



CAPACITY DEVELOPMENT INITIATIVE

Country Capacity Development Needs and Priorities

Regional Report for Africa

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Additional Annex on Climate Change

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CHAPTER 1: INTRODUCTION

1. Capacity building or capacity development has become common in the phraseology of such international forums as the Convention on Biological Diversity, the United Nations Convention to Combat Desertification and the United Nations Framework Convention on Climate Change. At the Conference of Parties (COPs) of these conventions many developing countries are calling for their capacities to be enhanced and/or developed to enable them to meet their obligations. For example, in the Convention on Biological Diversity COPs more than 65 decisions pertaining to capacity building have been made. The decisions call upon agencies such as the Global Environment Facility and the United Nations Development Programme (UNDP) to support developing countries in their efforts to build capacity to address global biodiversity issues and challenges. However, many of the decisions on capacity building are fairly general in nature and often not based on a clear understanding of the specific *capacity needs* of individual countries or regions.

2. The absence of information on capacity needs and priorities in building capacity for global environmental governance makes it difficult for agencies such as the GEF and UNDP to target their resources to those areas and activities that will enlarge the abilities of countries to implement the conventions. It is in response to the need to gain a clear understanding and build information on capacity needs of developing countries that the GEF and UNDP launched the Capacity Development Initiative (CDI) in 1999. The CDI is expected to establish a comprehensive and informed approach as well as strategy for developing the capacities of GEF eligible developing countries (at national level) to address global environmental issues and challenges, by implementing or meeting their obligations from the conventions.

3. This report is a contribution to the CDI. It focuses on capacity needs of African countries to address problems and issues associated with biological diversity, climate change and land degradation. It specifically identifies some of the capacity needs of African countries to meet their obligations from the conventions. The report assesses capacity needs at three levels: individual (mainly human resources), institutional (agency specific needs) and systemic (context related capacity e.g. overall economic and political conditions, infrastructure, etc.).

4. The first section of the report provides a brief overview of environmental status and trends as well as key priority issues and areas that need attention. It essentially shows that African countries are experiencing deepening problems associated with loss of biological diversity, degradation of land, and vulnerability to global climate change. Main areas of priority in addressing these problems are:

- (a) Conducting national assessments of status of biological diversity and identifying specific causes;

- (b) Conducting national assessments of land degradation and identifying priority areas for re-vegetation; and
- (c) Conducting national assessments of impacts of climate change and determining national vulnerability as well as adaptation capacity.

5. There are of course other priority issues and areas that are identified and analyzed. Such areas include reviewing the adequacy of existing policies, laws and institutions as well as establishing the necessary programmatic and institutional basis for taking action.

6. The first section of this report deals with conceptual and methodological issues. It is a first and general attempt at mapping out a conceptual framework and methodology for assessing national and regional capacity needs to address environmental problems. While drawing heavily on the work already done by UNDP, we make a major attempt at destroying some of the conceptual (and in fact epistemological) tensions that the general use of the concepts of 'capacity' and 'capacity building' or 'capacity development' carry. We do not in any way claim to have established the necessary conceptual framework.

7. The second section of the report focuses on capacity needs in the thematic areas of biological diversity, climate change and land degradation. It provides an assessment of capacity needs of countries and the region as a whole. Emphasis is placed on capacity to implement provisions of the conventions. The section identifies and discusses specific obligations that African countries have incurred by ratifying each of the conventions and their priorities in meeting those obligations. It shows that most countries of the region are lacking in adequate human resources in such areas as environmental economics, negotiation skills and environmental assessment and planning. Their institutional arrangements are also incapable of effectively addressing issues of biodiversity, land degradation and climate change. In addition, the necessary economic, infrastructure and political conditions for environmental governance are lacking in many, if not most, of the countries.

8. The last section is a synthesis of issues emerging from the thematic assessments. It focuses on those issues and areas that are common to most African countries and suggests some strategic approaches to capacity building. One key conclusion of this report is that there is need for thorough and conceptually founded national capacity needs assessments. A clear and appropriate methodology and associated guidelines for assessing national capacity needs should be developed as part of the main outputs of the CDI. Such methodology and guidelines would largely draw upon elements of the ones that have been used in this exercise.

Some Conceptual and Methodological Issues

1.1 Conceptual Issues

9. The concept of 'capacity' and that of 'capacity development' have acquired such wide and general usage that their precise meanings are rarely explored. Often the terms are used so generally that they are subject to misuse. Sometimes people take of capacity when actually there are referring to skills. Some say capacity is simply to reference to finances and institutions. At international forums level some of the delegations make generalized statements on capacity building without often articulating specific components or elements of capacity that they require building.

10. In our view capacity is *the ability (of an individual, institution, or society as whole) to identify and solve a problem or problems*. It is not the mere existence of potential. Capacity is capacity only if the potential is harnessed and utilized to identify and solve a specific problem that confronts society or an individual. Capacity has at least three elements or components. The first is the skills/expertise required to identify and solve a problem or problems. These are embodied in human beings. Indeed human beings are the carriers of skills/expertise. The second element or component of capacity is institution (both rule-based and role-based). It is institutions (be they clans, women groups, formal government agencies, corporate aggregates, and their norms, values and rituals) that create, mobilize and often utilize skills/expertise embodied in persons. Institutions also create other necessary resources (informational, finance, social, etc.) that persons require to identify and solve a problem. It is not the mere existence of agencies or organizations that constitute the institutional component of capacity but how each of the agencies or organizations are configured within to create the necessary space for the creation, mobilization and utilization of the skills and other resources. Intra-institutional or agency articulation is, thus, an important factor to consider in the assessment of capacity.

11. The third component of capacity is the context in which institutions and skills/expertise evolve, grow (and after sometimes die), and are mobilized and utilized.¹ The context comprises of the overall economic, political, socio-cultural, general infrastructure, inter-institutional/organizational articulate (how and whether institutions or agencies in a country communicate), the nature (including adequacy) of policies, laws and administrative measures and how and whether these are implemented or enforced on the basis of agreed upon or set benchmarks.

12. Having identified constituent elements of capacity it should be relatively easy to define what 'capacity development' or 'capacity building' means. Capacity development is in general terms the processes of creating, mobilizing, utilizing, enhancing or upgrading, and converting skills/expertise, institutions and contexts. It is, thus, achieved through the following interrelated clusters of activities:

- (a) Skills/expertise creation, mobilization, enhancement (and where necessary conversion) and utilization;

¹ This is largely the notion of systemic level of capacity as talked of in UNDP/CDI documentation.

- (b) Institution/agency creation, enhancement and utilization; and
- (c) Context creation, enhancement and/or sustenance.

13. Capacities exist at three general levels: individual (a person who possesses and uses (his/her) intellect, skills, money, information, infrastructure, values and norms, and social relations to identify and solve problem(s)), institution (agency or organization with skilled persons, money, programmes, values and norms, relations with other agencies, equipment/infrastructure, authority and autonomy, and purpose to identify and solve problems), and country (a country with a government, skilled persons, with linked and equipped institutions, policies, rules and laws, functioning and/or growing economy, a reasonable measure of political stability, overall general infrastructure, dynamic and good relations with other countries, etc.).

14. It is important to note that the individual, institutional and country/system capacities are *constantly changing both qualitatively and quantitatively*. And, thus, capacity is time dependent. At one time a person have skills relevant to the identification and solution of a problem and later those skills be obsolete or irrelevant to society and its problems. National capacity is the *cumulative composition* of the skills, institutions and context but not the sum of these components. It is not the sums of scientists, institutions and policies as well as laws that constitute national capacity but how these are configured and reconfigured over time to address specific situations and challenges.

15. The development or building of capacity is not an event or project but a knowledge-intensive process. Paradoxically you must have capacity to create capacity. The process entails the generation, retention and use of information to manage change. It also requires varying degrees of social organization, is articulated through institutions. Capacity development cannot, therefore, be pursued independent of the development of the relevant institutions.

1.2 Methodology

16. The assessment of countries' capacity needs was carried out over a period of 4 months (April to July) through an iterative process involving a variety of stakeholders and institutions. The main methodological tools and approaches deployed were:

- (a) Detailed structured questionnaire that was sent out to at least 500 focal points for conventions and agencies engaged in various activities related to environmental management. The questionnaire consisted of three sections: biodiversity, climate change and land degradation. Its objective was to assist countries to review their own capacity needs and priorities in implementing various provisions of the conventions. Responses from the questionnaire were received and analyzed by respective thematic experts. The main constraint with this tool was that less than 50 percent of the questionnaires were returned with more than 75 percent of these having generalized responses.

- (b) Thorough review of reports, literature and statements by governments and various international agencies. Each of the experts review national reports, background papers on capacity needs in the respective areas, and statements made by delegations at conference of parties to the conventions.
- (c) In-country studies were conducted in South Africa, Senegal and Uganda to obtain detailed data on specific capacity needs. The country reports for South Africa and Uganda have been used in preparing this report. The Senegal thematic area assessments are still being undertaken.

17. In order to the above, a regional workshop which brought together more than 70 government representatives from at least 50 countries was organized in Cairo Egypt end July 2000. The workshop gave governments an additional opportunity to feed into this report and the general assessment.

CHAPTER 2: OVERVIEW

STATUS AND CHALLENGES IN MANAGING AFRICA'S ENVIRONMENT

2.1 Environmental Foundation for Africa's Development

18. Africa's economies are, to a big measure, founded on the region's ecological structure and its associated natural resources, mainly land, forests, water, fisheries, wildlife and wetlands. The economies are mainly agricultural with a large percentage of farming systems still subsistence-based. Thus, land and its management are so crucial to the development and sustenance of the region's economies—both local and national. "Land is the most critical resource and the basis for survival for most people in Africa. Agriculture contributes about 40 per cent of regional GDP and employs more than 60 per cent of the labour force."² Thus, access to, control and management of land are political sensitive issues currently preoccupying public policy in many African countries.

19. Forests constitute another critical resource for Africa and its people. The region has 520 million hectares under forest cover constituting more than 17 per cent of the world's forests.³ The Democratic Republic of Congo alone has more than 100 million hectares. These forests are rich in plant species apart from being habitat for a variety of microorganisms, birds and insects. They play a major role in the region's economic survival as they contribute to 6 per cent of GDP in the region, the highest in the world according to UNEP's recent assessment.⁴

20. Africa is also endowed with a rich base of fauna and flora. It has more than 50,000 known plant species, 1,500 species of birds and 1,000 mammals. South Africa has an estimated 20,000 plant species, Kenya has at least 8,000 and Cameroon has more than 15,000. Other African countries such as Madagascar and the Democratic Republic of Congo are known for their rare internationally recognized plant and animal species. Fauna and flora form the foundation of social and economic development of the region and its people. Africa's agriculture is, however, founded on a narrow range of plant and animal species. It is estimated that not more than 5,000 of the 50,000 species of plants found in Africa are utilized in agriculture. However, some of Africa's plant species have contributed immensely to the world's pharmaceutical industry. Such plants as *Ancistrocladus korupensis* (a potential anti-AIDS chemical) found in Cameroon, *Pausinystalia yohimbe* (from Nigeria, Cameroon and Rwanda) and *Catharanthus roseus* from Madagascar are being used in pharmaceutical research by industrialized country institutions.

² UNEP, 1999. *Global Environment Outlook, 2000*, p. 55. United Nations Environment Programme, Nairobi, Kenya.

³ UNEP, 1999, op. cit. p. 57.

⁴ UNEP, 1999, op. cit. p. 57.

21. Africa's coastal ecosystems and marine biodiversity are major sources of economic growth of coastal countries of the region. The fisheries sector contributes to more than 35 percent of Namibia's GDP and at least 25 percent of Morocco's. Coastal zones also generate revenue for the economies by attracting tourists. Kenya, Morocco, Seychelles and Tanzania are heavily dependent on tourism.

22. The region's economic development is also dependent on maintaining climatic integrity or stability. Africa's agriculture is largely rain-fed. It is vulnerable to climatic changes and disorder. Climate change, resulting in sea-level rise and flooding, would have serious impacts on agriculture. It would also have adverse impacts on coastal zones undermining tourism and fisheries. Climate change, if not mitigated, will contribute to the destruction of the main sectors of the already fragile African economies.

Poverty makes many African peoples and countries particularly vulnerable to the impacts of climate change, especially in areas dependent on rain-fed agriculture. This vulnerability is increased by recurrent natural disasters such as drought, floods and cyclones. Increases in water stress and drought may also increase the incidence of vector borne diseases and hunger. In 1998, the El Nino is thought to have been the cause of serious floods in Southern and Eastern Africa and exacerbated outbreaks of cholera, malaria and Rift Valley fever in Kenya and Somalia.⁵

23. Despite its critical role in Africa's economic development the environment is being degraded at fairly high rates. Recent assessments have vividly shown that Africa is losing its natural resources at relatively rapid rates compared to many other regions of the world.⁶ For example, Africa is losing at least 150,000 hectares of forests every year (check figure). Its wildlife population of rich and unique species of animals and plants is under increasing pressure as well. Elephant population has been reduced by at least 30 percent in the last twenty years or so while many of the commercially and culturally valuable medicinal plants are becoming extinct. The region is losing several million of soil. Air and water pollution are also on the rise.

24. Environmental degradation, largely associated with the destruction of such natural resources as forests, water, marine and coastal resources, as well as erosion of soils and pollution of air, threatens the already vulnerable and poor economies of the region. Most of Africa directly depends on natural resources for economic change and growth. Social and political structures of the countries are also tied to the ecology, thus, any disruptions in and/or destruction of the environment undermine the socio-political fabric of the African people.

25. The causes of environmental degradation in Africa are many, complex and interrelated. *First* are the relatively high and growing levels of poverty among Africans, particularly among the rural-based

⁵ UNEP, 1999, op. cit. p. 65.

⁶ See for example WCMC, 1992. *Global Biodiversity: Status of the Earth's Living Resources*. World Conservation and Monitoring Centre, UK.; and UNEP, 1999, op. cit.

subsistence households. African economies have seen a considerable decline, and in some cases near collapse, in quantitative and qualitative terms. The rate of economic growth in at least half of the region has stayed below 2 percent per year—measured in GDP while the human population has grown by an average of 4 percent per year in the last two decades. Many African households have, thus, access to a very narrow range of economic goods and services. The rural ones, without appropriate technologies, draw their economic wants directly from natural resources and the fragile ecological systems. Their technological abilities to use natural resources on sustainable basis are very limited.

26. Many African governments have limited and declining budgets for environmental management. Most of them are preoccupied with short-term economic recovery measures. Although they appreciate the importance of environmental management, they are confronted with pressing and often short-term economic crises that undermine social and political stability. Under these conditions, it is not possible for them to invest in or re-direct resources to environmental management courses. The irony, however, is that if these countries need to invest in environmental management activities in order to achieve long-term economic recovery. Thus, the search for Africa's environmental sustainability cannot ignore measures that will renew and enlarge the region's economies.

27. The *second* source of environmental degradation is in the failure of economic markets and associated instruments to capture and promote 'real' value of Africa's natural resources. Indeed in most African countries national policies and market activities fail to reflect the full economic value and potential of natural resources. They ignore the costs of natural capital degradation and the current and future value of conserving the resources. For example, the loss of forests and wildlife is related to, *inter alia*, poor or inappropriate pricing systems. Most African countries capture less than 35 percent of the rent accruing from forest logging. This acts as an incentive for unsustainable forest exploitation. In Nigeria alone the long-term cost of not preventing environmental degradation has been estimated by the World Bank to be at least US\$ 5000 million a year.⁷

28. The *third* set of causes of environmental degradation is associated with the absence of institutional capacities to implement environmental policies, laws and agreements at national, sub-regional and regional levels. At national levels, environmental agencies "have to compete for staff and budgets with older and often more powerful sectoral agencies, whose activities often have more impact on the state of the environment and natural resources..."⁸ Mandates of many national environmental agencies are not well defined. For example, Zimbabwe has more than 10 ministries that administer an estimated 20 environment-related laws. Kenya has at least 6 sectoral agencies whose responsibilities and authority for forest management have not been clarified.

29. Many of the countries have a wide range of policy, administrative and legal instruments to address environmental problems. These instruments include national environmental action plans, and sectoral and umbrella environmental policies and laws. In addition, there has been significant progress

⁷ World Bank, 1990. *Towards the Development of an Environmental Action Plan for Nigeria*. World Bank: Washington DC, Report No. 9002-UNI.

⁸ UNEO, 1999, op. cit. p. 227.

made towards greater awareness of the implications of environmental degradation and the need to link economic development with environmental sustainability. Many countries have made efforts to integrate environmental considerations into their national economic development policies and plans. But the transition of these into concrete actions may have been hampered by constraints on financial resources and limited institutional capacity.

30. At sub-regional and regional levels, Africa has such instruments as the African Convention on the Conservation of Nature and Natural Resources negotiated under the auspices of the Organization of African Unity (OAU) and adopted in Algiers in 1968, the 1985 Nairobi Convention for the Protection, Management and Development of Marine and Coastal Environment of the Eastern African Region, the 1973 Convention Establishing a Permanent Inter-State Drought Control Committee for the Sahel, the 1991 Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa, the Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment, and the 1994 Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora.

31. In addition to the environmental agreements or treaties, sub-regional and regional bodies such as the Organization of African Unity (OAU), the Southern African Development Community (SADC), the Economic Commission of West African States (ECOWAS), the East Africa Cooperation, the Economic Commission for Africa (ECA) and the Intergovernmental Authority on Development (IGAD) have established environmental programmes or added environmental concerns onto their political and development agendas. The African Ministerial Conference on Environment (AMCEN) is another forum that provides the region with an opportunity to address its common environmental problems.

32. Despite these initiatives on the part of African states, the region's abilities to effectively address environmental challenges and problems are still limited and may be undermined by the growing economic and political insecurity. Environmental degradation and associated scarcity are among the sources of political and civil strife in and between countries of the region. Efforts aimed at resolving and/or managing conflicts in Africa will need to address the environmental causes as well as impacts of the conflicts. Thus, while environmental programmes will need to integrate and carefully contribute to the resolution of some, if not most, of the political and civil conflicts in Africa, subregional and regional conflict management process such as those within the OAU and IGAD should be informed by the extent to which ecological change and degradation of natural resources are causes or potential causes of the conflicts.

2.2 Biological Diversity: Issues and Priorities for Africa

33. Africa's biodiversity, which as we shown above contributes considerably to regional and global economic development, is under increasing threat. There is a growing rate of habitat destruction and species loss in the region. For example Ethiopia, one of the world's mega-biodiversity centers, has 44 plant species, 25 mammal species and 14 bird species threatened. Tanzania alone has 75 plant species threatened to extinction. At least 9 unique species of birds are under increasing threat of extinction in the Seychelles.⁹
34. The search for ways and means of stemming the degradation and loss of biodiversity has been the preoccupation of many African governments for many years now. Indeed many countries of the region have a long history of instituting and implementing conservation policies and programmes. Ethiopia, Uganda, Zimbabwe, Nigeria, Kenya, Tanzania and many more countries have at least 50 years of formalized conservation programmes by central and local governments. Many countries have established networks of protected areas for wildlife and forest management. Several have created national gene banks and botanic gardens for the *ex situ* conservation and enhancement of plant species.
35. Despite these efforts, African countries are still confronted by major challenges to manage (conserve and sustainably use) biodiversity. Many of the policies, programmes, laws and institutions have not been able to stem biodiversity degradation and loss. These countries have also incurred moral and legal obligations by subscribing to the Convention on Biological Diversity.¹⁰
36. There are a number of key issues in conservation that concern African countries. *First* are those issues associated with knowledge of and information on the status of (and trends in) biodiversity. In many countries there is scanty information on the nature of diversity that exists within and knowledge of a large number of plant and animal species is still rudimentary. For example, there is very limited information on the status and trends of marine and coastal resources shared by coastal countries. The status of marine and coastal resources of the eastern coastline of Africa (shared by Namibia, Kenya, Tanzania, Seychelles, South Africa and Mozambique) is less known. There is also scanty information on the status of plant species in the central Africa forests. In many countries microorganisms have not been identified, classified and studied.
37. The *second* set of issues pertains to understanding, assessing and monitoring impacts. Many of the human, economic, industrial and ecological impacts on biodiversity are less understood, assessed and monitored. For example, potential impacts of pollution and climate change on Africa's marine and coastal ecosystems are less known. Our understanding of the impacts of

⁹ WCMC, 1992. *Global Biodiversity: Status of the Earth's Living Resources*, p. 241.

¹⁰ We shall discuss below national obligations and priorities to implement the Convention.

different land uses on the conservation of wildlife is still meager and so is our knowledge of the impacts of modern agriculture on the conservation of plant species.

