MINISTRY OF TOURISM ENVIRONMENT AND NATURAL RESOURCES

Third National Report
On the
Implementation of the
Convention on Biological Diversity in Zambia

NARRATIVE REPORT

September 2006

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1.0 Introduction

This report has been prepared by the Ministry of Tourism Environment and Natural Resources on behalf of the Government of the Republic of Zambia a contracting party to the Convention on Biological Diversity (CBD). Zambia signed the CBD at the United Nations Conference on Environment and Development (UNCED) on 11th June, 1992 and ratified it on 28th May, 1993. All Contracting Parties (CP) to the CBD are mandated to regularly submit reports on the implementation of its provisions as well as action taken to address other related issues identified by the Parties. This report therefore assesses the implementation of the CBD in Zambia for the period 2001-2005. Progress on the conservation of biodiversity, is only realized through the stocktaking of past achievements and failure. The CBD requires that a Contracting Party submits a National Report every four years.

1.2 Purpose for preparing National Reports

The objective of national reporting, as specified in Article 26 of the Convention, is to provide information on measures taken for the implementation of the Convention and to provide comment on the effectiveness of these measures. The reporting process is not intended to elicit information on the status and trends of biological diversity as such in the country concerned, except in so far as such information is relevant to the account of the implementation measures.

The process of reporting can assist Zambia to monitor the status of implementation of the commitments it has taken on as a Contracting Party to the CBD. Further it can assist the country to identify those commitments that are being successfully met, those that have not been implemented, and constraints to implementation. In addition putting in place an effective system of national reporting can also assist the country to:

- Consideration of the lessons learned by Parties in the implementation of the Convention;
- Identification of gaps in capacity for policy research and analysis at the national level including technical and financial requirements;
- Formulation of appropriate requests and guidance to Parties and to its subsidiary bodies, the Secretariat, the financial mechanism, and other organizations with expertise relevant to the implementation of the Convention.

Within the national framework, public availability of the national reports can assist relevant actors (for example, ministries and department, non-governmental organizations and scientific bodies) to formulate focused strategies and programmes to assist the country, with implementation. Similarly it can enable sectors in the economy to identify common issues to be addressed, thus facilitating the development of cost-effective and mutually supportive initiatives for implementation

1.3 Methodology for preparing the National Reports

This National Report is a product of a consultative process and close liaison between the Ministry of Tourism and Environment Natural Resources and, key stakeholder organisations and institutions. The status of implementation was determined through responses to a checklist of issues from Guidelines made available by the CBD Secretariat. The responses were constructed from a narrative report. The contents of the narrative report and the questionnaire were validated to through a Stakeholders Consultative Workshop. In terms of process, the narrative report was put together first and information therein then used to fill out the questionnaire.

2.0 Priority Setting Targets and Obstacles

The main biome types in Zambia include forests, woodlands, and grasslands, aquatic and anthropic (manmade) systems. Combined large scale interactions at the biome level have resulted in and maintain a variety of ecosystems and biodiversity identified as regionally and globally important. These areas are not necessarily delimited by ecosystem boundaries nor do they necessarily contain one ecosystem, but are areas of high/habitat ecosystem diversity because of assemblages of biologically valuable resources. The biomes are subdivided into 16 ecosystems, ranging from dry evergreen forests through to cropland and forest plantations. The most significant of these ecosystems is the “miombo” woodland. Miombo woodlands cover close to 40% of the country.

Landscapes of biological significance within in Zambia include: the Zambezi river headwaters, the upper Zambezi river, the Kafue flats, the Four Corner areas where five countries-Zambia, Angola, Botswana, Zambia and Zimbabwe share boundaries, the Luangwa valley, the mid Zambezi area, the Lake Mweru-Luapula area, the Copperbelt area and the Bangweulu Swamps. Identification of these areas evolved from the WWF-Ecoregion programme which commenced in 2002. These areas of biological significance were identified using inputs from data on: areas of high diversity, high endemism, threatened species, animal movements and the evolutionary significance of a number of taxonomic groups.

2.1 Overview of Status and Trends of Components of Biological Diversity

The key biological resources in the areas of biological significance are floral (algae, mosses, fern grasses herbs, woody plants and crops and vegetables) and faunal (invertebrates, amphibians, reptiles, birds, mammal, fish and domesticated animals). A total of 7,774 species of organisms are recorded. This

may be an underestimation because knowledge is scanty. The diversity of flora in Zambia is estimated at 4,600 species and dominated by herbs and woody plants. The diversity of fauna is estimated at 3,407 species and dominated by invertebrates. The status of floral and fauna species is rather uncertain due to the lack of regular nation wide census or stocktaking. However, existing estimates and anecdotal information suggests that numbers, especially of fauna maybe on the decline except perhaps in those areas under intense protection.

3.0 Priority Accorded to Implementation of Articles of the Convention

The following levels of priority were accorded to the implementation of articles of the Convention

Article of the Convention	**Priority Accorded**
Cooperation	
• International and regional collaborative efforts and participation at international meetings of CBD, UNCCD, Ramsar, CITES, SADC	High
• National collaborative efforts- cooperation with local UM multilateral, bilateral programmes and NGO activities	High
General Measures for conservation and sustainable use	
• Establishment and maintenance of a coverage of PAs	High
• Development of policies institutions and legal frameworks	High
• Assessment/inventory of biodiversity status	Medium/low
• Monitoring and assessing sustainability of use	Low
• Technical capacity development	Low
• Availability of financial resources	Low
Identification and Monitoring	
Identification of new plant and animal species	Low
Development of national species monitoring systems	Medium/low
Monitoring of threatened and vulnerable species	Medium to low
In-situ Conservation	
• Establishment of new protected areas	Low
• Maintenance of existing national parks, game management areas, wildlife sanctuaries, botanical reserves, Ramsar sites and heritage sites	Medium to low
Tracking of the introduction of invasive alien species into the Zambian territory	
• Identification of invasive species	High/medium
• Development of policy and legal framework on alien invasives	Medium
• Strategies for the management of alien invasives	low
• Pilot initiatives directed at managing alien invasives	low
• Development of technical expertise and networking	Low/medium
Traditional Knowledge and related provisions	
• Application and integration of traditional knowledge	Low
• Integration of traditional knowledge systems in agriculture, health and natural resources management	Low
• Policy development for promotion and integration of traditional knowledge in national development	Low

Ex-situ conservation	
• Putting in place measures for conservation	Medium
• Maintenance of facilities for conservation	low
• Reintroduction of threatened species into natural habitat	Low
• Regulation and collection of biological resources from natural habitats	Medium
• Financial support for ex-situ conservation	Low
Sustainable use of components of biological diversity	
• Integration of conservation and sustainable use issues into national decision making	Low
• Protection and promotion of customary use of biological resources compatible with principles of conservation	Low
• Assistance to local populations to rehabilitate areas degraded on biodiversity	Medium
• Promotion of cooperation between public sector and private in developing sustainable sue methods	Medium
• Sharing of information on tourism and impacts; tourism planning and management	Medium
Incentives measures	
• Promotion of economic and socially sound measures as incentives for conservation and sustainable use	Low
• Legal framework for promotion of incentives	Low
• Incorporation of market and non-market values of biological diversity into plans and policies	Low
• Training and capacity building for implementation of incentives measures	Low
• Neutralizing or addressing pervasive measures	low
Research and Training	
• Promotion of research for conservation and sustainable use	Medium
• Promotion of cooperation in use of scientific advances in conservation and sustainable use	Low
• Allocation of resources for research and training	Low
Public education and Awareness	
• Promotion of importance and understanding of conservation and sustainable use by the media	medium
• Integration of biodiversity concerns into education strategies	High
• Allocation of resources to public education and awareness	medium
Impact assessment and minimizing adverse impacts	
• Developing and upgrading EIA regulations	High
• Developing national mechanisms for emergencies impacting on biological resources	medium
• Enforcement of EIA regulations	High
• Integration of EIA into programmes on thematic areas, alien species and tourism	Medium
• Promotion of local expertise for EIA	High
Access to genetic resources	
• Promotion of measures and guidelines for fair equitable sharing of benefits from the utilisation of genetic resources	Low
• Policy and legislation development in support of access and benefit sharing genetic resources	Low
• Capacity building to promote implementation of policy and legal measures and guidelines for access to genetic resource	Low
Access to and Transfer of Technology	

• Promotion or facilitation of access to and transfer to other parties of technology	Low
Exchange of Information	
• Facilitation of exchange of information from public source for the promotion of technical and scientific cooperation	Medium
Scientific and Technical Cooperation	
• Promotion of scientific cooperation	Medium
• Encouragement and development of technologies (including indigenous and traditional)	High
• Joint research and joint ventures	Low
• Implementation of the CHM	Low
Handling of biotechnology and distribution of benefits	
• Ensuring effective participation in biotechnical research	Low
• Development of policy and legal framework for handling biotechnology	High
Financial Resources	
• Allocation of financial resources for conservation	medium
• Exploration of alternative financing mechanisms conservation	high

4.0 Challenges and Obstacles to Implementation

4.1 Political will and support

It is generally accepted that the Governments to commitment to the CBD should be translated into various implementation activities undertaken to achieve the objectives of the CBD, but also the country's objectives for biodiversity conservation. Thus political will and support should have been translated into commitment of resources for biodiversity conservation, but more importantly to government commitment to being held accountable for performance in conservation

With respect to biodiversity conservation agencies, it is common knowledge that fundamental improvements were needed in two areas: First the objectives set for biodiversity conservation areas needed to be responsive to their constituencies and secondly, the biodiversity conservation agencies needed to held accountable for their performance in a number of ways including conservation effectiveness and financial efficiency.

Mechanisms for creating accountability are still developing. The current approach where centralization has characterised the provision of public goods (national parks and other conservation areas) works where government has strong accountability to the people. Indeed weak accountability at several levels has emerged as a root cause of the under-performance of biodiversity conservation agencies in Zambia. Political leadership does not set goals in service of their constituency. The misalignment between protected area objectives and the needs of Zambian society, particularly those populations in buffer and immediate areas to the protected areas are far from being addressed. In this

regard, dysfunctional relationships with the political leadership and conservation agency managers have often lead inefficiency, corruption or patronage associated with state owned resources. Finally the fact that goals and performance measures are not clearly articulated make conservation agencies neither accountable for their efficiency nor effectiveness.

4.1 Public participation and stakeholder involvement

The responsibility for biodiversity conservation is essentially a state function and managed through structures of the state. Public participation and stakeholder involvement is integrated into the legal frameworks for biodiversity conservation with regard to wildlife, fish, forests and water and wetlands Responsibility for public participation and stakeholder involvement biodiversity conservation and management thus continued to be driven and monopolized by budget funded state agencies with a lot of power, little accountability, and an abundance of organisational and managerial problems. These monopolies have been problematic and the reason why encouraging private and community biodiversity conservation initiatives have been important for Zambia. Although participation and stakeholder involvement has been encouraged, effective local public participation and stakeholder involvement still inadequate and Zambia continues to struggle with finding the most effective participation model to follow.

4.3 Mainstreaming and integration of biodiversity issues into other sectors

The process of mainstreaming and integrating biodiversity issues into other sectors has not been a part of the development planning development process. Good biodiversity management policies designed in the “environment sector” have not been mainstreamed into other sectors and have therefore not had significant impact in these sector nor have the impact of other sectors on biodiversity been well appreciated. Development frameworks intended to support national sustainable development have fallen short of properly integrating biodiversity and other crosscutting issues. Both the Poverty Reduction Strategy Paper (2002-2004) and Transitional National Development Plan (2000-2005) had stand alone sections on the environment or natural resources (which include biodiversity) with no real demonstrated linkages to other sectors. This is also the case in the Fifth National Development Plan (2007-2011). Zambian experience in implementing such national strategy plans shows that these government documents are generally not influencing the main forces affecting degradation of the environment and erosion of biodiversity, because they mostly fail to establish systems and processes that engage the dominant sectors of society and government.

Mainstreaming and integration of biodiversity issue into other sectors has posed capacity problems for Zambia in terms of strengthening the institutions that deal with biodiversity and the technical capacity for devising appropriate measures that are efficient and cost effective. While there have been attempts at putting in

place more effective institutional/regulatory infrastructures such as appropriate organizational structures, efforts have been thwarted by inadequate personnel, resources and equipment to ensure proper execution of policies in a regular, coordinated and predictable manner.

4.4 Precautionary and proactive measures

Article 8 (g) of the CBD states that each Contracting Party shall, as far as possible and as appropriate establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from modern biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking into account the risks to human health. Zambia has in place laws and regulations governing Public Health and Pest Control, Food and Drugs, Hazardous Substances, Agricultural Practice and Environmental Conservation. Zambia however does not have biosafety legislation in place.

