



ENVIRONMENTAL PROTECTION AGENCY

USER GUIDE FOR TOOLS
ENVIRONMENTAL MAINSTREAMING
REPORT



International Institute for Environment and Development

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BACKGROUND

Rapid development is now an inevitable concern for developing nations as well as the developed ones. There are no doubts that most developing countries all around the world are faced with some pertinent environmental challenges, which in the long run poses countless number of national growth quandaries. As a result, various stakeholders are putting effort in integrating all aspects of environmental mainstreaming processes in policy decision making in order to find endless solutions to these economic development problems. Ghana is of no exception; it experiences periodic confrontation on sustainable development difficulties specifically in environmental issues as well as natural resource management. Since independence, growth rate accelerates with relatively slow pace for which efficient resource allocation can be said to be accountable. This has given rise to adverse implications on growth, health and development in a broader context. This country has the responsibility to identify various measures, tactics, tools and methods, which will help, eliminate these mishaps. For this to be achieved, the entire environment should be subjected to mainstreaming (with various stakeholders concerned) which will serve as a basis for development decision making and policy development.

The International Institute for Environment and Development (IIED) has identified the need for a Guide for environmental mainstreaming which will provide various necessary tools, methods and tactics which will help in planning, policing decision-making and implementation. There are now a wide variety of tools, tactics and methods with little or no guidance to the selection of the appropriate tools needed for implementation under some specific situations. The International Institute for Environment and Development (IIED) has observed that so many tools are being “pushed” by external interest and little is known about whether other appropriate approaches have been effectively used. Consequently, a worldwide survey is being undertaken with a variety of countries (specifically developing ones) in order to produce a Guide that will be relevant to a wide range of potential and actual users. The Guide will use case studies to examine the factors that influence the selection and effectiveness of the most appropriate approaches such as:

- ❖ The management challenges or tasks for which a particular approach has proven effective
- ❖ The context in which the environmental mainstreaming is taking place and how this affects the selection of the approach
- ❖ The user, stakeholders and institutions who are actively involved in the process and how this affects the selection of the approach
- ❖ How tools, tactics and methods can be effectively applied.

The reasons why decision makers in the ministries, departments, agencies, consultants, NGOs and other stakeholder with environmental concern are to be covered in this survey is due to factors such as insufficient knowledge of tools and their availability as well as the inability decision-makers to select the appropriate methods for implementation. There are other reasons such as lack of funding, cost effectiveness of tools and the robustness of tools, which are argued to be responsible for the difficulties in the use of tool, tactics and methods in environmental mainstreaming.

There are locally developed tools, which are not yet discovered therefore making it closely impossible for their application in development decision-making. The increase in the number of industries over the years demands that a critical Environmental Impact Assessment (EIA) as well as Strategic Environmental Assessment (SEA) is required in order to minimize the adverse environmental effect of an undertaking. All these assessments require the application of various tools, tactics and methods, which are appropriate for a specific situation. It is for this reason that the Guide shall provide varying guidance that will assist decision-makers to consider environmental concern in planning and policy development. The success of growth in our environments does not only depend on the application of tool, tactics and methods but also on how effectively those tools are applied and the results which are obtained from their implementation; how gaps, challenges, opportunities and threats are identified so as to bridge the pace that exists among them.

Stakeholders from varying background opinions are examined critically in this report. The object of such examination is to determine whether tools are properly selected and to identify those challenges and obstacles they face in the using of tools. The analyses are presented in charts and tables with the aim of bringing to view the pictorial representation of the analyzed data. The survey is not only to identify the tools and their effective use but also to suggest measures, which serve as basics for strategic policy development.

Global initiative is required for the purpose producing an internationally standardized environmental mainstreaming mechanism that will help to promote sustainability. The Environmental Protection Agency (Ghana) is collaborating with International Institute for Environment and Development (IIED), to undertake a survey in Ghana to gather feedback from diverse existing and potential users or stakeholders about the opportunity and challenges they face in identifying and applying approaches to environmental mainstreaming.

OBJECTIVES OF THE STUDY

- To identify and evaluate tactics, approaches, methods and tools that have been found to be the most effective in environmental mainstreaming in Ghana.
- To identify the challenges and opportunities they face in the application of the identified tools.
- To identify the strengths and gaps associated with the tools

ORGANIZATION OF THE STUDY

The entire survey was categorized into six (6) main segments with each of the segments emphasizing on a specific requirement of the study. Its main categories includes; Stakeholders Identification, Design and Development, Desktop study, Carrying out Interviews, Analyses of results and Report writing.

Stakeholders Identification:

Various groups of stakeholders involved in environmental mainstreaming throughout the country were scrutinized so as to determine those which are appropriate for the study. Emphases were on those who critically involve environmental concern in decision making and

policy development. A wide range of decision makers from the ministerial level down to the NGO's were considered since they all employ various approaches in the implementation of the tool, tactics and methods in environmental mainstreaming. Some of the officials contacted were people at the environmental units of the institutions as well as managers at strategic positions engrossed in decision making. A couple of individuals without in-depth knowledge about environmental mainstreaming views were obtained. Institutions selected include:

- ◆ Governmental Institutions
 - Ministry of Food and Agriculture (Fisheries)
 - Ministry of Energy
 - Ministry of mining
 - Ministry of water, works and Housing
 - Ministry of forestry
 - Metropolitan assemblies and District assemblies
- Private Industries
- Academics
 - Institute of statistical and social research
 - Centre for wetlands management
 - Centre for scientific and Industrial research.
- NGOs
- The Press

The NGOs were selected subject to their relationship with the environment and whether their objectives and activities are environmentally related. Both the print media and the electronic media were also considered and involved in the exercise.

DESIGN AND DEVELOPMENT

A concise work plan was designed for the whole project followed by the development of a well structured questionnaire for the survey. Two separate kinds of questionnaires were designed with the both having the requirements of the survey as the bases. The first questionnaire which was developed in consultation with International Institute for Environment and Development (IIED) focused on obtaining information from stakeholders from different sectors of the country with an assortment of backgrounds in environmental issues.

The second questionnaire which was developed by the team centered on deriving information from specific stakeholders on the application of tools, tactics and approaches in environmental mainstreaming. Both questionnaire were administered and organized for analyses.

DESK-TOP STUDY

Different kinds of literature were reviewed with the core aim of identifying the existing tools, tactics and approaches which are used in mainstreaming locally and internationally.

Information from the internet was gathered from the internet also forming part of the literature review. Information gathered includes tools used by a wide range of user groups including the governmental institutions, press, NGOs and other private industries as well as approaches to implementation of plans and policies set by management at strategic level for environmental mainstreaming.

ANALYSIS

Information was obtained from diverse stakeholders through administration of questionnaires and one-on-one interview with respondents from various backgrounds. In the process of administering questionnaires major tools, methods and tactics as well as approaches were identified. But these approaches identified are applied differently due to the fact the stakeholders belongs to special areas of specialization and working environments.

It also identified various drivers, opportunities, challenges as well as the success of the environmental mainstreaming process in Ghana. The analyses were conducted using programmes such as SPSS, word, excel and other programmes due to the complexity of result obtained. In the administration of the questionnaires received from respondents individual views were considered as well as organization opinions forming a more complex but detailed information about the application of a particular tool under consideration. Particularly in the analyses, respondents' responds groupings and categorization was based on similarities and variations of views and opinion.

➤ *Organizations Involved In Environmental Mainstreaming*

In the organization of the study major stakeholders from all regions of the country were considered and these stakeholders include the governmental institutions, Private sector institutions, NGOs and other civil societies. The chart below shows the percentage of population of the institution involved in environmental mainstreaming in Ghana.

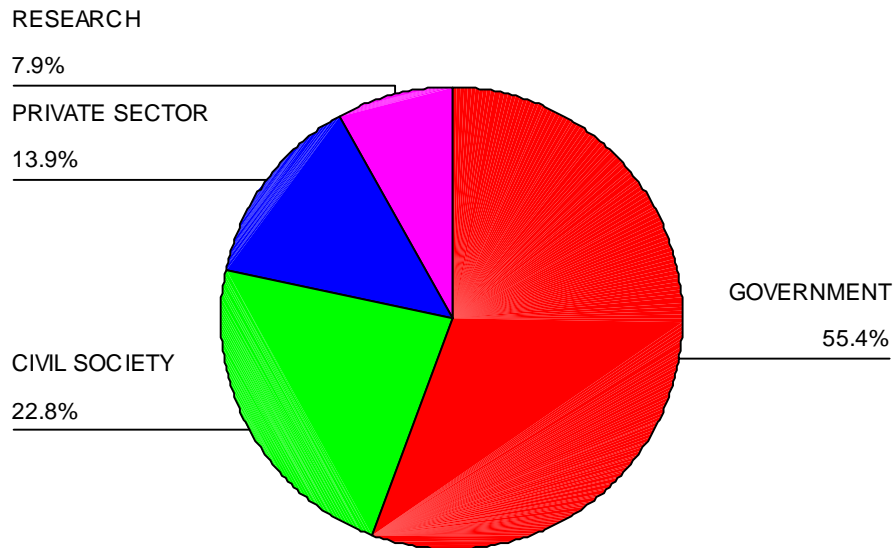


FIGURE 1: CATEGORY OF ORGANIZATION INVOLVED IN ENVIRONMENTAL MAINSTREAMING

In figure 1 above, the study revealed that the highest category of respondents come from the government sector i.e. 55.4%. This means that respondents from the government sector are more concerned about integrating environmental issues into their decision making. This was followed by the civil society (22.8%), the private sector (13.9%) and the research sector (7.9%) respectively.

➤ ***Role of Respondents***

The respondents contacted belong to various organizations and a result play diverse roles in their originations in the area integrating on environmental concerns in to strategic decision making. From the diagram below, it can be ascertained that some of the respondents belong to more highly strategic areas than others. This show how deep a specific category of respondents can influence decisions in their organization and the extent to which policies and plans can be affected by such decisions.

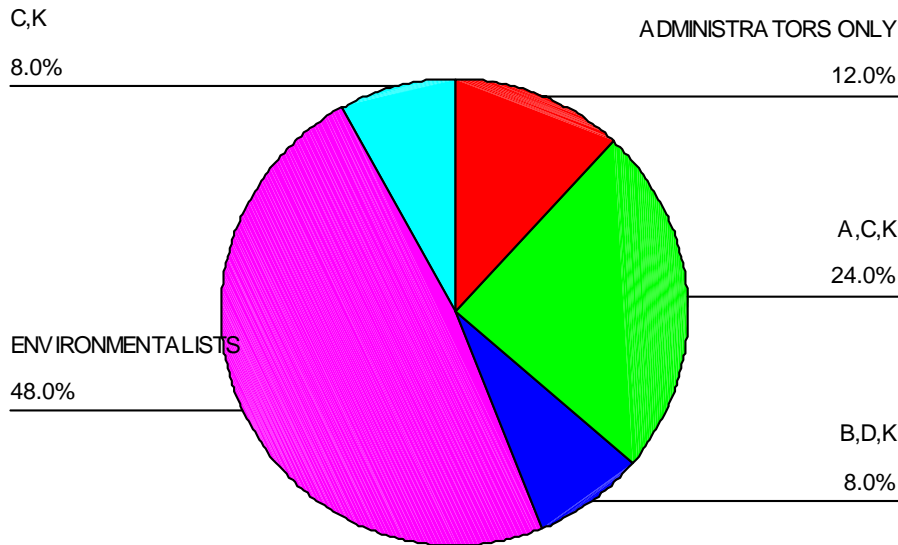


FIGURE 2: ROLE OF RESPONDENTS IN THEIR VARIOUS ORGANISATION

A: Administrator B: Planner C: Environmental specialist D: Economist E: Social specialist F: Investment specialist G: Financial manager H: Researcher/academics I: Senior officer J: Lobbyist/advocate K: Head of organization or department.