38. The *third* set of issues is about ownership of biological resources and the roles of communities in the conservation and utilization of those resources in the public domain. In most countries of Africa resource tenure arrangements are still ambiguous and in many cases deny private individual and local communities incentives to contribute to conservation. The ownership of public forests on lands that were appropriated from local communities is vested in the nation-states and responsibilities of managing resources in these areas are given to governments. Communities and their knowledge are less recognized in forest management. This is, however, beginning to change in such countries as Tanzania and Zimbabwe where community involvement in forest management has been sanctioned by forest policy and legislation.
39. In addition to the above issues of property rights in land and biological resources, the ownership of and sharing of benefits from international trade in genetic resources have become one of the most sensitive issues in public policy-making in the area of biodiversity in Africa. Most of the countries do not have national procedures and laws to regulate access to their genetic resources and to ensure that where access is granted, the countries and their communities share benefits from the commercial utilization of the resources. The absence of procedures and laws has been cited as a major priority by at least 20 African countries in their national reports to the Convention on Biological Diversity as well as in their submissions at the 5th Conference of Parties to the Convention.
40. There is a *fourth* cluster of issues in the management of biodiversity in Africa. This pertains to the economics of conservation and sustainable use of components of biodiversity. In many countries of the region economic uses and values of major components of biodiversity have not been established. Indeed, the economic potential (value) of many of Africa's plants is unknown. The tools and skills for economically valuing biological resources are not easily and adequately available to the countries. South Africa, Namibia, Uganda, Tanzania, Kenya, Seychelles, Senegal, Egypt and Nigeria have identified the need for economic valuation of biodiversity as one of the priority areas of investment in biodiversity management.¹¹ There are also issues of the nature of economic incentives for conservation and sustainable use. In many of the African countries incentive regimes are yet to be developed. This may be a major contributor to people's failure to support conservation efforts of central and local governments.
41. On the whole, there are a wide range of issues of and priorities in biodiversity management in the region. They include: the absence of information and knowledge, lack of economic valuation and incentives, absence of measures to regulate access to genetic resources and ensure the sharing of benefits from utilization of the resources, ambiguous resource tenure systems, institutional rigidities

¹¹ See national reports of South Africa and Kenya to the 4th Conference of Parties to the Convention on Biological Diversity, Namibia report to the 5th COP, Tanzania and Uganda's draft national strategies and action plans, Senegal's and Seychelles' final strategies and action plans on biodiversity, and Nigeria's report to the Rio+5 UN session.

that deny private and local people's participation in national conservation programmes, and absence of organized impact assessment and monitoring systems.

2.3 Climate Change: Overview of Status and Priorities

42. Africa's contribution to the global pool of greenhouse gas emissions is still relatively low. It is estimated that the region contributes to only 7 percent of the global emissions. It emits only 3.8 percent of the world's total carbon dioxide. Total emissions are expected to increase to 3.8 per cent of the world's total by 2010.¹² Despite the region's comparatively low volumes of emissions to the global greenhouse gas emissions, Africa's economic, ecological and socio-political systems are vulnerable to climate change. Climate change impacts on the countries will be varied, irreversible and long-term. They include: increased erosion and sedimentation of dams leading *inter alia* to changes in patterns of hydro-electric production; sea-level rise endangering coastal zone and small island economies; severe dislocation of the Nile Delta system; shifts in agro-climatic zones which would affect biomass production patterns; and general changes in habitats affecting both human and animal population patterns. These impacts could generate irreversible economic and socio-political problems.

43. African countries will need, therefore, to take climate change issues seriously. They will need to institute measures that enable them to anticipate and deal with negative impacts of climate change. These countries should also identify their short and long-term development priorities and should promote the accumulation of national and regional capacities to implement climate change commitments without compromising those priorities.

44. There are several climate change issues and priorities for Africa. *First* is the challenge to assess and understand the nature of impacts and their severity. Impacts of climate change on Africa's systems are less understood. For coastline states there is a major need to assess and monitor sea level rise as well as impacts (current and future) on marine and coastal resources. For inland forests and wildlife rich countries impacts of climate change on vegetation and status of animal wildlife population need to be assessed.

45. The *second* set of issues and priorities pertain to assessing national vulnerability and searching for appropriate climate change adaptation measures. In most countries there has been assessment of national vulnerability to climate change. Vulnerability to climate change is defined as "a nation's ability to cope with the consequences of the range of impacts of climate changes that may follow from increasing concentrations of GHGs in the atmosphere."¹³ Our understanding of how vulnerable Africa's ecological and economic systems are to climate change is still meager. It is, thus, crucial that countries

¹² UNEP, 1999, op. cit.

¹³ Fuglestedt, J. *et. al.* 1994. *A Review of Country Case Studies on Climate Change*. GEF Working Paper No. 7. Global Environment Facility (GEF), Washington DC.

undertake assessments to establish their levels of vulnerability. Such assessments should be linked to those that focus on impacts. Having clear national vulnerability statements would form the basis for establishing adaptation strategies and actions with high levels of confidence.

46. The *third* cluster of climate change issues and priorities are those pertaining to the acquisition or procurement of environmentally sound technologies for sustainable development. It has been recognized by most countries of the region that the extent to which they will be able to adapt to climate change and manage its impacts largely depends on how well they achieve economic renewal and growth. It is for this reason that African delegations to the Conference of Parties to the United Nations Framework Convention on Climate Change have put emphasis on technology transfer and the role of the developed countries in promoting the transfer of environmentally sound technologies to assist them to meet their obligations under the Convention. Countries such as Zimbabwe, Senegal and Egypt have put major emphasis on climate-related technology transfer issues in the submissions at COPs.

47. Discussions on transfer and acquisition or procurement of related technologies need to be focus on such considerations as endogenous capability to absorb and efficiently utilize technology, need to build mechanisms for technology forecasting and assessment, and issues of intellectual property protection that are of concern to technology sources—the private sector. While there is scanty empirical data on the individual African countries technological capabilities to acquire, absorb and utilize environmentally sound technologies the general view is that many of them lack such capabilities. Secondly, most of the countries have not established technology forecasting and assessment facilities. In the absence of such facilities it is not possible for the countries to effectively and efficiently procure state-of-the art technologies.

2.4 Land Degradation: Issues and priorities for Africa

48. The degradation of land in Africa threatens not only economic, but the physical survival of the region as well. More than two-thirds of Africa's land is arid and semi-arid. Land degradation and desertification threaten 30 per cent of African households. Desertification is a threat to human life and livestock in the Sudano-Sahelian region. In North Africa more than 400 million hectares of land suffer from desertification now.

49. The main sources of land degradation include soil erosion, salinization, soil compaction, overgrazing, deforestation, and pollution involving, for example, oversee of agrochemicals. High human population growth rates in the absence of technologies, and capacity to apply them, to manage the fragile ecologies is another major cause of land degradation in the region.

50. In many African countries land degradation is also caused by poor farming methods, unfavourable land tenure (including ownership and use systems), inequitable land distribution,

overstocking with livestock leading to overgrazing, and various economic policies that deny households incentives to invest in land management.

51. Although reliable data is lacking, it is estimated that some 500 million hectares of land in Africa has been affected by soil degradation since 1950, including as much as 65% of Agricultural land. In South Africa alone, soil losses are estimated to be as high as 400 million tones annually. Soil erosion also affects other economic sectors such as energy and water supply. The continent is most severely affected by desertification that threatens more than 33 percent of Africa's land area particularly in the Sudano-Sahelian region, Southern Africa and Mediterranean Africa. Recurrent droughts are largely a manifestation of land degradation in the region.

52. The degradation of land and its subsequent impacts on the region's economic and environmental systems raise a number of issues. The *first* set of issues covers the adequacy of current land management policies and the capacity of the respective countries to implement their policies. In many countries land use policies are lacking in many respects. In the Southern Africa region for example the Sub-Regional Action Programme to Combat Desertification in Southern Africa submitted to the United Nations Convention to Combat Desertification notes that many of the policies (both explicit and implicit) on land use have not been reviewed and revised to take into account growing human populations and changes in agriculture. Where such policies exist they are based on articulated appropriate tenure arrangements and as such the policies do not provide small holders (who form more than 60% of the populations) with incentives to manage the land.

53. *Secondly*, in most countries the status of land degradation has not been established. Indeed there is very scanty information on changes in land quality and general status in land degradation and recovery. For example, Lesotho states in its national action programme to combat desertification and mitigate the effects of drought that there is very little new and reliable data on land degradation status and trends in different parts of the country. It identifies the observation of land degradation and the assessment of trends as well as collection and analysis of data as some of its priorities in implementing the Convention to Combat Desertification and arrest land degradation in the country.

54. The *third* cluster of issues covers the acquisition, adaptation and development of environmentally sound agricultural production technologies. In countries of the Sudano-Sahelian region agriculture and livestock production systems are inimical to the integrity of land.

2.5 Overview of Capacity development Considerations

55. African countries differ in their 'capacity endowments'. They are different in their capacities to manage the environment in general and to address issues and problems in the areas of biodiversity, climate change and land degradation. Some countries have capable and well-organized institutions, with highly skilled personnel and adequate policies to respond to national and global environmental

challenges and problems while others suffer from limited capacity. Within countries there is also differentiation in the capacity endowment. A country may have highly skilled scientists in a particular environmental area but lacks the necessary organizational space to mobilize and utilize the scientists to address problems in that area. Such a country has potential but is, thus, lacking capacity—for capacity is capacity when it is articulated through its utilization to effectively solve problems. It is locked as potential if it is not utilized. In addition, national capacity endowment may also be differentiated in the sense that a country may have capacity to deal with problems in one environmental sector (say land degradation) but lacks that required for another area (say climate change). It is, thus, crucial to recognize that capacity for environmental management is differentiated both among and within countries of Africa. Any thorough and informed statements on the region's capacity for environmental management must as of necessity recognize the heterogeneous aspects region and within its countries, mainly in terms of the differences in their national priorities and 'capacity endowments.'

56. There are, however, considerable similarities in the environmental priorities of the countries. The similarities may be summarized as follows. *First*, no African country claims to have the necessary capacity to address problems and issues in all the three areas. Even within each of the areas no country has articulated capacity to address all its priorities and problems. *Second*, all African countries seem to have limitations associated with configuring their overall and sectoral agencies in such a way as to ensure that they articulate together and effectively and efficiently mobilize and utilize human, financial and informational capitals that are in short supply. The absence of appropriate national institutional arrangements for overall environmental governance is common to most if not to all African countries.

57. *Third*, the formulation and implementation of systemic environmental policies (policies that explicitly recognize and are founded on understanding of interconnectedness of various environmental facets—air, land, water, biological diversity, etc.) form another major capacity limitation of most if not all African countries. The countries have many policies for the natural resources management and some have formulated overall environmental policies. There is, however, no coherence in and between these regimes. Some of natural resources policies run counter to the spirit and provisions of overall environmental policies. In Kenya, Senegal, Uganda, Tanzania and South Africa this has been identified as a major constraint to achieving environmental governance at the local and national levels.¹⁴

¹⁴ This assertion is drawn from national reports to the conventions, the Commission on Sustainable Development (CSD) and Earth Summit + 5.

CHAPTER 3: BIOLOGICAL DIVERSITY

3.1. National Obligations Under the Convention on Biological Diversity

58. Majority of African countries signed the Convention on Biological Diversity in June 1992 at the United Nations Conference on Environment and Development (UNCD). The Convention, whose overall objectives¹⁵ are to promote the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of benefits arising from the utilization of genetic resources, has been ratified by at least 50 out of the 53 African states (see table below). By the ratifying the Convention these countries incurred several legal obligations and are, thus, required to institute and implement various measures to achieve the three objectives of the Convention.

Table 3.1: *Status of Convention Ratification by African Countries*

	Country	Date of Ratification/ Accession
1	Algeria	August 14, 1995
2	Angola	April 1, 1998
3	Benin	June 30, 1994
4	Botswana	October 12, 1995
5	Burkina Faso	September 2, 1993
6	Burundi	April 15, 1997
7	Cameroon	October 19, 1994
8	Cape Verde	March 29, 1995
9	Central African Republic	March 15, 1995
10	Chad	June 7, 1994
11	Comoros	September 29, 1994
12	Congo	August 1, 1996
13	Côte d'Ivoire	November 29, 1994
14	Democratic Republic of the Congo	December 3, 1994
15	Djibouti	September 1, 1994
16	Egypt	June 2, 1994
17	Equatorial Guinea	December 6, 1994

¹⁵ Objectives of the Convention on Biological Diversity are articulated in Article 2. UNEP, 1992. *Convention on Biological Diversity*. United Nations Environment Programme.

Africa's Capacity Needs in Global Environmental Governance

	Country	Date of Ratification/ Accession
18	Eritrea	March 21, 1996
19	Ethiopia	April 5, 1994
20	Gabon	March 14, 1997
21	Gambia	June 10, 1994
22	Ghana	August 29, 1994
23	Guinea	May 7, 1993
24	Guinea-Bissau	October 27, 1995
25	Kenya	July 26, 1994
26	Lesotho	January 10, 1995
27	Madagascar	March 4, 1996
28	Malawi	February 2, 1994
29	Mali	March 29, 1995
30	Mauritania	August 16, 1996
31	Mauritius	September 4, 1992
32	Morocco	August 21, 1995
33	Mozambique	August 25, 1995
34	Namibia	May 16, 1997
35	Niger	July 25, 1995
36	Nigeria	August 29, 1994
37	Rwanda	May 29, 1996
38	Sao Tome and Principe	September 29, 1999
39	Senegal	October 17, 1994
40	Seychelles	September 22, 1992
41	Sierra Leone	December 12, 1994
42	South Africa	November 2, 1995
43	Sudan	October 30, 1995
44	Tanzania	March 8, 1996
45	Togo	October 4, 1995
46	Tunisia	July 15, 1993
47	Uganda	September 8, 1993
48	Zambia	May 28, 1993
49	Zimbabwe	November 11, 1994

59. There are generally three categories of obligations that these countries have. The first category is those obligations that deal with *national domestication* (involving formulation and/or reform of policies, laws and institutions or establishment of programmes at national level) of the provisions of the Convention. These include such responsibilities as the preparation of national biodiversity strategies and action plans (Article 6 of the Convention), enactment of legislation to regulate access to genetic resources and promote sharing of benefits from the use of those resources (Article 15), creation of incentive measures (Article 11) and several others. The second category is those obligations on *reporting* to the Conference of Parties and the Secretariat. Such obligations are created by Article 26 (Reports) that requires that each Contracting Party “shall, at intervals to be determined by the Conference of Parties, present to the Conference of the Parties, reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.” The third category is those obligations that require Parties to *participate in the further elaboration and enrichment* of key policy issues and achievement of consensus of matters that are still unresolved. Such provisions include those deposited in Article 23 (Conference of Parties), Article 19(3) (consideration and development of protocol on biosafety) and 18 (international scientific and technical cooperation). These three categories constitute an interrelated web of obligations on those African countries that have ratified the Convention.

60. Each of the African Contracting Parties is also obliged to implement decisions of the Conference of Parties. However, the Convention provides the necessary flexibility for Parties to sequence their actions, programmes and processes to implement their obligations on the basis of their national priorities. Parties are, thus, expected to set their clear priorities for implementation without compromising the Convention’s provisions and obligations. There are two avenues of priority setting in the context of the Convention. The first is the Conference of Parties where collective priority setting takes place. For example, Parties at the Conference of Parties may decide that a particular provision or set of actions be accorded priority in national implementation. This is clearly the case with the implementation of Article 6 for example. The second meeting of Conference of Parties held in Jakarta Indonesia in November 1995 decided that Article 6(a) be accorded priority in national implementation. Decision II/7 (Consideration of Articles 6 and 8 of the Convention) also “emphasizes the importance of capacity-building as well as the availability of adequate financial resources to assist Parties in the implementation of Articles 6 and 8 of the Convention, and ...requests the ...financial mechanism under the Convention to facilitate urgent implementation of Articles 6 and 8 of the Convention by availing to developing country Parties financial resources for projects in a flexible and expeditious manner.”

61. In addition to the formulation and subsequent implementation of strategies and action plans (Article 6), African Contracting Parties are also required to take the following actions at domestic level:

- (a) *Identify* components of biological diversity that are important for its conservation and sustainable use (Article 7a). Identification in this regard involves taking inventories or accounts of ecosystems, habitats, species and genes of social, ecological, scientific and economic importance. Parties are also expected to prioritize in the identification efforts

in order for them to target those ecosystems and species that are under high threat. In this regard a national list of threatened important ecosystems and species is desirable. Parties are also expected to *monitor*, through sampling and other techniques, status of those identified components under threat. To meet this obligation Parties require capacities in taxonomy, information and data management, monitoring (possibly using satellite techniques) and organizational frameworks to mobilize and efficiently utilize skills (in e.g. taxonomy, information management, etc.) and necessary financial resources.

- (b) *Identify* processes and activities which have or likely to have adverse effect on biological diversity or sustainable use of its components. Parties are required to identify such activities as deforestation, unregulated trade and unsustainable agriculture that have or are likely to contribute to the destruction of biological diversity.
- (c) *Establish systems* of protected areas as well as *develop guidelines* for the selection, establishment and management of the areas. The Convention in Article 8 creates obligations on its Parties to either expand or create protected areas for the management of wildlife components of biological diversity. Parties are also encouraged to develop guidelines to enable them to carefully select those areas that require attention and to ensure that guided management is in place. The protected areas are to be selected and created in a logical way.
- (d) *Rehabilitate* and restore degraded ecosystems and promote recovery of threatened species. Parties are expected specific plans and implement them. Such measures as re-forestation are crucial in ensuring rehabilitation of degraded ecosystems.
- (e) *Prevent* the introduction and spread of alien species that threaten ecosystems, habitats and species. Here Parties are expected to enact and enforce legislation to ensure that voluntary and involuntary or accidental introduction of exotic species. Such laws must be based on clear monitoring and assessment of current and potential threats or impacts of the exotic species. Countries must, thus, possess the necessary scientific infrastructure to monitor introductions and assess impacts that the species may cause.
- (f) *Create or establish* incentives measures for the conservation and sustainable use of biological diversity. Parties are required to formulate and implement economic policies and enact laws (e.g. land laws) that give communities and private entities incentives to support and participate in conservation as well as sustainable use practices. Countries should possess expertise in such areas as economic valuation, natural resources law, etc. in order to effectively implement the provisions of Article 11 of the Convention.
- (g) *Raise public awareness* of the importance of biological diversity and the need to conserve and sustainably use it. Parties are required to institute educational and awareness programmes through such avenues as print and electronic media and

seminars.

- (h) *Establish and implement* administrative, legal and policy measures to regulate access to and collection of genetic resources as well as to ensure fair and equitable sharing of benefits from the use of the resources.

62. African Contracting Parties are also expected to participate in Conference of Parties and its subsidiary bodies (such as the Subsidiary Body on Scientific, Technical and Technological Advice) to make decisions associated with the implementation of the Convention and to address such unresolved issues as how to protect and promote indigenous knowledge and innovations, control of alien invasive species, liability and redress in the context of biosafety, and the need for international guidelines on access to genetic resources and benefit-sharing. They are also expected to prepare and submit their national reports at interval to be determined by the Conference of Parties. To effectively engage in and benefit from the implementation of the Convention it is crucial that Parties establish clear priorities and sequence their programmatic actions on the basis of those priorities. In the next section we identify and analyze priorities of African countries and their current efforts at meeting their obligations.

3.2 National Priorities and Implementation Processes

63. National priorities for the implementation of the Convention can generally be teased out of national reports (under Article 26), national strategies and action plans (Article 6), statements by delegations at Conference of Parties, project proposals submitted to the financial mechanism (the Global Environment Facility), responses to the questionnaire used in this assessment, and reports of national workshops as well as country studies. A careful review of the reports, country studies, responses to the questionnaire and statements by delegations shows that there are marked similarities in the priorities of African Contracting Parties though they may be at different stages in the implementation of the Convention.

64. The main priorities (not in any order of importance) for the African countries include:

- (a) Assessment and inventory of biodiversity;
- (b) Preparation of national strategies and action plans;
- (c) Review of protected areas systems and where necessary expansion of these;
- (d) Review and reform of national protected areas policies and laws (both for wildlife and forests);
- (e) Strengthening of institutions for managing protected areas (both for wildlife and forests);

- (f) Formulation of regulations and laws as well establishment of focal points to regulate access to genetic resources and ensure benefit-sharing;
- (g) Formulation of biosafety frameworks (policies, laws and institutions); and
- (h) Formulation of policies and laws as well as establishment of schemes (including programme/projects) to provide incentives for conservation and sustainable use of biological diversity.

65. Some of the countries have clearly articulated priority areas in their first reports on the implementation of the Convention. For example, South Africa set “identification of important components of biodiversity and threatening processes” as one of the top priorities in implementing the Convention. It states in its first report that “[o]ne of the most fundamental steps towards achieving the goals articulated in (its policy on biodiversity) requires the identification of important components of biodiversity, and threatening processes. There already exists considerable knowledge in South Africa concerning aspects of the country’s biodiversity, but this information needs to be gathered, ordered, and strategically used. Information also exists regarding processes or activities that have adverse impacts on biodiversity, but in many instances this is patchy, inconclusive, and not tailored towards facilitating effective management.”¹⁶

66. Seychelles’ priorities in implementation of the Convention are articulated in its first national report. These are:

- (a) undertaking assessment of the status of and trends in the country’s biodiversity,
- (b) preparation of national biodiversity strategy and action plan,
- (c) economic valuation of components of biodiversity and determination of costs and benefits of conservation, and (d) strengthening management of protected areas.¹⁷

67. Tanzania has also established identification of components of biodiversity (Article 7) as a priority in its efforts to implement the Convention. In its draft biodiversity strategy and action plan as well as country study¹⁸ it describes tasks associated with assessment of status of biodiversity and identification as well as monitoring of components of that diversity to be one of its priorities in implementing the Convention.

68. Kenya has provided in its draft national biodiversity strategy and action plan a general overview

¹⁶ Republic of South Africa, 1998. *South African National Report to the Fourth Conference of Parties to the Convention on Biological Diversity*, p.40. Department of Environmental Affairs and Tourism, January 1998.

¹⁷ Republic of Seychelles, 1997. National Report on the Implementation of the Convention on Biological Diversity—National Biodiversity Strategy and Action Plan. November 1997.