The non-existence of legislation on GMOs posed risks as Zambia could be attractive to foreign biotechnology companies or institutions wishing to test products that cannot be tested in the tougher regulatory climates of their countries. In the recent past Zambia courageously withstood the massive outside pressure on it to accept GM food aid. Some of the challenges to adopting effective precautionary and proactive measures included:

- limited technical ability for updating or complementing existing frameworks to relate them to products of modern biotechnology;
- top down policy formulation rather than participatory
- ignorance about the purpose of policies and
- limited financial resources for a more participatory policy development process

4.5 Capacity to act, caused by institutional weaknesses

Zambia's capacity to act or not under the period under review was in the first instance determined by the presence of a supportive policy environment. Secondly it was determined by the will of government to act and thirdly by the existence of resources to support action. A serious challenge to effective action has been the weak coordination mechanisms of biodiversity agencies. The mechanisms for sustaining capacities for action in place were largely project driven e.g., Biodiversity Working Group, and the Steering Committee on Wetlands, which had no legal basis but had set objectives and end dates. Thus, while well intentioned, such mechanisms never really become part and parcel of the government's long-term institutional arrangements for biodiversity conservation. They were functional for the period donor funds were available but quickly became inactive with the phasing out of projects.

The centrality of the Ministry of Tourism, Environment and Natural Resources (MTENR), was key to maintenance and coordination mechanisms for action. The MTENR's roles also embodied the facilitation and monitoring of the implementation of international agreements, conventions and treaties with a view to promoting the country's conservation interests as well as meeting international obligations. These two roles had a critical bearing on how conservation work is carried out in Zambia. The MTENR as an institution has tended to be upward looking – more to Cabinet and Ministry of Finance for budgetary considerations than coordination. In addition, there was no budgetary allocation *per se* for the MTENR coordination role which is amplified in the ministry's draft strategic development plan.

The obvious exclusions and overlaps in roles and responsibilities of biodiversity agencies presented further constraints to action and could have been resolved through closer collaboration. The more formidable constraint to action however was the shortage of financial resources and capacity to effectively assume roles and responsibilities. The monopolistic tendencies enshrined in the various enabling legal frameworks also affected the ability of biodiversity agencies to meet their objectives.

4.6 Transfer of technology and expertise

There was no policy framework established to govern the transfer of technology and expertise in Zambia resulting in a fragmented approach. No single institution was responsible for overseeing what kind of technology entered the country. This was of great concern especially in view of the progression of the privatisation programme, which brought about a wide range of investors coming into the country with a variety of technological investments. The new technologies were not screened for environmental soundness nor for their impact on the biodiversity. Another major constraint to the transfer of environmentally sound technology into Zambia was the lack of tax incentives. A demonstrative example is that of solar energy where high taxes and the pricing of solar panels made this source of energy unaffordable, especially for rural populations that were highly dependent on wood fuels.

On a more positive note, the Environmental Council of Zambia has in conjunction with the ZACCI and with support from NORAD implemented the second phase of the Cleaner Production Program, meant to encourage industry to invest in cleaner technology. Since cleaner production was introduced in Zambia, measurable environmental and economic benefits have been recorded. Further training given to staff of 71 companies over a period of seven years resulted in combined annual average savings of US$2.18 million (EZC 2004).

4.7 Traditional Knowledge

Until recently, there was no deliberate promotional policies on indigenous technologies and hence, their development and upgrading has been minimal and in most cases non-existent. This has been partly caused by the absence of baseline data on indigenous technologies. Growing interest in the traditional/indigenous knowledge and technologies from the Zambian authorities prompted revisitation of traditional/ indigenous knowledge and technology systems. For a start the National Science and Technology Council (NSTC) which is mandated, to promote the use of science and technology for wealth creation developed the NSTC Strategic Plan for the period 2002 – 2006 which gives priority to Indigenous Technological Capacities.

With regard to a ravaging health problem, the government directed that investigations into the efficacy of traditional remedies for treatment of HIV/AIDS patients be carried out and the possible integration of tradition remedies into modern medical practices be explored. In addition, the Parliamentary Committee on Education, Science and Technology directed that the traditional knowledge and technologies in Zambia be documented.

The lack of baseline data and documentation of indigenous technologies has been a constraint to the development and promotion of appropriate indigenous technologies which could contribute to productivity at the household and community level especially in peri-urban and rural areas. In this regard indigenous knowledge systems were not effectively integrated into national development strategies.

4.8 Scientific Research capacities to support all objectives

Core biodiversity scientific research activities are carried out the University of Zambia (UNZA), Zambia Wildlife Authority, (ZAWA) Forestry Department, (FD) National Institute for Scientific and Industrial Research (NISIR), National Artificial Insemination Services, Zambia Agriculture Research Institute (ZAGRI), and the National Plant Genetic Resources Centre (NPGRI). Focus research areas included: research & development in agricultural and natural Resources, food technology & biosafety; artificial insemination and agricultural research. A statutory body the National Science and Technology Council (NSTC) directs government policy on the development and application of science and technology in the country.

Challenges in scientific research are numerous but relate mainly to an embryonic policy and legal framework in biotechnology and biosafety, which will need to develop as quickly as industry is moving. In addition, scientific research and especially the results of research need to be simplified for the general public to understand and appreciate. Currently, public understanding of biosciences and

associated scientific research is limited. Although research opportunities are enormous the formation of research partnerships between universities, conservation NGOs, and management agencies has not been fully exploited.

4.9 Access to knowledge and information

Generation of knowledge and its management is antecedent to making it available to users. Several biodiversity organisations generated knowledge in the form of technical reports; baseline surveys research papers, results of experiments and evaluations. However, information on the extent of biological diversity in the country remained scanty demanding an integrated approach to the documentation of Zambia's flora, fauna, fungi, viruses, lichens and a host of other microbes that contribute to a balanced ecosystem anywhere in the country. Except for the forest sector resource assessments were few and far apart data

Information and documentation centres such as the one established at the Environmental Council of Zambia are few including organized data management facilities. The documentation of contemporary knowledge forms of biodiversity management received greater attention, knowledge, innovations and practices of local communities received less attention and its availability to biodiversity management remained limited. The documentation of traditional medicines for example is a case in point. No comprehensive data base was in existence.

Availability of information on biodiversity and development programmes to the general public was made possible through the print and electronic media. Apart from the familiar The Times of Zambia, Zambia Daily Mail and the Post News Papers, new daily paper that have emerged included the Monitor, The Angel and Guardian newspapers. In the electronic media, the Zambia National Broadcasting Corporation- TV and radio including several other new private community radio stations disseminated information to the public. Government procurement of FM radio transmitters that were installed in a number of districts improved radio reception. Further, implementation of satellite TV initiated to improve country wide TV reception progressed.

Notwithstanding the above developments the following challenges constrained access to knowledge and information

- a limiting media legislative environment that does not adequately provide for freedom of media, freedom of information and good governance
- inconsistency of existing laws in relation to a changing political environment
- obsolete or inadequate equipment and archaic technologies

4.10 Public awareness at all levels

Sensitisation and awareness raising on issues of biodiversity at all levels is a core mandate of all biodiversity management agencies. Consequently public awareness was a key objective in the operational plans of biodiversity

management agencies. For a sector where perceptions play a critical role in forming opinions, especially in sectors such as wildlife management, public awareness, accurate and up to date information is essentially short, especially for decision makers.

In the field, public awareness on biodiversity issues is enshrined in local level community programmes and specifically through the work of the extension functionaries. However low level extension staff levels in fisheries, wildlife, forestry and even in agriculture biodiversity management, the lack of experience in extension work and lack of funding for extension activities constrained the capacity of biodiversity agencies to deliver public awareness programmes. Thus public awareness activities were adhoc or confined to project areas.

However government took opportunity of the World Environment Day, the World Wetlands Day and such other events raise public awareness on the values of biodiversity.

4.11 Understanding and documentation of loss of biodiversity and the corresponding goods and services it provides

While there was appreciable understanding of the potential impacts of the loss of biodiversity on the national economy, written into several officials documents and reports of government, there not as much documentation of the actual effects of the loss of biodiversity on the ground. Both the Poverty Reduction Strategy Paper (PRSP) and the Transitional National Development Plan (TNDP) which were key national strategies prioritized issues of sustainable use and development and articulated factors that would lead to the loss of biodiversity and corresponding goods and services. In addition sector specific strategies such as the Zambia Wildlife Authority Strategic Plan, adequately identified the factors contributing to the loss of biodiversity.

A perennial weakness with the strategic documents was the weak articulation of the root causes of biodiversity loss and how these causes interacted and reinforce each other. Disincentives working against sustainable development and conservation of biodiversity emanating from other sectors are not given proper attention. The PRSP was for example was criticised for an overly general discussion regarding poverty and biodiversity loss. No attempt was made to link diagnostics and analyses with the setting of policy priorities. This sort of analyses requires adopting methodological approaches that could be used in case studies to unravel the linkages. None of this work was in existence.

4.12 Financial, human and technical resources

Financing mechanisms for biodiversity conservation during the period under review were mainly through the following -Appropriation by the National Assembly through the national budget, licence fees, permits and levies for biodiversity use; local authority rates, taxes and levies, bilateral and multilateral

loans and grants; the Global Environmental Facility (GEF) and NGO/CBO project funding. CBNRM in the wildlife and fisheries sectors was financing mechanism for biodiversity conservation in Zambia which channelled revenues from wildlife back into conservation. The Polluter Pays Principle and EIA administered by the Environmental Council of Zambia further provided finances for cleaning up and for conservation.

Key weaknesses in financial management included:

- the unclear procedures regarding how best to mobilize, receive, plan/budget and manage external resources,
- inappropriate systems of monitoring programme/project implementation and, consequently,
- inability to determine the level of impact and weak coordination within the Government system in the area of aid management, resulting in many line ministries getting marginalized in the process

Other challenges included:

- yearly fluctuations of resources
- accountability and transparency in collection and administration of financial resources
- absorption capacity and efficiency of use
- over commercialisation of the resource base

A serious threat to biodiversity management was the weakness in Zambia's human capacity to manage the sector. Many of the protection agencies struggled to find experienced managers. Private sector supplementation of human resources proved ineffective as it was small and under capitalized and civil society had capacity problems of its own. Generally there was a lack of exposure to best practices and the absence of pro-active mechanisms to improve leadership. Weaknesses at local higher institutions of learning compounded the human resource capacity problem in biodiversity management.

4.13 Economic incentive measures

In recent years, the government has made the move towards a more privatized and open market economy. Through economic structural reform, considerable progress was made in economic deregulation.

In so far as the environmental stresses are concerned, the impact of economic reforms encouraged illegal harvest of biodiversity insofar as it contributed to rural poverty and urban unemployment and also accelerated the reduction in funding for the administration of conservation agencies. Although the liberalization of foreign exchange markets might have reduced the incentive for the smuggling of trophies, Zambia still needs to work out incentives that will positive impact deforestation and the declining populations of wildlife. Deforestation continued to accelerate at 2.6% annually in view of reforms in the

economy. Land clearing caused by both commercial agriculture and shifting cultivation was largely responsible. Traditional agricultural practices and current land laws, under which there is no private land tenure, continued to encourage extensive agriculture. Increasing rural poverty continued to force people to turn to natural resource-intensive activities, including charcoal making and beer brewing, both of which contributed to deforestation.

4.14 Benefit-sharing

During the period under review there are various benefit sharing arrangements implemented in Zambia in mainly in the form of community based natural resources management (CBNRM) programmes in wildlife, forestry, water and fishery. Their main aim was to empower local communities and increase sustainability of their livelihoods. Some of the key challenges and constraints to benefit-sharing included:

- unclear property rights
- Limited capacity of key institutions for handling aspects of benefit sharing and community rights over resources.
- The lack of an operational Clearing-House Mechanism for effective sharing of information to all stakeholders on various aspects of ABS.
- Technology issues in benefit sharing largely limited to the promotion of commercial interests by the users and less on conservation and sustainable use
- Perceptions of a lack of transparency and suspicions by local communities surrounding the equitable sharing of benefits
- Systemic weaknesses regarding capacity building in various areas of conservation and sustainable use and whether the knowledge, any innovations and practices of indigenous people are being respected in agreements.
- Limitation in the distribution of benefits
- Weaknesses in accountability systems due to the lack of capacity and other social cultural barriers to full adoption of benefit sharing measures and systems
- Insufficient monitoring effort of the biological resources generating goods and services.

4.15 Synergies at national and international levels

During the period under review there was growing understanding and appreciation by biodiversity management agencies of the information requirements of international conventions such as CBD CITES, Ramsar, UNFCCC, UNCCD and the World Heritage Convention and an increased understanding of the linkages between the conventions. It was understood that activities taken primarily in response to the articles of one convention could equally be of significance to another convention. However Zambia did not develop a standard approach to the collection of data that would easily be used

for more than one convention and facilitate the production of cross convention summaries (where there are links) to encourage greater coordination between national agencies/focal points.

