THE INTEGRATION OF ECONOMIC MEASURES INTO THE NATIONAL BIODIVERSITY STRATEGIES AND ACTION PLANS OF UGANDA AND EASTERN AFRICA

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1.   Executive Summary

The national/regional case studies on the integration of economics into National Biodiversity Strategy and Action Plans (NBSAPs) are being carried out in South Asia, South East Asia, Eastern Africa, Southern Africa and South America. They aim to examine, in detail, how economic measures have been integrated into NBSAPs in countries in these regions. This case study focuses on the Uganda NBSAP.

Uganda, in a process led by the National Environment Management Authority (NEMA) has developed a first draft of a National Biodiversity Strategy and Action Plan (NBSAP) with funding from the UNDP-GEF.   Uganda is a signatory to the Convention on Biological Diversity and ratified the Convention in September 1993. The NBSAP process was developed and implemented as part of Uganda's obligations to the Convention, in compliance with Articles 6 and 8.   The formulation of the NBSAP is also consistent with the objectives and plans outlined in the Biodiversity Country Study (1992) and the National Environment Action Plan for Uganda (1995). It provides a means for identifying priority actions for biodiversity conservation and management. Biodiversity in Uganda is the vehicle of economic growth and development. It is also crucial for human health and wealth – a source of food, medicines and employment. The Uganda economy relies on a few main sectors based on agriculture and agricultural related activities.   These constitute the greatest part of the national income and are a major source of income for the poor.

The Uganda National Biodiversity Strategy and Action Plan (NBSAP) process began in 1988. Thematic and cross sectoral task forces were formed.   A national workshop was held in June 1999. A draft NBSAP was produced for wider comments. The process at this time should have been devolved to the Districts, but this did not take place due to the lack of funding.   A first edition of the NBSAP was finally ready on April 30th. This document now needs to be approved by the NEMA Boards of Governors and the Policy Committee on the Environment which is made up of the Prime Minister of Uganda and 11 line ministers.

The following comments relate to the first edition of the NBSAP which demonstrates a commendable effort in integrating economics into biodiversity conservation and sustainable use. Other countries in the region such as Kenya, Tanzania, Djibouti and Eritrea have not gone as far as Uganda has in trying to include economics into the NBSAP. There are however weaknesses in the elucidation of how this will be done especially in relation to funding and partnerships with other institutions and organisations at all levels.

The NBSAP needs to be sufficiently detailed in order for it to become a tool that can be used to implement biodiversity strategies at the national, district and local levels.   In its present state it mirrors what has already been mentioned in other major policy documents relating to biodiversity such as the National Environment Action Plan for Uganda.   In spite of the fact that the scope and extent of economics biodiversity incorporation is ahead of that of other countries in the region, the entire plan has not yet converged into a compelling driving force to integrate economics into biodiversity conservation.

This said however, it was noted by NEMA that the next steps are to get the document approved so that it will be possible to then proactively consult with the stakeholders at the district level to integrate localized aspects of biodiversity into the planning framework. This will provide the possibility for an operational framework for the strategy and plan to be realised.

There is need, like in other countries of the region, to publicize and popularize the NBSAP. All institutions (apart from NEMA who was actively involved) at the national and local level should be involved to initiate and implement the strategic plan according to the cross cutting guiding

principles of the NBSAP. For example, instruments in the Forestry, Wetland and Wildlife Sectors on benefit sharing and incentives and disincentives for conservation would be appropriately dovetailed into the NBSAP process.

If the NBSAP can become a document which reflects the needs and aspirations of Ugandans for Biodiversity, then it will be worth the time and effort it has taken to compile the document (since 1998) and will be justified in efforts to then broaden and activate its strategic objectives. A strong component of economics in the NBSAP will only help to make the NBSAP more realistic and feasible.

The importance of tackling the integration of economics within a planned institutional framework that designates instruments and measures for sectors rather than revolving around discrete donor driven activities needs to be strongly emphasized. This involves the consideration of innovative financial instruments. This would obviate the need to focus at the project instead of the programmatic level and would mitigate against product delivery overriding strategic planning of generic components of planning for biodiversity.