¹⁸ The country study was prepared prior to launching the process of formulating the national strategy and action plan. It was financed by UNEP.

of gaps in its efforts to manage biodiversity. The gaps outlined in the document include the following: lack of an integrated approach to management of biodiversity resources, inadequate monitoring and evaluation of biodiversity resources, weak local and national capacities, inadequate information and awareness of biodiversity issues, insufficient stakeholder involvement, low level of documentation and appreciation of indigenous knowledge, inadequate financial and technical resources, inadequate *ex situ* conservation facilities, lack of a comprehensive and harmonized land use policy, inadequate programmes for research and training in order to improve national capacity, and inadequate capacity to implement the National Biosafety Framework. This catalogue of capacity limitations is similar to that of Tanzania and Uganda (as in their draft national biodiversity strategy and action plan).

69. Egypt has a detailed list of priority goals and areas for the implementation of the Convention. It is very comprehensive report on the Convention as required by Article 26 the country has identified 14 key priorities. Egypt's priorities are well spelt out with a clear time-frame for addressing them.

Table 3.2: *Egypt's Priorities/Goals to Manage Biodiversity and Implement the Convention*

1.	By the year 2000, establish a capable and functional administrative and technical framework, that is financially self sufficient, and can effectively address the wide spectrum of nature conservation related issues on a national level, and can carry out other components of this strategy, efficiently.
2.	Identify the main components of Egypt's network of Protected Areas covering 15% of the country's territory (as recommended by the IUCN and declared in the GOE current Five Year Plan). All of the sites within the network will be declared and designated by the Year 2000.
3.	Initiated and upgrade the management process for Protected Areas. An immediate goal is for five of the most valuable and vulnerable Protected areas to be under appropriate management by the year 2002. Management will optimize the sustainable utilization of the resources they contain.
4.	Establish a sound economic rational and mechanisms for natural heritage conservation measures (e.g. for Protected areas, hunting management, etc.), which addresses both the conservation needs of the resources at hand, and the development requirements of the country.
5.	Promote the utilization of certain (appropriate) Protected Areas as a high premium-ecologically sensitive tourism resource.
6.	Protect and manage natural heritage resources not regulated by Law 102 (i.e. outside Protected Areas and their adjacent buffer zones) in a fashion that addresses the growing needs of development in Egypt, ensures their long-term sustainable maintenance and optimizes their economic and social output.
7.	Establish a functional and effective wildlife (e.g. hunting and fishing) management system, by the year 2000.
8.	Full compliance with all international conventions concerned with natural heritage conservation to which Egypt is signatory, by the year 2004.
9.	Establish a comprehensive information, monitoring and assessment system for the natural heritage resources of Egypt.
10.	Increase public, and decision-makers, understanding and appreciation of Egypt's natural heritage, and participation in its conservation.
11.	Development of a national biosafety framework for addressing questions of potential risk to the environment and human health.
12.	Establish a Natural History Museum to house the complete referral collections of the taxonomic groups of the biota of Egypt.
13.	Establish a National Gene Bank to include collection and for the maintenance of genetic resources (races, wild relatives of crops and fodder plants, poultry and farm animals); preservation of genetic materials in laboratory (<i>in vitro</i>), in fields of the Gene Bank (<i>ex situ</i>) and in their natural habitats (<i>in situ</i>), and preservation of genetic materials of micro organisms.
14.	Initiate a Captive Breeding Centre(s) to function as <i>ex situ</i> conservation of rare and endangered species of plants and animals.

70. Malawi has also made a major effort to define its priorities in implementing the Convention. These priorities are outlined in its first national report and draft strategy and action plan as:

- (a) Documentation of biodiversity;
- (b) Creation of data-base on the status of biodiversity;
- (c) Assessment and evaluation of current indigenous knowledge systems;
- (d) Determining socio-economic value of biodiversity;
- (e) Assessment of institutional capacity to meet the requirements of the Convention; and
- (f) Integration of biodiversity conservation, sustainable use and benefit-sharing considerations into sectoral, cross-sectoral policies, plans and programmes.

71. On the whole, many of the African Contracting Parties have defined their priorities or are in the process of doing so. These Parties are also engaged in various activities and processes aimed at implementing the Convention. Most of the countries¹⁹ (31 out of 50 Parties) have prepared their first national reports (thus, implementing provisions of Article 26) and several are now formulating their national strategies and action plans (Article 6). At least 37 African countries received funding from the GEF to implement enabling activities mainly—preparation of the first national reports and formulation of strategies and action plans (see table 3). Senegal, Seychelles, Malawi, Kenya and Uganda among several others have completed the preparation of their strategies and action plans while some like Ethiopia, Tanzania, Eritrea and several others are engaged in national processes to do so.

Table 3.3: *African Countries that have Submitted First National Reports*

Algeria	Eritrea	Rwanda
Benin	Gabon	Senegal
Botswana	The Gambia	Seychelles
Burkina Faso	Kenya	South Africa
Cameroon	Lesotho	Swaziland
Cape Verde	Madagascar	Togo
Chad	Malawi	Tunisia
DR of Congo	Mali	Uganda
Djibouti	Mozambique	Zambia
Egypt	Namibia	

¹⁹ See Table 3.3.

Equatorial Guinea	Niger	
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Table 3.4: *GEF Financed Enabling Activities as of April 2000*

	COUNTRY	AMOUNT (US \$)		COUNTRY	AMOUNT (US \$)
1.	Algeria	230,500	23.	Malawi	289,000
2.	Benin	233,820	24.	Mali	252,180
3.	Burkina Faso	230,977	25.	Mauritania	233,000
4.	Cameroon	300,000	26.	Mauritius	235,440
5.	Cape Verde	208,151	27.	Morocco	191,200
6.	Central Africa Rep	164,700	28.	Mozambique	216,000
7.	Chad	218,160	29.	Namibia	242,000
8.	Comoros	131,760	30.	Niger	229,500
9.	Congo	247,860	31.	Nigeria	313,740
10.	Congo, DR	331,560	32.	Rwanda	170,640
11.	Cote d'Ivoire	237,600	33.	Sao Tome and Principe	163,000
12.	Egypt	288,000	34.	Senegal.	205,200
13.	Equatorial Guinea	300,000	35.	Seychelles	186,000
14.	Eritrea	275,000	36.	South Africa	25,380
15.	Ethiopia	331,930	37.	Sudan	334,000
16.	Gabon	232,200	38.	Swaziland	169,560
17.	Gambia	243,000	39.	Togo	238,800
18.	Guinea	223,020	40.	Tunisia	89,000
19.	Guinea Bissau	195,480	41.	Uganda	125,000
20.	Kenya	157,000	42.	Zambia	289,440
21.	Lesotho	114,480	43.	Zimbabwe	299,456
22.	Madagascar	25,000			

72. Some of the countries have moved into implementing Article 15 on access to genetic resources. Notable examples are Uganda, Kenya, South Africa, Nigeria and Eritrea. Uganda and Kenya have drafted regulations while South Africa has policies on access to genetic resources in its White Paper on Biodiversity and Eritrea has a set of adopted guidelines and regulations.

73. In the area of biosafety (Article 19), several African countries have prepared national frameworks or are in the process of doing so. Kenya, Uganda, Cameroon, Namibia, Egypt, Malawi

and Zambia received funding from the GEF and have produced draft guidelines and frameworks. Zimbabwe has enacted legislation on biosafety. These are commendable efforts at implementing provisions dealing with biotechnology in general and biosafety in particular.

74. In terms of meeting obligations associated with participation in the Conference of Parties and further negotiations on such issues as biosafety and access to genetic resources, Africa's record is mixed. Attendance and effective participation in previous Conference of Parties can be gauged from lists of participants and reports of the meetings. At least 30 African Contracting Parties have had delegations to all previous meetings of Conference of Parties, 19 have attended all previous SBSTTA meetings, and at least 28 participated in all meetings of the Ad hoc working group on the biosafety protocol. Thus, in terms of attendance we can say with a certain measure of confidence that a good number of African countries have been responding to provisions of Article 23. However, the region's overall participation and interventions on key issues within both SBSTTA and the Conference of Parties has been limited by a variety of factors including the following:

- (a) *Lack of institutional coherence and stability* at the nation-state level. Environmental agencies that represent African countries at COP and other CBD meetings (e.g. SBSTTA) are under continuous flux. Many of the have limited financial and human resources to effectively engage in research on CBD issues. Their abilities to acquire, use and manage information on the CBD are low, and they tend to react to positions of other regions. In many cases, there has been high turnover in delegations destroying institutional memory and continuity.
- (b) *Economic and political instability* in such countries as Burundi, Rwanda and the Republic of Congo have undermined Africa's ability to participate a whole, and the individual countries' engagement with CBD issues and processes. Most of government energies have been diverted to managing civil strife.
- (c) *Enormous scope* of previous conferences and the *range of complex issues* have overwhelmed African delegations—which in many cases may not have had opportunity to study the issues. The previous conferences have tended to make too many decisions on a wide range of complex issues. With fairly small delegations, African countries have not been able to respond to many of the issues.

75. Despite the above limitations, some of the African delegations have been able to make active and informed contributions to COP agenda issues. Some of the countries have maintained a certain measure of continuity in delegations. A review of reports on the previous conferences shows that Ethiopia, Egypt, Seychelles and South Africa have had a high rate of consistency in the composition of their delegations. It is likely that these countries hold more memory of the negotiations and issues than those countries that had inconsistency in the delegation composition.

3.3 Country Capacity Needs for Implementation

3.3.1 Individual Capacities/Human Resources

76. For African countries to effectively implement the Convention on Biological Diversity they each require expertise in a wide range of disciplines. They require expertise in environmental economics, law, trade policy and law, intellectual property law, taxonomy, zoology and botany, diplomacy, planning, information management, risk assessment, sociology and anthropology, policy analysis, and a variety of other areas. Some of the expertise is in very short supply in most African countries or may be absent in some. From our review of reports, interviews with government and NGO officials, and responses to the questionnaire it is clear that no African country has all the expertise it requires to effectively implement the Convention. Some countries have more expertise in particular areas than others. There are, however, certain expertise that is missing or in very short supply in most African countries. Our review has identified the following as some of that expertise that is very short supply and high demand in most of Africa:

- (a) Environmental economics expertise to value components of biodiversity as well as assist policy-makers to establish appropriate economic incentives (as required by Article 11 of the Convention). Most countries of Africa have identified the absence of enough professionals in environmental economics as a major limitation to their efforts at formulating national biodiversity strategies and action plans. The limited supply of environmental economists has also constrained the abilities of such countries as Seychelles, Uganda, Kenya, Nigeria, Tanzania and Swaziland. Of the total responses to the questionnaire, at least 85% identified limited expertise in environmental economics as a major limitation to national efforts at valuing components of biodiversity and establishing economic incentives. At an interview with Uganda's focal point for biodiversity planning we established that absence of expertise in economic valuation of biodiversity has contributed to the delay in the Uganda's completion of its national biodiversity strategy and action plan.
- (b) Trade policy and law expertise to assist countries establish regimes to regulate trade in genetic resources and handle issues of access to the resources as well as to participate in such negotiations as on the convergence between agreements of the World Trade Organization (WTO) and the Convention on Biological Diversity. A review of statements by at least 9 African delegations (Ethiopia, Kenya, Malawi, Zambia, Rwanda, Uganda, Tanzania, Zimbabwe and Botswana) and the Africa group as a whole to the 4th and 5th meetings of the Conference of Parties to the Convention on Biological Diversity shows that many countries have few, if any, lawyers trained and/or experienced in such issues as intellectual property protection.
- (c) Taxonomists and related expertise in assessment of components of biodiversity have been identified to be in very limited in most African countries. At least 90% of the responses to the questionnaire identified the absence of an adequate number of

taxonomists. A study conducted by the African Centre for Technology Studies on national capacity for biodiversity management in Kenya, Uganda, Ethiopia and Tanzania shows that Kenya has less than 4 trained and experienced taxonomists while Uganda indicated 2, Tanzania 2 and Ethiopia 7.²⁰ At the 5th Conference of Parties to the Convention, the African group also stressed the absence of enough taxonomists in the region as one of the main limitations to the countries efforts to implement Article 7 and related provisions of the Convention.

- (d) Data/information management expertise to establish and manage national clearing house mechanisms as well as related responsibilities of promoting information exchange for scientific and technical cooperation (Article 18) has been identified to be limited in most countries. The Gambia, Eritrea and Egypt identified this area of expertise as one of the priorities in capacity building for biodiversity management.
- (e) Negotiation skills in key issues of the Convention are in short supply in many African countries. The Gambia and Uganda have articulated this as one of their capacity needs.

77. Most African countries have not quantified their human resource needs for biodiversity management in general and implementation of the Convention in particular. Eritrea has, however, made first attempt in its national report to the Convention. The report indicates the number of professionals in key areas in key institutions.

Table 3.5: Status Overview of Eritrea's Human Resources for Biodiversity Management

	Skilled (BA) +	Others (Diploma) +
University of Asmara		
➤ Department of Biology	10	3
➤ Department of Geography	4	1
➤ Department of animal science	5	1
➤ Department of Marine Biology & Fisheries	10	2
➤ Department of soil and water conservation	8	1
Ministry of Land, Water and Environment	3	-
Ministry of Agriculture		
➤ Department of Animal Resources	43	97
➤ Department of Research (including National Gene Bank)	34	21

²⁰ Mugabe, J. and Clark, N. 1998. *Managing Biodiversity: National Systems of Conservation and Innovation in Africa*. ACTS Press, Nairobi.

➤ Department of land Resources and crop production	73	217
Ministry of Local Government		
➤ -Environmental units at Zoba level	3	-
Ministry of Fisheries		
➤ Division of Research and Training	36	20
➤ Division of enforcement	3	20

Source: The State of Eritrea, 1997. *National Report on the Implementation of Article 6 of the Convention on Biological Diversity*. Ministry of Land, Water and Environment, Asmara Eritrea.

78. In its first national report (in response to the requirements of Article 26) Uganda identified biotechnology, environmental monitoring and environmental accounting as the main areas where it has limited expertise. The Gambia has a detailed list of its capacity needs to implement the Convention. This is in its first national report. Key areas identified by the country include: environmental law, environmental economics, land use planning, information management, and taxonomy. The need for information and data management expertise is alluded to in Tanzania's and Kenya's biodiversity strategies and action plans as well as in national reports (Seychelles, Uganda, South Africa, Cameroon and Zimbabwe). In the case of Kenya the expertise is not available to many of the institutions (such as the National Environment Secretariat) that are responsible for planning and policy-making.

3.3.2 Institutional/Organizational Needs

79. The nature of institutions and how they are configured are among the main factors determining a country's capacity to manage biodiversity and implement the Convention. A review of national reports, some of the draft national strategies and action plans as well as responses to the questionnaire show that most of the African Contracting Parties have established agencies to handle various aspects of biodiversity management and some have focal points for the Convention. A key feature of the institutional arrangements in most of the countries is the absence of, if any, *intra- and inter-agency articulation*. Most countries have recognized this limitation and some have articulated it in the first national reports. All review responses to the questionnaire identified this—the absence of or weak institutional articulation or *inter-agency linkages* as one of the priority areas of institutional building. For example, Seychelles has stated that:

“country-driven biodiversity conservation and management ...continues to be hampered by the scarcity of human, scientific and financial resources, as well as the geographical isolation of the Seychelles. ...there (are) ...gaps in government institutions to be filled by local experts. Typically, there is a high turnover of staff

thus, creating such problems as poor institutional memory, repetition and confusion. This leads to the realization that a paucity of experts ...may not be the cause of the problem. Experts are available but the effective is diluted because they may be scattered in different institutions...responsibilities for biodiversity issues and resources are either the responsibility of more than one entity or fall within a 'grey area' of management. As a result, inadequate or inappropriate institutional arrangements remain the major constraint to effective management.”²¹

80. In addition to the absence of or weak intra- and inter-agency or institutional linkages (what we talk of as institutional articulate—i.e. whether agencies are articulating together), all the national reports, responses to the questionnaire and the draft national strategies and action plans have identified *insufficient or lack of financial resources* (funding) as one of the major limitations to the management of biological diversity by the responsible agencies. Essentially the performance of agencies (those responsible policy and planning, protected areas, gene banks, monitoring, assessment, etc.) have very limited and sometimes no budgets for biodiversity activities. In most of the countries of Africa, government contributions to and expenditure on biodiversity management and Convention activities are very small. Assessments conducted in Ethiopia, Kenya, Uganda and Tanzania show that each of these countries has allocated and/or spends less than 2 percent of its annual expenditure directly on biodiversity management.²² More than 90 per cent of funding to biodiversity projects comes from bilateral and multilateral donors. This clear from a review of some of the country studies conducted by Tanzania, Malawi, The Gambia, Seychelles, Kenya, Uganda, Senegal and Nigeria. The country studies of these countries show that large percentages of financial resources to national biodiversity come from external sources. The Gambia notes in its first national report that only about 1 percent of central government budget is allocated to natural resources management sector. “Compared to the resources needs of biodiversity related institutions, this leveling of funding ...(is) grossly inadequate for any meaningful biodiversity ...programmes... The present government moratorium on new recruitment, the policy of zero-growth and continuous budgetary cutbacks to meet IMF conditionalities means ...needs (will) not be met at all.”²³

81. Another major institutional capacity limitation faced by most African countries relates to *poorly defined mandates and lack of adequate organizational autonomy* to effectively engage in conservation and sustainable use activities.²⁴ The poor and in some cases no defined mandates for

²¹ Republic of Seychelles, 1997. National Report on the Implementation of the Convention on Biological Diversity—National Biodiversity Strategy and Action Plan. November 1997, p. 22.

²² Mugabe, J. and Clark, N. 1998. *Managing Biodiversity: National Systems of Conservation and Innovation*. ACTS Press, Nairobi.

²³ Republic of the Gambia, 1998. National Report on the Implementation of the Convention on Biological Diversity. Publication of the Agriculture and Natural Resources Working Group/Task Force on the NBSAP Process—January 1998. <http://www.biodiv.org>

²⁴ In the case of East Africa, see Spooner, B., Singh, S. and Mugabe, J. 1994. ‘Institutional Linkages for Biodiversity Conservation in East Africa’. UNO/RAF/006/GEF. Project Field Doc. No. 6 Dar es Salaam:FAO.

agencies has been articulated by Gambia, Senegal, Kenya, Uganda and Tanzania as one of the major constraints to the performance of national agencies/institutions for biodiversity management. Uganda's first national report alludes to the absence of clearly mandates between the Uganda Wildlife Authority (UWA) and the National Environment Management Authority (NEMA). A telephone interview with a senior official of NEMA raised this as well. The official stated that UWA is under frequent flux and frequent changes in leadership. He stated that the role of agencies such as UWA and the Forest Department that is also under re-organization viz the functions and authority of NEMA are unclear. In most of the countries institutional arrangements for gene-banking are largely 'add-ons' to agricultural ministries or research bodies. In the case of Kenya for example the National Gene-Bank of Kenya lacks autonomy to develop projects and raise funds their implementation. Its operating budget is submerged in that of the Kenya Agricultural Research Institute (KARI).²⁵

82. Other institutional/organizational capacity needs identified through the responses to the questionnaires and review of various documents include:

- (a) *Inadequate staffing* of many of the agencies engaged in biodiversity management and the implementation of the Convention. The Gambia and Senegal as well as several other African countries have articulated poor and inadequate staffing of institutions as one of the main challenges in institutional building. In some of the countries (e.g. Zimbabwe, Kenya, Malawi, Tanzania and Uganda) the retrenchment of the civil service under World Bank and IMF programmes is already reducing considerably the number of staff available to agencies for biodiversity management.
- (b) *Insufficient equipment* (with emphasis on computers, vehicles, research laboratories) has been identified and listed by at least 23 African countries in their national reports and 57% of the received responses to the questionnaire. It affects the performance of organizations and is associated to the limited and inadequate financial resources the organizations have.

3.3.3 Systemic Capacity Needs: Economic, Political, Policy and Legislative Contexts

83. Systemic capacity needs relate to the overall context—economic, policy, legislative, political and national infrastructure—in which biodiversity management and the implementation of the Convention are to take place. It is overall national context that influences the creation, mobilization, utilization and sometimes conversion of skills (expertise) and institutions for biodiversity activities.²⁶ In the case of

²⁵ See Mugabe, J. and Clark, N. 1998. *Managing Biodiversity: National Systems of Conservation and Innovation*. ACTS Press, Nairobi.

²⁶ Mugabe and Clark talk of national systems of conservation and innovation—systemic capacity—in their volume Mugabe, J. and Clark, N. ed. 1998. *Managing Biodiversity: National Systems of Conservation and Innovation*. ACTS Press, Nairobi.

Africa one can generally state that various components of systemic capacity required for biodiversity management are weak or not well configured. On the economic front, for example, most of the countries are facing *severe economic problems* that have undermined their prospects of conserving biodiversity and sustainably using its components. The rate of economic growth of most African countries has been slow and for some countries there has been in fact major decline. Countries such as Ethiopia, Eritrea, Kenya, Tanzania, Zambia, Zimbabwe, Malawi, Burundi, Rwanda and Nigeria has seen their economic growth rates stay at below 3.5 percent per year despite. Kenya's economic growth rate is now estimated at maximum of 2 percent per year having being at least 3.5 percent per year in the mid-1990s.

84. Associated with the poor economic performance of many of the African countries are *the lack of development or improvement of infrastructure*, particularly the scientific and technical infrastructure for research and conservation. At least 75 percent of the responses to the questionnaire identified poor and declining infrastructure for protected areas management and research as one of the major systemic capacity limitations facing countries of Africa. The following countries have identified poor infrastructure as one of the major limitations to their efforts to implement the Convention: Kenya, Eritrea, Namibia, The Gambia, Seychelles, Uganda, Tanzania, Djibouti, Senegal, Rwanda and Zambia. The extent to which infrastructure is major capacity limitation is, however, not been defined or established.