4.16 Horizontal cooperation among stakeholders

Zambia had a several key agencies in the public sector with responsibilities for managing biodiversity. The key agencies were mandate driven institutions, highly centralized resulting in the lack of attention to areas of overlaps, grey areas, and conflicts. These areas of possible contestation and/or collaboration where opportunities lie for the maximization of returns on financial and technical resources have never been fully rationalized in support of biodiversity management. This issue is of critical importance as the continued compartmentalization of PA management as provided for in the Acts does not promote collaborative approaches to biodiversity management. It was noted in the period under review that the continued downward spiralling of budgetary allocations for biodiversity management lead to greater losses in biodiversity as demonstrated in the wildlife sector. Some rationalization measures that could have been undertaken include:

- Cost sharing among biodiversity management organisations
- Staff attestation where one agency could have provided basic training to the staff of another agency in order to carry out preliminary work on the ground
- Outsourcing of services and greater collaboration with the private sector
- Involvement of communities

4.17 Effective partnerships

Although the fulfilment of the obligations of biodiversity management agencies were exclusionary, increasing operational costs for managing biodiversity, escalating pressures from rural communities, decried the need for development of smart partnerships in biodiversity management. A review of the position revealed the following challenges and constraints to building effective partnerships for biodiversity management:

- Co-management arrangements involving private-public-community entities have always assumed that collaborating entities have a shared vision, roles, responsibilities, and accountability when this is not the case
- The capacities commensurate with the assumed responsibilities especially for communities have often been glossed over. Often the weakest partner in partnership arrangements have always been the community, whose participation needed better facilitated.
- Private sector involvement in the management biodiversity has never been actively promoted because of perceptions that the public sector was

subsidising the private sector as a result of inadequately negotiated partnership arrangements.

4.18 Engagement of the scientific community

For the period under review research in biological diversity had low priority in the Government's general research policy. There were and still are many gaps in biological diversity that an active scientific community in Zambia could have filled. Research Institutions such as the University of Zambia, Copperbelt University, National Institute for Scientific and Industrial Research (NISIR), Agricultural Research and Forestry Research were poorly funded to undertake any meaningful research aimed at adding value to the country's understanding of biological diversity. Public spending on research only increased with the introduction of donor supported facilities for applied research under specific projects.

4.19 Appropriate policies and laws

Zambia had several policies and statues in place in support of biodiversity management. Zambia's body of laws relating to the management of biological diversity is spread over more than 20 international treaties and over 30 Acts of Parliament and responsibility dispersed amongst at least ten line ministries. Although policies and legal frameworks for the promotion of biodiversity management were explicit in their objectives and strategies implementation and enforcement, was great challenge in a resource constrained environment.

Some policies appeared to be in conflict with each other *e.g.* between agriculture and forestry on farm extensification *vs.* intensification A significant step was taken in 2004 to initiate the process of developing an all encompassing National Environmental Policy. A draft policy paper was prepared by the end of 2005. The formulation of a National Environmental Policy provided an opportunity to address policy weaknesses and establish cross-sectoral uniformity, in order to reduce the risk of sectoral conflicts in policy interpretation. However this did not eliminate the problem of sectoral failure in policy implementation, which could only have been achieved through legislative and institutional reform, and a greater political commitment to sustainable biodiversity management.

Another challenge was weakness of existing law relating to the integration of international treaty agreements. Implementation of international environmental legislation has been piecemeal due to the diversity of interests amongst the agencies responsible.

Most policies were supportive of community involvement in natural resource management. However while community participation was very much in vogue not much progress was made in dealing with local level institutional arrangements. As a result there was duplicity of institutions and functions.

Law enforcement remained weak. A pervasive problem was the lack of resources (transport, funds, and human) available for law enforcement. Prosecutors were in short supply leading a majority of biodiversity management agencies except for the wildlife sector to rely on prosecutors from the Zambia Police Service, unfamiliar with the principles and objectives of environmental management, to investigate and prosecute cases.

4.20 Poverty

Despite government attempts to stabilize the economy, the performance of the Zambian economy has continued to perform poorly over the last five years, and resulted in the persistence of high poverty and unemployment levels. Poverty in turn, exacerbated pressure on the environment and the sustainable use of natural resources. The effects of economic reforms and the frequent occurrence of drought, accentuated the poverty situation

In a situation where over 70% of the populations were classified poor, amongst whom women and children constituted the most disempowered and vulnerable impacts on the environment can be quite telling.

Because of being poor a large proportion of the Zambian population, continued to depend directly on natural resources in terms of food, energy, water and shelter for their survival. The lack of alternative livelihood strategies, desperate short term needs and the ensuing unsustainable use of resources continued to lead to the degradation of biological diversity in many localities in Zambia with depletion putting the livelihoods of the people at further risk.

4.21 Population pressure

At the last count in 2000, Zambia's population stood at approximately 9.8 million[1]. Almost two thirds (65 percent) of Zambia's population were in the rural areas. The average distribution of population stood at 13.1 persons per square km. The higher concentrations of population are generally along the line of rail, specifically in Lusaka and the Copperbelt and to some extent in the Eastern and Northern and Luapula Provinces. The effects of growing concentrations of human beings in these and other locations continued to grow and were manifested as deforestation and, wildlife and fish depletion, and threatened sustainable economic growth and the survival of the poorest populations.

Zambia continued to work at the integration of population factors in plans and programmes. The two major plans during the period under review-the Poverty Reduction Strategy Paper and Transitional National Development Plan both incorporated population's issues. However little progress has been achieved in addressing the impacts of population dynamics on biodiversity. Understanding of the linkages within a multi-sectoral framework has been limited so as to determine the appropriate public actions or interventions to address population-

[1] CSO 2000, Census of Population and Housing

biodiversity issues at the national level. The complication of this relationship poses technical and institutional capacity problems for Zambia.

The prevalence of the HIV/AIDS pandemic estimated to affect about 16% of the productive age group is yet another problem, which threatened the survival of many Zambians, in particular young females. The implications on the productivity of all sectors of the economy including biodiversity management, due to prolonged illnesses and deaths of staff and the people the sectors are very evident.

4.22 Sustainability of Consumption and production patterns

Zambia continued to depend on a single primary product copper, for her foreign exchange earnings. This situation presented a gloomy future as the mining industry continued to be affected by numerous and serious internal and external shocks, to the extent that the industry's capacity to sustain the economy was seriously being questioned. The dependence on copper mining actually accounts for many of the economic problems Zambia is currently facing. Great scope for diversification, development and expansion of the economy has been directed at the exploitation of other natural resources, particularly for tourism, agricultural and industrial development. In a scenario where the majority do not have enough to eat has meant little attention paid to changing consumption patterns to encouraging production and consumptions levels at times to the detriment of biodiversity.

4.23 Capacities for local communities

More than fifteen years of working at local community level in Zambia in biodiversity conservation has shown that capacity building processes take much longer than expected. All sectors of biodiversity and others continued to struggle with developing capacity building processes that would contribute to sustainable biodiversity use at the local level. Some of the expected results of capacity building were that communities would: be aware of their peculiar circumstances regarding biodiversity; push for greater increased representation in decision making bodies which would lead to greater control as community members became active agents and not passive recipients or beneficiaries; enhance communities' possibilities of gaining control of resources and of initiatives concerning their own development. The methods to achieving capacity building for local communities so far have not been effective enough to achieve these changes in the communities. Constraints to building capacities for local communities have included: poor education levels amongst the communities, weaknesses in the facilitating organisations, weaknesses in the law, institutional frameworks that insulate elected local leaders from the wider community, resulting gin leaders being unaccountable to the electorate.

4.23 Natural disasters and environmental change

The Environmental Council of Zambia and the Disaster Management Unit under the Vice Presidents Office put in place Emergency Response Systems which provided for effective response to accidents and emergencies likely to bring immediate negative impacts on the environment and human life. Many of the emergencies involved chemical spills.

Attention was also paid to the removal of the invasive weed and specifically Kafue Weed (*Eichorrnia crasipes*) in the Kafue River when the infestation was declared a national disaster. Other government departments participated in the removal of the weed.

5.0 Twenty Ten (2010) Targets

Zambia has not prepare a separate document to elaborate the 2010 targets under the CBD, but integrated these targets into several national documents which also addressed the Millennium Development Goals (MDGs) including Target 7, concerned with environmental sustainability.

For Zambia the MDGs synthesizes the country's own long-term aspirations intended to have been achieved through the implementation of strategies contained in the Poverty Reduction Strategy Paper (PRSP) and the Transitional National Development Plan (TNDP). The first MDG National Report[2] highlighted the fact that in many areas of human well-being, efforts were being made to make positive changes, but that this challenge was a long way from being fully achieved. In as far as environmental sustainability is concerned and with specific reference to integrating the principles of sustainable development into the country policies and programs and reversing the loss of environmental resources, the 2003 MDG report indicated that meeting this target was potentially likely. Further, that the state of national support for this target was weak but improving. The 2005 report indicated that the situation was much the same and although the supportive environment was good, achieving the target was unlikely. Progress made towards achievement of the 2010 targets in Table 1 is assembled from status reports on the PRSP and the TNDP.

[2] Millennium Development Goals Progress Report for Zambia 2003, GRZ.

Table 1: Status of the 2010 Targets

2010 CBD GLOBAL TARGETS	**Equivalent National Targets[3]**	**Status**
Goals/specific targets		
GOAL 1: To promote the conservation of the biological diversity of ecosystem, habitats and biomes Target 1.1: At least ten percent of each of the world ecological regions effectively conserved Target 1.2 Areas of particular importance protected	Goal: To ensure the conservation of the full range of Zambia's natural ecosystems through a network of protected areas <u>Targets</u>: • ensure inclusion of all major ecosystems • ensure representativeness of protected areas	• Extensive PA system maintained. Efforts directed at reclassifying the PA systems to ensure representativeness and the inclusion of all major ecosystems
Goal 2: Promote the conservation of species diversity Target 2.1: Restore, maintain or reduce the decline of populations of species of selected taxonomic groups Target 2.2 Status of threatened species improves	• Targets not clearly elaborated, but enshrined in above targets	• Illegal harvest eroding the populations of large mammals; Rhino reintroductions in selected locations
Goal 3: Promote the Conservation of genetic diversity Target 3.1 Genetic diversity of crops, livestock, and of harvested species of trees fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained	Goal: Conservation of genetic diversity of Zambia's crops and livestock <u>Targets</u>: • Conserve genetic diversity of traditional crop varieties and their wild relatives • Conserve genetic diversity of traditional livestock breeds	• Processes initiated to develop comprehensive genetic resource policy framework; • Pilot activities in the conservation of traditional crop varieties being undertaken, but not enough effort. • No indigenous livestock breed conservation programmes in the country. • Genetic diversity is slowly eroding and being replaced by high producing breeds that require high management (feeding and disease control) for which the traditional farmer has no capacity.
Goal 4: Promote sustainable use and consumption Target 4.1 Biodiversity-based products derived from	Goal: Sustainable use and management of biological resources	

[3] Derived from the PRSP, TNDP, draft FNDP, the Biodiversity Strategy and Action Plan and ZFAP and other national strategies

sources that are sustainably managed and production areas managed consistent with the conservation of biodiversity Target 4.2: Unsustainable consumption, of biological resources, or that impacts upon biodiversity reduced Target 4.3: No species of wild flora or fauna endangered by international trade	Targets: • Develop and implement local management systems that promote sustainable use • Establishment of maximum sustainable yields of biological resources • Design and implementation of monitoring frameworks	
Goal 5: Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced Target 5.1: Rate of loss and degradation of natural habitats decreased	Goal To moderate deforestation by influencing land management practices and wood energy supply and demand Targets • Pace of deforestation reduced through improved land management practices and by more efficient use of existing wood resources for wood energy supply and demand.	• No comprehensive stock assessments carried out in recent years • Rate of deforestation of forests high; encroachment of forest PA's increasing; degradation of animal habitats in several national parks and game management areas
Goal 6: Control threats from invasive alien species Target 6.1: Pathways from major potential alien invasive species controlled Target 6.2: Management plans in place for major alien species that threaten ecosystems, habitats or species	• No national targets comprehensively elaborated	• Report on Information on Invasive Alien Species (IAS) in Zambia prepared in 2004
Goal 7: Address challenges to biodiversity from climate change, and pollution Target 7.1 Maintain and enhance resilience of the components of biodiversity to adapt to climate change Target 7.2: Reduce pollution and its impacts on biodiversity	• No comprehensive national targets elaborated	• Meteorology as a sector is now being recognised as an important tool for better resource management • A Meteorology Policy is in draft • Meteorology Department providing reliable high quality data for inclusion in national reports. • National Action Plan to implement UNCCD in place.
Goal 8: Maintain capacity of ecosystem to deliver goods and services and support livelihoods Target: 8.1 Capacity of ecosystems to deliver goods and services maintained	• No disaggregated national targets except through the maintenance of the PA system	• Woodlands, inland waters outside of protected areas at risk from expanding agriculture, impact of the day-to-day use of the