From figure 2 above most of respondents are administrators who perform other roles as well. The study revealed various combinations of roles played by respondents. Environmentalists played the major role in environmental affairs and this shows that they are doing their work.

➤ ***Drivers in Environmental Mainstreaming***

During the study the team investigated to find conditions which drive respondents to integrate environmental concerns into policy formulation and implementations. The results obtained are represented on the chart below:

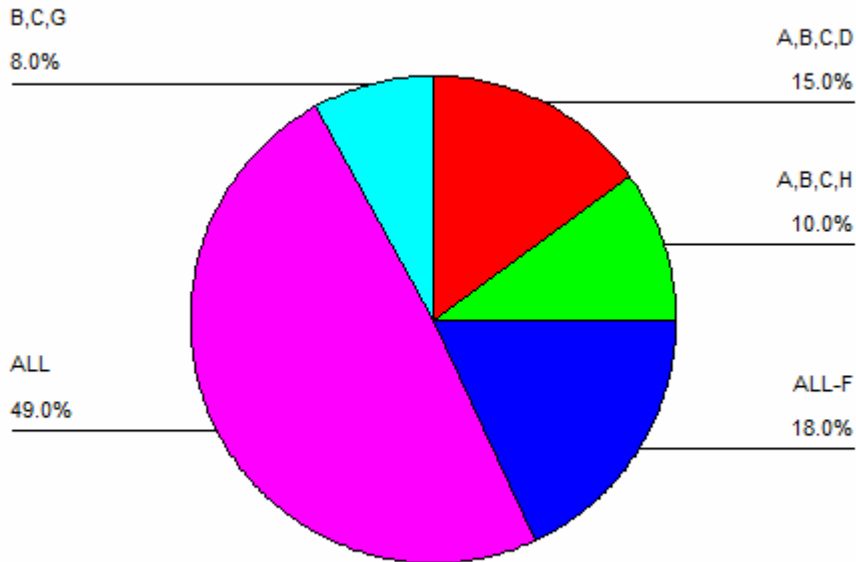


FIGURE 3: DRIVERS IN THE ENVIRONMENTAL MAINSTREAMING PROCESS

- A: International commitments (e.g. UN conventions)
- B: Legislation, Regulations and Requirements (Local/ National)
- C: Company/Business plans or objectives.
- D: Company/Business regulations.
- E: Stakeholder/Public Demands.
- F: Conditions imposed by donor/lender.
- G: Risk management
- H: Personal values
- I: Organization's values
- J: Traditional/ Cultural reasons
- K: Actual or Potential environmental events and issues

What actually drives the respondents to include environmental considerations into their decision making was identified. 49% of the respondents identified all the drivers while 18% identified all except F (conditions imposed by a lender or donor), 15% however identified options A, B, C, and D as the main drivers of environmental mainstreaming as shown in figure 3 below.

➤ **Tools Used in Environmental Mainstreaming**

In the implementation and deciding on which part of the environment should be mainstreamed which should not, a whole range of tools needed for such implementation were also obtained from stakeholders who also explained how these tools work in their respective area of work. Some respondents find some tools more appropriate and easy to be used under a particular situation than others. The variations and the intensity to which a particular tool is considered and used is represented below.

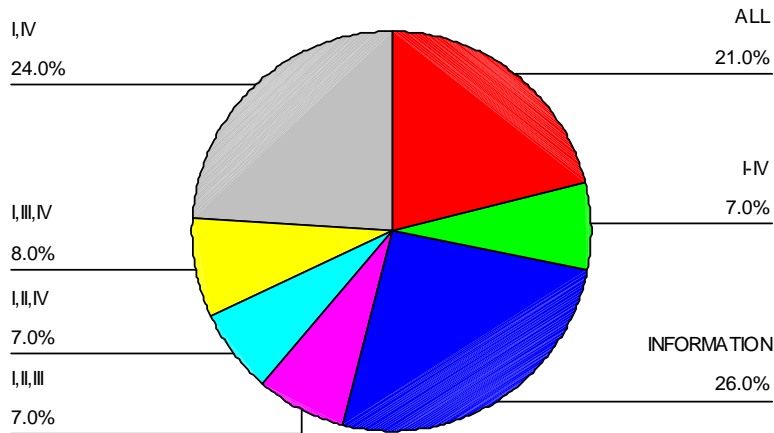


FIGURE 4: TOOLS USED BY RESPONDENTS IN THE ENVIRONMENTAL MAINSTREAMING PROCESS

- | | |
|--|--|
| <i>I: Information and assessment tools</i> | <i>II: Deliberative tools and tools for engaging</i> |
| <i>III: Planning and organizing tools</i> | <i>IV: Management and monitoring tools</i> |
| <i>V: Customary or indigenous tools</i> | <i>VI: Others</i> |

The respondents identified various tools used, as well as combinations of those tools considered appropriate. The study however revealed that the most single commonly used tool is the Information and Assessment tool while 21% identified all the tools to be used in their various sectors.

➤ **Methods Used by Respondents**

In Ghana, the definition of a particular method depends on the situation under consideration and the context in which it is used. Various methods were identified by the respondents. The study revealed different combinations of methods that are used in Environmental Mainstreaming process. The most single commonly used method however was the Impact Assessment and Strategic Analysis Method. The other combinations of methods used are shown in figure 5 below.

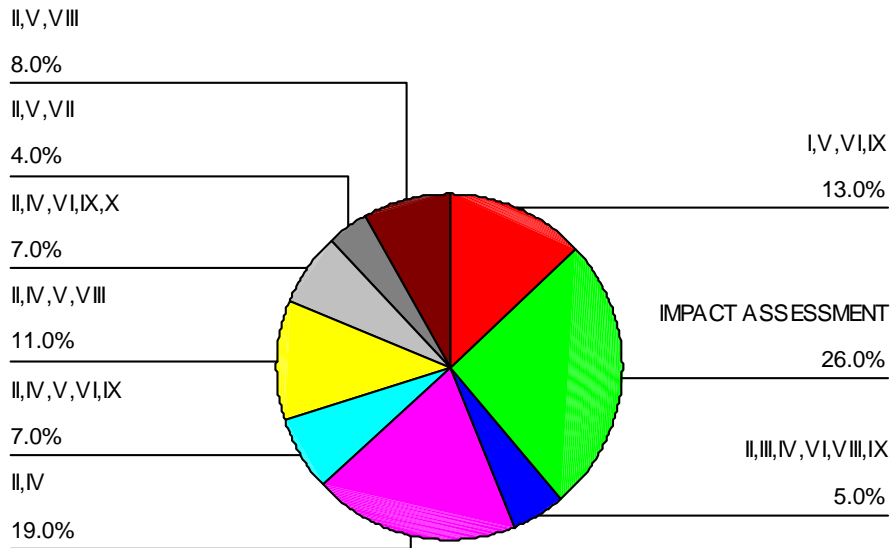


FIGURE 5: METHODS USED BY RESPONDENTS IN THE ENVIRONMENTAL MAINSTREAMING PROCESS

- | | |
|--|---|
| <i>I : Economic and financial assessment</i> | <i>II: Impact assessment and strategic analysis</i> |
| <i>III : Spatial assessment</i> | <i>IV: Monitoring and evaluation</i> |
| <i>V : Policy analysis</i> | <i>VI: Participation and citizen action</i> |
| <i>VI : Political analysis and action</i> | <i>VIII: Legislation</i> |
| <i>IX: Management</i> | <i>X : Others</i> |

➤ **Tactics Used by Respondents**

Considering the tactics used by the stakeholders in the implementation of these tool for environmental mainstreaming, stakeholders were not so responsive in the decision as which very factices are more reliable and appropriate. But the study revealed various combinations of tactics used by respondents in their respective sectors. The most commonly used tactics as shown in figure 6 are the Environmental Impact Assessment, the Natural Resource Assessment, Audit, Environmental Management Plans and Risk Management. The others are thus shown in figure 6 below.

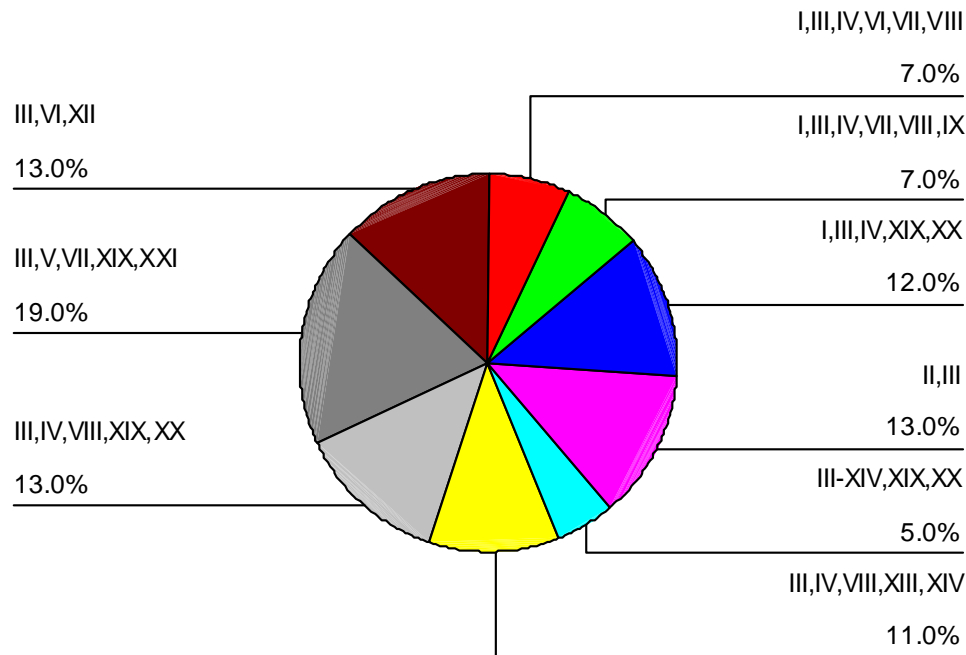


FIGURE 6: TACTICS USED BY RESPONDENTS IN THE ENVIRONMENTAL MAINSTREAMING PROCESS

- | | |
|---|---|
| <i>I: Cost benefit analysis</i> | <i>II: Greening Ghana project assessment</i> |
| <i>III: Environmental impact assessment</i> | <i>IV: Strategic environmental assessment</i> |
| <i>V: Natural resource assessment</i> | <i>VI: Millennium development goals</i> |
| <i>VII: Audit and indicators</i> | <i>VIII: Stakeholder views</i> |
| <i>IX: Institutional</i> | <i>X: Governance mapping</i> |
| <i>XI: Remote sensing</i> | <i>XII: GIS and GPS</i> |
| <i>XIII: Public Hearings</i> | <i>XIV: Press conference and release</i> |
| <i>XV: Participatory rural appraisal</i> | <i>XVI: Manifesto evaluation</i> |
| <i>XVII: Budget</i> | <i>XVIII: Public interest litigation</i> |
| <i>XIX: Environmental management plan</i> | <i>XX: Environmental monitoring</i> |
| <i>XXI: Risk management</i> | |

➤ **Most Commonly Used Approaches**

After the identification of the approaches used by respondents, the study sought to find out the most commonly used as well as the most useful approach in environmental mainstreaming, the approaches refers to the step-by-step system developed by the stakeholders and decision makers from their unique area of specialization in implementation environmental mainstreaming tools identified above.