85. Another major limitation to the systemic capacities of some of the African countries is the *absence of peace and political stability* and for many increasing social strife. By 1999 at least 14 African countries were, according to the United Nations Security Council, under civil and/or political war and social strife. These included Burundi, the Democratic Republic of Congo, Eritrea and Ethiopia, Angola, Sierra Leone, Liberia, and Rwanda that are Contracting Parties to the Convention. These countries have had their economic, political and intellectual resources diverted from issues of biodiversity management to the management of their internal conflicts. It is also unlikely that such countries will be able to attract the best skills and necessary infrastructure for biodiversity management and the implementation of the Convention if peace and stability continue to be absent.

86. While most African countries have both explicit and implicit policies and laws for the management of biodiversity these (*policies and laws*) are *inadequate* in various respects. First, in many of the countries the policies and laws are founded on sectoral natural resources management imperatives and fail to recognize and articulated the interconnectedness of the resources, ecosystems, etc. They promote conservation on sectoral basis and often undermine the holistic approach that is built into the notion of biodiversity. In Kenya for example "the legal framework relating to biodiversity management reflects a scenario of sectoral laws that are not harmonized, and occasionally conflicting. These laws are not clearly defined, thus, necessitating the need to review them and create an enabling environment for sectoral collaboration and operational harmony."²⁷

²⁷ Republic of Kenya, 1999. The Kenya National Biodiversity Strategy and Action Plan, p. 5. Ministry of Environment and Natural Resources. (Draft of December 1999).

87. The *lack of harmonized policies and laws* has been cited as some of the main limitations to the conservation of biodiversity and sustainable use of its components. In addition to Kenya, it has been identified by the Gambia, Uganda, Zambia, Egypt, Zambia, Namibia, Senegal, and Rwanda in the first national reports. Tanzania has also identified the absence of harmonized policies and laws in its draft national strategy and action plan. At least 9 out of 11 responses to the questionnaire listed the absence of harmonized policies and laws as one of the major limitations to the implementation of the Convention.

88. In many of the countries policies and laws are also inadequate in another respect—they have not yet accommodated some of the provisions of the Convention, particularly those that pertain to the objective of fair and equitable sharing of benefits from the utilization of genetic resources. Many of the policies and laws focus largely on conservation and are in various ways inadequate of regulating illegal collection of genetic resources, promoting benefit-sharing, and facilitating the transfer and/or procurement of relevant technologies. Many of these policies and laws are also inadequate in providing incentives for conservation and sustainable use.²⁸

3.4 Capacity Building Initiatives and Lessons Learnt

89. To address some of the capacity limitations identified above a number of national, regional and international initiatives have emerged in the last five years or so. These initiatives are scattered across the institutional terrains of NGOs, governments, the United Nations agencies particularly UNDP and UNEP, and bilateral and multilateral donors. Many of the capacity building initiatives have been convinced around projects. While some have targeted certain specific capacity needs many have been developed without clear assessment of needs of the institutions and countries. Some of the major capacity building initiatives have include:

- (a) Training courses in policy analysis of issues associated with the Convention offered since 1995 by the Nairobi-based African Centre for Technology Studies (ACTS). These courses have focused on such specific issues as access to genetic resources, transfer of technology, financial mechanisms and resources, incentive measures, and biosafety. Target groups have been mainly focal points for the Convention, officials from national wildlife and forest departments, and some from public research organizations. More than 75 officials from at least 9 African countries have gone the courses that normally lasted 3 months.
- (b) Training courses in environmental economics offered by the Eastern and Southern Africa Network for Environmental Economics with its Secretariat at IUCN East Africa Regional Office in Nairobi offers short courses in such areas as valuation of biodiversity

²⁸ See Seychelles, Kenya, Uganda and Rwanda's first national reports.

components. At least 15 economists from the region have gone through training economic valuation of biodiversity.

- (c) Institutional Support to East Africa's Biodiversity (GEF financed project between 1993 and 1996) involving national institutions (NEMA in Uganda, NES in Kenya and the National Environment Management Council (NEMC) of Tanzania) focused on strengthening national agencies to network, develop databanks, review policies and laws, and build infrastructure for biodiversity management.
- (d) GEF financed Global Support Programme for Biodiversity Planning which aims at assisting countries enhance their capacity to formulate and implement national strategies and action plans. The programme is administered by UNEP and UNDP. Its main focus is on promoting best practices, exchange of information and expertise, and strengthening national capacity for information/data management.

90. Many of these initiatives have been implemented as short-term projects without a focus on ensuring that institutional and individual capacities are sustained. They have not addressed, at least adequately, organizational development challenges associated with clarifying mandates and changing overall policy context. The Institutional Support to East Africa's Biodiversity Project may be an exception to this. Some of its activities focused on assisting the countries to reflect on mandates and linkages between institutions. It has been followed up by another project being implemented by these agencies in a fairly coordinated way at the regional level. There is a need to examine other GEF projects to assess the extent to which they promoted institutional continuity and learning at the country and regional levels.

CHAPTER 4: CLIMATE CHANGE

4.1 National Obligations Under the Climate Change Convention

91. The United Nations Framework on Climate change (UNFCCC) is one of the conventions opened for signature at the United Nations Conference on Environment and Development (UNCED) in June 1992. The Convention, which has now been ratified by at least 46 African states, creates and vests a number of obligations on its Contracting Parties. It is an international regime whose overall objectives are to manage climate change through stabilization of greenhouse gas concentrations in the atmosphere at levels that would prevent interference with the atmosphere and climate systems. There are a number of important principles that form the cognitive structure of the Convention. First is the principle of *differentiated responsibility*. The essence of this principle is that while the primary objective to manage climate change is common (common concern and objective) responsibility to take action is differentiated on the basis of capability to discharge that responsibility²⁹ and on the levels of national contributions to the greenhouse gas emissions. Second the Convention is erected on the principle of *national sovereignty over natural resources within national jurisdictions*. Individual Contracting Parties are given autonomy and authority to determine or define their development priorities. The Convention explicitly recognizes that for developing countries economic and social development, and poverty reduction are the main priorities. It is in this context that African Contracting Parties must link their obligations from the Convention to articulation of the economic and development priorities and strategies.

92. Article 3 of the UNFCCC calls upon Parties to “take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects.”³⁰ This precautionary principle is established on the view that despite the lack of adequate scientific evidence and certainty the world community should take measures, even if anticipatory ones, to stem climate change.

Table 4.1: *Status of Climate Convention Ratification by African States as of September 7, 2000*

	Country	Date of Ratification/ Accession
1	Algeria	June 9, 1993
2	Angola	May 17, 2000
3	Benin	June 30, 1994

²⁹ Okoth-Ogendo, H.W.O and Ojwang, J.B. 1995. *A Climate for Development: Climate Change Policy Options for Africa*. ACTS Press, Nairobi.

³⁰ United Nations, 1992. *Framework Convention on Climate Change*, Article 3(3). United Nations New York.

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	Country	Date of Ratification/ Accession
4	Botswana	January 27, 1994
5	Burkina Faso	September 2, 1993
6	Burundi	January 6, 1997
7	Cameroon	October 19, 1994
8	Cape Verde	March 29, 1995
9	Central African Republic	March 10, 1995
10	Chad	June 7, 1994
11	Comoros	October 31, 1994
12	Congo	October 14, 1996
13	Côte d'Ivoire	November 29, 1994
14	Democratic Republic of the Congo	December 9, 1995
15	Djibouti	August 27, 1995
16	Egypt	December 5, 1994
17	Equatorial Guinea	August 16, 2000
18	Eritrea	April 24, 1995
19	Ethiopia	April 5, 1994
20	Gabon	January 21, 1998
21	Gambia	June 10, 1994
22	Ghana	September 6, 1995
23	Guinea	May 7, 1993
24	Guinea-Bissau	October 27, 1995
25	Kenya	August 30, 1994
26	Lesotho	February 7, 1995
27	Libyan Arab Jamahiriya	June 14, 1999
28	Madagascar	June 2, 1999
29	Malawi	April 21, 1994
30	Mali	December 28, 1994
31	Mauritania	January 20, 1994
32	Mauritius	September 4, 1992
33	Morocco	December 28, 1995
34	Mozambique	August 25, 1995
35	Namibia	May 16, 1997

	Country	Date of Ratification/ Accession
36	Niger	July 25, 1995
37	Nigeria	August 29, 1994
38	Rwanda	August 18, 1998
39	Sao Tome and Principe	September 29, 1999
40	Senegal	October 17, 1994
41	Seychelles	September 22, 1992
42	Sierra Leone	June 22, 1995
43	South Africa	August 29, 1997
44	Sudan	November 19, 1993
45	Swaziland	October 7, 1996
46	Togo	March 8, 1995
47	Tunisia	July 15, 1993
49	Uganda	September 8, 1993
50	Tanzania	March 8, 1996
51	Zambia	May 28, 1993
52	Zimbabwe	November 3, 1992

93. The UNFCCC creates obligations on African Contracting Parties. The main obligation relates to communicating to the Conference of Parties information on:

- (a) national inventory of sources and sinks of anthropogenic emissions of greenhouse gases; and
- (b) steps taken or planned to implement the Convention.

94. In addition to the obligation to communicate to the Conference of Parties, the African Contracting Parties are also expected to:³¹

- (a) Integrate climate change management considerations into their social, economic and environmental policies and programmes;
- (b) Keep levels of their emissions under check by periodically or as required providing

³¹ See Ohiorhenuan, J. and Wunker, S. 1995. *Capacity Building Requirements for Global Environmental Protection*. Global Environment Facility (GEF), Working Paper No. 12.

national inventories of anthropogenic emissions and removal by sinks;

- (c) Promote education, training and public awareness;
- (d) Promote the sustainable management of sinks and reservoirs of greenhouse gases; and
- (e) Promote and/or conduct relevant research and cooperate in exchange of information.

95. African countries are also expected to meet their obligations related to participation in the Conference of Parties to the Convention and its subsidiary bodies. These Parties are required (though not legally obliged to) under provisions of Article 7 to send delegations to and participate in deliberations of the Conference of Parties as well as in the negotiation of protocols to the Convention. Article 7 establishes the Conference of Parties:

“as the supreme body of (the) Convention, ...[to] keep under regular review the implementation of the Convention and any related legal instruments that the Conference of Parties may adopt, and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention.”

96. It is through their participation in the Conference of Parties' meetings that African countries can ensure that their priorities get deposited in decisions regarding the Convention's implementation and any legal instruments created under the Convention.

4.2 National Priorities and Implementation of the UNFCCC

97. As we have stated above, the implementation of the UNFCCC by African countries has to be based on and informed by their individual priorities and needs. Each country is expected to define its priorities and base its implementation strategies on those priorities.

98. In this assessment, we provide as much as possible some common priorities on the basis of which framework capacity development response measures can be established. Admittedly, though, it is quite difficult to develop these common priorities not indeed to select any key problem areas as priorities in a continent so besieged with a variety of problems each with almost equal urgency. What can be done, however, is to organize these in a manner that can guide some response measures for building the requisite capacity development for climate change.

99. National priorities have been grouped for this purpose into three categories, namely:

- (a) Priorities relating to national development; the national development agenda independent of climate change considerations

- (b) Priorities relating to national concerns with the effects of climate change on the national development agenda
- (c) Priorities relating to management of climate change and its response measures in a global economic and political setting.

4.2.1 Priorities relating to national development; the national development agenda independent of climate change considerations

100. It is not possible to appreciate national climate change priorities without fully understanding the national development interest that forms the basis of African countries participation in climate change under the UNFCCC. The complexity of and breadth of Africa's development problems cannot, however, be meaningfully addressed in this exercise alone. The following categories of priorities do capture quite reasonably, the full extent of problems that Africa has sought to resolve over the decades and some of these, Africa has sought hard to place on the UNFCCC agenda with variable success. In fact, Agenda 21 of the Rio Earth Summit is a response to this effort by Africa and the developed world to press upon the convention to respond to Africa's real development problems.

101. These categories are: poverty alleviation, enhanced economic growth, equity in the distribution of wealth and access to development resources and technologies. These considerations have guided Africa's participation at the various conferences of the Parties to the convention and related meetings of subsidiary bodies to the convention. Any initiative of the convention and particularly capacity development because of its cross cutting nature to measures responding to Africa's problems must impact positively on these development priorities.

4.2.2 Priorities relating to national concerns with the effects of climate change on the national development resource base

102. Most African countries' development has to be constructed on a fragile natural resource base and a very underdeveloped infrastructure. This is a major limitation that has worsened limited human capacity to manage this fragility and to develop further the nascent infrastructure. Africa is keen to fully utilize its natural resource base to support economic development and to expand its infrastructure. The threat of climate change to both the infrastructure and the natural resources poses a new and urgent problem that Africa has sought to bring forward to the conference of the parties to the UNFCCC.

103. Most threatened areas, as indicated in the Uganda and South Africa reports on the detailed assessment of this capacity development needs assessment as well as in the UNFCCC special report on Africa are agriculture, forestry, natural ecosystems, wildlife, water resources including rainfall regimes,

fisheries, human settlements, energy resources, transport and industrial infrastructure particularly those located in coastal areas, human health and all related management systems put in place to manage the national services in the absence of climate change.

104. In agriculture, there are major concerns with shifts in agro-ecological zones. Any shifts that may occur would naturally demand a shift in supportive infrastructure and a change in production knowledge systems particularly those rooted in cultural traditions. Droughts and increases precipitation (which is predicted for some parts of Africa in some scenarios) may lead to greater soil erosion, major disturbances in food security, livestock production and wildlife management. There may be shifts in crop disease patterns demanding again changes in knowledge systems and response infrastructure.

105. In forestry, there is concern with enhanced desertification which would lead to major social problems associated with loss of traditional fuel wood supplies and, in many places construction materials. Uganda, for example, has reported an increase in pest and disease invasion in national soft wood plantations.

106. Water resources are critical in a generally semi arid continent like Africa. The lack of predictability and poor national ability to respond to whichever direction climate change takes is a major concern to most African countries. The recent floods in Mozambique have demonstrated amply these fears. Water resources are also closely associated with the energy development plans of most countries. For example, countries such as Zambia, Uganda, Kenya, Tanzania, Mozambique, Senegal, Democratic Republic of Congo, to name a few depend almost totally on hydro power for their electricity supply. Large populations depend significantly on fishing as an economic activity and way of earning a living. In addition, some countries have built large artificial infrastructure to develop the fishing industry. The effects of climate change on development are not known and capacity to predict or assess impact is critically limited in Africa.

107. Sea level rise would inundate coastal zone infrastructure and human settlements. The recent floods in Mozambique again present an important indication to the possible effects of abruptly increased precipitation. Worst affected sectors would be human settlements and transport infrastructure as well as agriculture and mining operations. These are all important sectors in Africa that has a very long coastline.

4.2.3 Priorities relating to management of climate change and its response measures in a global economic and political setting

108. Africa is aware of and is participating in the formulation of the various global response measures to address climate change. Most of these have to do with and will require the introduction of appropriate policies and measures at global and national levels. Africa has indicated fear of the implementation of some of these measures in respect of their impact on its competitiveness in the global

economy. Particular areas of priority here include concern with access to global technologies, the balance of payment and debt effect of the introduction of some of the clean development technologies, and fears regarding the shifting of risk from developed countries to developing countries in cases where unproven response technologies and measures are implemented in Africa. Of major concern and of priority consideration is the possible global pressure for Africa to shift from such natural resources as coal which have been the mainstay of industry and energy sector development in some countries to cleaner technologies including hydro for power generation.

109. Internally, countries have also indicated concern with the shifting of the climate change mitigation burden to some sectors of the economy particularly those based on fossil fuels.

110. For reasons of these factors, Africa considers it a high priority that it has an effective appreciation of the effects of the various measures and policies on risks that may accompany the measures and policies. Lack of this appreciation has greatly influenced the positions African negotiators have taken at various meetings related to the convention.

4.2.4 Priorities relating to meeting commitments under the UNFCCC

111. We have already indicated that the UNFCCC brings forth three basic commitments to African parties to it. These are the commitment to conduct national assessment of factors that influence climate change, the commitment to report these assessments to the convention and the commitment to put in place national response policies and measures albeit with the committed assistance of parties in annex 1 of the UNFCCC.

112. Priorities discussed here relate to the ability of African parties to deliver on their commitments.

4.2.5 Commitment to conduct national inventories of sinks and sources assess

113. Under the convention this commitment relates to conducting national inventories on sources and sinks of greenhouse gases. The majority of countries have conducted these assessments and they have participated in the formulation of agreed guidelines for carrying out and presenting the assessments. While capacity on inventories has been developed at the individual and institutional levels to the extent that emissions inventories have been successfully produced in most countries, there is still need achieve national level awareness on the process of generating the inventories and to set up formal institutions and mechanisms for updating the inventories with the requisite feedback to key sources and managers of sinks such as forests.

114. This priority has been reported in the context of understanding, observation and measurement. Limitations according to the questionnaire survey were presented as lack of skilled human skills to undertake public awareness programmes, lack of financial support for awareness building activities and limited technology assessment skills to assess and project future emissions trends associated with specific technology policies.

115. In some cases the problem of generating country specific emission factors is presented as a priority. However, this has been countered at various for a by the argument that the accuracy gains from such an effort are negligible. The problem of awareness raising and establishing a systematic feedback and update mechanism occurs at the systemic, institutional and individual levels with the problem of financial resource taking a cross cutting effect.

4.2.6 Commitment to submit national communication reports to the COP

116. Reporting on national implementation of the UNFCCC is through national communication reports to the Conference of the Parties. It is here that very little Africa progress has been realised. Few countries including Senegal, Zimbabwe, Egypt, Mauritius and Tunisia have submitted their initial national communications. The national communication includes important information on policies and measures for responding to climate change and information on future actions or projects for responding to climate change among other chapters. This additional information exceeds skills built under the assessment of sources and sinks. The information must be generated studies on climate change mitigation assessment and vulnerability and adaptation assessment and most critically on some level of national consensus on what policies and measures can indeed be implemented by the party.

117. African countries have at every opportunity indicated that vulnerability and adaptation assessment were the most critical of all their interests in climate change. They have also pointed to the lack of desire by developed country parties as well as the climate change support mechanisms such as GEF to support V&A capacity building and actions. This remains by far the key priority area for Africa. It is a cross cutting priority which if resolved can open the way for greater and more meaningful participation by African parties to the convention.

118. Under Climate Change mitigation, priorities are mainly at developing individual skills to conduct mitigation analysis, developing institutional feedback mechanisms and developing national mechanisms for consultation and reaching consensus on policies and measures to reported and adopted. In a few African countries to include Botswana, South Africa, Senegal, Egypt, Ghana, Zimbabwe, Mauritius, Zambia, Tanzania and Tunisia, very high-level skills have been developed in mitigation analysis through methodological training support by UNEP and country studies support programmes from US country studies programmes, GTZ and UNEP.

119. A priority in this area remains broadening the skills base beyond the few institutions and individuals and more importantly converting mitigation analysis skills into skills for developing actual mitigation action. This conversion is currently being attempted by the Climate Technology Initiative of the EU in the SADC region. In this initiative a broad based region-wide consultation and planning process is being implemented to convert mitigation assessments in the energy sector into an investment programme for a cleaner energy path. In addition to national level skills, the contiguity of most Africa economies makes it imperative that regional assessment skills be developed particularly for sectorally based programmes of action. This would be most pertinent for the inter-linked electricity grids such as found in East Africa, West Africa and in SADC. Efforts in such regional assessments have been attempted with support from GTZ for SADC and East Africa. There, however, remain constraints relating to reaching investment and technology choice consensus among countries affected. This is mainly due to lack of skills to assess and demonstrate win-win options that override important national considerations such as security of supply and balance of payment effects.

120. The highest priority in V&A remains financial support and a concerted effort to develop comparable assessment methods such as the effort seen in support of methodological development for mitigation assessment. Priorities at national level have been presented in the survey as human resources development at the individual level, provision of relevant information to conduct effective V&A assessments. This is an important consideration in an area where the sciences require for assessment are quite many and varied with calling for a concerted interdisciplinary effort. Institutions administering the main affected areas such as agriculture, water development and energy have narrow mandates and sometimes fail to provide the requisite support for an interdisciplinary assessment. This is mainly due to the pressing needs of line responsibilities and lack of funds to take on the added responsibility of climate change in financial and human resources terms.

4.2.7 Commitment to formulate policies and measures

121. As has already been indicated in this report, the national statement on policies and measures requires broad based national consultation and consensus. This entails a significant level of resources on the one hand and extensive skills for assessing the various stakeholder interests and how they are affected by certain policies and measures to be adopted. The present generation of national communication reports only makes passing reference to policies and measures and list a few projects for implementation. This weakness has been attributed to the systemic problem of limited financial resources and lack of institutional capacity to implement cross-sectoral assessments.

122. Priority actions presented by the survey to overcome this limitation include developing skills in policy analysis, economics of climate change, vulnerability and adaptation assessment and integration of national policies with individual company priorities.

4.3 Country Capacity Needs

123. In this assessment, capacity development needs have been defined at three levels; the systemic level, the institutional level and the individual level. The systemic level relates to the supportiveness of the overall socio-economic environment to the implementation of climate change obligations and programmes. The institutional level relates to the presence or absence of organizational structures to support the climate change implementation policies and measures. The individual level relates to the presence of professional capability to assess and administer climate change policies and measures. It also includes the conduciveness of national conditions to professional development in the disciplines related to climate change.