Target 8.1 Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained		woodland by peri-urban and communal area dwellers that depend on the woodland products for livelihoods.
Goal 9. Maintain socio-cultural diversity of indigenous and local communities Target 9.1: Protect traditional knowledge, innovations and practices Target 9.2: Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing	*Goal:* promotion of the development and preservation of national arts and culture and promotion of the expression of folklore and culture among ingenious people.	• Systematic identification of appropriate indigenous technologies and promote their application and upgrading initiated • Investigations into the effectiveness of traditional medicines in treating HIV/AIDs in progress
Goal 10: Ensure the fair and equitable sharing of benefits arising out of the genetic resources Target 10.1 All transfers of genetic resources are in line with the CBD, International Treaty on Plant Genetic Resources for Food and Agriculture and other application agreements. Target 10.2: Benefits arising from the commercial and other utlisation of genetic resources shared with the countries providing such resources	*Goa*l: ensure the equitable sharing of benefits from the use of Zambia's biological resources <u>Target</u>: • Develop and adopt a legal and institutional framework which will ensure equitable share of benefits • Improving national capacity to effectively negotiate for equitable sharing of benefits at international level	• Situation analysis concerning implementation of the Bonn Guidelines and their utlisation in Zambia prepared, further strategies expected as a follow-up to the report.
Goal 11: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention Target11.1: New and additional financial resources are transferred to developing country parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20. Target 11.2 Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4	• strengthening the financial system, • improving public sector budgeting and accounting systems, integrating aid with National plans, designing national development strategies through dialogue with stakeholders, • implementation of the public sector reform programme • improving the budgeting system, • improving debt management and capacity and, • strengthening the enabling environment for private sector development and foreign investment flows.	• Increased external aid flows between 2002-2004 • Debt cancellation under the Heavily Indebted Poor Countries (HIPC) initiative attained in April 2005. • Best practices in innovative financing for biodiversity conservation and sustainable use explored • Reform of public sector institutions • Development of a five-year Financial Sector Development Plan (FSDP);

		• Preparation of the rural financing policy and strategy in 2005;

6.0 Global Strategy for Plant Conservation (GSPC)

Plants constitute a vital component of the biodiversity spectrum in Zambia. The country is endowed with the diversity of geomorphologic units, geological formations and soil types, which have all given rise to a corresponding floristic diversity. The floristic diversity supports a correspondingly high diversity of fauna as is apparent in the existing protected areas. The achievements of the GSPC targets were expected to contribute towards the achievement of the MDG#7. The GSPC targets are recognised in the National Biodiversity Strategy and the Zambia Forestry Action Plan. Progress towards achievement of the GSPC targets is summarized below:

Target 1: A widely accessible working list of known plant species, as a step towards a complete world Flora

The proposed strategy addresses the plant kingdom with particular focus on vascular plants and Bryophytes (mosses and allies). Zambia does not have widely accessible working list of plant species. However the wealth of data on Zambian vascular plants prompted the compilation of a checklist of this group during the period under review. The checklist included four broad categories: pteridophytes, gymnosperms, monocotyledons, and dicotyledons. Algae and bryophytes were excluded. Under each plant group, the families have been arranged in alphabetical order. The Checklist is a valuable contribution of basic of information for plant biodiversity management in Zambia.

Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels

Zambia still needs to undertake a comprehensive assessment of the conservation status of all known plants in the country. However the status of a few plant species was assessed and included: orchid, a near endemic *encephalartartos schmitizi,* and some timber tree species such as the Zambezi teak. Zambia participated in the development of a revised Red Data list for Southern Africa from which a National Red Data List was derived. The National Red Data List provides information on the status of threatened plants in the country. The RDL provides background for policy decisions affecting threatened plant species in Zambia. The University of Zambia Herbarium initiated the development of a plant database using the PRECIS software in order to adopt standardisation of data with the sub-region.

Target 3: Development of models with protocols for plant conservation and sustainable use, based on research and practical experience

The University of Zambia continued to improve its Teaching Botanic Garden which was designed to serve as a field laboratory for students of botany, ecology and biogeography. The Teaching Botanic Garden was used for practical guidance

on how to conduct plant conservation and sustainable use activities in particular settings and integrated *in situ* and *ex situ* conservation approaches

In addition several initiatives were underway for the development of additional botanical gardens across the country for the purposes of scientific research, conservation, display and education. These initiatives were expected to start in Chibombo and Mpika districts for which land has already been allocated for the gardens. Ongoing work at the Munda Wanga Gardern, last three years has strengthened the garden and enabled the establishment of new botanical collections. Munda Wanga also started a Threatened Plants Programme.

Target 4: At least 10 per cent of each of the world's ecological regions effectively conserved.

No official analysis of the extent and protection of Zambia's ecological regions were available. However preliminary analysis suggests that of the fourteen major vegetation types only four were adequately conserved by national parks. However the picture is better if game management areas and forest reserves are included in the analysis. The MDG report of 2005 indicates that 39.6 % of Zambia's land surface was under protection for the maintenance of biological diversity. Proper analysis requires robust data. Zambia's data base on key habitats, species, and their protection is currently weak.

Target 5: Protection of Fifty per cent of the most important areas for plant diversity assured

Important Plant Areas (IPAs) have been identified. Most areas important for plant diversity were protected under the current system of protected areas which comprised national parks, game management areas, and local and national forest reserves. However many areas were threatened by encroachment and habitat destruction.

Target 6: At least thirty per cent of production lands managed consistent with the conservation of plant diversity

While much of the country side still has impressive courage of trees and plants, slash and burn traditional farming methods of farming negatively impacted on forests and woodlands. Equally modern mechanised farming methods that require the clearing of land contribute to the deforestation and degradation of wooded areas. However sustainable production methods were being encouraged such as selective harvesting of trees, loping of branches in the slash and burn systems rather than felling the entire tree, experimentation with on-farm maintenance of agro biodiversity and tree planting of degraded areas.

Target 7: 60 per cent of the world's threatened species conserved in situ

Zambia is contributing to the conservation of the worlds threatened plant species through the protected area network. Close to 40% of Zambia's land surface is under protection either in the form of national parks or forest reserves. However management effectiveness of the protected areas continued to a source of concern. Seven Zambian habitats and 146 plant species have been defined as threatened in the Southern Africa Plant Red Data List. The main cause of eco-system disturbance was uncontrolled human activity, driven by population growth and poverty, making unsustainable natural resource use practices more widespread.

Target 8: 60 per cent of threatened plant species in accessible ex situ collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes

The National Plant Genetic Resources Centre maintained a collection 4,500+ germplasm accessions of about 40 different crops and plants. Crop species for which collection where not adequate included those not cultivated but harvested for use at local community level. Other gaps included pasture, fodder and fruit tree species. Zambia adopted measures for the re-introduction of threatened species into their natural habitats under appropriate conditions under the NPGRC. Zambia has not developed a threatened plant species programme.

Target 9: 70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated local and indigenous knowledge maintained

As stated above the National Plant Genetic Resources Centre maintained a collection of germplasm accessions. Work started on the identification of medicinal plants including the determination of the ecological requirements of each specie in close collaboration with the Traditional Healers and Practitioners association of Zambia.

Target 10: Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems

Although invasive alien species were identified no comprehensive management plans have been put in place. Approach to management has been to fire fight problems areas. Recommendations from a national status report on alien invasives are expected to be followed up.

Target 11: No species of wild flora endangered by international trade

Data relating to international trade in wild flora is scanty and therefore difficult to determine the impact of trade on particular species of plants.

Target 12: 30 per cent of plant-based products derived from sources that are sustainably managed

Production forests ensured the supply of timber to the nation. The opportunities for increase production volume based on indigenous forests were limited mainly because a large part of the resource was too far from the markets; well-stocked areas were heavily harvested and more remote areas often not economically exploitable. Commercial indigenous timber harvesting was mainly for the supply to the local market. Non-wood forest industries showed promising growth. Encroachment and illegal settlement were increasing problem in many forest reserves. In Zambia certification has not developed as a national process, thus precluding opportunities for linking certification with trade and sustainable use.

Target 13: The decline of plant resources, and associated local and indigenous knowledge innovations and practices that support sustainable livelihoods, local food security and health care, halted

Until recently, there has been no deliberate promotional policies on indigenous technologies and hence, their development and upgrading has been minimal and in most cases non-existent. This was partly caused by the absence of baseline data on indigenous technologies. A baseline survey of indigenous knowledge was initiated by the Ministry of Science and Technology whose focus would be medicinal plants.

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, educational and public awareness programme

One of the greatest threats to plant diversity is the lack of awareness and knowledge. The University of Zambia Herbarium was the most active botanical centre in the country and provided identification services to research institutions, as well as local and foreign postgraduate students affiliated to the University of Zambia. The herbarium also provided teaching facilities to undergraduate students and short-term regional workshops in Plant Genetic Resources programmes. The Munda Wanga Trust developed a holistic environmental education and interpretation service. The Botanical Gardens and the Wildlife Park provided an accessible outdoor classroom dedicated to raising awareness and stimulating interest. One of the challenges of communicating the importance of plant diversity and the need for its conservation was translating technical material into readable and interesting material for the general public.

Target 15: The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this strategy.

Zambia had a shortage of professional botanists, taxonomists, horticulturists and plant diversity specialists. With the assistance from SABONET, Zambia was able to train 5 plant taxonomists and also trained a further 25 individuals in herbaria methods, database management environmental impact assessment, aquatic plants, grass identification, pteridophytes, miombo, botanical gardens and the Red Data List through the participation in short courses held in the sub-region.

Target 16: Networks for plant conservation activities established or strengthened at international, regional, and national levels.

Zambia participated actively and benefited from the activities of the Southern African Botanical Network. SABONET helped to build capacity in the Curation of botanical specimens by supplying museum material, which was then distributed to the Forestry Herbarium in Kitwe, Mount Makulu Herbarium in Chilanga Mfuwe Herbarium at Chinzombo Wildlife Research Station and at the University of Zambia. These herbaria are now a source of botanical information relevant to conservation programmes.

7.0 Ecosystem Approach

Zambia has considerable experience in the application of the ecosystem approach in a number of areas. During the period under review, the Zambia Wetlands Policy, the Water Resources Action Program (WRAP), the Miombo program in the Ministry of Agriculture and Cooperatives, the Protected Areas Reclassification Project at MTENR, the Zambia Forestry Action Project (ZFAP), the Lake Tanganyika Biodiversity Project all targeted particular ecosystems and adapted to the national and sub-national levels taking into account the principles and guidance provided by the COP.

Further Zambia made efforts at strengthening capacities, exchanging experiences, facilitating technology transfer and raising awareness for the application of the ecosystem approach in addition to promoting regional cooperation in applying the ecosystem approach across national borders through collaborative initiatives. These included the ZIMOZA initiative in the dry and subhumid lands of Zambia, Zimbabwe and Mozambique; the African Wildlife Foundation (AWF) African Heartlands Programme in the Lower Zambezi area (Zambia and Zimbabwe) and the Four Corners (Botswana, Zambia, Zimbabwe, Angola and Namibia); and the World Wide Fund for Nature, Miombo Ecoregion Conservation, all which followed the integrated ecosystem approach.

Zambia also continued to cultivate an enabling environment for the implementation of the ecosystem approach, through the development of appropriate institutional frameworks through the Zambia Wildlife Authority, the Forestry Department, Department of Water Affairs and the Fisheries Department which carried the mandate to implement ecosystem approach.

The lack of alternative sources of livelihoods continued to force rural communities to over-exploit ecosystem goods and services. Thus, people utilized unsustainable fishing methods, fished during spawning periods, over-hunted, made charcoal, and cultivated in unsuitable areas because they had no alternatives to meet their day-to-day needs. Therefore, the lack of alternative sources of livelihood to unsustainable exploitation of resources featured prominently as a root cause for degrading ecosystems and problems afflicting fisheries, forests and woodlands, wildlife, and soil resources.

The problems caused by rural households attempting to meet household needs were compounded by an institutional framework that was unable to undertake cross-sectoral ecosystem management. The were concerns raised over the weak horizontal coordination among the Ministry of Lands; Agriculture and Cooperatives; Tourism Environment and Natural Resources; Mines and Minerals Development; Energy and Water Development discussed elsewhere in this report. To the set of weaknesses in government institutions, could be added the virtual absence of national NGOs with participatory biological resource management capacity, and weak local-level organizational and managerial capacity. Thus, weak institutional capacity, government and otherwise, was also a root cause of threats to Zambia's ecosystems.