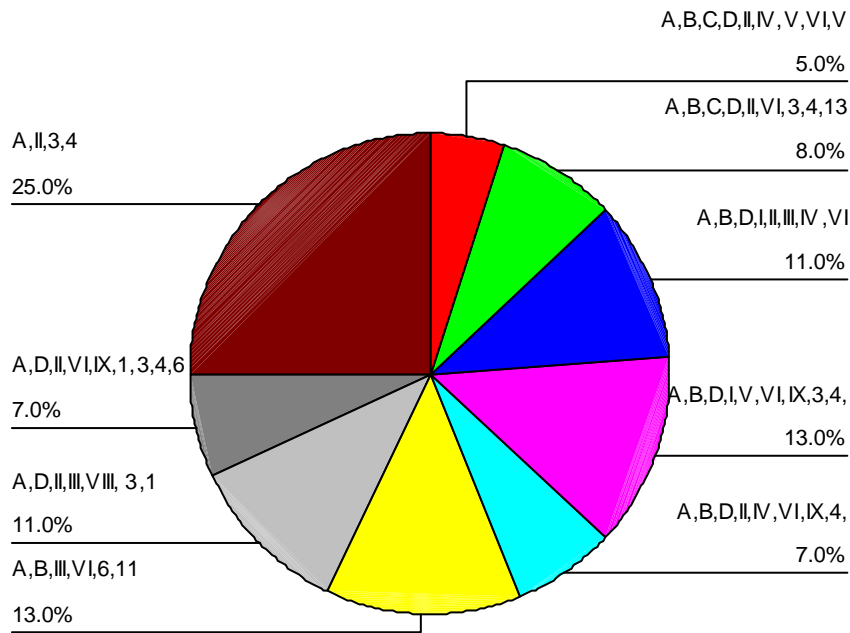


FIGURE 8: MOST COMMONLY USED TOOLS, METHODS AND TACTICS

From the above diagramme, 25% of the respondents were recognized to have applied the A, II, 3&4 (Information and assessment tool, Impact assessment and strategic analysis method, Environmental impact assessment and Strategic environmental assessment tactics) combination. This was followed by other combinations as represented in figure 8 below.

➤ *Reasons for the Selection of Approaches*

The study sought to know the reasons for the selection of particular tool, method and tactic as used by respondents. It was revealed that respondents do consider the extent of skills and training as required to use the tool. Also the simplicity and availability of the approach is another reason for the selection of the approach. This is represented in figure 7 below.

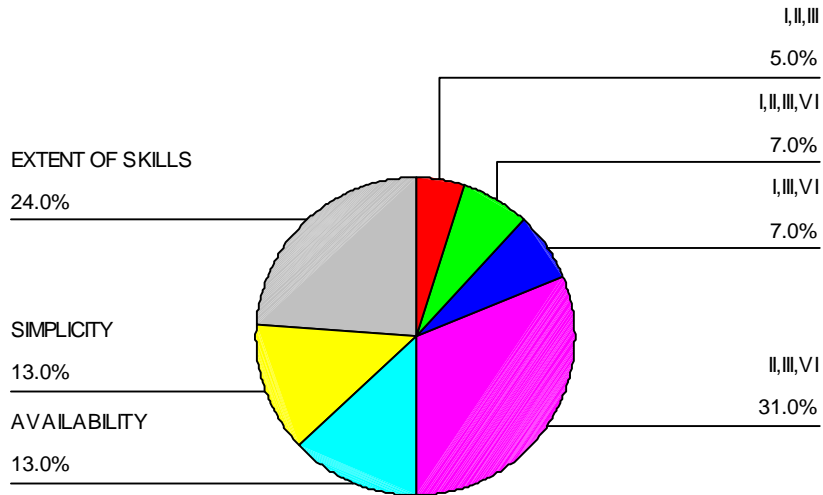


FIGURE 7: REASONS FOR THE SELECTION OF PARTICULAR TOOLS, METHODS AND TACTICS

- | | |
|-----------------------------------|--|
| <i>I: Ease of use of the tool</i> | <i>II: Cost effectiveness of the tool</i> |
| <i>III: Availability of tool</i> | <i>IV: Time required for the approach</i> |
| <i>V: Robustness of the tool</i> | <i>VII: Extent of skills and training required to use the tool</i> |

➤ *Strengths of the Approaches*

For a successful implementation of a policy, the strengths, weaknesses and opportunities as well as the threats of the tools needed for the implementation should be critically analyzed so as to form a bases for comparism and further decision making as to whether the its implementation will benefit a particular society. Due to this, the tools identified above were assessed based on stakeholders' point of view so as to form an opinion. This approach is to find out the strengths of a particular tool and its possible effects on the area of implementation. The diagramme below illustrates the strengths for the use of the tool mentioned above.

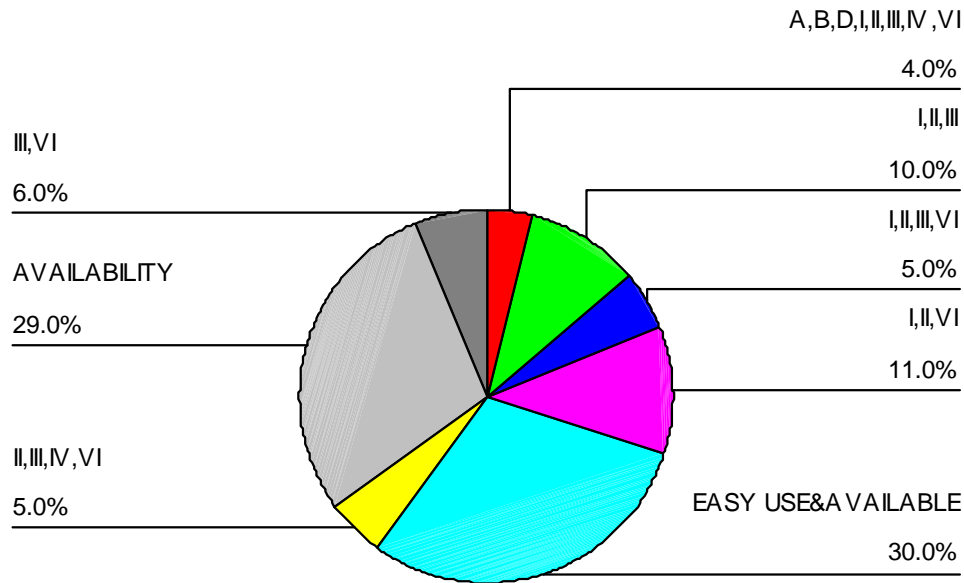


FIGURE 9: STRENGTHS OF THE VARIOUS TOOLS, METHODS AND TACTICS USED BY RESPONDENTS

- I: Ease of use of the tool
- II: Cost effectiveness of the tool
- III: Availability of tool
- IV: Time required for the approach
- V: Robustness of the tool
- VI: Extent of skills and training required the tool

The study revealed various strengths of the selected approaches. 30% of the respondents identified the ease of use and the availability of the tools to be the most important advantages, when applying the selected approach.

➤ **Opportunities Derived from Tools**

In Ghana the opportunities derived from the use of a particular tool is not usually measured to find the effect of its responsiveness to a particular situation. This may be due to the fact that the bases for the measurements as well as the criteria needed for the measurement are not clearly defined. But it was obtained from the survey that there are some hidden opportunities that stakeholders enjoy from the using of tools for mainstreaming in Ghana. The se are illustrated in the chart below

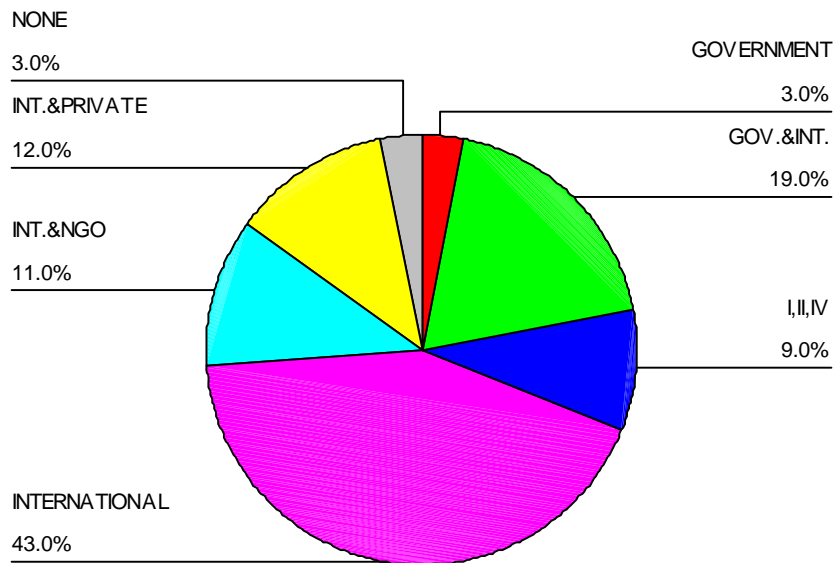


FIGURE 10: OPPORTUNITIES DERIVED BY PRACTICING ENVIRONMENTAL MAINSTREAMING

I: Government II: International bodies III: NGOs IV: Private sector

Some opportunities came to the respondents by way of integrating environmental issues into their decision making. These benefits were derived by different means. It was revealed that international bodies (43%) were the main agencies that gave out most of the opportunities compared to that of the government and the others. This may be due to adequate financing and the presence of accountability and transparency of the implementation methods. Government did not record many opportunities which may be due to scarce resources and difficulties faced in the allocation of resources. This may also be due to the fact that the government is limited by financing since other areas are also equally important for consideration in decision making.