124. In this section we present an assessment of capacity needs at all these three levels noting that capacity needs at the three levels may not necessarily be mutually exclusive. There are significant overlaps that sometimes reduce the benefits of the distinctions. We, however, maintain the distinctions in order to provide some basis for guiding of focusing response strategies for capacity development.

4.3.1 Individual/Human Resource Needs

125. The attitude of individuals as leaders or line professionals could make a major difference on how climate change as a subject is treated at all the three levels of capacity defined in this assessment. The most important attitude at the individual level can be reduced to career interests or career progression to include security of tenure within disciplines applied to climate change. Questionnaire responses showed that over 35% of respondents considered career progression and security of tenure as a major factor in determining the importance of climate change activities in their programmes of work. Networking and training opportunities were also considered important. Capacity needs at this level have, thus, been identified as those relating to ensuring security of tenure, ensuring career progression, providing for training and networking opportunities. Training and networking are associated with two other factors that were considered important at the individual level. These are performance and information. Effective or competitive performance is critical in dealing with global issues that have a bearing on national competitiveness. Information and information interchange and access facilities, therefore, form an important part of capacity building needs at the individual level.

126. The Cairo consultation highlighted the importance of building climate change into the education curricular of schools and universities and the need to maintain a longer-term capacity building process with African countries at this level. It was, however, recognized that much could still be done by repackaging existing skills into appropriate interdisciplinary teams as the basic sciences are already present in most countries.

127. An important of skills dispensation in some African countries has been the individual or institutional consultants. These have made an important contribution to the introduction and assessment of climate change issues. As indicated for other professionals, security of tenure in this field is as much an issue. This has been damaged by lack of consistent support from multilateral climate change agencies such as GEF and lack of a formal relationship with local agencies such as governments and climate change offices. For the consultant, issues of performance and information are even more critical. Bolstering capacity at these levels would strongly enhance availability of consulting skills in African countries.

128. Government officials and heads of department and parastatal agencies have a strong influence as individuals on what direction government programmes take. These lack analytical skills and information and are also keen to excel as individual professionals in competitive and career assuring disciplines. It is important that focus be placed on these individuals and their career interests. Quite commonly, these people are in many cases well trained in specific disciplines but over the years they degenerate into generalities due to lack of incentive, accountability and skills refreshment as well as equipment and tools to exert the requisite analytical rigour on decision making.

129. The government professionals are very powerful in that they can stall decisions or enhance them. There are the most trusted advisors to policy makers and no amount (in many cases) of consultancy excellence can supersede the trust their policy-making supervisors have placed in them. It is important, therefore, that this professional be a strong target for training and capacity development.

4.3.2 Institutional Level Capacity Needs

130. Conducive systemic capacity to assess and administer climate change policies and measures must translate into reality through institutions and individuals. In this section we assess the need for institutional capacity development. There are three key institutions that are important in addressing climate change. These are:

- (a) The convention which outlines commitments, obligations and processes by which climate change shall be addressed by the parties;
- (b) The government which is the national custodian of the convention but more importantly which translates global commitments under the convention into national policies, legislation and instruments to meet the obligations and commitments. It is also the government that is the custodian of the common interests of national stakeholders on

matters relating to climate change and shields these from undue infiltration by the convention and its processes.

- (c) The productive sector and social behaviour that in fact enhance or reduce the emission of climate change agents.

Capacity relating to the convention and its processes

131. The Convention is a global accord to which no country should accede unless it fully understands the commitments and obligations. An acceding country should also seek effectively to contribute to the terms and conditions of the accord otherwise it is not a meaningful or voluntary party. More importantly, a party that is a weak partner cannot effectively contribute to meeting the goals of the accord thereby weakening the effectiveness of the accord. It is important for this reason that capacity be developed among African country representatives to the various aspects of the convention so that their participation and the commitments they make on behalf of their countries is meaningful.

132. Several capacity needs have been identified in this regard. These are:

- (a) Financial resources to send large enough delegations to cover the important sections of the convention meetings.
- (b) Training in negotiating skills. There are three specific groups which get involved in negotiating bearing in mind that negotiations also take place at home and not only at the UNFCCC for a. These groups include the negotiators and policy makers on climate change, scientific and technical personnel who prepare background materials for negotiations nationally and at UNFCCC for a, socio-economic groups such as industry and development planners in the various economic sectors..
- (c) Capacity to evaluate and implement climate change policies and measures among institutions responsible for sectoral development and other stakeholders.
- (d) These institutions have a strong stake in the negotiations and must duly instruct negotiators. Their capacity to take their role on negotiations and national position building is limited by lack of skills, tools and resource to critically analyse climate change issues.
- (e) Financial and human resources to research and advise negotiators and stakeholders on important background issues for consideration by negotiators as well as the preparation of key position papers are considered critical as indicated by the assessment. The

effect of harnessing such skills and resources includes capacity to strengthen negotiators mandates through stakeholder consultation and stakeholder education on key negotiation issues. As already indicated, emphasis must be placed on support for research and critical analysis of climate change issues, assessing benefits, obligations, impacts of policies and measures and developing approaches to managing and implementing response programmes. In the negotiation process, it is sometime important to seek to influence the various parties' views even before the negotiation meetings. This has become a common approach in the negotiations where positions are debated way ahead of the COPs. A cadre of African experts working together with negotiators with the benefit of national and regional sectoral consultations must be supported and equipped to conduct this brain storming activity both among African negotiators to build constituency consensus and with their global counterparts to soften positions before the COPs.

- (f) Analytical tools for climate change such as models are virtually absent or not applied in African decision making at national, sectoral and institutional levels. This is not because there are no capable professional to develop or adopt models but because there are no resources to establish a critical mass and culture for model applications in decision-making. Better financed institutions such as electricity utilities, for example, have developed this culture and can effectively support the use of models as part of their decision tooling. There are also some modeling capabilities in universities but there is hardly any budgetary allocation for climate change related model development and application. Some models such as those developed traditionally for energy sector analysis have been adopted for use in mitigation analysis and various models exist for predicting climate change phenomena such as changes in temperature and precipitation. The introduction of these unfortunately has been ad hoc and project based to the extent that no critical mass has been build as required.
- (g) A typical cross cutting modeling team would involve sector experts such as agriculture, energy etc, financial experts, technology assessment experts, scientific experts and social analysts. This already is an interdisciplinary team that is difficult to assemble unless there is an institution with a strong mandatory commitment to modeling and to harnessing other rigour of analysing climate change phenomena and their implications for national development goals.
- (h) Environmental legislation is the domain of parliaments in the various countries and as indicated earlier of local authorities through by-laws. The decision to legislate on any scientific, technical or economic issue is a critical one for parliament and one that cannot be made in the absence of effective background materials. Models, other research approaches and awareness raising among legislators must be applied to ensure that environmental legislation is informed and, therefore, can be seen to complement other socio-economic interests of the country.

- (i) Climate change mitigation will entail the introduction of new and cleaner technologies some of which may be slow in attaining commercial status but nonetheless must be tried and tested. NGOs will require skills to implement some of these technologies. These bodies are also well placed to carry out various activities in support of the global and national climate change agenda to include awareness raising and consensus building. Capacity development in these areas is critical.

4.3.3 Systemic Capacity Needs

133. The most commonly sited systemic capacity development needs are:

- (a) Lack of information on socio-economic gains of implementing the UNFCCC; lack of information on the commitments made by the country by virtue of being a signatory to the convention. These commitments are not broadly communicated even to the most important stakeholders such as industry and managers of economic sectors that interact with climate change; only a few experts and negotiators seem to be more fully informed about issues on climate change. Because a broad based national understanding is not present, even the negotiators have little appreciation of the implications of signing the convention on the national development policies and programmes.
- (b) Lack of legislative framework to ensuring that provisions of the Convention are translated into action at national level. For this reason, it is difficult for government planners and budgetary process to allocate time and financial support to climate change mitigation and adaptation efforts as there is no legislation for such allocation. Climate change programmes are, therefore, supported only voluntarily and with funding from outside the national budget. Even in case where private companies wish to try some climate change mitigation initiatives, there is no legal provision to reward them or to safeguard them against the risks that may attend such effort.
- (c) No culture of technology assessment and general optimization management in industry or at the national level. Skills to assess optimization approaches are limited. This leads to poor policy formulation and poor knowledge of gains associated with implementing climate change policies and measures as indicated earlier.
- (d) It is needless to mention lack of financial resources. This is a commonly sited problem. It is difficult, however, to list this as a major constraint in the presence of such financing mechanisms as the GEF and the various bilateral and multilateral support mechanisms for supporting mitigation action. Even without too much imagination, one can tell that with the proper information and assessment on national gains from implementing climate change policies and measures, even some local resources would be allocated to climate

change activities. The key problem here is, thus, reduced to information and capacity to assess gains and commitments.

- (e) Another capacity development need at the systemic level is political commitment. This need should perhaps top the list given above. But this should also be seen in the light of poor information. This results from the fact that government appreciation of climate change issues is too limited to engender commitment of resources and political effort. Advanced knowledge such as we see among annex one countries would naturally lead to greater activities in this sector.
- (f) A key systemic factor highlighted in studies relating to energy efficiency in various countries is the lack of an independent promoter for climate change action in the region. Observations (e.g. In South Africa, Tanzania, Zambia, Zimbabwe, Botswana, Nigeria, Kenya and Malawi) show that the bulk if not all climate change actions in the region are driven from outside the country. This is despite the presence in these countries of institutions that have strong financial and professional interests in these countries. This is also despite the claim by GEF implementing agencies that programmes on climate change have to be country driven. Having said that, it must be admitted that countries with such interested institutions with some capacity to be internal drivers of climate change programmes have had a greater share of climate change studies than those that do not. Countries in such situations are for example, Senegal, Zimbabwe, Tanzania, Zambia and Tunisia.

134. An important observation made in the Uganda detailed country assessment is the lack of devolution of climate change authority or commitment from the line ministry to local authorities such as urban and rural councils. Ratification of the convention by parliament should devolve authority to local authorities that also have the power to establish local by laws and implement their own programmes on the environment. This level of authority is critical and the devolution of obligations to this level is critical as these are the authorities which administer local environmental pollution from industry and in the case of rural areas, have greater influence on the management of forests as sinks.

135. These systemic or structural needs are compounded by lack of guiding national policies as already indicated but more by lack of expertise in developing specific national policy instruments such as incentives and disincentives for climate change sensitivity in economic activity. Africa has had great difficulty with developing and managing macro-economic data for planning and policy administration. Decisions on climate change are subject to this same limitation. This is indeed why African countries fail to put forward a proactive agenda in climate change negotiations.

136. The general rapport between the private sector and the public sector in Africa is weak. It is only recent that effort for greater acceptance for the private sector in the continent has been observed. This lack of trust and sharing of skills has reduced the benefit African policy-making has realized from skills in the private sector. Along the same lines, the private sector thinks very little of skills and capabilities within the public sector and, thus, does take little of the public sector initiatives seriously. It

is for this reason that public sector efforts to enlist greater private sector's participation in climate change management have received limited or poor response from industry. Climate change has predominantly remained the subject of interest to government and to non-governmental organizations.

137. Lack of financial resources can also be defined in terms of capacity to access to cleaner technologies and related know-how. In some very poor agro-based African economies, access to financial resources and technology is mainly through donor funding while in the more advanced countries such as South Africa and Egypt, foreign direct investment plays a major role. This cleavage place the various African countries in significantly differentiated fortunes regarding needs for financial and technology capability to address climate change. When looking at lack of financial resources, therefore, it is important to consider the various conduits by which technology and skills may be accessed. This difference in fortunes is the basis for the argument for equity in access, for example, to global resources under such programmes as the Clean Development Mechanism (CDM).

139. Another major systemic problem to be addressed by capacity development is accountability. The culture of accountability is poor in most African countries. This is the reason why ministries that are responsible for the implementation of the UNFCCC have not bothered to ensure fuller national consultation and this is also why African negotiators in many instances have failed to seek effective mandate to negotiate on behalf of the various climate change stakeholders at home. Accountability, which became highly prominent after democratization of South Africa, is the main reason why it took so long for SA to conclude ratification of the convention. There was, here, a serious effort to consult and gain national consensus on ratification thereby building a relatively strong commitment to the convention.

140. Lack of entrepreneurship although not mentioned specifically in African climate change circles and even in this assessment can in fact be identified in Africa's frustration with the passage of climate technology gains back to the north. The resistance by Africa of the US demand for "meaningful participation" among key developing countries such as Brazil, India and China as a condition for signing the Kyoto protocol is, indeed based on the argument that the US is simply trying to ensure a broader market for climate change technologies. Such arguments read in corollary show a strong desire by African countries to equally benefit from the investment and business that derives from climate change sensitive policies and measures. The bottom line to such benefits is the ability of Africans to convert climate change policies and measures into profitable business- entrepreneurship. Building this skill will greatly enhance political and resource support for climate technology assimilation among African countries.

141. A strong issue was raised during the African CDI consultation workshop held in Cairo Egypt on August 1-2. This related to the continued failure of African countries to access GEF funding for project. Observations made boiled down to the view GEF feels that African countries cannot prepare and submit acceptable climate change project proposals. A comparison was drawn between proposals and economic cooperation documents written successfully for other multilateral bodies such as World Bank, IMF and African Development Bank by the same professionals who are said to fail to satisfy the proposal quality level demanded by GEF. A strong call was made for GEF to seek to communicate its

requirements clearly and to engage in a large-scale capacity development exercise for proposal writing by African country experts and officials.

142. An observation was also made regarding the failure by GEF to accept and consider for proposals capacity building initiatives originated independently by African countries or organizations. A number of such initiatives were outlined and GEF was asked to consider in its CDI or other programmes the Capacity Building Position of the G77 and China on the Possible Elements of a Draft Framework for Capacity Building. This paper is attached here as an annex to this report as a specific request by delegates at the Cairo meeting.

4.4 Capacity Building Initiatives and Lessons Learned

143. Not many projects have been conducted specifically for capacity development. In fact while a number of bilateral and GEF projects have been conducted across the continent, only one project has been designed specifically for capacity building. This is the GEF/UNDP Capacity Building Project carried out in Kenya, Mali, Zimbabwe and Uganda. The project focused mainly of raising awareness among national stakeholders who would otherwise not readily participate in climate change activities. The main lesson learned from this project is that awareness-raising campaigns alone without a clear demonstration of gains from climate change activities may not yield commitment to climate change. The passage of the project does not seem to have left behind practical enthusiasm to participate in climate change. Further activities needed to follow this exercise up on a longer-term basis.

144. Other national and regional climate change projects included the US country studies programme which included many African countries and was conducted over a period of more than three years; the GTZ supported national country studies focusing mainly of mitigation analysis, GTZ supported regional assessment of mitigation option in the SADC regional power pooling arrangement, Methodological studies by UNEP Collaborating Centre on Energy and environment which were conducted over a relatively longer period and involved specific institutions across the region and more recently UNIDO has had an initiative on industrial responses to climate change.

145. The main effect of all these efforts has been at least, to raise awareness on the subject particularly among utility managers, research NGOs, agriculture sector authorities and government agencies. The exact nature of lessons learned, however, could only be assessed through an in-depth review.

CHAPTER 5: LAND DEGRADATION

5.1 National Commitments Under the Convention to Combat Desertification

146. Fifty African countries have signed and ratified the United Nations Convention to Combat Desertification (UNCCD). These countries have, thus, incurred obligations to meet the overall objective of the Convention, viz: “to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.”³² African Contracting Parties have specific obligations (deposited in the Convention and in the Regional Implementation Annex for Africa (RIAA)) to:

- (a) Adopt an integrated approach in addressing the physical, biological and socio-economic challenges associated with combating desertification and drought;
- (b) Establish strategies and priorities to combat desertification and mitigate the effects of drought
- (c) Integrate strategies for poverty eradication into programmes and projects related to desertification control and the mitigation of the effects of drought;
- (d) Strengthen sub-regional, regional and international co-operation, especially in the areas of information collection, analysis and exchange, research and development, and in the transfer, acquisition, adaptation and the development of technology;
- (e) Cooperate within relevant intergovernmental organizations;
- (f) Make appropriate financial allocations from their national budgets towards implementation of the Convention and the RIAA;
- (g) Strengthen reforms towards greater decentralization as well as reinforcement of participation of local communities in halting and reversing desertification process; and
- (h) Mobilize new and additional national financial resources for the implementation of the Convention.

³² United Nations, 1994. *United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification*, Article 2. United Nations, New York: A/AC.241/27.

Table 5.1: Status of Ratification of the UNCCD by African States

	Country	Date of Ratification/ Accession
1	Algeria	May 22, 1996
2	Angola	June 30, 1997
3	Benin	August 29, 1996
4	Botswana	September 11, 1996
5	Burkina Faso	January 26, 1996
6	Burundi	January 6, 1997
7	Cameroon	May 29, 1997
8	Cape Verde	May 8, 1995
9	Central African Republic	September 5, 1996
10	Chad	September 27, 1996
11	Comoros	March 3, 1998
12	Congo	July 12, 1999
13	Côte d'Ivoire	March 4, 1997
14	Democratic Republic of the Congo	September 12, 1997
15	Djibouti	June 12, 1997
16	Egypt	July 7, 1995
17	Equatorial Guinea	June 27, 1997
18	Eritrea	August 14, 1996
19	Ethiopia	June 27, 1997
20	Gabon	September 6, 1996*
21	Gambia	June 11, 1996
22	Ghana	December 27, 1996
23	Guinea	June 23, 1997
24	Guinea-Bissau	October 27, 1995
25	Kenya	June 24, 1997
26	Lesotho	September 12, 1995
27	Liberia	March 2, 1998*
28	Libyan Arab Jamahiriya	July 22, 1996
29	Madagascar	June 25, 1997
30	Malawi	June 13, 1996

	Country	Date of Ratification/ Accession
31	Mali	October 31, 1995
32	Mauritania	August 7, 1996
33	Mauritius	January 23, 1996
34	Morocco	November 7, 1996
35	Mozambique	March 13, 1997
36	Namibia	May 16, 1997
37	Niger	January 19, 1996
38	Nigeria	July 8, 1997
39	Rwanda	October 22, 1998
40	Sao Tome and Principe	July 8, 1998
41	Senegal	July 26, 1995
42	Seychelles	June 26, 1997
43	Sierra Leone	September 25, 1997
44	South Africa	September 30, 1997
45	Sudan	November 9, 1995
46	Swaziland	October 7, 1996
47	Togo	October 4, 1995**
48	Tunisia	October 11, 1995
49	Uganda	June 25, 1997
50	Zambia	September 19, 1996
51	Zimbabwe	September 23, 1997

* indicates "Accession" status

** indicates "Acceptance" status

147. The UNCCD creates at least three categories of obligations on its Contracting Parties. The first category is those obligations that have to be met through domestic or national activities, policies, programmes and laws. Such obligations are deposited in Article 10 (National Action Programmes) and in Article 4 of the Regional Implementation Annex for Africa (RIAA). Specific actions that the countries are expected to invest in include:

- (a) Establishing preventative measures for lands that are not yet degraded or which are only slightly degraded;

- (b) Enhancing national climatological, meteorological and hydrological capabilities and the means to provide for drought early warning;
- (c) Incorporate long-term strategies to combat desertification and mitigate the effects of drought into national sustainable development policies; and
- (d) Provide for effective participation at the local level, national and regional levels of non-governmental organizations and local populations in policy-making, planning and implementation as well as review of national action programmes.

148. The second category includes those obligations to be implemented at sub-regional level through sub-regional institutions. These obligations are in Articles 10 and 11 of the RIAA. Such obligations include:

- (a) developing alternative energy sources through sub-regional programmes;
- (b) cooperation in the management and control of pests as well as of plants and animal diseases;
- (c) capacity-building, education and public awareness;
- (d) sharing of experiences, particularly regarding local participation;
- (e) development of policies in such areas as trade and for common infrastructure; and
- (f) joint planning for mitigating the effects of drought, including measures to address the problems resulting from environmentally induced migrations.

149. The third category is those obligations pertaining to reporting to and participation in Conference of Parties and its subsidiary bodies. African Contracting Parties are required to participate in decision-making on/for the implementation of the Convention. Article 26 of the UNCCD requires its Contracting Parties to “communicate to the Conference of the Parties for consideration at its ordinary sessions, ...reports on the measures which it has taken for the implementation of the Convention.”³³ Their participation in the Conference of Parties is also crucial for the enlargement and sustenance of the political authority of the Convention.

5.2 National Priorities and Implementation

³³ United Nations, 1994, op.cit. Article 26(1).

150. A number of African countries have defined their national priorities and strategies for the implementation of the UNCCD. By December 1999 at least 42 African countries had submitted their communication to the Convention's Secretariat. Most of the communication attempts to articulate national priorities. For example, Zambia has defined its priorities as:

- (a) establishment of a national desertification fund to mobilize and provide financial resources for national implementation of the Convention;
- (b) formulation and adoption of new land use policy and plans;
- (c) enhance public education and awareness of the UNCCD and issues of land degradation; and
- (d) formulation of a National Action Programme.

151. Like Zambia many other African Contracting Parties have similar priorities in the area of land degradation in general and the implementation of the UNCCD in particular. A common priority of most countries of the region is assessing the extent of land degradation and developing appropriate land use plans. Most countries stated in the national reports to the third meeting of the Conference of Parties to the UNCCD that they had limited information or data on the status of land degradation within their countries and emphasized the need for assessing the status of land and its degradation. Such assessment may identify those areas that are under severe land degradation and, thus, require immediate attention. The following countries identified assessment of status of land degradation as a priority in the first national reports and several stated that it will form a major component of their National Action Programmes: Angola, Egypt, Eritrea, Kenya, Morocco, Lesotho, Sudan, South Africa, Uganda, Zambia and Zimbabwe. Nine out of the 13 responses to the questionnaire identified assessment of land degradation as a priority action in the implementation of the UNCCD.