8.0 Articles of the CBD

8.1 Cooperation

Zambia values its cooperation with the international community and continued to cooperate under multilateral and bilateral frameworks to implement the articles of the Convention. Under multilateral cooperation Zambia is a member to several international agreements which impact on biodiversity. In this respect during the period under review Zambia attended the following important meetings:

- The WSSD- Johannesburg, 2003
- CITES
- Ramsar
- SADC
- UN-CBD, UNCCD, UNFCCC
- Scientific Bodies of the key conventions and agreements
- Genetic Resource Policy Initiative (GRPI)- an international programme for strengthening capacity to analyse national genetic resources policy options

Within the sub-region, Zambia cooperated with other countries under:

- SADC Protocols – Wildlife, Water, Forests and Agriculture
- Transboundary initiatives discussing transboundary conservation initiatives
- Biotechnology and Biosafety management
- Southern Africa Biodiversity Conservation Programme
- Cooperation in the Integrated management of dryland biodiversity through land rehabilitation
- Southern Africa Botanical Diversity Network (SABONET)

- Under bilateral cooperation Zambia continued to accord priority to collaboration under bilateral agreements.

Additionally, Zambia and her development partners, reached agreement in 2004 to enhance aid effectiveness through aid harmonisation and coordination for the betterment of the Zambian people both individually and cooperatively in poverty reduction and the Millennium Development Goals (MDGs). The spirit of this understanding emanated from the work of the OECD/DAC, the resolutions of the Monterrey Consensus (2002), the Rome Declaration on Harmonisation (2003), the Strategic Partnership with Africa (SPA) and further developed in Zambia through the Harmonisation in Practice Initiative (HIP) and the HIP Framework of Actions (2003), and the World Bank Report on Donor Coordination (2003). Government and development partners generally agreed on the following core areas:

- Delivery of development assistance in accordance with Zambia's needs and priorities;
- Alignment with GRZ systems such as national budgets cycles, financial systems and monitoring processes; where these provide reasonable assurances that cooperation resources are used for agree purposes;
- Addressing institutional capacity limitations and other constraints that prevent reasonable assurance on use of cooperation resources.
- Review of multiplicity of different donor missions, conditionalities and documentation with the aim of reducing government transaction costs;
- Promotion of coordination and Harmonisation at all levels
- Working towards delegated responsibility among donors at country level where it is legally and administratively possible
- Improvement of information sharing and understanding of commonalities and differences in our policies, procedures and practices

Between 2000 and 2004, however, aid delivery continued to be fragmented despite the presence of the Harmonisation in Practice (HIP) Initiative. In order to consolidate HIP Government and the Cooperating partners further devised the Joint Assistance Strategy (JAZ) - strategy for a harmonised coordination framework and practice in aid delivery.

Through the HIP process, an Aid Policy was drafted and has been submitted to Cabinet for approval. The main objective of the Aid Policy is to ensure that Zambia has a clear, systematic, and well co-coordinated approach for soliciting and managing aid from cooperating partners. In addition an information management system to capture and monitor the flow and effectiveness of external aid flows was in the process of being developed during the period under review and expected to be ready in 2006.

8.2 General Measures for conservation and sustainable use

During the period under review the NBSAP continued to be the key national programme that outlined measures for conservation and sustainable use of

biodiversity. Government finalised preparation of the National Policy on Environment, reviewed the National Energy Policy and commenced activities that would lead to the establishment of the Forestry Commission (possibly by January 2006) and effect the enforcement of the Forestry Act of 1999. The preparation of a Biodiversity Bill was in progress.

At macro level government prepared the Transitional National Development Plan in 2000, followed by the Poverty Reduction Strategy Paper in 2002 and initiated the preparation of the Fifth National Development Plan (NDP) in 2005. The Government also developed a National NEPAD Action Plan through a consultative process. These national level strategies attempted to translate the measures established in the policy and legal frame work into action.

Preliminary indications are that some capacity building conservation and sustainable use has taken place on the individual and institutional levels. Many individuals in Zambia have benefited from expanding education and training programs covering global environmental issues, and awareness for these issues has been found to have increased since the Rio United Nations Conference on Environment and Development (UNCED) in 1992.

Institutional capacity also significantly improved in Zambia, measured by the number of organizations and government agencies newly created or that now incorporate capacity to deal with climate change, biodiversity and desertification issues. But national experience shows that lack of funding and political will, may in many instances undermine newly created individual and institutional capacity. Another obvious weakness was lack of monitoring framework that could have been used to measure the targets integrated into the programmes. The NSABP for has not been evaluated since inception in 2000.

In as far as Climate Change issues are concerned; Zambia ratified the Kyoto Protocol aimed at reducing the concentration of Green House Gases that bring about climate change. Greenhouse gases in Zambia (carbon dioxide, methane and nitrous oxide) were negligible compared to world levels. Despite low green house gas emissions the threat of climate change was still imminent because of the global situation with respect to greenhouse gases. Predicted temperature warming in Zambia is expected to decrease rainfall in the range of 8% to 30% and the frequencies of drought expected to be more pronounced in agro-ecological zone I which covers the valley areas (Gwembe, Lunsemfwa, and Luangwa and the southern parts of western and southern provinces. If predictions are confirmed, agriculture revenues are expected to decline by 100% and 60.37% in the southern and northern parts of the country respectively from the impacts of climate change. During the period under review, climatic effects resulted in substantial shocks to the national economy and the livelihoods of poor households in rural and urban areas from drier agriculture seasons. This vulnerability will in future further stress biological resources and the environment in general.

Although Zambia produces none of the Ozone depleting chemicals it had an international obligation under the Montreal Protocol to reduce the consumption of the chemicals within its borders. During the period under review a baseline target of 28.1 tons was established for compliance with respect to ODS consumption. Zambian ODS consumption thus reduced from approximately 31.0 tons in1996 to approximately 10 tons in 2003. Ideally consumption should reduce to zero as ODS alternatives are increasingly used in industry in the country (ECZ 2003).

The portfolio of projects promoting conservation and sustainable use included:

- Development of strategies and increase in national capacity to protect the environment and support sustainable development under the UNDP supported Environmental Protection and Natural Resources Management Project working to develop a National Environmental Policy; adapt international conventions on environmental protection and natural resources management to the national level; and develop gender mainstreaming tools for the environment and natural resources sector. In addition, the GEF-funded NCSA process which would help Zambia determines its priorities for capacity building to implement the three key Rio Conventions.

- Promotion of the adoption of sustainable land management practices in Zambia, and improvement of rural livelihoods, through the UNDP funded Kasama Youth Training Centre to provide training, production, research and development of sustainable agricultural practices based on the Benin's "Songhai Centre Model"., which emphasized use of local resources, hybridization of traditional and modern agricultural practices, encouragement of individual and communal initiatives. The adaptation of the Songhai experience from Benin to Zambia was an excellent example of South-South cooperation.
- Promotion of the conservation and sustainable use of globally significant biodiversity in Zambia through a GEF-funded National Protected Areas System project incorporating policy, governance, institutional capacity and protected area management as key drivers with the active participation of the public and private sectors, local communities, and civil society organizations.
- Participation in an Africa regional methyl bromide (Me. Br.) phase-out project, implemented by UNDP for low-volume consumers, which provided policy-strengthening assistance to prevent the introduction of methyl bromide use in the country.

8.3 Identification and monitoring of biodiversity

Biodiversity identification is important for providing much needed information for programmes related to biological diversity conservation. Zambia has broadly identified its major ecosystems. Types of species: of fish (408 spp), animals (211 spp) and plant (3000+ spp) have been identified and recorded. The identification

of new species has been few and wide apart. However mention should be made of the SABONET expeditions in the country that led to the identification of species in the Nyika and Mpika area. Constraints on financial resources precluded effective identification of new species.

Monitoring and Evaluation systems continued to be a barrier to effective biodiversity conservation during the period under review. There was limited routine monitoring of biodiversity undertaken during the reporting period. An initiative to develop a national monitoring plan for the NBSAP through the Task Force with IUCN support did not progress as expected. To no date national monitoring plan has been prepared as a companion to the NBSAP.

While methodologies for monitoring large charismatic mammal populations are relatively better developed, very little has been done in other sub-sectors of biodiversity management in the development of effective monitoring techniques. Monitoring of wildlife populations was not consistent nor was the monitoring of forest cover loss and the monitoring of ecosystem health generally, meaning that issues of sustainability were not clearly understood. Both the Zambia Wildlife Authority and the Forest Department have had limited funds for an operational M&E program. Zambia's databases on key habitats, species, their protection, protected areas and major threats (especially agriculture/settlements) are thus very weak. Attempts to develop and entrench monitoring frameworks were project based and ended when donor funding such as the Dutch funded system for monitoring wildlife populations at the Environmental Council of Zambia and the World Bank funded Environmental Support programme at the Ministry of Tourism Environment and Natural Resources.

There were no regular inventory and monitoring programmes in place for commercial timber species. This was also true for agro-biodiversity and aquatic biodiversity where inventories and monitoring systems are only in place for species of economic importance such as cash crops and fish respectively.

Thus reliable data continued to be scare. Questions continued to be raised about methodology and replicability, and gaps in the data precluded the effective analysis of trends in the status of the biodiversity. At organizational and institutional level, the formal monitoring or regulation of biodiversity agencies by the MTENR continued to be weak and so was the monitoring of management partnerships for biodiversity conservation.

Assuming a functioning evaluation and monitoring system were in place the country would be able to provide answers to the following issues for protected areas[4]:

[4] Chabwela, H. and Gaile, B. (2004) Monitoring *and Evaluation Plan for Protected Area*, Consultants report submitted to MTENR under the Reclassification of Zambia's Protected Areas Systems Project

- The question of whether or not the existing protected area system covered the most important biodiversity for the country;
- The distinction between broad and general definition of objectives for all protected areas and site-specific measurable objectives and their translation into measurable targets and measurable indicators.
- the effectiveness of instituted management systems;
- Appreciation of the general protected area conservation values versus site-specific significance;
- Adequacy and appropriateness of management processes including management efficiency and the appropriateness of methods, activities and inputs;

8.4 Taxonomy

Zambia's taxonomic capacities are weak. Experts agree that a significant number of organisms remain undescribed and unrecorded. This was attributed to the sparse taxonomic understanding in a data poor environment and shortage in experts. Collaboration between ZAWA, UNZA, the Forestry Department and other agencies, and SABONET culminated in the training of only five taxonomists during the period under review. The absence of a comprehensive assessment of the taxonomic needs of the country meant that taxonomic work was adhoc and dependent on project funding.

The few taxonomic initiatives under taken during the period under review included:

- ZAWA collaborated with Green Force a UK non-governmental organisation to generate biological and ecological information for the Kafue National Park, focussing on filling in taxonomic gaps. Species for which information was collected included: large mammals, birds, rodents, shrews, reptiles and amphibians, butterflies and beetles.
- Nyika Expedition which culminated in the publication of "Plants of Nyika: a conservation checklist
- Survey of Edible Orchids of Zambia to establish the eco-geographical distribution of the species including the collection herbarium specimens in order to establish species conservation status and proposed practical measures for sustainable utilisation.
- A survey of cycads which culminated in the identification of small community of endemics in the *encepharlatos schmitzii* the Bwinjifumu Forest of the Mpika District.

9.0 In-situ Conservation

In-situ conservation continued to be the most appropriate mode of conservation of biodiversity and was recognised in several biodiversity conservation strategies. The protected area network comprising national parks, game management areas, wildlife sanctuaries, game ranches, national and local forest reserves, botanical

reserves, Ramsar sites, and heritage sites was maintained. The strategy for resource protection in these localities was premised on both physical restraints and the change of people's attitudes toward biological resources. Sensitization of people especially local communities was intended to create and develop in individuals and communities, internally driven positive attitudes towards biodiversity. Investigations and prosecutions especially in wildlife areas formed an important part of in-situ biological resources protection. Logistics involved in these operations were costly and could have been made more effective with the availability of aerial surveillance.

Some progress was achieved in the preparation of General Management Plans (GMPs) for national parks and land use plans for game management areas. Five GMPs (Kafue, Lochinvar, Lower Zambezi, Blue Lagoon and North Luangwa national parks were prepared during the period under review. Seven (7) other GMPs were in draft. Eight (8) parks had no GMPs.

As for the categories of other PAs not much progress was reached in finalizing management plans although attempts were made to develop resource management plans the Joint Forest Management Plans under the Provincial Forest Action Programme (PFAP).

No new national parks were designated. Only one new Game Management Area, Mufunta on the western boundary of the Kafue National Park in the Kaoma area is in the process of being designated. During the period under review Government through the MTENR developed a proposal with intent to review and reclassify the protected area (PA) system and to develop models for the effective and sustainable management of Zambia's protected areas within the framework of the Zambia National Biodiversity Strategy and Action Plan (NBSAP).

