institutional Arrangements

- Industries build up their own capacities to carry out their own analysis in compliance with standardized environmental bye-laws, stipulated by EPA.;
- Straighten EPA to police industries; and
- Recommendations: Tema Oil Refinery, Volta Aluminum Company, Ashanti Gold Corporation, Ghana National Petroleum Corporation, Ghana Port and Harbours Authority to check oil spillage into ports and coasts;^{16/}

6. Sanitation^{17/}

Policy

- Review and amend national policy on local/regional sanitation issues;
- Community participation in policy formulation;
- Private sector participation;
- Capacity building; and,
- Provision of sanitary facilities be made at top priority in coastal districts.

Education

- Training of trainers for e.g. Environmental Management Committees of Dt. Assemblies;
- Sanitation to be included in basic school curricula; and,
- Non-formal educational programs e.g. film shows on sanitation, involvement of churches, etc.

Projects

- Appropriate sanitation facilities, e.g. recycling plants;
- Sewerage collection and treatment plants;

^{14/} This paragraph on "Structure" does not make much sense, and I assume that the EPA version that I received have missed something her.

^{15/} The EPA version prefixes the item listed here with the sub-heading "a", indicating that most likely further items under heading "b" etc. were left out.

^{16/} Something appear to be missing from the EPA typed version of the presentation by this group.

^{17/} A footnote is added to this presentation, as follows: "Prevention rather than curative." It is unclear whether this footnote refers to the sub-category "institutional arrangements" or to the whole presentation.

- Adequate domestic/potable water provision;
- Facilities to be locally set up and operated; and,
- Consultants advise to be sought where deemed appropriate.

Compliance & Enforcement

- Review of existing legislation on sanitation;
- Strengthening agencies involved in enforcement; and,
- EPA to expedite action on recruitment of district officers.

Institutional Arrangements

- Co-operation and collaboration among relevant agencies, e.g., Dt. Assemblies, AESE, GWSC, T & CP, EPA, NGOs and MOH.^{18/}

7. Erosion

1. MARINE EROSION.

2. Land erosion due to human activities which give rise to accelerated erosion.^{19/}

Policy

- Arrest the havoc caused by the sea, and other natural forces, reclaim and preserve the coastland and its environment; and,
- Determine appropriate land use.

Education

Educate the people about the vegetation, effect of sand winning, clay and other mineral resources. Education must be done by Dt. Assemblies, and be included in both JSS/SS syllabi to create awareness among the youth.

Projects

- Well designed and implemented sea defense systems, reforestation and land reclamation;
- Research and detailed planning for the coastal lands;
- Master drainage plants must be instituted for all coastal lands; and,
- Training and maintenance of water course wave.

Compliance & Enactment of natural laws and local bye-laws

- Ensure that the laws are enforcement obeyed.

Institutional Arrangements

Put in place coastal management commission which will be properly decentralized, with the major function of seeing to the implementation of recommendations that affect the coast made in HRRCRO/EEC reports.

^{18/} The layout given this part in the EPA typed version is very strange, and almost certainly not correct. I have tried to correct it to something that makes more sense.

^{19/} These two points are copied from the EPA typed version, including the capitalized first point. The intention with these two points is unclear, and I assume that this is another example of EPA having done a bad typing job.

H. Closing Remarks by Dr. P.C. Acquah

[Ed. comment: No information available]

I. Evaluation

Workshop participants were asked to fill out a “Workshop Evaluation” questionnaire consisting of the following questions:

- (1) In addition to the draft 8 priorities in the report, do you want to add any?;
- (2) Indicate your ranking of the draft 8 priorities, as well as any you have added: Wetlands, Forest, Water Hyacinth, Fishing, Erosion, Sanitation, Industrial Pollution, and Industrial land degradation?^{20/}
- (3) Indicate which of the 8 draft priorities, as well as any you have added, are most closely related to each other?;
- (4) What in your opinion are the major causes for the environmental degradation in the coastal zone?;
- (5) Indicate the most important causal relations between the selected major causes on the one hand, and the 8 priorities on the other hand?^{21/}
- (6) In my judgment, the workshop: (a) fully achieved its objectives; (b) partially achieved its objectives; and, (c) did not achieve its objectives;
- (7) By participating in the workshop I have learnt the following:;?
- (8) Of the issues identified at the workshop, the following were the most important to me:;
- (9) In my opinion, the following issues need further discussion and clarification;
- (10) Indicate below your assessment of the various exercises used in the workshop: (a) Regional reports; (b) Environmental priorities; and, (c) Possible interventions?^{22/}
- (11) The duration of the workshop was: (a) Just right; (b) Too long; and, (c) Too short;?
- (12) What follow-up of the workshop, if any, would you like to see;? and,
- (13) Use the space below to make any other comments you wish about the workshop. The facilitator drafted questions nos. 6-13 which were subsequently slightly revised, while I prepared questions nos. 1-5.

A total of 34 participants filled out the questionnaire and turned it in. On my request, EPA made copies of all filled-in questionnaires. Analysis of the questionnaires has not yet been done.

J. Process Notes

The event followed more or less the same pattern as the regional workshops, with more formality and glitches and delays. The ideas for structuring the event were good, and the facilitator had a professional grasp on structuring the overall process and guiding the group through it. The limited amount of time available contributed to making it a somewhat hurried and unsatisfactory event.

^{20/} The values used were: Very important - 1; Important - 2; and, Less important - 3.

^{21/} In a note in parenthesis, respondents were invited to use arrows to indicate causal relations.

^{22/} For each exercise, the following options were given: (a) Useful; (b) Not useful; and, (c) Comment.

8 Post-Plenary Workshop Planning Meeting, I

A. Place and Date

This workshop took place at the EPA Headquarters, Accra, May 22, 1996

B. Program

[Ed. comment: No information available, this was an internal EPA meeting]

C. Objectives of the Meeting

[Ed. comment: No information available]

D. Participants

The EPA Regional Programme Officers and selected EPA HQ staff.

E. Product: Identification of Priority Areas, Specific Problems and Interventions

[Ed. comment: No information available]

F. Evaluation

[Ed. comment: No information available]

G. Process Notes

[Ed. comment: No information available]

9 Post-Plenary Workshop Planning Meeting, II

A. Place and Date

This workshop took place at the EPA Headquarters, Accra, May 22, 1996

B. Program

Table 18 – Program for the Post-Plenary Workshop Planning Meeting, II

Time	Item
9:30 am	?
	?
	?
	?
	?

Notes: As the program became delayed, the approximate times listed were departed from.

C. Objectives of the Meeting

Discussion of the outcome of the Accra workshop, discussion of follow-up tasks and assigning responsibilities.

D. Participants

EPA Regional Programme Officers, EPA HQ staff, and the World Bank team.

E. Product: Identification of Priority Areas, Specific Problems and Interventions

[Ed. comment: No information available, not applicable.]

F. Evaluation

[Ed. comment: No information available, not applicable.]

G. Process Notes

This was a fairly brief and unstructured meeting. There is not much to say about it.