152. Lesotho has identified five priority areas in its NAP. These are: poverty eradication, technical measures to alleviate pressures on natural resources, drought preparedness and drought relief schemes, institutional development, and knowledge support, learning and communication. On measures to alleviate the pressures on natural resources, the country's NAP states that:

In combating desertification on rangelands, rain-fed cropland and irrigated land, it is important to distinguish in the degree of severity of degradation of the land and the corresponding need to address the desertification trend with appropriate measures. Desertification preventive measures should be adopted in areas not yet affected or only slightly affected by the desertification process. ...Application of corrective measures and rehabilitation of moderately and severely degraded lands should be through the introduction of environmentally sound, socially acceptable,

*fair and economically feasible land use systems which will enhance the carrying capacity of the land and maintain biotic resources.*³⁴

153. Other countries such as Zimbabwe have outlined broad areas in which specific interventions or focus will be given in the development of NAPs. Zimbabwe has listed the following as priority areas:

- (a) Water resources provision;
- (b) Energy provision;
- (c) Poverty eradication (provision of alternative livelihoods);
- (d) Land rehabilitation;
- (e) Creation of public awareness and capacity development;
- (f) Development of environmental information systems for the NAP process.

152. Namibia has designated its Desert Research Foundation as a lead agency to handle issues associated with the UNCCD in general and prevention of desertification in particular. The Foundation will be responsible for formulating and overseeing the implementation of NAP.

154. At sub-regional levels countries through their regional economic blocks have identified programmatic areas of common concern and priority. A review of the information available to us so far indicates that at sub-regional level, SADC (Southern Africa), CILSS/ECOWAS (Sahel and Coastal West Africa) and IGAD (Eastern Africa) have identified programme areas that are of common concern. These are:

- (a) Capacity development and institutional strengthening;
- (b) Strengthening of the early warning systems/mitigation against the effects of drought;
- (c) Cooperation in sustainable management of shared natural resources and ecosystems and the development of policy/legal frameworks;
- (d) Information collection, management and exchange;
- (e) Development and transfer of appropriate technology;
- (f) Development of alternative sources of energy.

155. Programmes that are specific to individual sub-regional institutions include:

³⁴ Lesotho National Action Programme in Natural Resource Management, Combating Desertification and Mitigating the Effects of Drought, Prepared by Emmanuel Pomela, January 1999.

- (a) Socio-economic issues for SADC;
- (b) Protection of crops, forest species and animals from pests for CILLS;
- (c) Development of pastoralism for IGAD.

156. At the regional level, a number of priority programme areas have also been identified within the context of the RAP. Additionally, a number of institutions have been identified and entrusted with the responsibility of coordinating activities in their domains of competence, as indicated below:

- (a) Ecological monitoring, Natural Resources Mapping, remote Sensing and Early Warning Systems: Organisation Africaine de cartographie et de Teledetection (OACT), Algiers, Algeria;
- (b) Agroforestry and Soil conservation: Institute du Sahel (INSAH-CILLS), Bamako, Mali;
- (c) Rational Use of Rangelands and Development of Fodder Crops: Inter African Bureau for Animal Resources (OAU/IBAR), Nairobi, Kenya;
- (d) Integrated Management of International Rivers, Lakes and Hydrogeological Basins: SADC/Water Coordination Unit, Maseru, Lesotho;
- (e) Renewable Energy Sources and Technologies: Agence Nationale des Energies Renouvelables (ANER), Tunis, Tunisia, in close collaboration with ENDA/TM, Dakar, Senegal;
- (f) Sustainable Agricultural Farming Systems: Semi-Arid Food Grain Research and Development (SAFGRAD), Ouagadougou, Burkina Faso.

156. In terms of national implementation of the priorities and provisions of the UNCCD, it is notable that most countries are still at stages of developing their NAPs. Article 9(1) of the CCD requires that Parties to the convention shall, as appropriate, prepare, make public and implement national action programmes, utilizing and building, to the extent possible, on existing relevant successful plans and programmes. Some countries, for example Mozambique, have noted that the absence of endogenous capacity has constrained their efforts to develop, make public and implement NAPs. Mozambique has the following capacity constraints:

- (a) Human and material Resources;
- (b) Technical capacity;
- (c) Financial resources;

- (d) Strengthening of the coordination of institutions;
- (e) Strengthening of communication systems; and
- (f) On the other hand, a number of countries have not clearly indicated their priority programme areas in their reports at the COP3.

5.3 Capacity Needs for Addressing Land Degradation Issues

157. Many African countries are faced with a wide range of constraints in their efforts to implement the UNCCCD and stem land degradation. The constraints can be generally categorized as: lack of skill/expertise in specific areas, absence of appropriate policies and laws, weak institutions, poor institutional linkages, limited financial resources, and lack of political commitment to address problems associated land ownership and use.

5.3.1 Human resources/skills

158. One of the main capacity constraints faced by most African countries in the implementation of the UNCCD relates to the absence of a critical mass of scientists in such areas as soil chemistry, soil microbiology and soil physics. In many countries there is a shortage of expertise in these areas and where there are some scientists they are not engaged in soil research activities or land management programmes. Many countries of the region have also shortage of expertise in remote sensing and survey, land use planning, and land law. As we have noted above some of the countries, for example, Zimbabwe and Mozambique have identified some of these areas of expertise as being those in which they require skills development or enhancement.

5.3.2 Policy and Legislative Constraints

159. Many African countries do not have explicit land use and management policies. A review of some of the national action programmes shows that while the countries have established land management programmes (as in the case of semi-arid and arid areas programme in Kenya) they do not have the necessary policies (and often plans) to promote sustainable management of land and to combat drought and desertification. Often such problems as drought are responded to on ad hoc basis by governments of the region. However, implicit land use and management policies are deposited in such regimes as national environmental policies and action plans (as in the cases of Kenya, Uganda and

Egypt). Key policy gaps relate to lack of explicit measures on ownership. In many countries land ownership regimes contain a lot of ambiguity and often do not provide incentives for the sustainable management of land and resources thereon.

5.3.3 Institutional Capacity Needs

160. There are four kinds or categories of institutions for executing land management programmes. These are: a) integrated-activity-based institutions; b) sector-based institutions; c) local level institutions; d) non-governmental institutions. For the purpose of combating desertification, Country Parties to the CCD have formed national bodies charged with the responsibility of coordinating the NAPs. In Zambia and Kenya the body is called National Steering Committee, in Zimbabwe it is referred to as National Task Force, and in Senegal, it is named National Focal Point, etc. These bodies are generally poorly staffed and not attached to a high profile Ministry such as the Office of the President or Prime Minister's Office.

161. There are, therefore, capacity development needs for these bodies to:

- (a) Co-ordination between institutions at national, provincial and district levels; and
- (b) Development of systems/mechanisms for monitoring management, accountability and transparency in the operations of institutions.

5.3.4 Overall Systemic Capacity Needs

162. In addition to the policy and legislative constraints, the implementation of the UNCCD and land management programmes are faced with other overall systemic capacity limitations. These include the absence of the necessary scientific and technical infrastructure, scanty information for policy making and implement, poor national economic performance, poor capacity development needs are in two categories, namely, those that have direct impacts on the combating desertification and those whose impacts are important but indirect. Those with direct impacts include the availability of training institutions and monitoring equipment for desertification control activities in the general areas of energy (firewood geo-thermal, and natural gas) and water (for irrigation as well as for human, industrial and animal consumption). Those with indirect but important impacts include transport (roads, railways, ports and harbours, and air transport).

163. Capacities are required for the:

- (a) Creation of new training institutions and/or strengthening the existing one at sub-regional and national levels in order to effectively halt and reverse the desertification process;
- (b) Acquisition of monitoring equipment, and training of experts in their use; and

- (c) Putting in place operational mechanisms for monitoring and evaluation.

5.4 Capacity Development Initiatives: Lesson Learnt

164. At the regional/sub-regional levels there are a number of capacity development initiatives by such institutions as CILLS, IGADD, SADC, LCBC, etc. There are also activities carried out by the GTZ, the Sahara-Sahel Observatory and other bilateral donors.

165. At national Levels, various countries have concentrated actions through the establishment of 'anti-desertification' units and the formulation of National Plans to Combat Desertification and Drought. Related actions include those in National Environmental Action Plans, National Biodiversity Strategies and Action Plans, Tropical Forest Action Plans, National Conservation Strategies, etc. relations with other international conventions. Land degradation issues are not only by the CCD, but future prominently in provisions of related to international conventions, notably the CBD and the UNFCCC.

166. African countries are examining, defining and prioritizing their land degradation issues, elaborating projects and receiving funding at international, bilateral and national levels for project implementation to combat the effects of land degradation. Notwithstanding, it is evident that the elaboration of projects and the availability of funding for project execution are not sufficient conditions to assure success in the solution of the problems of land degradation (desertification). Capacity development and the provision of 'an enabling environment' are highly desirable complementary factors to project elaboration and funding in order to assure effective implementation of projects to combat land degradation in Africa.

167. An important example of a land degradation project aimed at building capacity is the 'Decentralization in the Management of Natural Resources in Niger' project. The project was aimed at organizing and managing the changing the relationship between the state and local stakeholders in forestry activities within the area of "Canton de Chadikori in Arrondissement du Guipan," Niger. The stakeholders included local community members, forestry agents representing the state, local associations, NGOs, technical advisers and representative of the technical projects. The success of the project depended on the following favourable conditions:

- (a) Confidence between the population and Forestry Agents that represented the State.
- (b) Participation.
- (c) Awareness creation and ensitized on.
- (d) Decentralisation.

- (e) Clear definition and assuming of responsibilities by all stakeholders.
- (f) Enough labour

168. The lessons learnt as discussed above are clear indication of what can be achieved by addressing the challenges in land degradation issues. Very remarkable in the last lesson learn is the indication that “project success is not necessarily a function of financial means alone,” as other underlying factors may even be more important – a point worth noting for the CDI in Africa.

CHAPTER 6: SYNTHESIS AND RECOMMENDATIONS

Synthesis

169. The explorations in the three thematic areas have shown that there are certain specific common broad priority areas in the implementation of the three conventions to problems associated with biodiversity loss, climate change and land degradation. These priorities are strengthening national capacity to *undertake assessment* in each of the three areas, development and implementation of *strategies and action plans*, enlarging *national and regional constituencies* for the conventions and associated issues, and enhancing national capacity to formulate and implement systemic policies and laws as well as strengthening national reporting to the respective conference of parties.

170. **Assessment:** the three conventions create obligations associated with assessment and most African countries have identified and articulated specific assessment priorities in their national reports and communication. In the area of biodiversity they have identified assessment of status of and trends in ecosystems and species integrity as well as identification and assessment of impacts on biodiversity. For climate change emphasis has been placed on assessment of impacts and vulnerability of climate change on Africa's economic and ecological systems. In land degradation assessment is to focus on status and trends as well as impacts of various development activities on land.

171. **Development and implementation of strategic actions and policies as well as legislation:** The need to develop and ensure effective implementation of appropriate policies, strategies and related legal instruments to address biodiversity loss, land degradation and climate change have been identified as common priority of African countries. In the area of land degradation most African countries have, in their national action programmes, articulated the need to establish specific strategies and action plans to address land degradation. For biodiversity, countries have identified the formulation and implementation of national biodiversity strategies and action plans as priority.

172. **Reporting to respective conventions and further participation in negotiations in the conference of parties:** African countries have identified reporting and strengthening of participation in the conference of parties and its subsidiary bodies as priority for them in the three areas and associated conventions. In the area of reporting the countries have difficulties in understanding and using the different guidelines for reporting to different conventions. In addition, the institutions responsible for national reporting are not coordinated in such a way as to feed each other.

173. **Enlarging national, sub-regional and regional constituencies** for the problems and issues associated with land degradation, biodiversity loss and climate change: most African countries have recognized poor and/or limited public awareness of the conventions and issues as one of the main constraints to their efforts at implementing their commitments. Many have outlined public education and awareness raising as one of the priority areas of investment in implementing the conventions.

174. To undertake various specific tasks and activities to meet their priorities African countries face various interrelated capacity constraints. These constraints can generally be grouped into the following categories:

- (a) ***Information-related constraints:*** These include the absence of adequate skills, infrastructure, equipment and agencies with financial resources to effectively manage data for such activities as biodiversity planning, negotiations on specific issues in the areas of land degradation, climate change and biodiversity, and generally information on the status of and trends in the three areas. In many cases information on available capacity is scanty and not easily accessible to those who should be using it for planning and management.
- (b) ***Negotiation and planning capacity constraints:*** Most African countries lack adequate skills in environmental negotiation and associated eco-diplomacy as well as skills in planning, law, risk and impact assessment, economics and such areas as taxonomy are some of the main common capacity needs of the countries.
- (c) ***Institutional inadequacies:*** To meet their priorities outlined above, African countries face constraints of institutional nature. These constraints, common to the three thematic areas, related to the absence of clear agency mandates, lack of institutional linkages or articulation, and lack of organizational stability.
- (d) ***Policy and law reform and development:*** The absence of adequate and coherent policies and legislative measures constitute one of the main constraints faced by African countries in their efforts to implement the conventions. Most countries have identified, for all the three areas, the absence of explicit policies or existing of conflicting policies and associated laws as major limitations to address global environmental problems.
- (e) ***Finances and infrastructure:*** A common set of capacity constraints that are common to the three areas. Most African countries' institutions and experts have access to inadequate financial resources and equipment to address problems associated with climate change, land degradation and biodiversity loss.

CHAPTER 7: RECOMMENDATIONS

175. To assist African countries to develop their capacities to address their national priority issues and problems in the areas of land degradation, biodiversity and climate change, it is recommended that the GEF and its implementing agencies be guided by the following principles:

- i. The GEF and the agencies should explicitly recognize convergence of the three conventions as well as the fact that implementing the conventions requires convergence of skills and synergy of institutions at the national level. A GEF capacity development strategy and action plan should aim at maximizing the convergence and synergy.
- ii. The GEF should target those activities and capacity needs that are less targeted by the countries themselves and other donors. In this it should aim at adding new value to national capacity development initiatives.
- iii. GEF and its agencies should build upon prior and ongoing activities and progress.
- iv. GEF strategy and action plan should put emphasis on process and not products of short-term nature. They should promote and maximize local/national learning.
- v. GEF strategy and action plan should be founded on clear and agreed upon benchmarks or standards against which their implementation can be periodically measured.
- vi. GEF strategy and action should be flexible and anticipatory to ensure that any future capacity needs and priorities of the countries can be addressed as well.

176. Given the fact there is considerable diversity in the levels of capacities of African countries to implement their obligations, and recognizing the need for articulation of specific capacity components, it is crucial that the proposed GEF strategy and action plan aim at promoting specific National Capacity Assessments (NCAs). The NCAs would identify specific country needs and form the basis for establishing national strategies. This would bring more clarity to GEF's approaches and efforts at support capacity development. We recommend that:

- (a) A clear conceptual and methodological frameworks for assessing national capacity needs be developed, discussed and promoted for NCAs;
- (b) GEF invests in training workshops on NCAs;

- (c) GEF supports NCAs as part of its support to countries to implement the conventions;
and
- (d) Regional workshops to share information on and experiences in NCAs should be organized.

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ADDITIONAL ANNEX ON CLIMATE CHANGE
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SECTION 1: OVERVIEW

1. STATUS AND CHALLENGES IN MANAGING AFRICAN ENVIRONMENT

1.1 Environmental Basis for Africa's Development

Natural resources by far remain the main source of wealth and have therefore been the area of considerable focus in the past, present and future. The main components of the natural resource base are: climate, land, forests, water, fisheries and wild life. All these components depend on climate although there are feed back effects between climate and land, water and forests.

The African continent has a variety of climates. This includes humid Mediterranean, desert or semi-desert, tropical wet and dry Savannah and humid tropical climate (tropical rainforest). This variety of climate supports a wide range of biological species. The region is rich in biodiversity. The African ecosystems are particularly vulnerable to weather events, particularly the drier areas of the continent. The fragile ecosystems coupled with unsustainable use of natural resources have resulted in environment degradation. The level of degradation varies from one sub-region to another but the Sahel is the most affected.

Despite the importance of climate in socio-economic development it has never been recognized as a natural resource in both developed and developing countries. It is in the wake of climate change that climate is increasing been given consideration at both national and the international discussions.

Agriculture, by far, is the backbone of the African economy but it is based largely on primitive production methods and poor agricultural practices, which have led to environment degradation. Good climate and land remain the most critical resource base for survival and economic development for the African continent. Africa's agricultural sector contributes about 40% of the regional gross domestic product (GDP) and contributes 60 percent of the labor force.¹ Thus access to, control and management of land are politically and socially sensitive issue. In many African countries land is vested in public custody which means that its protection is more of a state responsibility. This type of land tenure has created insecurity and therefore led to land degradation.

Africa's coastal and marine biodiversity provide additional economic base for production of food for both local consumption and export. The economy of some of the countries, particularly the coastal and island states, largely depends on marine ecosystems. Also large water bodies such as the Lake Victoria provide a rich marine ecosystem with fishing becoming increasingly important to the countries in these lake basins.

¹ UNEP, 1999. Global Environment Outlook, 2000, p 55. United Nations Environment Programme, Nairobi, Kenya

Forests constitute another critical and important resources not only because of its economic importance but also because of its environmental benefits. Forests are important component of biodiversity and also provide a habitat for other biodiversity species such as insects, microorganisms, mammals and birds. In addition to the above forests play a very important role in water conservation and moderation of microclimate.

Africa has 520 million hectares under forest cover. This constitutes 17 percent of the world forests.² The Democratic Republic of the Congo alone has more than 100 million hectares. The Congo forest has strong influence on the climate of many African countries because of the moist outflow of air from this sub-region. Forests play a very important role in the economic development of the region because they provide about 6 percent of the region's GDP, the highest in the world, according to UNEP's recent assessment.³ However, the exploitation of the African forests is not based on sustainable principles and has therefore resulted in serious environmental degradation.

Africa is also endowed with a rich base of fauna and flora. It has more than 50,000 known plant species, 1,500 species of birds and 1,000 mammals. South Africa, Kenya and Cameroon have 20,000, 8,000 and 15,000 plant species respectively. Other countries such as the DRC are re-known internationally for their rare plant and animal species. Fauna and flora form the foundation of social and economic development of the region and its people. Despite this wealth of biodiversity Africa's agriculture is based on a narrow range of plant and animal species. It is estimated that about 5,000 of the 50,000 of the plant species is used in agriculture, although this varies within the region. The distribution of these species is dependent on the climate of the region.

Africa's plant species is invaluable for its medicinal use. It has contributed significantly to world pharmaceutical industry. Plants such as *ancistrocladus korupenis* (a potential anti AIDS chemical) in the Cameroon, *pausinystalia yohimbe* (from Nigeria, Camroon and Rwanda) and *catharanthus roseus* (from Madagascar) are being used in pharmaceutical research in industrialized countries. In addition to these uses plant species are widely used by herbalist in Africa for treatment of many ailments. Increasingly African governments are recognizing the role of herbalists in society and therefore the medicinal value of plant species will increase.

Despite its critical role in Africa's socio-economic development the environment is being degraded at a rate that is not in equilibrium with natural repair. Recent environmental assessments revealed that Africa is degrading its environment at a higher rate than the other regions.⁴ Hence the serious environmental degradation problems faced by many African countries. Some species of both animal and wild life are threatened by extinction. For example about 150,000 hectares of forest is deforested every year. Elephant population has been reduced by about 30%. Several millions of good topsoil is washed away

² UNEP, 1999, op. cit. p 57

³ UNEP, 1999, op. cit. p 57

⁴ See WCMC, 1992 Global Biodiversity: Status of the Earth's Living Resources. World Conservation and Monitoring Centre, UK, 1999, op. cit

through soil erosion. Air and water pollution resulting from poor planning and lack of quality control measures is adding to the problem. The fish is not spared either because of over exploitation for both local consumption and export. These activities are enhanced by poverty, which has crippled the economies of many African nations.

The causes of African's environmental degradation are many and some of these re-enforce each other thus compounding the problem. For example loss in forest cover not only enhances soil degradation but also enhances biodiversity losses. Some of the principle causes of environmental degradation are discussed in the subsequent sections.

1.2 Biodiversity Loss

Biodiversity plays a very important role in socio-economic development of the continent and preservation of its environment. The loss of biodiversity stems from the quest for development and its use for various uses including food and medicine. At the current rate of biodiversity loss it won't take long before many, if not all, of its species, have disappear. It is important therefore for African governments to take appropriate actions to address the many causes of biodiversity loss. These causes include the following:-

- Over-harvesting and exploitation driven by both internal and external forces such as local consumption and illegal trade, particularly on biodiversity products. This has caused many species to completely disappear (the white and black rhinos in Uganda⁵ and others enlisted as endangered species;
- Poor and weak institutional infrastructure and management;
- Lack of strong and coordinated policies and re-enforcement framework. Existing policies are fragmented and sectoral;
- Poor land-use planning leading to destruction of habitat such as forests and draining of wetlands. This has far reaching consequences on the biodiversity of the region. Destruction of biodiversity habitat will be aggravated by climate change and higher order factors such as fires resulting from dry conditions;
- Introduction of alien species which eventually dominates and overpowers local species;
- Pollution of habitat thus poisoning species or suffocating biological substance;

⁵ NEMA: State of the Environment Report 1998 p.159. National Environment Management Authority created in 1995 by a Statute to spearhead management of environment in Uganda. It produces yearly reports on the Status of the Environment.