➤ ***Challenges Faced by Respondents***

From the study, many challenges were identified as problems faced by the respondents. It was revealed that most of these challenges ranged from I – VII (25%) followed by I – VIII (21%). The others are represented in figure 12 below.

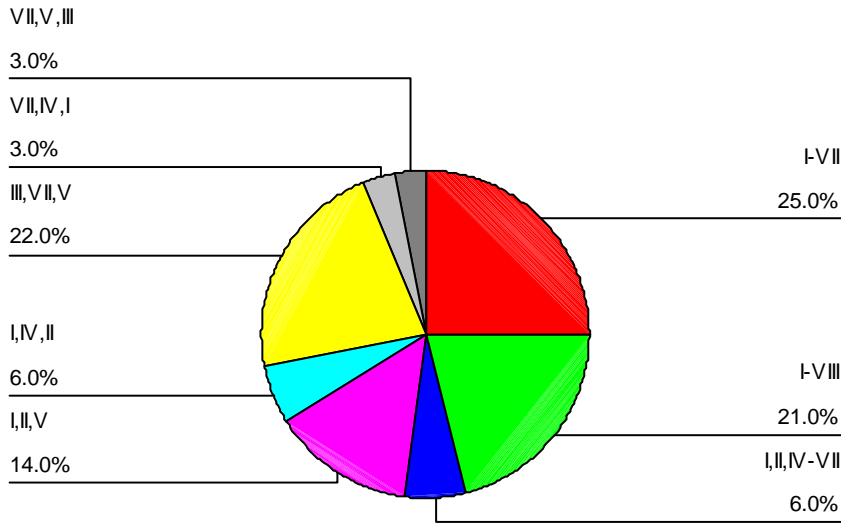


FIGURE 12: CHALLENGES FACED BY RESPONDENTS IN ENVIRONMENTAL MAINSTREAMING PROCESS

- I: Lack of sufficient data/information*
- II: Insufficient human resources*
- III: Insufficient human resources with relevant skills*
- IV: Lack of awareness of the range of tools available*
- V: Lack of insufficient funding*
- VII: Lack of political will*
- VIII: Lack of understanding and awareness of relevant environmental issues*

➤ ***Benefit of Environmental Mainstreaming in the Sustainability of Ghana’s Environment***

In general terms, the team conducted survey to ascertain the relationship that dwell between environmental mainstreaming and development. The study also sought to find out how environmental mainstreaming was beneficial or helping in the sustainability of Ghana’s environment. Most respondents argued out that the system of environmental mainstreaming is not fully understood and therefore believes that they are not being used. Another point that is there the no well defined approaches to the mainstreaming making it difficult to decide on which tool to be applied to what situation. The respond are represented on the chart below showing that 88% of the respondents agreed that it was beneficial whiles 12% disagreed that it was not of any benefit to the environment.

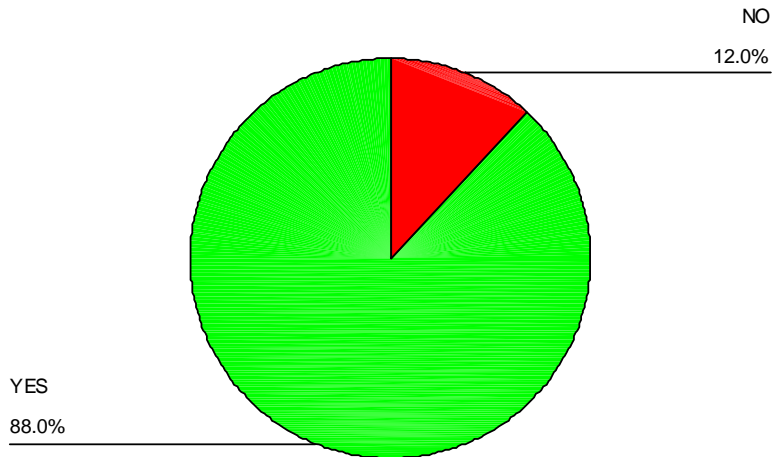


FIGURE 13: HELP OF ENVIRONMENTAL MAINSTREAMING IN THE SUSTAINABILITY OF GHANA'S ENVIRONMENT

➤ *Success of the Environmental Mainstreaming Process in Ghana*

The question as to whether environmental mainstreaming has been successful in the country is a question of debate since people possess a whole range of arguments as to whether environmental mainstreaming in it self exists. Whether its implementation is even possible in the country and who should be involved in the environmental mainstreaming. Researchers came to the realization that the entire system of mainstreaming is not known by a large number of people making it nearly impossible for effective implementation of the mainstreaming tenets. In Ghana, environmental mainstreaming was introduced into the country not quite too long therefore finding it difficult to gain grounds.

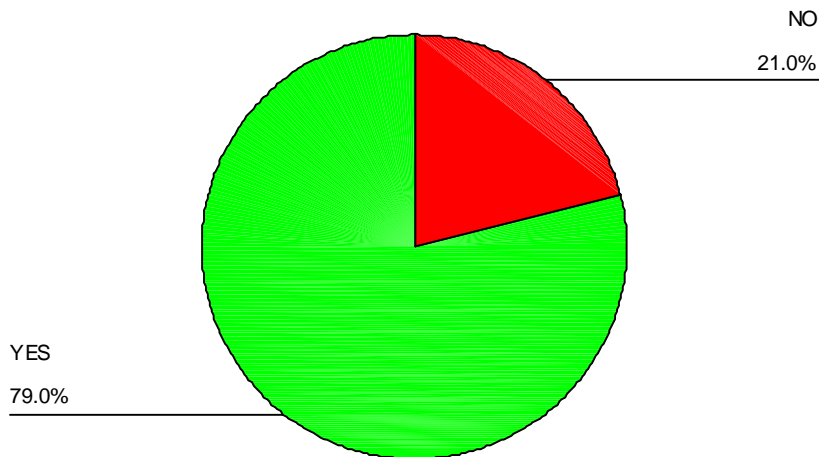


FIGURE 14: SUCCESS OF ENVIRONMENTAL MAINSTREAMING
PROCESS IN GHANA

From the survey, it was obtained that 79% of the respondents agreed that indeed that the system of environmental mainstreaming is being practiced and its helping in the sustainability of the economy but there some areas of the system which should be subjected to review and improvement. Some respondents (21%) however did not see the program to be successful so far. They were of the view that more needed to be done to see its success.

➤ *Need for A User Guide to Effective Approaches in Environmental Mainstreaming*

As part of the survey, researchers sought to know if there was a need for a comprehensive user guide to be used by stakeholders in their quest to integrate Environmental issues into their decision making and planning. 86% of the respondents agreed in affirmation whiles 14% were not in favour since they foresee it to be a mere waste of resources which would not be used in the country. This is illustrated in figure 15 below.

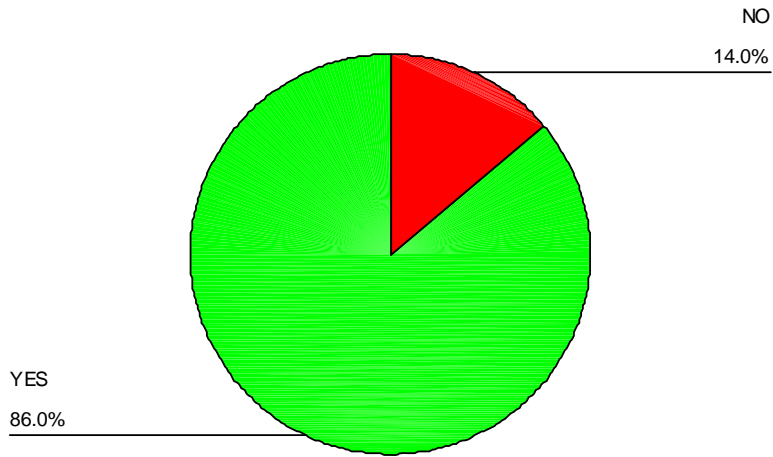


FIGURE 15: NEED FOR A USER GUIDE TO EFFECTIVE APPROACHES IN ENVIRONMENTAL MAINSTREAMING PROCESS

TOOLS IN ENVIRONMENTAL MAINSTREAMING

INFORMATION TOOLS

A. *Economic Assessment*

- i. **Social Cost Benefit Analysis**
- ii. **Natural Resource Accounting**
- iii. **Indigenous Values**

I) **Social Cost Benefit Analysis**

Cost Benefit Analysis or CBA is a relatively simple and widely used technique for deciding whether to make a change. Costs are either one-off, or may be ongoing. Cost Benefit Analysis is a tool which is used to provide information on the cost that may be incurred in the implementation of programmes, plans or policies as well as the benefits which will be derived from incurring such cost.

Benefits are most often received over time. Cost-Benefit Analysis (CBA) estimates and totals up the equivalent money value of the benefits and costs to a community, of projects to be established to ascertain whether they are worthwhile. These projects may be dams and highways or can be training programs and health care systems.

In its simplest form, cost-benefit analysis is carried out using only financial costs and financial benefits. In Ghana CBA is a widely used tool by most stakeholders in governmental and non-governmental organizations in assessing and evaluating plans or policies on the extent to which economic resources will be integrated in developmental activities so as to ensure that benefits to be accrued should exceed the cost which will be incurred. In most ministries in Ghana strategic decision makers in no doubt consider CBA as a first hand informative instrument that is used to evade material misstatements and misappropriation of funds. Additionally it provides the basics for developmental policies formulation in that projects which may not be cost friendly could be transferred to some other areas where cost can be minimized.

Strengths

- ❖ In the Ghanaian context, it is relatively easy for stakeholders to compute the necessary information required for either approach.
- ❖ Secondly, the process provides more information upon which to base a decision. In particular, it provides a notion of where the impacts of uncertainty are important for the analysis and where they are not. This helps the analyst to gather additional information

- ❖ Thirdly, because the process requires a careful examination of the factors most likely to influence the cost-benefit flows, the analysts is better informed as to what the results of the analysis truly represent.
- ❖ Finally, the potential interaction of factors is revealed when *scenario analysis* is employed.

Gaps

- ❖ One of the problems of CBA in Ghana is that the **computation** of many components of benefits and costs is intuitively obvious but that there are others for which intuition fails to suggest methods of measurement. Therefore some basic principles are needed as a guide.
- ❖ Another area is that in cases where cost exceed benefit, valuable and more sustainable policies which can benefit a particular community may be rejected.
- ❖ The determination of values that correspond to variations in key factors is based upon the best information at the disposal of the analyst. Inevitably, this implies the reliance on ad hoc methods for determining pessimistic, optimistic and most likely estimates.
- ❖ Also, the lack of a systematic method for determining the appropriate combination of factors used to define given scenarios limits the reliability of sensitivity analysis.
- ❖ Finally, while the *variable-by-variable* approach fails to account for factor interaction, the *scenario* approach usually only includes a small number of potential scenarios.

ii) Natural Resource Accounting

Conventional growth accounting has often ignored the issue of social costs. Following the study of Ghana, an environmentally-sensitive growth accounting framework is developed and applied to the countries' system of national income accounts. Ghana's resource-dependent growth patterns are less robust than would be the case under conventional accounting procedures. For African countries seeking to achieve sustainable patterns of economic growth and development, accounting for environmental costs in an operationally consistent manner is a useful first step in fashioning appropriate economic policy.