10.0 Tracking of the introduction of invasive alien species into the Zambian territory

Plant Species known to be invasive in Zambia are mainly weeds and include the Kafue weed (*Eichhornia crassipes), Lantana camara, Mimosa pigra,* and *Kariba weed, (Salvinia molesta),* (NBSAP 1999). Aquatic weeds have had a particularly negative impact on the wetland habitat. IAS introductions into Zambia were either intentional or accidental. Invasive alien plants came in as ornamentals, mammals were brought in for the delight of the spirit and sense and fish for fish farming purposes[5]. Most invertebrates and microbes introductions have been *accidental,* often attached to other species introduced intentionally.

[5] MTENR, (2004) Report on Information on Invasive Alien Species (IAS) in Zambia, Southern African Biodiversity Support Programme, IUCN

Often agricultural weeds have been introduced as contaminants of crop seeds, whereas most of the environmental weeds were purposefully planted as ornaments, for soil stabilization, for firewood, etc. some times supported by ill-guided aid programmes or commercial ventures. All the declared noxious weed species of Zambia were introduced intentionally as ornamentals for erosion control and hedge plants for boundary fences.

The lack of monitoring capacity was one of the major institutional problems during the reporting period. Monitoring alien species is highly technical and required well-trained experienced technical staff. All mandated institutions were very limited in their capacity for monitoring the floral and faunal spread of alien species in the country. During the period under review, however, a National Steering Committee comprising the private and public institutions was set up to jointly plan long term actions on invasive plants, in addition to building capacity for sustainable invasive alien species management in Zambia.

11.0 Traditional Knowledge and related provisions

Government's intention in traditional knowledge management during the period under review was to develop a national policy for protecting indigenous knowledge and genetic resources. In this regard baseline activities aimed at assessing how people used traditional knowledge and biological resources, and how much users knew about patents and intellectual property were critical. When developed the draft policy would incorporate strategies to address concerns about the protection of traditional knowledge.

Until recently, there have been no deliberate promotional policies on indigenous technologies and hence, their development and upgrading has been relatively low key. This has been partly caused by the absence of baseline data on indigenous technologies.

At sector level Zambia developed capacity-building programs to involve and enable smallholder farmers, indigenous and local communities, and other relevant stakeholders to effectively participate in decision-making processes related to genetic use restriction technologies through the Agricultural Commercialization Program (ACP), Agricultural Policy and the Agricultural Development Support Project (ADSP).

Significant effort was directed towards implementing capacity-building programs which involved and enabled smallholder farmers, indigenous and local communities and other relevant stakeholders to effectively participate in decision-making processes related to GURTs through the NPGRC.

Support was provided to indigenous and local communities in undertaking field studies to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities through the Zambia Alliance of Women and the Zambia Lands Association.

However Zambia did not progress in incorporating the Akwe: Kon Guidelines into national legislation, policies, and procedures. Consequently no legal and institutional review was undertaken for matters related to cultural, environmental and social impact assessment in order to integrate the guidelines. Further Zambia did not use the AkweiKon Guidelines in any proposed project sited on sacred sites and/or land and waters traditionally occupied by indigenous and local communities.

12.0 Capacity building and participation of indigenous and local communities

The community based approach to biodiversity conservation that has taken root in Zambia is based on the principle (among others) that communities' capacities are built and communities genuinely empowered to manage and benefit from the management biodiversity in their localities. This has been easier said than done. With regard to capacities and empowerment, local communities have not been fully empowered.

Communities were still passive and biodiversity conservation agencies such as ZAWA and Forest Department still dominant their roles in biodiversity management. Communities still needed proficiency in biodiversity management, allocation and negotiation of wildlife/forest concessions, and the equitable sharing of benefits derived from utilisation of biodiversity. In addition, capacity continued to be weak in financial management and community mobilisation. The lack of effective monitoring negated successes where these community capacities have been built, as in wildlife. Participatory monitoring methodologies were also not sufficiently developed.

Government's move towards decentralisation following the adoption of the Decentralisation Policy in 2002 triggered debate as to how issues of local level capacity building and participation could be better addressed and consolidated from a much boarder perspective and institutional framework that supported democracy and poverty reduction.

Under the Decentralization Policy the district became the recognized unit to which resources were to be devolved. This arrangement presented an excellent opportunity for facilitating better biodiversity management and coordination of all development issues at the district and sub-district level. In practice however local level institutions still work in isolation of each other.

13.0 Support to Implementation

During the period under review Zambia maintained the National Biodiversity Steering Committee hosted at the MTENR, which coordinated issues of biodiversity but also provided direction to biodiversity initiatives.

The Ministry also hosted the Sector Advisory Group, whose responsibility was to guide input into governments' national development frameworks. The work of the SAG culminated into the preparation of the Poverty Reduction Strategy Paper (200-2004) and the Draft of the Fifth National Development Plan (2006-2011). The Tourism and Environment SAG (which also included biodiversity) was comprised of representatives from key stakeholders, brought together to enrich input and drafting of these two important national documents and thus critical to PRSP and FNDP processes.

Another key forum was the National Consultative Forum, (NRCF) established in 2005 to be an impartial institution to influence government policy direction by creating the necessary interest and drive amongst stakeholders. The MTENR facilitated and promoted participation in the forum, however the momentum for networking, sharing information and ideas amongst the stakeholders did not progress as anticipated. In as far a its advisory role was concerned, the NRCF successfully prepared and delivered an Advisory Note to Government in respect of Joint Forest Management.

A related development was the formation of Community Based Natural Resources Management Forum (CBNRMF) specifically formed to promote and guide community based natural resources management in Zambia. The forum is supported by WWF under the WWF Regional CBNRM Capacity Building project and devising strategic direction for its work.

At the local level, Community Resource Boards, Joint Forest Management Committees and Fisheries Committees have been established to support biodiversity conservation and management at the local level. The local level institutions, of which the CRB's are the strongest, are supported financially from benefits from biodiversity utilisation. However capacities are still limited. Community development and biodiversity conservation plans are still spearheaded by the parent agency.

Generally civil society in Zambia has shown a potential to considerably contribute to the human, social, political and economic development of the country. However the work of civil society in environment and specifically in biodiversity conservation remained weak. Civil society organisations – as well as the state - were heavily donor dependent. This resulted in a highly competitive environment and placed serious constraints on home-grown strategies for biodiversity conservation.

Civil society organisations that operated in rural areas had a tendency to implement prescribed programmes. Frequently, these did not sufficiently respond to local needs and take into account local knowledge, interest and level

of organization. There was a definite lack of efficient coordination and collaboration within and between sub sectors of activity, regions and issues. In the same area, activities often duplicated efforts or contradict each other.

14.0 Ex-situ conservation

Priorities for ex-situ conservation focussed on the strengthening of existing institutions established for ex-situ conservation. These included the Botanical gardens at Munda Wanga, Herbarium at the University of Zambia, Forestry Department and Mt. Makulu, National Gene Bank at Mt. Makulu, fish breeding at Mwekera Veterinary research facilities and private game ranches.

Through membership to the SADC Plant Genetic Resources Center at Chalimbana near Lusaka, Zambia has adopted measures for the *ex-situ* conservation of components of biological diversity native to our country and originating outside our country. The National Plant Genetic Resources Center (NPGRC) was also used for this purpose.

Another important center was the National Herbaria based at the University of Zambia, which focussed on improving the technical capacity of the Herbarium Staff.

The National Plant Genetic Resources Centre continued to maintain a collection under its long term storage conditions using the principle of low moisture content and subzero temperatures. The national gene bank held 4,500+ germplasm accessions of about 40 different crops and plants. Crop species for which collection where not adequate included those not cultivated but harvested for use at local community. Other gaps included pasture, fodder and fruit tree species. Zambia adopted measures for the re-introduction of threatened species into their natural habitats under appropriate conditions under the NPGRC.

Further measures were adopted to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species.

15.0 Sustainable Use of components of biodiversity

The Government of Zambia continued to accord importance to the sustainable use of components of biological diversity and thus gave priority to exploring the best ways of involving local communities in the promotion of sustainable use. In this respect, Zambia continued to refine its policies and legislative framework to facilitate sustainable use. Policy and legislative reform was focussed on the Zambia Wildlife Policy, Zambia Forestry Policy, Zambia Water Policy, Zambia Wetlands Policy and the Zambia Fisheries Policy. These policies formed the basis of legislation in the specific sectors.

Specific measures adopted related to development and implementation of management plans for wildlife protected areas, forest reserves and other conservation areas. In addition under community based approaches, measures were put in place to protect and encourage customary uses of biological resources compatible with conservation or sustainable use requirements

Under various conservation programmes measures were put in place that assisted local populations develop and implement remedial action in degraded areas where biological diversity has been reduced. Through poverty alleviation programmes associated with community based natural resource management programmes sustainable use practices have been integrated to promote the sustainability of ecosystems.

In addition Zambia put in place the Tourism and Forestry Development Funds which are national mechanisms for involving and promoting sustainable use in the private sector.

During the period under review Zambia did not initiate processes to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity (Decision VII/12), nor did it take any initiative or action to develop and transfer technologies and provide financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity (Decision VII/12)

16.0 Biodiversity and Tourism

The large mammal and avifaunal biodiversity continued to be the basis for photographic/eco-tourism and hunting tourism in Zambia. The photographic tourists mainly visited the national parks –Lower Zambezi, Kafue, South Luangwa and the Livingstone areas. Hunting tourism was mainly based on safari hunting by foreign tourists and facilitated through a system of safari hunting licenses in Game Management Areas. Safari hunting contributed approximately 90% of all hunting revenues, based on approximately 10% of the annually agreed quota of huntable animals.

The impacts of the two forms of tourism are yet to be understood. While it has been argued that photographic tourism can create negative environmental impacts at high densities, this is not yet manifest in Zambia because of the relatively low density of numbers of tourists that visited the national parks. There however were areas of abrasion between photographic and hunting tourism that caused concern. Most areas of inter-sector conflict stemmed from policy weaknesses. One prime example that affected lion and leopard populations in the interface areas between national parks and GMA was the current policy requirement that prime hunting areas had to conduct a specific number of hunts regardless of the hunting blocks real ability to support these quotas and combination of species allotted to the hunts. Similar, but slightly reduced

requirements also applied to secondary hunting areas. This policy was intended to ensure that both the ZAWA derived the maximum possible revenues from each hunting block and secondly that a concessionaire did not sit on a valuable concession without using it.

If animal population data inputs and quota setting processes were transparent and adequate, this policy would be understandable. Regrettably the various inputs to the quota setting process were generally agreed to be less than satisfactory and incompatible with sustainable lion and leopard hunting. As a result of this policy there was always the fear that an avid safari outfitter and an under-funded ZAWA could find mutual benefit in driving these quotas upwards – to the detriment, not just of the population dynamics of these predators in the GMAs, but also in adjoining areas of national parks

An associated issue was that safari hunting outfitters could sell their lion and leopard quotas together (lion with leopard), or separately. The area concession fee was paid per hunt. Outfitters sold a combined lion and leopard classic safari wherever possible (and were driven to try and obtain sufficient lion and leopard quotas to do this) – and to hunt as close to the national park boundaries as possible to attract animals out of the protected area with baits.

17.0 Article 11 – Incentive Measures

Zambia continued to refine the community based approach to biodiversity as a way of providing incentives for biodiversity conservation at the local level. No comprehensive measures such as tax incentives or subsidies were provided for at the national level although the cost structures in some sectors such as energy sector acted as disincentives to forest conservation.

Under the CBNRM concept applied in the wildlife sector government restructured benefit sharing following consultation with community institutions and other stakeholders in order to make benefits more visible, tangible and significant. The benefits were intended to act as an incentive for the local communities. In the CBNRM arrangement, which has extended to forest and fisheries sectors, the system itself generates funding to economically empower communities while the other part is ploughed back into conservation activities.

In the wildlife sector, which is slightly more advanced than other sectors, new share ratios were agreed on to the benefit of the communities. Whereas previously communities only received 35% of revenues from total hunting views realised in an area, the new share ratio increased to 45% for the communities. For concession fees communities would now begin to receive 15% of total fees collected where previously nothing was shared with the communities. The Chiefs who were patrons of local level institutions received 5% of hunting fees and 5% of concession fees collected.

Local communities utilized these public funds on agreed local community socio-economic development projects such as schools, health centres and feeder roads. The ZAWA guidelines advised CRBs to allocate 45 % of community revenues to conservation, 35% to social development and 20%for administration. However the fact that less than 50% of community funding apportioned for conservation actually went to conservation in the localities where it was raised cast doubt on the effectiveness of the incentive. Many reasons have been forwarded for this situation. The most repeated being that benefit sharing needs to be viewed in the wider context of devolution in order to have impact. Community control over setting hunting quotas, decision who to sell quotas to and the decision how to use the revenues were some of the issues that needed to be addressed in relation to strengthening incentives to the communities.