- Illegal trade in plants, animals and derived parts or products. Illegal trade dates back to the colonial era when parts of animals or plants were recognized as having high commercial value. Poaching or hunting of animals such as elephants, rhinos, python and leopards was and is still driven by external trade. Despite efforts taken by the international community to ban trade in endangered species illicit trade still continues and threatens existence of endangered species such as elephants.

The following are priority areas to mitigate biodiversity loss in the region:

- Create awareness at all levels of civil society and instill the importance of biodiversity and its conservation into the youth of the region;
- Strengthen institutional framework to ensure development of an integrated approach to biodiversity conservation;
- Institute measures to reduce on destruction of biodiversity habitat in the region;
- Re-enforce implementation of international agreements through legislation and institutional strengthening;
- Encourage cooperation, coordination and collaboration with international community to step illicit trade in endangered species.

1.3 Climate Change

Climate has varied in the past but these variations have been such that natural ecosystems have been able to adapt to climate variations. However, the human quest for development and the industrial revolution resulting in high energy, consumption has led to emissions of greenhouse gases (GHGs) into the atmosphere. The concentration of these gases consequently resulted in global warming that is threatening and disrupting socio-economic activities. The existence of many people of the region, particularly small island developing states are threatened by sea level rise resulting from global warming. The IPCC Second Assessment Report (SAR) clearly indicates that Africa is the most vulnerable region to the adverse effects of climate change. The issues facing the continent can be grouped into the following:-

- a) Impacts of adverse effects of climate change on the socio-economic development of the region;
- b) Higher order impacts of adverse effects of climate change on economies and social structures of the region; and
- c) Impacts of response measures taken by developed countries to implement their

commitments under the climate change and the Kyoto Protocol.

d) Implementation of Commitments

It is not intended to treat any of this in detail in this section but to highlight the issues in each category to get some deeper understanding of the underpinning problems.

a) Impacts of adverse effects of climate change on the socio-economic development of the region.

Climate change will manifest itself in forms of increased frequency of extreme weather events such as floods (including landslides), droughts and tropical cyclones. Climate change can also manifest itself in the form of sea level rise and landslides in mountain slopes resulting from melting of glaciers and icecaps on mountains. Each of these forms have direct impact on socio-economic activities of the region. The events of the last few years (droughts and floods and associated impacts on sectors such as communication infrastructure, agriculture, health and land) have clearly demonstrated the vulnerability of the continent to climate change. However, for concrete actions to be taken by both governments and the climate change convention it is necessary to carry out detailed vulnerability and adaptation assessment at the national level and develop strategies for mitigation of these impacts. Substantial capacity is required to carry out such undertakings.

The region is grappling with poverty reduction. Many African governments have put poverty reduction in their top priority programmes. However, these efforts will be frustrated by the impact of climate change on production sectors, which are dependent on weather and climate. Events of the last few years have had negative impact on the budgets of many African countries. Despite this serious impact on the economies of the region climate change has not been accorded its rightful place in the region. There is need for substantial awareness to be done in the region.

b) Higher order impacts of adverse effects of climate change on economies and social structures of the region.

There are numerous high order impacts and will therefore be difficult to list them here but it is sufficient to give a few examples to illustrate this.

Impact on agriculture – agriculture is a main economic activity in the region. A negative impact will be directly transmitted to the economy, debt servicing schedule, health (food security) and others;

- Ecosystems – impact on forests will lead to reduction of biodiversity and also destruction of biodiversity habitat. This will also impact negatively on the economy through loss of ecotourism.
- Water resources – negative impact on water resources will be transmitted to other sectors such as health, agriculture and manufacturing industry.

These higher order impacts have also feedback on some of the first order impacts.

c) Impacts of response measures taken by developed countries to implement their commitments under the climate change and the Kyoto Protocol

Developed countries are obligated to reduce GHG emissions into the atmosphere through policies, which will translate into energy savings and energy efficiency. While some of these policies require actions from either private sector or communities some of these policies may require creation of enabling environment to implement such measures. This may lead to reduction of already declining ODA. Thus affecting development programmes in the region. Some of these policies could also lead to higher taxes thus increasing costs of imports and therefore increasing balance of payment. These policies could also make debt servicing difficult.

In light of the above discussions, the priority for the region should be based upon the following:-

- Strengthen institution(s) assigned to coordinate the implementation of the climate change convention and the Kyoto Protocol to ensure effective coordination and implementation;
- Build capacity for vulnerability and integrated adaptation assessment
- Develop integrated programmes to mitigate adverse effects of climate change in an integrated manner so as to minimize the impacts on key sectors such as agriculture, health, forestry and water resources;
- Strengthen capacities of meteorological and hydrological services to collect, analyze and interpret weather, climate and hydrological information to support adaptation programmes.

Option to the formulation below

a) Implementation of Commitments

The primary obligation for developing country Parties under the climate change convention is to prepare national communications and communicate them to the Conference of the Parties (COP). National communication comprises of:-

- An inventory of GHG emissions by source and removals by sinks;
- Mitigation analysis and assessment of mitigation options;
- assessment of vulnerability and adaptation to adverse effects of climate change;

- Policies and measures to mitigate climate change;
- Any other relevant information.

Preparation of national communication requires a cross-section of disciplines and skills, which are generally lacking. It is also a continuous process and therefore a burden to developing countries. Developing country Parties are also obligated to carry out the following:-

b) Implementation of Commitments

The primary obligation for developing country Parties under the climate change convention is to prepare national communications and communicate them to the Conference of the Parties (COP). National communication should contain an inventory of GHG emissions by source and removals by sinks, mitigation options, vulnerability to adverse effects of climate change assessment as well as adaptation assessment and measures to mitigate the impact of adverse effects of climate change on socio-economic activities. Preparation of national communication requires a cross-section of disciplines and skills, which are generally lacking. It is also a continuous process and therefore a burden to developing countries. Developing country Parties are also obligated to carry out the following:-

- Enhancement of sinks and reservoirs;
- Cooperate with other Parties in collection, analysis, interpretation and dissemination of weather and climate information;
- Cooperate with other Parties in education, training, public awareness and research in climate change and related areas.

These commitments are all additional burdens, which require capacity to implement these obligations.

1.4 Land Degradation

Land degradation is the loss of soil, soil fertility and vegetation cover. There are many possible causes of land degradation including natural causes such climate variability and human causes such as unsustainable land-use and land-use change. Over two thirds of the region is arid or semi-arid. The degree of land degradation therefore varies from sub-region to sub-region with northern African having higher degree of degradation and also pockets in southern African and eastern Africa. The dominant factors of land degradation are:- soil and wind erosion. These factors are also influenced by other factors such as destruction of vegetation cover, poor land-use planning, agricultural practices and overpopulation, both human and animal, leading to high pressure on land.

Land and climate remain critical natural resources upon which socio-economic development of the region depends. However, if the present rate of land degradation continues then the region will face

much more serious problems of food security and abject poverty. The following main issues will therefore need to be addressed urgently to retard land degradation. The issues include:-

- Poor land-use and land-use change planning;
- Unsustainable forest harvesting;
- Destruction of forests and vegetative cover;
- Poor agricultural policies, practices and management methods;
- Primitive production tools leading to continuous bush and forest clearing for agriculture;
- Severe and frequent droughts resulting in frequent outbreaks of fires;
- Poor forestry and agricultural policies, measures and re-enforcement structures;
- High population growth (human and animal);
- Climate variability and climate change;
- Outbreaks of fires and pests; and
- Poor and inadequate management structures and capacities.

There is immediate need for the region to take actions at all levels to reduce land degradation. Integrated national and sub-regional approaches could lead to better results in a shorter period. The following specific priority areas are suggested for actions:-

- Strengthen capacity of institutions, including ministries of agriculture, charged with land-use planning and management;
- Create awareness at all levels of civil society to ensure that the problems is well understood and that the solution lies in the people of the region;
- Strengthen coordination of line ministries/departments to ensure effective implementation of policies and measures to reduce land degradation.
- Strengthen meteorological and hydrological services with a view of providing timely information to support land-use planning and agricultural production.

1.5 Status and Challenges at Systemic Level

The UNFCCC, CCD and CBD are closely related and interlinked. It is cost effective to approach the implementation of these conventions from a holistic approach to minimize on overheads, reduce duplication of efforts and use resources optimally. In some African countries these conventions are under one ministry while in others they may be in several ministries. Whatever institutional structure(s) exist for the implementation of these conventions it is extremely important at least to build strong bridges between these conventions. If this is promoted substantial benefits will accrue in the long run. Public awareness at all levels is another strong compelling reason for a holistic approach to the implementation of these conventions. The region should direct its efforts on the following areas:-

- Raising the level of awareness at the highest level and including environmental and capacity building under the conventions in discussions in the sub-regional and regional meetings. A top down approach in this case will attract support from national budgets.
- Strengthen the overall implementing framework for the conventions and formulate an integrated policy framework. A single implementing framework, backed by strong policy or legislation, will yield more and better benefits through reduction in duplication of efforts and synergies.

1.6 Status and Challenges at Institutional Level

There are very few countries in the region, which have established environmental agencies to coordinate implementation of environmental policies and also police compliance with such policies. In most of the countries environmental policies exist in line ministries/departments. These fragmented policies make integrated approach to solving environmental problems more difficult. It is important and critical to pay attention to some of the following issues:-

- Formal institutionalizing of the implementation of the conventions through either policy or legislation;
- Support activities of the institution through budget provision to show level of commitments.
- Build capacity to differential between sustainable exploitation of natural resources and attempts to reduce poverty through accelerated exploitation of natural resources.
- Strengthen coordination and collaboration with key institutions responsible for key sectors. Ministries of Planning and Economic Development should be partners in this collaboration. This will facilitate integration of environmental issues in the national planning process.

- Promote coordination with UN and bilateral agencies through an integrated and holistic approach to the environment problems. Sometimes the weak coordination is exploited by some agencies.

1.7 Status and Challenges at Individual Level

- Effective implementation of these conventions requires collective efforts of all people irrespective of their positions in society because the problems are man made and therefore must be solved by them. In order to do this the understanding of individual members of society must be sufficient to appreciate the problem and therefore realize that his/her contribution is important. Such a level of understanding requires extensive public awareness programmes to sensitize society. The challenge within the region is therefore to create the necessary critical human capacity to be able to this.
- The following activities could contribute to this goal by addressing critical shortages of skills and lack of services:
- Training of trainers such as individuals with the basic skills or involving training and research institutions;
- Developing a prioritize training programmes;
- Stimulating interest among training institutions and consultancy firms to undertake training in identified key areas;
- Encourage development of local skills in environment issues
- Encourage use of existing structures such as churches, clubs and associations to enhance level of awareness and participation in solving environmental problems.

The development of the region is dependent on its natural resources. Sustainable exploitation of these resources will ensure healthy economic growth and healthy environment for future generations. Active participation in the environment agenda by the region is of utmost importance.

SECTION 2. CLIMATE CHANGE

2.1 Implications of Climate Change to Africa and National Commitments under the Convention

There is growing evidence that rising concentrations of greenhouse gases in the earth's atmosphere, resulting from increased economic activities and demographic pressure over the last two centuries since the industrial revolution, are causing global warming to irreversible climate change. In 1995, the Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) confirmed that there is a discernible human influence on global climate. The Report projected that global mean surface temperatures would increase by between 1 and 3.5 °C by 2100. This is the fastest rate of change since the end of the last ice age. The report also projected that global mean sea levels would rise by between 15 and 95 cm by 2100, causing flooding in low-lying coastal areas. Changes in rainfall patterns are also predicted, increasing the threat of drought, floods or intense storms in many regions including Africa.

The climate system is complex, and scientists still need to improve their understanding of the extent, timing and impacts of climate change. However, what is already known points to the potentially dramatic negative impacts of climate change on human health, food security, economic activities, water resources and physical infrastructure. Africa is the most vulnerable region to the adverse effects of climate change.

Agricultural activities are expected to be seriously disrupted, leading to a decline in production in many countries in the region. Tropical diseases are expected to spread to higher latitudes; the geographical zone of potential malaria transmission, for example, could increase from around 45% of the world population today to approximately 60% by the latter half of this century. Sea level rise and changing weather patterns could also trigger large-scale migration from more seriously affected areas. While climate change will affect the rich and the poor alike, the poor will suffer most from adverse effects of climate change because they are most vulnerable and they also have the lowest adaptive capacity. Africa is particularly vulnerable. In order to address this global problem, the UN general assembly by resolution 45/212 in December 1990 established an Intergovernmental Negotiating Committee (INC) to conduct negotiations on a framework convention on climate change. After 15 months the INC adopted the UN Framework Convention on Climate Change in May 1992. The Convention was then open for signature at the Earth Summit in Rio on 4 June 1994 and came into force on 21 March 1994. Today 180 governments and the EU are parties to the Convention; among these are Forty-six African States.

2.1.1 Commitments under the Convention

The Convention sets an "ultimate objective" of stabilizing atmospheric concentrations of greenhouse gases at safe levels. Such levels, should be achieved within a time frame sufficient to allow ecosystems to, adapt naturally to climate change, ensure that food production is not threatened and enable economic

development to proceed in a sustainable manner. To achieve this objective, all countries have a general commitment to:

- (i) Address climate change;
- (ii) Adapt to its effects; and
- (iii) Report on actions they are taking to implement climate change.

The Convention divides countries into two groups: those listed in its Annex I (known as “Annex I Parties”) and those that are not listed (so-called “non-Annex I Parties”). The principles of equity and “common but differentiated responsibilities and respective capabilities” enshrined in the Convention requires Annex 1 parties to take the lead in modifying longer-term trends in emissions since they have a historical responsibility for the concentration of greenhouse gases (GHGs). To this end, Annex I Parties are obligated to:

- Adopt national policies and measures with the non-legally binding aim of returning their greenhouse gas emissions to 1990 levels by the year 2000 - which in 1995 at COP 1 in Berlin during the first review of the adequacy of commitment under the Convention, it was clear that they could not achieve this, prompting a process to establish a legally binding instrument, a process which resulted in the Kyoto Protocol at COP3 in 1997;
- Submit regular national communications, detailing their climate change policies and programmes, as well as annual inventories of their greenhouse gas emissions (Emission Inventories);
- Provide new and additional financial resources to developing country parties to meet the full cost for undertaking national inventories of GHGs and to communicate such information and any other relevant information to the conference of the parties. This will also include provision of such financial resources and technologies to meet the agreed full costs of implementing the provisions of the convention and particularly Article 4.1 of the convention;
- Assist developing country parties that are particularly vulnerable to the adverse effects of climate in meeting costs of adaptation to these adverse effects.

Developing country parties, including African country parties, are obligated to:

- Prepare and submit national communications and any other measures these parties are taking to implement the provisions of the convention;
- Integrate climate change management considerations into their social, economic and environmental policies and programmes;

- Keep levels of their emissions under check by periodically or as required providing national inventories of anthropogenic emissions and removal by sinks;
- Promote education, training and public awareness;
- Promote the sustainable management of sinks and reservoirs of greenhouse gases; and
- Promote and/or conduct relevant research and cooperate in exchange of information.

The extent to which developing countries and indeed African country parties will effectively implement their commitments under the convention is contingent on provisions new and additional financial resources and access to cleaner technologies. Implementation of the commitments under the convention will have to be in the context of Africa's socio-economic development addressing poverty eradication, which is a preoccupation of African governments.

African country parties are actively participating in the sessions of, the Conference of Parties and subsidiary bodies to ensure that their interests are safeguarded. These interests include access to financial and technical assistance, effective implementation of provisions of the convention and the Kyoto Protocol by developed country parties and participation in the decision making process of the climate change. Article 3.3 of the Convention calls upon Parties to "take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects."⁶ This precautionary principle is established on the view that despite the lack of adequate scientific evidence and certainty the world community should take measures, even if these measures are anticipatory, to mitigate climate change.

Table 1: *Status of Climate Convention Ratification by African States as at 25 May 2000*

Country	Date	Country	Date
Mauritius	4/9/92	C.A. Republic	10/3/95
Seychelles	22/9/92	Cape Verde	29/3/95
Zimbabwe	3/11/92	Eritrea*	24/4/95
Zambia	28/5/93	Namibia	16/5/95
Algeria	9/6/93	Sierra Leone	22/6/95
Tunisia	15/7/93	Niger	25/7/95
Burkina Faso	2/9/93	Mozambique	25/8/95
Uganda	8/9/93	Djibouti	27/8/95

⁶ United Nations, 1992. *Framework Convention on Climate Change*, Article 3(3). United Nations New York.

Sudan	19/11/93	Ghana	6/9/95
Mauritania	20/1/94	Guinea Bissau	27/10/95
Botswana	27/1/94	Morocco	28/12/95
Ethiopia	5/4/94	Rep. Of Tanzania	17/4/96
Malawi	21/4/94	Swaziland	7/10/96
Chad	7/6/94	Congo	14/10/96
Gambia	10/6/94	Burundi	6/1/97
Benin	39/6/94	South Africa	29/8/97
Nigeria	29/8/94	Gabon	21/1/98
Kenya	30/8/94	Rwanda	18/8/98
Senegal	17/10/94	Madagascar	2/6/99
Cameroon	19/10/94	Angola	17/5/00
Ivory Coast	29/11/94		
Egypt	5/12/94		
Mali	28/12/94		
Zaire	9/1/95		
Lesotho	7/2/95		
Togo	8/3/95		

2.2 National Priorities and Implementation of the UNFCCC

As mentioned in the previous section, poverty eradication and socio- economic development are the primary and overriding priorities for the African region. Thus efforts to address climate change must be in line and consistent with the primary goals of the region.

The assessment has shown that common priorities, in the region, on which a framework for capacity development can be established, include: -

- Impacts of adverse effects of climate change on the overall regional development agenda;
- Impacts of response measures taken by annex 1 parties to implement their commitments under the convention and the Kyoto Protocol.
- Higher order impacts of climate change to the economies and social structure of the countries within the region;

2.2.1 Priorities relating to addressing higher order impacts of climate change to the economies and social structure of the countries within the region

The driving force for Africa's participation in climate change processes is to ensure, better environment for present and future generation and also to ensure that its efforts and focus on socio-economic development is not detracted. The main elements of focus are: poverty alleviation, enhanced economic growth, social order, equity in the distribution of wealth and access to development resources and technologies. These considerations have guided Africa's participation at the various conferences of the Parties to the convention and related meetings of subsidiary bodies to the convention. Any initiatives related to capacity development to address the challenges of climate change will be based on the overall objectives of development performance of each individual country.

Higher order negative impacts of climate change will directly impact on the economy of the region and will certainly cripple the overall struggle to address poverty and the other key issues on the development agenda of the region.

The adverse effects of climate change on the agriculture sector, which is the main economic activity in the region, will directly impact on food security, health, infrastructure, budget performance, debt servicing, and industrial production. Impacts on ecosystems, particularly forest ecosystems, will lead to destruction of biodiversity habitat, extinction of species, reduced biodiversity. This will also negatively affect ecotourism and the overall performance of the economy. The negative impact on the water resources will also affect health, agriculture and manufacturing. Adverse effects of climate change may also enhance migration, social conflicts and increased regional conflicts. UNEP has estimated that in the next 25 years 25 African Countries will be liable to water shortages.

It is of high priority for Africa to develop the capacity to understand such higher order impacts in order facilitate meaningful adaptation measures and mitigation options.

2.2.2 Priorities relating to addressing the adverse effects of climate change with respect to the overall regional development agenda within the global setting

Most African countries' development is based on fragile natural resource base and an underdeveloped infrastructure. This is one of the major limitations that have eroded their limited human capacity to manage this fragility and to develop further the nascent infrastructure. Africa is keen to fully utilize its natural resource base to support economic development and to expand its infrastructure. The threat of climate change poses a new and urgent problem additional to the long-standing problem of desertification.

Most threatened sectors, as indicated in the Ugandan and South African assessment capacity development needs reports and the UNFCCC special report on Africa are:- agriculture, forestry, natural ecosystems, wildlife, water resources including rainfall regimes, fisheries, human settlements, energy resources, transport and industrial infrastructure particularly those located in coastal areas, human health and related management systems put in place to manage the national services in the absence of climate change. Senegal has shown priority activity areas to address climate change to be:

agriculture, water resources, energy, forestry, health, data collection and management, policies strategies, programmes and project formulation and management.