For the past years there are new integrated approaches to economic development and environment has been gaining increasing credibility. This approach, expounded in recent "ecodevelopment" literature, is based on the premise that programs for the conservation of soil, water, land, forests and wildlife must be combined with economic development. The current economic crisis and environmental deterioration in most Sub-Saharan African countries including Ghana has encouraged a much broader recognition of this link between environmental maintenance and elimination of poverty. There is a growing perception that the conventional income accounts reflect changes in natural resources and environment rather poorly, and as a result, may lead to estimates of income levels or growth rates that are not

sustainable. Hence, a number of international agencies and the government are currently trying to construct indexes to better represent the quality of life and eventually to replace GNP.

These new indexes would give the sustainability of natural life support systems priority over conventionally measured economic growth, and would include natural resource depletion in national income accounts

In many resource-dependent counties like Ghana, failure to extend the depreciation concept when depleting the capital stock embodied in natural resources represents a major flaw of the accounting process. It must be stated at the outset that there are limits to setting up physical accounts than to their monetary valuation. For example, in addition to problems pertaining to the availability and quality of data, where accounting of timber resources is concerned, there are also conceptual problems such as aggregating wood from different species of trees. Moreover, monetary valuation is very difficult, and at times quite arbitrary, chiefly due to the remoteness of at least some of the resources from the market economy. Consequently, some of the procedures used below to construct timber resource accounts may involve somewhat roundabout methods that involve a number of assumptions, some of which might be questionable.

However, natural resource accounting as a field of study in Ghana is relatively young, and one would expect that as its value and notion are more widely accepted and practiced, improvements in concepts, methods, and data quality will naturally follow. In other words, given the current state-of-the art, we acknowledge that more theoretical and empirical work is needed before conventional measures could be replaced by more sustainable measures of income.

Under the current system, if a nation like Ghana uses the revenue from its timber sales to finance current consumption--an ultimately unsustainable path--national income would show a gain, not a loss in wealth. Such an approach would be appropriate only in a universe in which natural resources are so abundant that they have no marginal value. Today, however, especially in low income countries for which Ghana in of no exception, natural resources are under such pressure from human activities and have deteriorated so much that many consider large areas in Africa as environmentally bankrupt or refer to it as "a continent on the brink". Therefore, how could a country like Ghana which depend largely on natural resources for employment and income, use a system for national income accounting that ignores their principle assets?

Natural resources are considered "free gifts of nature." But throughout much of the low-income regions rapid deforestation is laying waste to valuable economic assets, destroying fragile soils and accelerating desertification. About 20 million hectares of forest, mainly tropical moist forest, are lost each year. Forests are also deteriorating in quality; each year more than 4 million hectares of virgin tropical forests are harvested, becoming secondary forests. In Africa, between 1950 and 1983, forest and woodland areas dropped 24 percent. Over half of the forest loss in Africa occurred in the West African countries of Ivory Coast, Nigeria, Liberia, Guinea, Gabon, and Ghana, where the rate of forest loss is seven times the

world average. These countries account for virtually all exports of tropical hardwood products from Africa.

In Ghana natural forests covered almost one third of the country at the beginning of this century. By 1980 virgin forest had all but disappeared. According to estimates, well over 60 percent of Ghana's forest has been destroyed in the search for agricultural land, firewood, minerals, and logging for timber. Logging and cocoa production were most responsible for the loss of closed forests until the mid-1960s. The principal sources of more recent deforestation in Ghana, however, have been shifting cultivation and fuel wood harvests, both of which are driven by poverty. Fuel wood consumption, which grew sharply after 1997, reached 906 cubic meters per capita per annum in by 2003, one of the worlds highest. As we shall see below, fuel wood harvests, about four times the volume of industrial log harvests in the early 1970s, are now more than 10 times larger than the latter.

Physical accounts reflect the annual growth in the volume of trees in natural forests. It is well-known that Ghana's rainforests, although relatively poor in species still contain between 20 to 800 species per hectare. Moreover, no two hectares have exactly the same species composition and a high proportion of species is found only once even in a large plot. These characteristics make estimation of growth rates in tropical forests relatively difficult compared to more uniform temperate forests.

Although no detailed information is available on growth rates of tree species in Ghanaian forests and woodlands, a FAO study suggests an average growth of 0.02 m³/ha/yr in most tropical forests put the growth rates of commercial species between 0.1 to 0.6 m³/ha/yr. Another FAO survey of productive tropical forests gives a growth estimate of 0.01-0.05 m³/ha/yr in gross volume. The same FAO study suggests the average annual productivity in Ghanaian open forests to be between 0.02 and 0.06 m³/ha/yr. Based on these estimates, we will assume increments of 0.05 m³/ha/yr in productive closed forests, 0.07 m³/ha/yr for, Only in virgin (undisturbed) forests no increment to volume should be expected, since these forests have already reached their climax equilibrium.

In conclusion, it is widely believed that Ghana has not derived many benefits from forest use to offset the heavy economic, social and ecological costs of rapid deforestation. Fortunately, the Government of Ghana has initiated the Environmental Action Plan, a major effort to combine economic development with the protection of the environment and better management of natural resources.

Strengths

- It promotes the effective accountability for the use of natural resources in most developing nations.
- As a mainstreaming tool, natural resource accounting serves as the basis for environmental resources evaluation for implementation of plans, policies and programmes.

Gaps

- There are no effective established monitoring programmes.
- Failure to deliver appropriate extension services.
- Inadequate involvement of the community in participatory programs.

iii. Indigenous Values

Numbering around 370 million people worldwide in more than 70 countries, indigenous peoples are estimated to include at least 5,000 different socio-linguistic groups. Characteristics of indigenous and tribal peoples include social, cultural and economic ways of life different from other segments of the national population, traditional forms of social organization, political institutions, customs and laws and long-term historical continuity of residence in a certain area. In some regions, the term indigenous also refers to residence prior to conquest or colonization by others.

Two other characteristics recognized as important in identifying indigenous peoples are: relative political marginalization and special ties, and relationships with their customary lands and resources, closely connected to their cultural identity. The widely-used definition and notes that indigenous peoples “form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis for their continued existence as peoples...”

The close ties of indigenous peoples in Ghana with their customary lands, waters and resources are particularly relevant for conservation organizations, leading to recognition of indigenous peoples as important stewards of high-biodiversity areas and to the identification of natural resource-related characteristics often associated with most of our communities. These include:

- natural resource-dependent customary livelihoods including subsistence economies
- traditional ecological knowledge
- traditional systems of control, use and management of lands, waters and resources
- traditional institutions and leadership structures for self-governance and decision making

Indigenous peoples in Ghana are distinct from other stakeholders. They have particular rights and concerns as well as ties of ancestry and stewardship to many areas of biodiversity importance.

For the past recent years, there have been approaches in recognition of the need to make special efforts to respect and protect indigenous rights in relation to conservation initiatives. These approaches are such that they recognize indigenous peoples as right-holders rather than just as vulnerable. Therefore without recognition of the rights of indigenous peoples, no

constructive agreements can be drawn up between conservation organizations and indigenous peoples groups.

The indigenous values as a tool recognize the people's rights to:

- Customary lands, territories, and resources
- Cultural and intellectual heritage
- Free and informed consent prior to the approval of any project affecting indigenous lands, territories and resources
- Decision-making regarding management and governance systems and technologies for their territories

Decision-making regarding development strategies and priorities for their lands

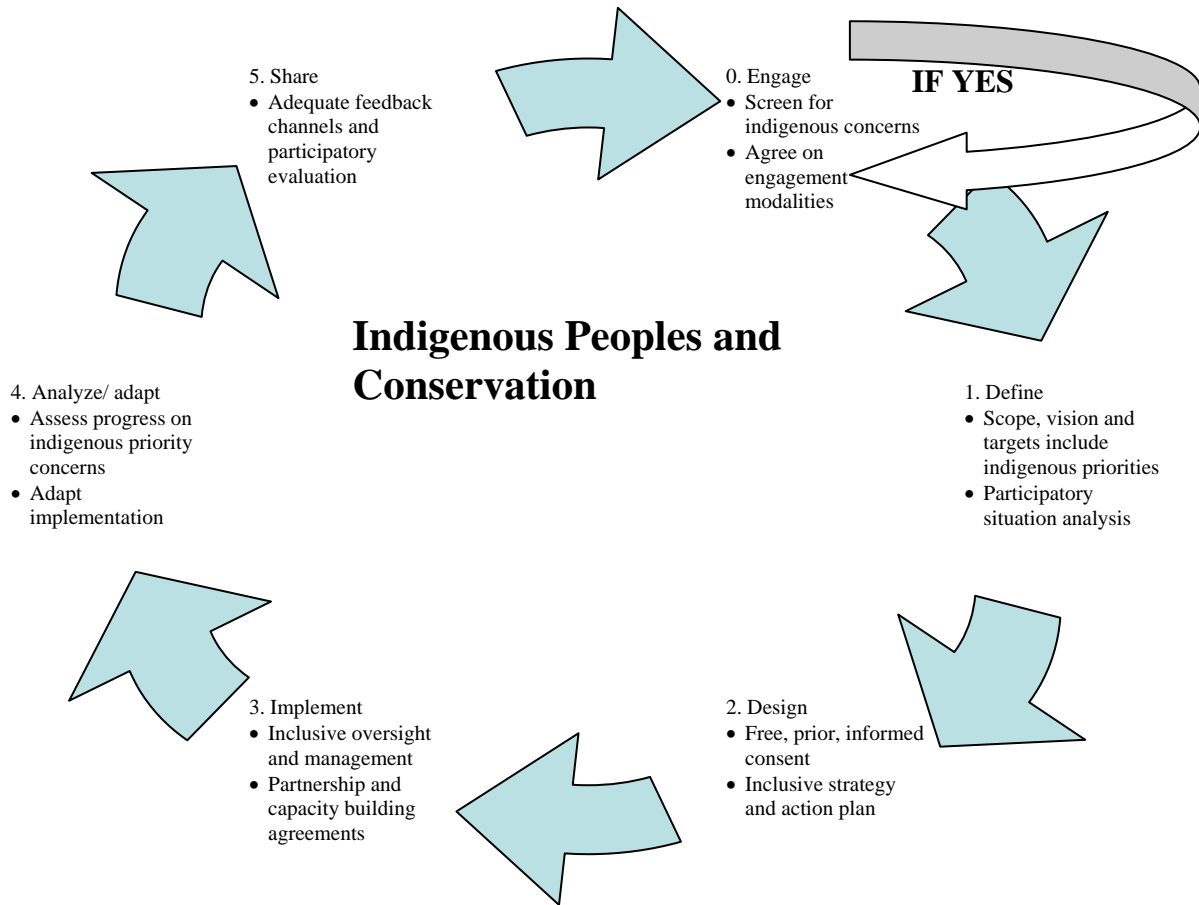
Ghanaians – Supporting territorial rights as a basis for co-management

Many large intact forests in the Ghana coincide with the ancestral lands of the country's approximately 12 million indigenous peoples. The regulations for the protection of such values created unprecedented opportunities for improving indigenous tenure security and strengthening rights-based conservation planning. Yet, it quickly became clear that additional financial and technical capacity was needed to secure effective implementation. Since 1997, Ghana began implementing various Development projects in most regions, with a focus on facilitating the ancestral domain claim. This involved working closely with the indigenous leaders as well as support organizations with anthropological, legal and other technical expertise. Project activities also facilitated dialogue between indigenous communities and park officials of most environmental protection organizations. Sixty percent of the ancestral domain lies within the park, and indigenous access and rights had not been taken into account in the design process. The combined work on ancestral domain titling *and* management planning created a strong formal and technical basis for negotiating a co-management framework and joint activities with protected area authorities. In situations of scarce resources for conservation planning and indigenous titling, on-the-ground activities and support Environmental Protection Agency to strengthen territorial recognition, conservation planning and conflict resolution are of critical importance.