18.0 Research and Training

Zambia established programs for scientific and technical education and training in the identification, conservation and sustainable use of biological diversity and its components through training at the University of Zambia-School of natural sciences and School of Agriculture; and national colleges and training institutions that provide training aspects in forestry, fisheries, wildlife and agriculture.

Through various national biodiversity conservation programmes at MTENR and other institutions such as ECZ, ZAWA, NCHS, fisheries and higher institutions of learning Zambia prioritized research contributing to the conservation and sustainable use of biological diversity in the public and private sector. Undertaking actual research in support of the conservation and sustainable use of biological resources was a mammoth task considering the large size of areas to be covered by research units of biodiversity conservation agencies. As a result some key research activities tended to suffer in view of the shortage of research staff. Animal population counts were irregular or not conducted at all. Capacity development in species monitoring, and habitat monitoring systems and database systems which were critical for trend analysis and advice to policy and decision-making remained to be achieved.

With respect to cooperation in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources Zambia cooperated with other countries through the Southern African Botanical Network (SABONET) and the Southern Africa Biodiversity Program. Some of the outcomes and impacts of actions taken included the documentation of vascular plant species in Zambia, the development of a species map for Zambia and an inventory of the grasses of the Nyika area, a joint initiative of Zambia and Malawi,

Regarding the contribution to progress towards the 2010 target, progress in implementing national biodiversity strategies and action plans, Contribution to the achievement of the MDGs, the improved management of biological resources has

contributed to the achievement of the Millennium Development Goals (MDGs) through an improvement in the supportive environment, which has links to the availability of resources and food, improved child nutrition, improved health for pregnant mothers, education, environment and agricultural production.

Zambian institutions have participated in the Programme for the Enhancement of Research Information (PERI) since the beginning of 2002. Under this programme Zambian institutes have been provided with access to electronic information resources; participate in ICT skills training programmes, local research dissemination and management. From inception, it was made clear that countries will have to come up with strategies for sustainable access to electronic information resources, ICT skills training, and research dissemination and management of local journals.

The PERI Country Coordinating Centre, University of Zambia Library, organized a meeting of stakeholders: Librarians and Journal Publishers/Editors in July 2002 to introduce PERI as well as the Consortium concept through which sustainability of the service could be achieved. Three years of PERI implementation has revealed a number of issues that needed to be brought out in discussions and sharing of experiences.

Limited finances and materials resources however severely constrained research.

19.0 Public Education and Awareness

Zambia developed and implemented communication, education and public awareness strategies and promoted public participation in support of the Convention in Zambia in line with global Goal 4.1 of the Strategic Plan under the CBD, of the convention through the environmental education programmes at the MTENR and the Communications unit of the Environmental Council of Zambia (ECZ). Government departments involved in biodiversity such as ECZ, ZAWA, Forestry, fisheries had major responsibility for promoting public education and on the Convention and on conservation of biological resources at national level.

Annual “World Environment Day” celebrations were organised by the MTENR under various themes. The ECZ, more than any other public agency, put out materials and publications for public consumption of brochures, newsletters and posters, and also held exhibitions to disseminate environmental information to the public.

Local workshops and participation of Zambian experts at international seminars contributed to the awareness regarding activities being undertaken to facilitate the implementation of the program of work on Communication, Education and Public Awareness (CEPA) as contained in the annex to decision VI/19 of the COP.

In addition Zambia promoted biodiversity-related issues through the print and electronic media, other media, and public relations and communications networks

at national level through local and international NGOs such as the Wildlife Environmental Conservation Society of Zambia (WECSZ), IUCN, WWF, and AWF.

Zambia continued to provide support to regional and international activities prioritized by the Global Initiative on Education and Public Awareness through attending respective meetings and continued to promote cooperation and exchange programs for biodiversity education and awareness at the national, regional and international levels through meetings and workshops.

Zambia's CEPA activities being undertaken for implementation of cross-cutting issues and thematic programs of work adopted under the Convention are such as development of HIV/AIDS policies for all government Ministries and institutions.

Communicating or sharing of information on the various elements of the 2010 biodiversity target and the establishment of appropriate linkages to the Decade on Education for Sustainable Development in the implementation of the national CEPA programs and activities were mostly done through workshops; The outcomes of the activities were the wide participation of various stakeholders and contribution to wide participation in the management of biodiversity.

20.0 Impact Assessment and Minimizing Adverse Impacts

Encouraging progress has been made regarding the promotion and implementation of Environmental Impact Assessment following development of the Environmental Impact Assessment Regulations of 1997, under the EPPC Act Cap 204, which require listed projects likely to have adverse effects on biological diversity to prepare EIAs. These regulations prevented damage to wildlife, forest and fish biodiversity.

EIA regulations have been incorporated into sector legislation such as the Zambia Wildlife Act, The Tourism Act, the Roads Act and Energy Regulation Act. Major national development programs which incorporated environmental assessments included the Agricultural Development Support Project (ADSP) funded by the World Bank, Road Sector Investment Program (ROADSIP) funded by the World Bank and the SEED project also funded by the World Bank.

During the period under review EIA's were conducted mainly for industry as the awareness of the usefulness of EIA as a planning tool grew. The integration of EIA or Strategic environmental assessment into large sectoral programmes in agriculture, fisheries, forestry and tourism and core national programmes was limited. The ECZ undertook nationwide EIA sensitisation programmes in all provinces in order to sensitise local authorities on the requirements of the EIA process.

Public participation in the EIA process increasingly assumed importance with the holding of public hearings to give opportunity to the general public to interact with the proponents of projects, but more so to air their views on proposed

developments. While useful, public hearings assume a certain level of literacy, awareness and understanding of environmental issues amongst the public to enable them articulate their views in relation to the impact assessment reports. Often this level of awareness and was very limited consequently limiting understanding and appreciation of the EIA process, the assessment report and its contents by the general public.

Zambia put mechanisms in place to prevent or minimize danger or damage originating in the countries borders to biological diversity in the territory of other Parties or in areas beyond the limits of national jurisdiction through the Sanitary and Phytosanitary Services of the Ministry of Agriculture and Cooperatives.

Zambia thus, applied the Guidelines for Incorporating Biodiversity-related Issues into Environment Impact Assessment Legislation or processes and in Strategic Impact Assessment as contained in the annex to decision VI/7 in the context of the implementation of paragraph 1 of Article 14 and decision VI/7 of the COP.

Zambia continued to cooperate with other CBD contracting parties to strengthen capacities at the national level for the prevention of damage to biodiversity, establishment and implementation of national legislative regimes, policy and administrative measures on liability and redress.

Challenges that were encountered in implementing the EIA regulations included:

- Enforcement of the EIA process for developments in national parks and GMAs, mining and agriculture;
- Raising awareness and compliance for projects established before the regulations took effect;
- Harmonising and integrating environmental provisions into other acts such as the Town and Country planning, Land Act, Fisheries Act, Water Act and related policies;
- Reviewing the EIA fee structure and fees in order to adopt a system that would reward compliance and punish non-compliance.

21.0 Access to Genetic Resources

During the period under review, the Zambia initiated implementation of the third objective of the CBD dealing with access to genetic resources and benefit sharing. Of immediate priority was to document existing practices on ABS. The first step in this was to ascertain status of the implementation of ABS principles in Zambia. Consequently a case study on the implementation of the Bonn Guidelines on Access to Genetic Resources and the fair and equitable sharing of benefits arising out of their utilisation in Zambia was prepared by the Ministry of Tourism Environment and Natural Resources in October 2005.

The study discerned that there was a general lack of awareness and appreciation of the Bonn Guidelines in biodiversity management sectors i.e. wildlife, fisheries

and forestry and even among planners, policy makers. Further, there was a lack of awareness among most stakeholders and especially communities on the importance of Access and Benefit Sharing as a tool for improved biodiversity management mainly due to lack of information on best practices and success stories of such initiatives from elsewhere. In addition it was established that there was a general lack of understanding of the concept of Access and Benefit Sharing and misconstrued to be synonymous with CBNRM for which many key aspects of ABS are absent. It was established however that some elements of ABS were being implemented through several community based approaches particularly in the wildlife and forestry sector. The effectiveness of the programmes was varied and ABS was generally constrained by:

- The unfavourable legal and policy frameworks particularly in respect of access and control to biodiversity and the subsequent sharing of benefits arising from their use. There was no holistic enabling legal framework developed for effective implementation of the access and benefit sharing concept as an incentive for sustainable management of biological resources.

- Zambia had no overall strategy for ABS, a major constraint to implementation of ABS principles as required by the Bonn guidelines and the sectoral approaches remained uncoordinated.

- The lack of access to and transfer of technology for conservation and sustainable use from the developed world. Much of the technology transferred was primarily for improved, efficient and effective harvesting of genetic resources and rarely for improved conservation and sustainable use.

- Limitations in the generation of scientific, socio-economic and documentation of indigenous and traditional knowledge on genetic resources due to lack of funds for research in genetic resources for which access was being granted.

- Limitations in exchange of information due to the non-existence of an operational National Clearing-House Mechanism.

- Inadequate provision of financial resources for the country to meet its obligations to the CBD on ABS given the country's preoccupation with economic development and poverty alleviation in its resource allocation to various sectors of the economy.

22.0 Access to and Transfer of Technology

Government directed policy on the development and application of Science and Technology through the National Science and Technology Council (NSTC). The

NSTC Strategic Plan for the period 2002 – 2006 guided the promotion of scientific and technological development for wealth creation. The National Technology and Business Centre (NTBC) was responsible for promoting transfer of technologies both local and foreign and spearheaded the development and application of appropriate indigenous and other technologies in Zambia under the Home Grown Technology (HGT) programme. During the period under review, the National Science and Technology Policy and the National Agriculture Policy and Health policy were reviewed.

Some of the constraints to accessing and transferring technology in Zambia included:

- Inadequate financial and skilled human resources,
- Low accessibility to high-quality laboratory facilities, equipment and supplies.
- Insignificant links with the international scientific community; and low accessibility the global stock up-to-date knowledge.
- Lack of harmonization of S&T laws contained in the various Zambian statues.

23.0 Exchange of Information

Zambia took measures to facilitate the exchange of information from publicly available sources with a view to assisting with the implementation of the Convention and promote technical and scientific cooperation through sponsoring meetings, preparation and dissemination of reports, workshops and posting of information on the MTENR Web site and websites of other biodiversity management agencies. Information was also provided through the submission of national reports to secretariats of Convention of Wetlands of International Importance, Convention on Trade in Endangered Species, Vienna Convention on the Protection of the Ozone Layer and the Montreal Protocol.

Further, information was exchanged with local cooperating partners in biodiversity management through submission of technical reports, project progress reports and end of project reports.

Locally Zambia launched the Zambia Network of Environmental Educators and Practitioners (ZANEEP) in 2002 to promote and facilitate collaboration among environmental educators and practitioners in Zambia by sharing environmental information, resources and experiences. ZANEEP had a membership of more than 90 organisations and individuals. This group of key actors and stakeholders for communication environmental issues was strongly supported by government as a way of integrating biological diversity conservation matters in practice relevant

sectoral and cross-sectoral plans, programs and policies in Zambia. The work of ZANEEP during the period under review culminated in the hosting of the 3rd International Conference on African Zoo and Reserve Educators Network (AZOREN) and the Environmental Education Association of Southern Africa (EEASA) in 2005.

24.0 Technical and Scientific Cooperation

Under bilateral and multilateral collaborative frameworks, Zambia was able to develop methods of cooperation for the development activities in support of the CBD. Specific areas of technical and scientific cooperation included:

- handling biotechnology,
- training in various aspects of taxonomy
- Genetic resources conservation
- research in mammal species and
- Design of projects in support of effective biodiversity management.
- Managing invasive species
- Human resource development
- Project planning and implementation

Biodiversity management programmes and projects that benefited from scientific and technical cooperation included the following:

- The Royal Norwegian, Government- Wildlife conservation and community participation, Development of biosafety
- The Royal Danish Government – Wildlife conservation and community participation, development of collaborative forum
- The World Bank –Support for economic expansion and development focussing on tourism development, strategic planning for the wildlife sector
- UNDP/GEF- Reclassification of protected areas, National Capacity Self assessment, support for environmental and natural resources management, Trade and environment, Environment policy development and legal reform
- Global Water Partnership – IWRM planning and implementation
- WWF- biodiversity conservation, establishment of collaborative forums
- African Wildlife Foundation- heartland programme

Technical and Scientific Cooperation targeted at the development and strengthening of the national capacity in human resources and institutional development related to ABS has remained minimal and hence even the lack of a national overall ABS strategy or policy to-date.