- (a) In agriculture, there are major concerns with; unreliability and variability of rainfall, shift in seasons, extreme weather events, increased pests and diseases, increased desertification and shifts in agro-ecological zones. Any shifts that may occur would naturally demand a shift in supportive infrastructure and a change in production knowledge systems. Droughts and increased precipitation (which is predicted for some parts of Africa in some scenarios) may lead to greater soil erosion, major disturbances in food security, livestock production and wildlife management. There may be expansion of agricultural diseases demanding new knowledge and changes extension services infrastructure. Shift in agro-ecosystems will lead to shift in the cropping zones, enabling some of the crops that were only confined in the tropics like, cotton and coffee to be grown in the higher latitudes thus further diminishing the market opportunities for African countries in the global trading systems.
- (b) In forestry, there is concern with enhanced deforestation, which would lead to major social problems associated with loss of traditional fuel wood supplies and construction materials. Uganda, for example, has reported an increase in pest and disease invasion in national soft wood plantations.
- (c) Water resources are critical in a generally semi arid continent like Africa. The lack of knowledge and inability to predict climate change makes it very difficult to response adequately to impacts of climate change. This is a major concern to African countries. The recent floods in Mozambique have demonstrated amply these fears. Water resources are also closely associated with the energy supply and development plans of most countries in the region. For example, countries such as Zambia, Uganda, Kenya, Tanzania, Mozambique, Senegal and Democratic Republic of Congo depend almost totally on hydropower for their electricity supply. The impact of adverse effects of climate change on water basins in these regions has not been studied. In 1997 the Ghanaian hydro electricity generation (based on the hydropower (on the Upper Volta River)) was seriously affected by the droughts of that year. The country had to use diesel generators to cope with the demand for electricity.
- (d) A large proportion of the population depend on fishing as an economic activity and means of earning a living. In addition, some countries have built large artificial infrastructure to develop the fishing industry.
- (e) Sea level rise would inundate coastal zone infrastructure and human settlements. Worst affected sectors would be human settlements, transport infrastructure, agriculture, fisheries, ecotourism and mining sectors. These are important sectors in the economies

of African countries, particularly those with long coastlines. Africa needs to develop capacity to address such adverse effects

2.2.3 Priorities relating to addressing the impacts of response measures taken by annex 1 parties to implement their commitments under the convention and the Kyoto Protocol

Developed countries are obligated to reduce GHG emissions into the atmosphere through policies, which will translate into energy savings and energy efficiency. While some of these policies require actions from either private sector or communities some of these policies may require creation of enabling environment to implement such measures. This may lead to reduction of already declining ODA. Thus affecting development programmes in the region. Some of these policies could also lead to higher taxes thus increasing costs of imports and therefore increasing the deficit in balance of payment. These policies could also make debt servicing difficult.

Particular areas of priority also include concerns with access to global technologies, the balance of payment and debt effect of the introduction of some of the clean development technologies. There is also a fear regarding the shifting of risks from developed countries to developing countries, particularly in cases where unproven response technologies and measures, are implemented in such countries. Of concern and priority consideration in some of the African countries is the possible global pressure for countries such as South Africa, to shift from natural resources such as coal which have been the mainstay of industry and energy sector development to cleaner technologies including hydro electricity generation. Some countries have also expressed concerns with the shifting of the climate change mitigation burden to some sectors of the economy particularly those based on fossil fuels, thus affecting their sustainable development agenda.

2.3 Regional Capacity Needs

2.3.1 Priority capacity needs for Africa

In light of the discussions in the previous sections, the priority capacity needs for the African region can be categorized into the following:-

- (a) Understanding Climate Change: Vulnerability and Adaptation Assessment;
- (b) Climate Change Awareness;
- (c) Systematic observations and measurements;
- (d) Systematic observations and measurements;
- (e) National Institutional Capacity Development;

(f) Mitigation Strategies;

a) Understanding Climate Change: Vulnerability Assessment and Adaptation Measures

A clear understanding of the impact of climate change on key sectors such as agriculture, forestry, water and health and their interactions is necessary for development of good adaptation strategies. Implementation of such strategies would reduce the impacts of adverse effects of climate change on socio-economic activities. In order to do this it is necessary to develop the capacity to carry out an integrated vulnerability and adaptation assessments, develop integrated adaptation programme and implement such programme in a sustainable manner. Skills required to carry detailed vulnerability and adaptation assessment need to be developed. There are officers with basic skills in the different sectors what is therefore required is orientation, imparting of additional techniques and provision of tools for the assessment. Such capacity, if built, will be extremely valuable for implementation of both the convention and the Kyoto Protocol as this team would provide a pool of expertise in their disciplines.

b) Climate Change Awareness

Climate change awareness is key to the attainment of the objective of the convention both at all levels of society. Climate change is caused by anthropogenic emissions of GHGs and can therefore be resolved. In order to develop a good public awareness programme it is necessary to understand the causes of climate change, associated problems and how these problems can be solved. In developing a public awareness programme on climate change the following need to be taken into account:-

- A good knowledge of the causes of the climate change;
- Knowledge of problems caused by climate change;
- Ways to reduce the impacts of adverse effects of climate change;
- What capacities are required to develop and implement the awareness programme
- What skills and institutions exist which can be harnessed;
- How can the programme be implemented and what levels are targeted

It is not intended to answer the above questions or comment on each of the items listed above. It is important that key institutions such as meteorological, hydrological services, water resources department, agriculture, forestry, energy and the media should be in at the early stages of the design of the programme to ensure full understanding of the information to be disseminated.

c) Systematic Observations and Measurements

The understanding of climate dynamics is essential for the prediction of extreme weather and climate events. Weather and climate information is important for planning, monitoring and forecasting agricultural production disaster preparedness planning and management and many other applications. In the context of climate change the use of weather and climate information can significantly reduce the impacts of climate change. Improved understanding of the climate system requires adequate data coverage and long records. Climatological observations are therefore critical and important for further understanding of the climate systems. The data would also feed into climate prediction models, which are critical for a better understanding of climate change problems at both global and regional levels. In addition to scientific data collection, it is also necessary to collect and analyze socio-economic data to improve the understanding of the impact of climate change on socio-economic development. Furthermore, a better understanding of global concentration of GHGs over time is useful for formulating further actions to mitigate climate change.

This data/information requirement puts additional burden on African Parties. African countries have relatively low capacity to cope with this additional burden. The climate change process should therefore urgently address problems of data collection, analysis, interpretation and the associated required capacity to perform these activities. Capacity of institutions such as meteorological and hydrological services requires strengthening.

d) National Institutional Capacity Development

Activities to implement the convention and the Kyoto Protocol have increased considerably in the last few years. The activities have also become more complex thus requiring coordination and collaboration with other interested institutions. Initially implementation of the convention at the party level was a function of a focal point or contact person. However, as the implementation of the convention progressed it became quite clear that a focal point or contact person was inadequate and that the process is complex and requires involvement of several institutions for effective implementation of the convention. Developed countries are now in the process of formulating an institutional framework for the implementation of the convention and the Kyoto Protocol. It is much more difficult to setup such a framework in developing countries because of lack of financial resources and capacity for these countries to do so.

There are many activities, which must be carried out at the Party level. These activities include: vulnerability and adaptation assessment, development of an integrated adaptation plans, mitigation analysis and development of mitigation options, awareness creation at all levels, GHG inventories, preparation of national communications, monitoring and reporting weather and climate, exchange of information and scientific cooperation in weather and climate, assessment of technologies and developing baselines and approval procedures for CDM projects. Invariably these activities will be performed by several institutions but coordinated by a single institution.

The capacity needs of key and relevant institutions need to be identified and developed. However, prior to development of such capacities it is necessary that each party carries out a detailed analysis of capacity building needs in the various sectors, taking into account sustainability of capacity building programmes and also capacity of local institutions and expertise which can play an important part in the development of capacity at the local level.

e) Mitigation Strategies.

Developing countries are not obligated to reduce their GHG emissions because their economies must continue to grow in line with their development goals. Trends of GHG emissions from developing countries clearly indicate rise in emission levels. If this rise in GHG emissions is not abated then it will be difficult to stabilize concentration of GHGs in the atmosphere and therefore the objective of the convention will not be realized. Developing countries, to the extent feasible, must take actions to minimize their GHG emissions without sacrificing their development goals.

Relatively small investments aimed at increasing efficiency of energy generating plants can yield significant payoffs in GHG reduction. An energy services perspective coupled with integrated resources planning could also yield significant capital savings through demand side management projects, as well as further significantly reduction in GHG emissions from the power industry. Similarly, road transport systems are fairly amenable to policy changes, such as a differential import tax according to engine capacity rating, or the promotion of buses and other relatively energy efficient forms of public transportation, this would yield significant GHG reductions. All these activities would require capacity building at both the institutional and individual levels.

2.3.2 Levels of Capacity needs

In accordance with the priorities of the region outlined in the previous sections, capacity development needs have been defined at three levels:

- (i) Systemic capacity needs;
- (ii) Institutional capacity needs; and
- (iii) Individual/human level capacity needs.

It is to be noted that capacity needs at the three levels may not necessarily be mutually exclusive. There are significant overlaps that sometimes reduce the benefits of the distinctions. However, this distinction is maintained in order to provide some basis for development of capacity programme.

2.3.2.1 Human/Individual level capacity development needs

The individual level relates to the capability to assess, formulate, coordinate and implement climate change policies and measures. It also includes the conducive national conditions to professional development in the disciplines related to climate change. The attitude of individuals as leaders or line professionals could make a major difference on how climate change as a subject is treated at all the three levels of capacity defined in this assessment. The most important attitude at the individual level can be reduced to career interests, job satisfaction, career progression and job security. Questionnaire responses showed that over 35% of respondents considered career progression and job security as a major factor in determining the importance of climate change activities in their programmes of work. Networking and training opportunities were also considered important. The following capacity needs, for this level, have been identified as:-

- Job satisfaction and security through career development and progression;
- information and information interchange and access to facilities/equipment;
- Technical support for policy makers and negotiators;
- Policy development and formulation, legislation, regulation and enforcement, project formulation and development, community participation, monitoring and evaluation, adaptation and mitigation;
- Training and networking opportunities.

Training and networking are associated with two other factors that were considered important at the individual level. These are performance and information. Effective or competitive performance is critical in dealing with global issues that have a bearing on national competitiveness.

The Cairo consultation highlighted the importance of building climate change issues into the education curricular of schools, tertiary institutions, universities. Capacity building is a continuous process and therefore must be approached from a point of long-term sustainability. It was also noted that acute problems of lack of capacity, could be ameliorated, by repackaging of existing skills into appropriate interdisciplinary pool of experts as the basic sciences are already present in most countries.

Climate change is a new emerging discipline and therefore there is an acute shortage of good skills even in the consultancy sector. A few individuals have filled this gap but their knowledge of these issues is still lacking. There is need to develop this sector as well.

The public services in the region employ highly qualified and experienced staff. Senior public servants advise governments on policy formulation, professional issues and other technical matters. It is important therefore, that these professionals be exposed to a wider view of environment issues through training and workshops to ensure that climate change issues are incorporated into policies. There has been a common tendency for professions to drift to administration, other than professional

administrators. This, has in many instances, has led to degeneration of technical and professional skills. It is important that this brain wastage should be halted and training be undertaken to ensure such people regained their professional skills where possible. Another serious problem is the near absence of incentives and motivation in public services in the region. The pay is so low that public servants cannot live on it. Despite promises of living wages by many African governments nothing concrete has materialized. This has demoralized public servants further.

2.3.2.2 Institutional Capacity Needs

Institutional capacity is the ability of an institution to formulate, implement, monitor and evaluate policies and measures related to climate change and its associated problems. The application of appropriate legal framework, policies and regulations in a transparent and prudent manner is a vital element of institutional capacity building.

Implementation of the climate change convention requires the involvement of all people irrespective of their position in society and institutions, including NGOs, CBOs and religious institutions. Each person or institution has a role to play in the climate change process. In order to achieve maximum benefits there is need for an institutional framework to organize, mobilize resources and coordinate the climate change process. The institutional capacity needs could therefore be viewed at the following platforms:-

- a) Coordinating institutional framework;
- b) Key sectoral institutions; and
- c) Outreach institutions such as NGOs, CBOs, religious organizations and field workers.

a) Coordinating Institutional Framework

Under 4.3.1 (d) the need and importance of an institutional framework setup to oversee the implementation of the convention and the Kyoto Protocol was amply discussed. In this section emphasis will be placed on practical steps to establish this institutional framework. The steps taken by countries in the region will vary from one country to another. What particular method is taken is immaterial provided the end results are achieved. It is however, important that countries should have a clear view of the functions to be performed by such an institution and therefore provide flexibility for future development of the convention. This will include protocols that may be adopted.

Since the entering of the convention into force the implementation of the climate change has promoted the concept of focal point or contact person. With the development of the convention and adoption of the Kyoto Protocol it is now clear that a focal point or contact person will not be effective for the implementation of the convention at the national level unless a mechanism is designed to involve all other related institutions.. Both developed and developing countries have recognized this inadequacy. The developed countries are now in the process of addressing this problem. Developing countries do not

have the capacity to do this and will require assistance to build such capacities. Indeed the problem is aggravated by restructuring and down sizing of departments/ministries.

Several projects have been formulated to address “institutional strengthening” with no concrete activities to strengthen such institutions. It is therefore important to take note of these failures. African countries should formulate projects with very clear objective(s) and activities to develop a policy framework for establishment or strengthening a coordinating institutional framework. The output of such a project should lead to a formal assignment of functions to this institution. Assignment through a legal instrument would give authority and status. This would also compel others institutions to cooperate and collaborate with it.

Multilateral institutions could play a key role in development of such a capacity through support for the formulation of regional projects to realize the establishment or strengthening of coordination institutional framework. However, the approach is likely to differ from country to country within the region. Human and financial resources have been identified by the survey, as a critical institutional problem.

b) Key Sectoral Institutions

Effective implementation of the convention and adaptation programmes requires the co-operation and collaboration of other institutions, which have the basic skills for specific sectors. Some of the key sectors include:- agriculture, water, forestry, energy, transport, communications and finance. For instance the key and lead institutions for adaptation in the agricultural sector are the department of agriculture and agricultural research institutions. Both basic technical skills and skeletal institutional framework exist in these institutions and therefore must be exploited. In Uganda, Kenya and Tanzania, for example, several agricultural research institutions are engaged in development of drought resistant crops or pest resistant crops. Such efforts can be re-oriented and enhanced. There are also regional and sub-regional institutions whose experiences in capacity building could be tapped. In the energy sector the ministry of energy is the key institution. The ministry of energy would handle issues related to energy. However, when it comes to developing and formulating a climate change related policy it is necessary for the key and lead agencies to jointly participate in the formulation of such a policy. There would be need to strengthen their capacities.

(c) Outreach Institutions

These are very important institutions because they are in contact with local communities. The impact of adverse effects of climate change will be more felt in the rural communities because of the high level of poverty in these areas. Therefore they play a very important role in the implementation of the convention and measures to mitigate the impact of adverse effects of climate change.

In the African region communities have great respect for opinion and traditional religious leaders. In view of these this category of institutions or individuals can be used as vehicles for raising public awareness and also dissemination of environmental issues such as forest deforestation, land degradation

and sustainable use of natural resources. Indeed this would be developing a powerful vehicle for dissemination of environment information.

The level of capacity needs does vary from each of the categories discussed above. To some extent both equipment and financial resources will be needed in all the three categories. To the extent possible modern technology such as satellite digital technology should be used for dissemination of information.

2.3.2.3 Systemic Capacity Needs

The systemic capacity is the ability of a country to provide overall socio-economic, policy and legal environment to the climate change process. The most commonly sited systemic capacity development needs are lack of:

- Formal institutional framework for the implementation of the convention. As a result many countries do not fully understand their obligations and opportunities under the convention. Policy makers and implementers should have a broad understanding of climate change and its impact on socio-economic development to enable them formulated policies to address it.
- Policy and legal framework to support implementation of the convention and the Kyoto Protocol. The climate change is a new environmental problem, which has not been internalized by many people, particularly lawmakers. This problem is also being experienced in developed countries. However, policy development and institution of legal framework is likely to be accelerated by the needs of the clean development mechanisms of the Kyoto Protocol.
- Low priority to service providing institutions such as meteorological services and climate change and hence very low budgetary allocation. Vulnerability to adverse effects of climate change has not been clearly understood and therefore adaptation programmes cannot be supported from national budgets.
- Financial resources. There are many more compelling needs competing for meager resources. High priority is given to issues such as poverty alleviation and infrastructure development and yet adverse effects of climate change impact on poverty and infrastructure.
- Coordinated and integrated approach to planning at both national and local government levels.
- Capacity to develop good projects, consequently the region gets the least amount from the GEF funds.

Most of the least developed countries are from the African region. Many of these countries are also dependent on mono-culture agriculture thus making their economies very vulnerable to climate change. The high level of poverty among the African countries puts them at a disadvantage when accessing multilateral funds. This in turn affects their systemic capacity to effectively address climate change.

The private sector can play a positive role in the implementation of the convention, particularly in the area of technology transfer and the clean development mechanisms. However, the private sector has not been brought on board as yet. This is partly because some people in the private sector do not clearly see the opportunities. There is need to encourage them to participate in the entire process.

A strong issue was raised during the African CDI consultation workshop held in Cairo Egypt on August 1-2. This related to the continued failure of African countries to access GEF funding for projects. Observations made boiled down to the view GEF feels that African countries cannot prepare and submit acceptable climate change project proposals. A comparison was drawn between proposals and economic cooperation documents written successfully for other multilateral bodies such as World Bank, IMF and African Development Bank by the same professionals who are said to fail to satisfy the proposal quality level demanded by GEF. A strong call was made for GEF to seek to communicate its requirements clearly and to engage in a large-scale capacity development exercise for proposal writing by African country experts and officials.

An observation was also made regarding the failure by GEF to accept and consider proposals for capacity building initiatives originated independently by African countries or organizations. A number of such initiatives were outlined and GEF was asked to consider in its CDI or other programmes the Capacity Building Position of the G77 and China on the Possible Elements of a Draft Framework for Capacity Building. This paper is attached here as an annex to this report as a specific request by delegates at the Cairo meeting.

2.4 Lessons Learned: Climate Change Capacity Building

Several projects, with capacity building components and funded by multilateral and bilateral agencies, have been implemented in the region. The GEF/UNDP Capacity Building Project, implemented in Kenya, Mali, Zimbabwe and Uganda, was designed specifically for capacity building. The project focused mainly on raising awareness among national stakeholders. The impact, such a project would have, is dependent on several factors, the most important being the scope, targeted group and funds available for such activities. Other national and regional climate change projects implemented in the region include the:

- US country studies programme which involved many African countries and was conducted over a period of about three years;
- GTZ National Country Studies Project which supported mitigation analysis;

- GTZ Project which supported assessment of regional power grid integration;
- UNEP Collaborating Centre on Energy and Environment Methodological Studies Project which was conducted over a relatively longer period and involved institutions on the region;
- UNIDO Project an initiative on industrial responses to climate change.

It would be of interesting to know if these projects were coordinated to ensure feeding into each other where applicable and also to minimize duplication of efforts.

Some of these projects were conceived and designed by donors, using the so-called top down approach. Countries in the region were invited to sign-on. The advantage with such an approach is the speed with which to access funds. No further elaborate approval procedures are required. The serious disadvantage of this approach is that it is not based on the needs of countries in the region and therefore does not adequately address the capacity building needs. Also such projects tend to focus on development of skills and provision of office equipment leaving out the institutional capacity building aspects.

Under the climate change many developing country Parties have expressed dissatisfaction with this approach and have demanded for a country driven approach to capacity building. This notion, country driven, has generally been accepted and the GEF Climate Development Initiative (CDI) is an attempt to meet the demand of its customers.

It is clear from the projects listed above that the thrust of the projects is not capacity building although in the process capacity would have been built. There is need therefore to differentiate between a specific capacity building project and other types of project. Unless this is done some aspects of capacity building such as institutional will not be adequately addressed. It is also to be noted that public awareness is a continuous process rather than a snap shot.

2.5 Recommendations and conclusions

The climate change convention differs from the other two conventions in one particular respect. It is a framework convention and other frames are expected to be developed to strengthen it. The capacity building needs may therefore vary with layers and time. The Kyoto Protocol is an illustration of this point. There are specific capacity building needs associated with its implementation. The capacity building needs may also vary from country to country within the region and also priority attached to a specific element is country dependent. For this reason it is therefore difficult to provide detailed and specific conclusions fitting all countries in the region. There are different levels of development within the region and this undoubtedly will dictate the needs and the priorities. However, there are generic

capacity building needs that will be required in most of the African countries, if not in all of them. These are now discussed in the subsequent sections.

2.5.1 Capacity Building: Systemic Level

The late 80s and 90s have witnessed the emergence of environmental agencies in the region. In some countries these agencies are instituted through legal framework defining their functions and role in environmental management. These are young national structures with inexperienced and staff (probably under-staff) and under-funded. The other problems are functional overlaps, fragmented environmental policies, weak regulations and re-enforcement structures, under staff and inadequate funding (frequently reliance on external funding).

2.5.2 Institutional Level

The climate change convention is implemented by institutions, which participated in the negotiation process. Climate change issues constitutes a small portion of their normal assignment. In such cases the implementation of the convention is likely to be marginalised and indeed even the negotiations suffer because no adequate preparations and consultations can be made. In some countries the implementation of the convention is under environment agencies. Unless it is an entity within the agencies again it will be marginalised. The implementation of the Kyoto clean development mechanism has raised the question of “are the current institutions able and competent to respond to customer needs?”

There is need to critically examine possible structure of an institutional framework to implement the climate change convention. In so doing due considerations should be given to synergies with the CCD and CBD and also the linkages with key and relevant institutions. In several discussions the need to integrate implementation of the UNFCCC, CCD and CBD has been raised and supported in workshops. The GEF should support these efforts.

2.5.3 Individual/Human capacity

The primary areas of focus for the region, although this will vary from country to country, are: -

- Adaptation to adverse effects of climate change;
- Promoting and enhancing development of adaptation technologies in the region;
- Provision of information (climate and hydrological) to support adaptation efforts and mitigate impacts of adverse effects of climate change;
- Access to clean and safe technologies to support sustainable development;

- Mitigation analysis and development of options.

In order to effectively address the issues under the areas of interest, significant efforts need to be put on development and enhancement of human resources in the region. This therefore calls for a detailed country driven capacity building assessment and developing of a comprehensive programme to address these needs. It is extremely important that a wide cross section of stakeholders be involved in the process. Institutions such as academic and research institutions, NGOs and CBOs, government ministries and departments should be consulted at one stage or the other in the capacity needs assessment and development of the programme. Academic and research institutions will play a key role in the implementation of the programme, particularly the human capacity development and must be actively involved. The programme should be discussed at the highest level possible and also with the donor community.