Indigenous Peoples & Conservation

The following sections outline practical guidelines for mainstreaming implementation strategic Principles on Indigenous Peoples and Conservation in programme and project management. Each section describes recommended activities linked to steps of the Environmental organizations Standards framework, and key benchmarks of policy implementation. Often, there are several points in the planning cycle at which policy requirements can be met. In keeping with best practice, these guidelines recommend addressing them at the earliest possible point.

Figure 1. Indigenous Peoples & Conservation



What are their major issues?

Once the indigenous “factor” has been established, it is often necessary to invest in a more detailed assessment allowing stakeholders to familiarize itself with indigenous concerns and vice versa. It is particularly important to fulfil the Environmental Protection Agency policy commitment to seek out information on customary land and resource rights, and legal contexts for their recognition.

In addition, assessment of major issues may involve:

- ✓ Understanding the history of relationships between conservation actors and indigenous peoples
- ✓ Sharing information with indigenous peoples about EPA’s objectives and priorities
- ✓ Assessing commonalities and differences between indigenous and EPA’s objectives
- ✓ Understanding different perspectives of indigenous men and women

In general, knowledge and relationship-building with indigenous peoples require iterative approaches. Initial assessments are likely to reveal needs for further learning down the road. Issues may be identified that will require more in-depth analysis as part of the situation analysis. The more information, understanding and relationship-development done at a programme level, the better-positioned programmes will be in applying policy provisions in specific contexts – this becomes especially important where timeframes or resources for project development may be limited.

B) Impact Assessment and Strategic Analysis

i) EIA,

ii) SEA,

i) Environmental Impact Assessment (EIA)

Environmental Impact assessment (EIA) is a planning and a decision making tool applied in Ghana to proposed “undertakings” (i.e. any activity, project, structure, investment, plan, programme etc.) The implementation or development of which may have a significant impact. EIA involves the gathering and analysis of all relevant information on a proposed undertaking to determine the likely consequences if the undertaking is implemented in a given area, and if it should, what appropriate mitigation or alternatives must be considered in order to ensure an environmentally sound and sustainable implementation or development.

The main stages in the EIA process include screening, scoping and the EIA. However in some cases, a Preliminary Environmental Assessment (PEA) may be required. PEA’s are usually required for moderately significant impact undertakings to provide adequate information on the undertaking as the basis for decision-making.

In any EIA, there are key actors of the proposed project. The actors include the Proponent, Environmental Protection agency (EPA), Relevant Metropolitan or District Assembly, Relevant Ministry and Departments and other stakeholders (affected and interested parties). All stakeholders must be effectively consulted or involved for their inputs and to address concerns and requirements of their in the EIA.

EIA of a proposal is carried out by the proponents (the prospective developer or investor or owner of the undertaking. The proponent may conduct the study or commission an expert to do so.

For an EIA to start, the EIA mandatory list (undertakings for which EIA is required) must be checked. If the proposed project is not listed in the EIA mandatory list, a proposal registration form is filled. However, if the proposed project is listed in the mandatory list as shown below, then a form (Form EA2) is completed to register the undertaking.

EIA Mandatory List:

- Transportation
- Agriculture
- Health
- Mining
- Energy
- Tourism
- Manufacturing Industry
- Forestry and Wildlife
- General Construction and Service

Also, for undertakings within or near some protected areas, EIA is required. Such areas are:

- National parks, reserves, sanctuaries, grooves, watershed
- Habitats of endangered/threatened/rare species
- Unique cultural and tourist value
- Natural disaster prone areas, hills with critical slopes, eroding coast, prime agricultural lands
- Recharged areas of aquifers/water bodies

Filling of form EA2 is accompanied by scoping which helps to focus the EIA on the major issues and concerns. The scoping output is the Draft Terms of Reference (TOR) for carrying out the EIA. 10 copies of the scoping report must be submitted for agreement on the draft TOR, prior to commencing the actual EIA.

Strengths

1. EIA predicts likely problems, conflicts and constraints and determines ways to minimize or avoid them; also offers opportunities and how to realize and enhance them. As such, the proponent and society as a whole benefits.
2. EIA presents options to select from; makes projects more likely to be completed on time and resources relied upon are conserved.
3. EIA provides means for all parties to be consulted (Public involvement), for agreement to be reached between stakeholders and the proponent; and for the answers needed to make informed decisions for sustainable development.

Gaps

- ❖ One of the most frequent problems with environmental impact Assessment (EIA's) is that they are not well done.
- ❖ Additionally, the Environmental Assessment Regulations 1999 (LI 1652) which provides the bases for the assessment is not extensively enforced.
- ❖ EIA's are done by people who already know about them, thus the EIAs are not true reflections or representation of what actually lies on the ground.

ii) Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment is the formal, systematic and comprehensive way of evaluating environmental effects of a policy, plan or programme and its alternatives and using the findings after preparing a written report in public decision making. SEA involves stakeholder engagement, awareness creation and aids clear decision making. SEA includes the refinement of policies, plan and programmes as well as a SEA Report that documents the process of a clear decision making.

Sea is important because:

- 1) it deals with EIA problems particularly the lack of assessment of cumulative and
- 2) It promotes sustainable development.

What SEA actually does is that:

- It can incorporate environmental issues intrinsically into project planning by influencing the context within which project decisions are made.
- SEA also allows consideration of alternatives or mitigation measures that go beyond the confines of individual projects.
- It could also allow for consultation on the more strategic issues.
- SEA is proactive.
- One major advantage of SEA over project EIA is that it allows consideration of a wider range of mitigation measures particularly measures to avoid impact at an earlier and more appropriate stage of decision making.
- SEA allows sensitive areas to be avoided and environmentally beneficial development to be promoted rather than allowing individual development proposals to be considered on an adhoc, reactive basis.
- It may also allow some potential negative impact of one action to be used positively for another development. It can also allow for a wider range of positive measures to be taken, for instance, the creation of new recreation areas or wildlife corridors that goes beyond individual development sites.

SEA can be done in various sectors as well. This is called Sectoral SEAs. Examples of Sectoral SEAs are;

- Transport sector SEA
- Energy sector SEA
- Mining sector SEA

In Ghana many Strategic Environmental Assessments have been done. In 1998 for example, the Ghana Environmental Assessment Capacity Building Project (GEACap) was commissioned by RNE to EPA. The project covered a time period of three (3) years and its aim was to enhance the capacity in undertaking Environmental assessment and its contribution to planning in Ghana especially at the district level. The outputs from this project were several guidelines and manuals, increased levels of exposure to and experience with EA and higher levels of understanding and appreciation of EA.

Other examples of previous SEAs in Ghana include;

- VIP (1996)
- TEMA EP2 (1998)
- AgSSIP (1999)
- Small Towns Water Supply (2004)
- SEA of GPRS (2003-2004)
- SEA of the water sector (2003)

Strengths

SEA has a lot of advantages over EIA or Environmental Assessment as a whole. SEA:

- ❖ Takes place at the earlier stages of decision making
- ❖ Identifies environmental implications, issues of sustainable development
- ❖ Considers a broad range of potential alternatives
- ❖ Gives early warning of cumulative effects
- ❖ Emphasis on meeting environmental objectives, maintaining natural systems
- ❖ Is a multi-staged process overlapping components
- ❖ Focuses on sustainability agenda, gets at sources of environmental deterioration

C) Monitoring and Environmental

- i) Indicators**
- ii) Millennium Development Goals (MGDs)**

i) Indicators

Environmental Protection Agency in Ghana defines an indicator as “a numerical value derived from actual measurement of a pressure, state or ambient condition, exposure or human health or ecological condition over a specified geographic domain, whose trends overtime represent or draw attention to underlying trends in condition of the environment”.

Indicators in Ghana are powerful tools used at strategic levels for economic performance evaluation. In some cases it provides bases for end-of-project performance evaluation.

Considering the environment where most developmental project take place, it is important to establish a system which provide adequate information about performance evaluations; indicators are directly used as informative tool for public information. As a monitoring and evaluation tool, they are used variously to describe the state of the environment for a particular issues (plans, policies and programmes) in scientifically concise and well understanding manner to facilitate easy implementations. Our country public awareness system includes indicators which are systematically arranged in other to establish periodic approaches to provide in-depth explanations to policy implementations and effects.

Strengths

- They serve as signposts for the country's path towards environmental and developmental sustainability.
- Indicators in Ghana identifies where additional research, data quality improvements and information that are needed.
- Policies can be formulated from environmental indicators and this will help in the achievement of the MDGs and improve the environment in Ghana,

Gaps

- They do not represent a comprehensive report on the state of our environment.
- There is lack of a standardized method of data acquisition and interpretation.
- Lack of interest in the field.
- Organizations are unable to cooperate well to share information (i.e. difficult to know who has the information as well as which information is reliable).

ii) MDGs

The MDGs represent a global partnership that has grown from the commitments and targets establish at the world summits of the 1990s. responding to the worlds main development challenges and to the call of civil society, the MDGs promote poverty reduction, education, mental health, gender equality and aim at combating child mortality, AIDS and other diseases.

MDG 7 focuses on enduring environmental sustainability and the main targets are; to integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources, to have, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation and finally to improve the lives of at least 100 million slum dwellers by 2020.

MDGs is feasible if Ghana combines strong government leadership, good policies and practical strategies for scaling up public investments in vital support from the international community

Strengths

- The MDGS provide outcome objectives that countries can use as benchmarks for the transition from relief and recovery to long-term development.
- MDGs serve as a universal framework for development and a means for developing countries and their development and a partner to work together in pursuit of a shared future for all

Gaps

- Some goals are not met just because they were set too high
- Inability to picture real issues
- A lot of information is not up to date and this makes it difficult to identify priorities and magnitudes of the problems.
- There is lack of highly trained personnel (environmental specialist) and professional manifesto for databases.