25.0 Handling of Biotechnology and distribution of its benefits

While biotechnology and products of biotechnology can contribute significantly to agriculture, health, environment and industry, Zambia decided to take a judicious approach to its handling. Zambia made international headlines in 2002, when it rejected about 27,000 tons of genetically engineered food aid donated by the US government despite the food deficit situation caused by prolonged drought. The basis of the decision was the country's inability to handle genetically modified organisms and the risk presented to the environment and biodiversity. In 2003, the government of Zambia developed a National Biosafety and Biotechnology Policy under the UNEP/GEF Pilot Biosafety Enabling Activity Project, designed to accord with the Cartagena Protocol on Biosafety and the UN Convention on Biological Diversity, which it is now seeking to implement.

As a follow up, government developed a draft National Biosafety Framework, a legislative framework for implementing the policy. This effort was led by the Ministry of Science and Technology with the participation of stakeholders.

26.0 Financial resources

Financial resources for supporting implementation of the CBD came from the Zambian government through the various responsible government agencies. This funding varied from year to year but was more directed towards salaries and less to actual conservation work. Additional funding to Government, for national level implementation effort came through project funding from Bilateral and Multilateral arrangements. Priority activities that received funding from these sources included: Reclassification and Effective Management of Zambia's Protected Areas Systems; development of the National Environmental Policy and implementation plan; development of tourism infrastructure; development of subsidiary legislation, development of protected area management plans; law enforcement; and purchase of communication equipment and vehicles;

Financial resources for local level activities came through NGO project funding, CBOs and the Private sector and were in the form of grants, and sub-contracts. These sources however remained limited in comparison to funds grants which came through the public sector.

No biodiversity trust funds were put in place at national level, although feasibility study to develop a trust fund for the environment been initiated with Norwegian funding.

Specific activities funded under the GEF included:

- The Environmental Protection and Natural Resources Management Project (ZAM/01/006/01/99/f) -
- Lake Tanganyika Integrated Management-Zambian Component (Catchment Management through Sedimentation Control
- National Capacity Self Assessment (PIMS 2693).
- Reclassification and Effective Management of National Protected Areas System (PIMS 1937)-
- Preparation of the National Adaptation Programme of Action (PIM 2712
- National Environmental Policy development
- Southern African Biodiversity Programme activities
- Domestication of the UNCBD, UNCCD and UNFCCC
- Environment and Natural Resources Management Programme

Zambia continued to provide financial support to those national initiatives as prioritized in the NBSAP in order to achieve the objectives of Convention. Significant amounts of financial resources were received to enable it to meet the incremental costs of implementing measures for fulfilling the Convention

27.0 Thematic Areas

27.1 Agriculture Biodiversity

Zambia developed and implemented several programmes including the Agricultural Commercialization Programme (ACP), Agricultural Development Support Project (ADSP), Community Fisheries Programmes, Agro-forestry programmes and the Miombo programme to ensure the development and successful implementation of policies and actions in support of conservation and sustainable use of agro-biodiversity components.

Zambia has undertook specific assessments of components of agricultural biodiversity namely plant and animal genetic resources. Priority was given to major traditional food crops namely maize, sorghum, finger millet, pearl millet cowpeas, groundnuts and beans. The main objective was to rescue local genetic diversity and to have these conversed for future crop development and improvement. Collection missions were undertaken in almost all parts of the country. The focus on maize has led to the abandonment of traditional crops and varieties throughout Zambia. For example, traditional sorghum production in Central, Eastern, Southern and Western Provinces has been largely displaced by maize production.

Regarding livestock genetic resources conservation, measures for the conservation of livestock genetic resources have been limited or non-existent. Only the collection of semen from the local Tonga cattle breeds has been stored at Mazabuka Animal Research Institute.

Zambia has carried out assessment of the knowledge, innovations and practices of farmers and indigenous and local communities in sustaining agricultural biodiversity and agro-ecosystem services for food production and food security.

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In terms of in-situ on farm conservation of both crop and livestock genetic resources the main players are local traditional farmers and communities. Even though management practices, technologies and policies that promote the positive impacts of agriculture on biodiversity have been generally encouraged with communities, the lack of incentives accruing to the communities was a major constraint.

Through the Ministry of Agriculture and Cooperatives (MACO), Zambia mainstreamed supporting institutional frameworks and policy and planning mechanisms for agricultural biodiversity in agricultural strategies and action plans, and their integration into wider strategies and action plans for biodiversity. However Zambia did not taken action to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.

Zambia supported the compilation and carrying out of relevant case studies relating to biodiversity, food and nutrition, and soil biodiversity including the development of indicator/indicators of biodiversity used in food security, consistent with decision VII/30. Significant progress was made towards food security, last season (2005-06) when a bumper harvest was realized in Zambia.

Through SADC Zambia supported the need for the program of work on agricultural biodiversity to foster synergies with other relevant protocols, conventions and treaties.

The activities undertaken in agro-biodiversity conservation contributed towards the achievement of MDGs 1 on eradicating extreme poverty and hunger and 7 on ensuring environmental sustainability.

The lack of adequately qualified human resources, limited financial support Zambia as well as the lack of facilities and equipment necessary for the conservation of genetic resources constrained progress. Although the policy environment improved slightly, the lack of legal provision for the regulation of collections and exchange of both crop and livestock germ plasm further constrained the conservation and management of agro-biodiversity.

27.2 Forest Biological Diversity

There has been no objective assessment of the condition of the vegetation cover in Zambia for over thirty years. However, qualitative observations indicate that, on the average, the condition of the woodland and forest is relatively good. Compared to some of its neighbours, Zambia still has significant forest biological resources classified under nine forest types and five woodland types. The forests and woodlands support and protect other eco-systems, such as grasslands,

wetlands, lakes and river systems. Unfortunately, many of these natural eco-systems continue to be disturbed or threatened by human activity.

Specialized forest types of limited geographical coverage, such as the *Cryptosepalum* in North-Western Province or *Itigi* thicket forests in Northern Province are disappearing at a rate, which may lead to an irreversible loss of these resources. According to the Southern Africa Red Data List[6], seven Zambian habitats[7] and 146 plant species are classified have been defined as "threatened". Disturbance even in the more common forest types such as the miombo, munga and Kalahari woodlands, also has a negative impact on forests functions which in turn affect the forests' ability to provide environmental services. Illegal logging of high value species such as *Afzelia quanzensis* (pod mahogany), *Baikiaea plurijuga* (mukusi), *Faurea saligna* (saninga), *Guibourtia coleosperma* (muzauli), and *Pterocarpus angolensis* (mukwa) was rampant where vehicle access is possible.

Deforestation was estimated at 900,000 ha/annum. Investigations suggested that more than half of deforestation was attributed to the expansion of agricultural, whilst wood fuel harvesting, uncontrolled fires and commercial logging account for the remainder[8]. The removal of forest and woodland cover in many areas in the country is leading to the shortened flow of seasonal streams and the drying up of formerly permanent rivers.

In the forest protected areas which equal 9.64% of the total land area, encroachment and illegal settlement continued to cause problems in many reserves. Forest Department estimates that half of the reserves remain intact. In densely populated areas, of the Central and Copperbelt Provinces, there was tremendous pressure to de-gazette forest reserves for agricultural land. In forest reserves, positive impact on biodiversity would be achieved, if the current pace of encroachment and forest degradation were slowed down.

27.3 Inland water ecosystems

Approximately 20% of the country's surface is covered with water bodies: lakes; rivers; swamps and small streams. About 6% of the country's surface is designated as commercial fishery areas. The water bodies of Zambia are rich in fishery resources and harbour a great diversity of fish species.

[6] Golding, J. (2002). Southern African Plant Red Data Lists. Southern African Botanical Diversity Network Report 14.
[7] Riparian forest, Itigi thicket, mateshi evergreen thicket, Livunda Cryptosepalum forest, Baikiaea forest, one wetland habitat (Kafue Flats) and the Lusaka dolomites.
[8] Puustjärvi, E. – G.M. Kokwe – M.Chakanga (2005). The contribution of the forest sector to the national economy and poverty reduction in Zambia. Forest Department & Ministry for Foreign Affairs of Finland

There are more than four hundred and eight (408) different species of fish that have been recorded and identified in Zambia belonging to twenty-one (21) taxonomic families. The family **Cichlidae** has the largest number of species. There are one hundred and sixty-two (162 species of fish) followed by **Cyprinids** with eighty-two (82) species. Other important families include the following: **Mormyridae** 20 species; **Characidae** 17; **Bagridae** 18; **Clupeidae** 5**; Centroptomidae** 5 and **Latidae** with 5 species. Most Cichlids, approximately 138 species have only been recorded in Lake Tanganyika where they are endemic.

Aquaculture mainly involved the farming of Cichlids. These are *Oreochromis andersonii*; the **three spotted bream**, *Oreochromis macrochir*; the **green headed bream** and the *Tilapia rendalii*; the **red breasted bream**. These are raised in artificial ponds using the integrated system. Species that are commonly used in aquaculture have been taken from the wild and bred in captivity. From time to time, it is important to cross breed the farmed strains with the wild ones to reduce inbreeding and to increase pond productivity.

Generally, fisheries are believed to be over-fished, but few, if any, stock assessments have been carried out in recent years and reported catch statistics are considered unreliable. Fishery research in Zambia thus continued to place great emphasis on fish stock assessments. Taxonomic work on fish and fish biodiversity studies were implemented mainly with a view to support fish stock assessment studies. This is so mainly because fisheries have largely been managed for creation of employment and the supply of cheap source of animal protein for the local population. In view of the growing environmental concerns and unease about over-fishing, greater attention was placed on the sustainability of fish biodiversity.

27.4 Biological diversity of dry and sub-humid lands

Dryland and sub-humid areas ecosystems are important for wildlife which includes large mammals, exceptional abundance of avifauna reptiles and insects. In Zambia biodiversity conservation activities in dry and sub-humid lands were focussed in the Rufunsa GMA, surrounding the Lower Zambezi National Park. The work of the African Wildlife Foundation in the African Heartlands programme focusing in the Lower Zambezi areas. The specific priorities included land rehabilitation, conservation, sustainable use and equitable sharing of benefits accruing from biodiversity and, regional and transboundary resource management. These activities are consistent with national policy frameworks.

27.5 Mountain biodiversity

The Nyika plateau is the highest point in the extreme north eastern part of Zambia and the only area close to possessing mountain biodiversity in Zambia. There is limited information on the biodiversity of this area. Thus priority was

directed at inventorying the biodiversity of this area under the Nyika Expedition supported by Southern Africa Botanical Network (SABONET)

28.0 Operations of the Convention

Zambia actively participated in sub-regional and regional activities in order to prepare for Convention meetings and enhanced implementation of the Convention. Through participation in the SADC Biodiversity Strategy Programme, Zambia contributed to strengthening regional and sub regional cooperation, enhancing integration and promoting synergies with relevant regional and sub regional processes. Zambia continued to work with other Parties to strengthen the existing regional and sub-regional mechanisms and initiatives for capacity-building especially with countries within the Southern African region.

At national level the MTENR on behalf of Zambia undertook the following initiatives in order to enhance implementation of the Convention:

- The Environmental Protection and Natural Resources Management Project (ZAM/01/006/01/99/f) - aimed at enhancing managerial capacity for environmental protection and sustainable management of natural resources as well as for coordinating the implementation of environmental international conventions.
- Lake Tanganyika Integrated Management-Zambian Component (Catchment Management through Sedimentation Control), whose objective is to produce an effective and sustainable management system for managing and conserving the biodiversity of Lake Tanganyika and its basin.

- National Capacity Self Assessment (PIMS 2693) - project supported by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), whose the main objective is to take stock of Zambia's existing capacities and specific capacity development needs and priorities related to the implementation of the UN Convention on Biological Diversity (CBD), the UN Framework Convention on Climate Change (FCCC), and the UN Convention to Combat Desertification (UNCCD). Through a country-driven and highly participatory process, the project will analyse capacity gaps and capacities needed for implementing national activities under the three conventions. Capacity gaps and needs will be assessed at the individual, institutional and systemic (policy and legislative framework) levels, including assessments of vertical (between local and provincial authorities and national levels of government) and horizontal (between government agencies, NGO/CBO and private sector organisations) arrangements for planning and executing needed activities.

- Reclassification and Effective Management of National Protected Areas System (PIMS 1937) - a project supported by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF). The main objective of the project is to strengthen the enabling frameworks and

capacities for managing the National Protected Areas System of PA that have biodiversity conservation as a principle objective.

- Preparation of the National Adaptation Programme of Action (PIM 2712) - the objective of the project is to develop a National Adaptation Programme of Action (NAPA) that will serve as a road map for the country towards the implementation of climate change adaptation activities that will contribute to the achievement of the Millennium Development Goal (MDG) 7 – Ensuring Environmental Sustainability and promotion of sustainable development.

Regarding contribution to the achievement of the goals of the Strategic Plan of the Convention, Zambia through SADC supported the report of the 5 th World Parks Congress on Protected Areas and also contributed towards the 2010 target, through implementation of national biodiversity strategies and action plans. The above initiatives further contributed to the achievement of MDG 7 on sustainable environmental management.