D) Policy Analysis

- i. Stakeholders**
- ii. Institutional**
- iii. Governance Mapping**

i. Stakeholders

Stakeholders are those parties concerned with or affected by Environmental issues and may include government, regulatory authorities and other agencies, professional and industrial bodies, environmental and local interest groups and individual members of the public.

Stakeholders in Ghana's environmental issues consist of everybody. This ranges from the government to the various ministries and agencies, non-governmental organizations, the private sector, international bodies as well as individuals. With the rising levels of environmental concerns, all and sundry are more environmentally conscious and as such, question leaders without environmental issues in their decision making.

One of the basic premises for sustainable development is the recognition that environment and development are not exclusive of one another but are complimentary and interdependent and in the long run mutually reinforcing. Stakeholders see it necessary to view environmental problems as a system: a coherent set of solutions is required which will ensure that each step taken, whether in planning or implementation, to meet them fits imperfectly with others envisaged. It is not possible to neither compartmentalize environmental concerns nor deal with them in sectors. The difficulties are however compounded by the fact that long-term and flexible responses are devised.

Unfortunately in Ghana, industrial including mining development has generally been at the expense of the environment. There is increasing evidence that, in some parts of the country, excessive demands are being made on the limited resources and the current capacity on the fragile eco-systems. These have led to soil and degradation, aerial and water pollution, public health problems etc. For example, the main problems associated with surface mining in Ghana include land devastation, soil degradation, water and air quality changes. The main potential environmental concerns of stakeholders associated with underground mining in the country are subsidence, visual intrusion and water quality change especially if the underground mine water (s) is pumped to the surface. The health hazards to miners are numerous and may include accidents (rock falls, mine fires, haulage accidents, shaft accidents etc), gas poisoning, high temperature and humidity effect, and various occupational diseases.

Statistics of approved industrial establishments in Ghana show the rising numbers of manufacturing industries in the country. Available data also shows about 60% of Ghana's industry to be located within the Accra-Tema districts. Such a situation naturally led to the migration of people from the rural areas to Accra-Tema thereby aggravating environmental stresses caused by industrial activities to stakeholders.

Strengths

- Stakeholders in environmental issues have proved very strong by unearthing major environmental issues to the public thus helping in the prevention of some environmental disasters.
- Stakeholders have been part of decision making processes by incorporating environmental considerations into planning and policy implementation.

Gaps

- Environmental problems to an extent have been caused by the stakeholders themselves.
- Stakeholders have sometimes proved difficult when strict measures or decisions are taken to help sustain the environment at large. For instance, when people are asked to evacuate their abode because of an emerging disaster, they find it difficult to do so.
- Some leaders also take sides with stakeholders so as not to consider environmental considerations into their planning and decision making processes because they see it as a waste of resources.

ii. Institutions

Several public institutions are involved in policy formulation and execution in the Environmental Management field. In Ghana most of these institution works hand in hand with the Environmental Protection Agency in the management of the land. The institutions

however, deal with various sectors of the environment. As such, the institutions are concerned with particular environmental issue. Examples are listed below.

1. For the mining and industrial sector, the institutions operating include the EPA, Factory Inspectorate, Minerals Commission, Mines Inspectorate, and Forestry Commission among others.
2. For Marine and Coastal Eco-systems, the institutions responsible include, The Hydrological Services division, The Water Research Institute, The Survey Department as well as the District Assemblies.
3. For Human Settlements, institutions such as the District Planning Unit of District assemblies, National Development Planning Commission, Statistical Service, Ministries of Transportation, Works and Housing, Railways etc. operate.
4. For Forestry and Wildlife Sector, institutions operating include the Ministry of Mines, Lands and Forestry, the Forestry Commission, the Wildlife Department, Forest Products Inspection Bureau, Timber Export Development Board, Lands Commission and the Faculty of Renewable Resources.
5. For Land Management, the institutions are, the Ministry of Agriculture, Ministry of Local government, Rural Development and Environment and the Lands Commission.
6. For Water Management, the institutions include Meteorological Services Department, Hydrological Services Division, Water Research Institute, and institute of Aquatic Biology. Others include the Volta River Authority (VRA), Ghana Water and Sewage Company and the Irrigation Development authority.

Strengths

- The various institutions have helped in monitoring and managing environmental issues in the country.
- The institutions have helped by giving their views during the formulation of policies and their execution and thus have been part of the decision making process in the country.

Gaps

- The institutions have not lived to their expectations especially in the area of their objectives.

- In one way or the other, the institutions have failed to achieve their aim in monitoring the environment.
- Lack of funds has been the basic constraint that has led to inadequate monitoring of activities by these institutions concerned with environmental issues.

DELIBRATIVE TOOLS

- i) Press releases**
- ii) Press Conferences**
- iii) Public Hearings**

i. Press Release

The general definition of Press Release is simply the activity that various institutions engage in informing the public based on their mandate. In Ghana, organization in charge of the environment i.e. Environmental Protection Agency (EPA) is involved in monitoring Environmental Education and Awareness Creation. With the monitoring regime, it emphasizes on the monitoring of industrial activities, manufacturing and other sections like chemicals and Agro business and recently there have been the inclusion of climate change for a department has been set to administer.

For the public, EPA engages in the creation and innovation much environmentally needed information. This information comes out of research for public consumption. An example is the information about high lead level in individual's blood. The Agency disseminates the information into the domain of the media houses news bulleting. This process of information dissemination is what the agency refers to as press releases.

Strength

- ❖ As a tool, it serves as a major source of ascertaining sensitive and more reliable information since such information are usually from strategic levels fan organization.
- ❖ Usually press releases come in the form of open forum where observers come directly into contact with stakeholders concern. This helps for direct interactions by both parties which give way to further clarifications and questioning.

Gaps

- ❖ The major weakness of the press release as a tool is that some information provided to the media houses may be insufficient on the subject matter.
- ❖ Moreover, the media house representatives at the press release are not frequently allowed to seek clarifications.
- ❖ Sometimes in order to obtain additional information to ascertained one need to book appointments with officers concern to which makes the system complex.

ii) Press Conference

With Press conferences, the organization, institutions or company organizes conferences and feeds the public on information about the environment. The press conference is more in-depth. There is enough clarification on issues that may have been generated outside the country that could have a bearing on the activity in Ghana. Media house representatives are given adequate chances seek clarification that can trigger more discussions on the issues at hand.

Strengths

- ❖ Press conferences help in providing more and detailed information than press releases.

Gaps

- ❖ A limitation to this tool is that it cost more to organize press conference than the press release.

iii. Public Hearing

It is a requirement under (LI 1652) 1999 that certain projects that are environmentally sensitive in terms of location should go for public hearing. It has the characteristics of the press conference in a way that the public is invited to hear your intention on the proposed project.

They solicit public views into the project design. The people in the area are given grounds to express their consent whether they approve or disapprove the proposed project in their community which must be known at the public hearing.

Strengths

The public hearing is a legal requirement which gives an opportunity for follow-up on the project.

It provides the opportunity for monitoring of the project at divers points.

Gaps

The inhabitants of most localities bring undue pressure on the proponent undertaking the projects.

Also, people who do not agree to the project influence and organize demonstrate and cause problems during the public hearing and these agitations really impede the progress of the projects.

PLANNING AND ORGANIZING TOOLS

A. Legal

- i. Legislations**
- ii. Public Interest Litigation**
- ii. Budget**

i. Legislation

Legal framework for the forest sector comprises a mix of old and new legislation. Old laws still in force include the 1927 forest ordinance, which operates alongside recent primary legislation (Acts) and regulations (Legislative Instruments, LI's).

In 1996, proposals were submitted to the Ministry of Mines, Lands and Forestry by a committee for a consolidated forest act (Committee for the Review of Laws in the Forestry Sector 1996). Draft legislation was prepared that brought together forestry and wildlife and included proposals for the devolution of authority for forest management to local communities through dedicated forests.

The Wild Animals Preservation Act of 1961 regulates the use and exploitation of Wildlife in Ghana and establishes the Government's right to establish protected area. Detailed management organisation is provided for in both the Wildlife Reserves regulations: 1971, L.I 710, and the Wildlife Conservation Regulations: 1971, L.I.685. Some of the laws are perceived as being fundamentally unfair at odds with local values or impossible to implement. New Legislation is currently being drafted with technical assistance from IUCN.

Some newly environmental laws formulated environmental laws by government and stakeholders has provided a legal backing to environmental activist whiles serving as guideline to business industries in safeguarding the countries environment and natural resources. The Association of Ghana Industries (AGI, an umbrella group for industries in Ghana.) has adopted some of the guidelines and made it mandatory for its members to adhere to as the Ghana Business Code.

Strengths

- ❖ Businesses are setting up environmental units to access loans and other benefits.
- ❖ People are learning more about sound environmental practices.
- ❖ People can be prosecuted for abusing the environment.

Gaps

- ❖ Legal framework for wildlife and forest sector is dated.
- ❖ Other gaps in the legal framework must be filled such as mproving the forest plantation Development Fund Act , which is designed to enable financial assistance

for the development of forests plantations , yet does not specify important issues such as the restrictions and obligations of the grantees for the fund.

- ❖ Enabling legislation to provide for the voluntary establishment of dedicated forest reserves.
- ❖ Dealing with timber rights fees when TUC's are not allocated through mechanisms such as conversion.
- ❖ Treating unsolicited bids e.g. for wildlife lodges or facilities.
- ❖ Creating a better definition and better processes for implementation of social responsibility agreements (SRA's)
- ❖ Harmonizing the fiscal incentives and mechanisms for private sector plantation investments, including treatment of carbon values and other environmental services.

- ❖ Law enforcement bodies and the judiciary are often ignorant of these laws

- ❖ Punitive measures are often not enough to serve as deterrent
- ❖ Local government authorities not adequately equipped to ensure adequate environmental protection.

ii. Public Interest Litigation

According to Environmental Assessment Regulations 1999(LI 1652), any undertaking (any enterprise, activity, scheme of development , construction, project, structure, investment, plan ,programme, demolition, rehabilitation or decommission) the implementation of which may have a significant impact must register with the Environmental Protection Agency (EPA). After registration the, the proposed undertaking is screened. And successful candidates are then required to submit a Preliminary Environmental Report or an Environmental Impact Statement (EIS).

A scoping report is the first exercise to be carried out to determine the main issues to be addressed in an EIA study. The scoping exercise leads to the preparation of terms of reference (TOR) which serves as a guide for the EIA. The TOR must be agreed upon between the Agency and the proponent. The PERs and EISs submitted are reviewed by the Agency in collaboration with relevant ministries and government agencies. For the EISs, a 21 day public notice (newspaper adverts) is served to invite contributions/comments. Public Hearing is held as part of the review (Regulations 16 & 17) where:

- there are strong public concerns on the undertaking
- it involves resettlement/relocation of communities, utilities or diversion of a river/stream.
- the Agency considers that the undertaking could have extensive and far reaching consequences on the environment.

Projects deemed to be environmentally sensitive due to their location are supposed to go for public hearing in accordance with LI 1652, 1999. This is to solicit public views of the project and address their concerns. Businesses or industries that abuse the environment or fail to address the concerns of concerned individuals or communities can be dragged to court.

Strengths

- The process elicits public involvement.
- Ensures the public's environmental concerns are addressed.
- Measures can be adopted to prevent any disasters in future.

Gaps

- Ignorance on the part of communities on their rights hinders efforts at ensuring industries observe safe environmental practices.
- Education on safe environmental practices needs to be intensified and simplified.

ii. Budget

Ghana's economy is expanding at a commendable growth rate, with an average annual GDP growth of about 6 %. As a result, the country has made considerable strides in laying a strong foundation for sustainable growth and poverty reduction.

With the government's inclination for a faster poverty reduction: accelerated growth is set to play a key role, and Ghana's Growth and Poverty Reduction Strategies (GPRS II), fuelled by agriculture and private sector development, are focused on continued growth. However, Ghana's natural resources upon which so much of the country's economic activity and the population's livelihood depend are being depleted at an alarming rate. This threatens to reduce the country's GDP growth in the near future. Recent estimates of the cost of natural resource and environmental degradation suggest that the equivalent of 9.6 % GDP is lost annually through unsustainable management of the country's forests and land resources and through health costs related to water supply and sanitation, and indoor and outdoor air pollution. This has significant impact on the capacity of the country to sustain its growth, as it substantially reduces the genuine savings rate (a measure of growth sustainability that takes into account environmental factors). In light of this, the Government of Ghana and its development partners have jointly developed a natural resources and environmental governance budget support operation as a response to the findings in the CEA (Country Environment Analysis).

Furthermore, over the five year period beginning in 2004, funding of the ENR (Environmental and Natural Resources) sector has declined, in real terms as a share of the Government of Ghana's total spending.

Strengths

CEA will assist the Government of Ghana and the developing partners to:

- Assess the country's environmental priorities in key sectors, the environmental implications of the key economic and sector policies and the country's institutional capacity to address them.
- Find practical management, institutional and policy solutions to handle issues of natural resources management, environmental degradation and sustainability of the growth.
- The CEA has already contributed to mobilizing, strengthening and anchoring the Environment and Natural Resources Management (ENRM) dialogue between the government and the development partners involved in the Multi-Donor Budgetary Support (MDBS) Group.

The CEA provides:

- a comprehensive report that provides for each sector/ asset -an overview of the sector and its contribution to growth, an analysis of the underlying causes of degradation, and a set of implementing recommendations to address these issues.

- a set of policy /action matrices that provide for each sector/asset – a road map for action in the short, medium, and long-term.
- The budgetary allocation to the ENR sector enables the stakeholders to play their roles effectively.

Gaps

- The CEA does not address all possible environmental or natural resources aspects, but functions rather as a key input to stimulate the ongoing policy dialogue in the country.
- Although the CEA highlights the main environmental challenges, it does not identify Ghana's environmental priorities but rather focuses on the priority issues in key environment and natural resources sectors that are critical for both growth and poverty reduction in Ghana.
- Environmental and Natural Resources sector is under the Ministry of Local & Rural Development which is a big ministry with vast responsibilities hence the ENR is not given the due attention it deserves.
- One of the main problems facing the sector is the formulation process. The Ministry of Finance and Economic Planning was unable to meet the resource requirements of the sector because the budget planning proceeded on the basis of differing objectives. While the agencies initiate the budget process by bidding up previous allocations, the macro-economic ceilings imposed by MoFEP seek to fit these budgets within the tight constraint of the national budget.
- Sometimes after the ENR sector has been given its budgetary allocation, funds are diverted to other area of the economy.

MANAGEMENT AND CONTROL TOOLS

A. Management Planning

- i. Environmental Management Plan
- ii. Environmental Monitoring- Inspections
- iii. Risk Management

i. Environmental Management (Plans)

Environmental Management Plan is an operational plan that organizes and co-ordinates mitigation, rehabilitation and monitoring measures in order to guide the implementation of a proposal and its on- going maintenance after implementation. The plans are used for environmental management which ensures that environmental concerns are included in all stages of development so that development is sustainable and does not exceed the carrying capacity of the environment.

Environmental Management usually consists the process gone or things done to maintain the environment in a near-natural state that is sustainability of the environment to prevent future problems. In Ghana, Environmental Management process consists of Environmental policies, Environmental Quality control, Integrated Planning and Development as well as Environmental ethics and laws.

Environmental Management in Ghana has been sectioned into many parts such as the Management of Environmental Resources which comprises of conservation of forest, fishery and wildlife resources, protection of the soil, development and ecological management of coastal regions, energy resources management (especially the reduction of pressure on forest for wood fuels by promoting the development of renewable energy sources), management of water resources, urban areas and waste management(since volumes of waste is generated in urban centers on daily basis.) The Environmental Management in these areas encompasses prevention, restoration/reclamation and proper disposal of waste.

For example, solid waste is generated by all manufacturing, processing and mining industries and usually poses disposal problems to both industries and the public. The characteristics of solid waste vary but consist of wood, plastics, rubber, metals, textiles, glass and residues of combustion. Here, management embraces the storage, collection and transportation to the disposal/treatment site.

In Ghana, solid waste management is the responsibility of the ministry of Rural Development, Local Government and Environment through the District and Municipal Assemblies since the district assembly is responsible for the administration of its area of authority and for the provision of public services in that area.

Strength

- ❖ Laws and regulations have been made and implemented

Gaps

- ❖ Enforcement of laws and ethics has been very weak
- ❖ Environmental regulations made have not been monitored (it does not sufficiently and committedly involve public executing agencies)

- ❖ There is limited knowledge, experience and expertise in environmental management
- ❖ Non implementation of the management measures put in place especially because funds to finance proposals are neither provided for nor elicited

ii. Environmental Monitoring

Monitoring is the collection of information to determine the effects of environmental management and to identify changing environmental condition or needs. Monitoring constitutes an essential activity in the solution of Environmental problems. Human activities and the environment in which they occur are in a constant state of flux, therefore, the process of environmental monitoring must necessarily include the need to describe change.

Monitoring in Ghana is designed to provide a sound knowledge about the resources themselves, that is, their spatial distribution, their quantity and quality and of all the interacting elements within their framework of development. There is also the need to know the extent to which the environment is being modified as a result of the various human use systems. This ensures that rational choices are made among alternative development strategies.

Monitoring (Environmental Monitoring) is done in various ways in Ghana. The Environmental Protection Agency (Ghana) is responsible for monitoring in the country. This monitoring is however sectioned in various ways so that it will achieve good results in the end. For example, the Environmental Quality Department of EPA, Ghana is responsible for air quality monitoring in the country. As such, there are a number of air monitoring stations spread across the country that monitors the air we breathe.

Also the Ozone Department of EPA, Ghana, is responsible for the monitoring of Ozone Depleting Substances (ODS) in the country since Ghana has been a signatory to the Montreal Protocol. Other monitoring activities done in the country include monitoring in the mining sector, industrial sector, fisheries sector, transportation sector, water sector etc.

Some institutions involved in monitoring apart from EPA in Ghana include the Factory Inspectorate, Mines Inspectorate, Minerals Commission, Forestry commission, Energy Commission, Survey Department, Water Research Institute, Geological Survey Department among others.

Strengths

- ❖ Environmental monitoring has come a long way to help sustain the environment because monitoring has exposed environmental issues that have been tackled which otherwise would have been environmentally disastrous.
- ❖ Due to monitoring, financial aid has come from international bodies that have helped in undertaking some projects in the country.
- ❖ Monitoring has exposed some environmental risks and thus given the need and attention for research into such areas.

Gaps

- ❖ Some monitoring projects started were not executed to the end
- ❖ Lack of funds has been the major hindrance to environmental monitoring in Ghana

iii. Risk Management

Environmental Risk comes about when there is an exposure of an identified hazard i.e. $\text{Risk} = \text{Exposure} \times \text{Hazard}$. Environmental Risk takes many forms such as Physical, Human, Ecological, Environmental etc depending on the cause and or the effect of the hazard.

When a series of procedures are performed to assess the hazard, it is referred to as Risk Assessment. In Ghana, after Risk Assessment has been done, plans are taken to manage the risk. Thus, the institution of various mitigation measures both administrative and technical to minimize the effect of an operation or programme on the environment is referred to as risk management.

Risk management usually involves the training of personnel or the uses of technical means to reduce an exposure or the effect of the risk on the environment. An example is the management of Genetically Modified Organisms (GMOs) in Ghana.

Strengths

- ❖ During risk assessment, the broader significance of a risk is evaluated as a basis for risk management decision making. This process essentially determines the acceptability of the risk.
- ❖ The process of risk management consideration involves various options available to manage the risk.
- ❖ Risk management is often informed by science and by stakeholder concern and or by political decision.

Gaps

- ❖ A complicating issue of Environmental Risk Assessment is the lack of an easily defined measure of what constituted harm to the environment.
- ❖ In some cases, definition of environmental damage is laid down in statutes, but in others appropriate criteria would need to be selected on the basis of scientific and social judgments.

Conclusion

Ghana as a republic and a developing country needs rapid development and growth to enable it to compete with the very rapid globalization. In terms of resource development and improving upon the current condition of life of all its citizens, the government and all other related stakeholders are employing various strategic approaches in executing plans and policies at national level. The environment forming part of the economic endowments of the country, systematic approaches for the protection, improving, and preservation of natural resources of the country is of high priority in developmental issues. The Environmental Protection Agency of Ghana which is responsible for the environmental sustainability of all

regions in the country as well as the responsibility of advising the government on environmental progress, finds mainstreaming as an essential aspect of the system for integrating environmental concern into developmental policies and plans. In view of the development of a user guide on the use of tools for environmental mainstreaming in Ghana, the idea is well accepted since it is believed that the guide shall possess detailed information on the real definition of tools which is appropriate for environmental mainstreaming in all areas considered necessary. With reference to the survey, most tools are not well known and little understanding into their exploration is known and considered necessary for decision making. The researchers are with opinion that intense education is needed to orient stakeholders in all these area to appreciate the impact that environmental mainstreaming have on the development of our nation. Additionally, inputs must be made into areas where uncertainty exists to establish a clear cut explanation as to which tool is appropriate and for what purpose as well as under which specific situation should it be implemented.

Another important area with the mainstreaming is the relationship with the indigenous value and how these values are considered in strategic policy formulation and developmental decision making. Traditional leaders such as chiefs, priests and elders should be wholly involved in the process so as to bridge the gaps that exist between environmental mainstreaming and indigenous values.

It is also noted that more guides are needed in the area of resource mobilization and allocation. The countries aim of attaining millennium development goals is highly based on the poverty reduction and issues involving the environmental progress in all sectors of the country.