As always funding for activities is a normative consideration. The Ugandan NBSAP mentions that new, innovative and sustainable ways of generating finances to supplement existing sources of funds are needed. It also mentions that the integration of a range of instruments that aim to make conservation financially profitable and economically worthwhile such as market and charge systems, taxes and subsidies, loans and grants and bonds and deposits to decrease biodiversity degrading behaviour are required. (see Chapter 12).

A major gap noted in the Uganda Biodiversity Economics Assessment was the low level to which private and community rights to resource ownership, use and management are covered by environmental policies. In some vital areas such as land use and biodiversity itself, no policies exist. The NBSAP agrees that there is no national land use policy or national biodiversity conservation policy and sets out to develop a range of instruments that aim to make conservation financially profitable and economically worthwhile to the groups whose activities have the most potential to impact on biodiversity – the private sector and local communities.

A major emphasis of the NBSAP is on valuation whilst there is not enough analysis dedicated to the identification of financial mechanisms which need to fund the NBSAP. The NBSAP needs to explain how more expertise in environmental economics will be created. Even more important will be a clear understanding about how innovative financing mechanisms for biodiversity will be developed, who will develop them and at what levels.

The NBSAP describes in details the economics of the plan, but in the corresponding strategy, the economics assessment should be used to reflect detailed instruments, partners and a time frame. Within NEMA itself, there needs to be commitment to follow up with the NBSAP and reflect it in the activities of the organization and on activities on the ground.

In order for the NBSAP to gain broader acceptance and to be practically operational it should make conservation activities economically attractive. Consultation then needs to take place especially at the District level, with communities and with different economic and natural resource institutions.
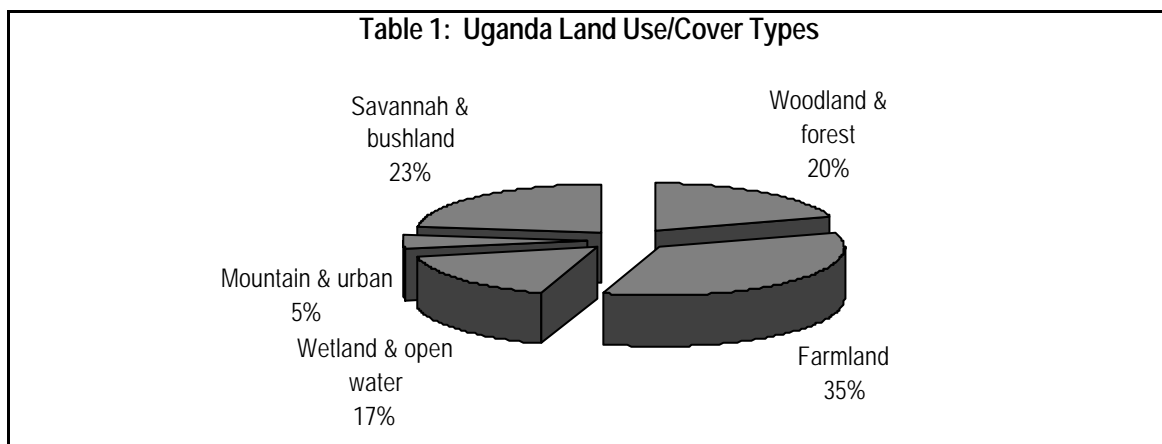
2.   Introduction

2.1.   Biodiversity and general economic conditions

Uganda is a landlocked country in Eastern Africa, part of the great Rift Valley and the Lake Victoria system. Uganda' population is about 22 million of which 90% live in rural areas (Emerton & Muramira, 1999). Uganda's Gross Domestic Product (GDP) is essentially natural resource based. The agricultural sector contributes half of the GDP, (cash and food crops, livestock, fisheries and forestry) which is based on using or harvesting natural resources.   About half of the construction sector and 30% of manufacturing are dependent on natural resources.

Biodiversity in Uganda is therefore the vehicle of economic growth and development. It is also crucial for human health and wealth – a source of food, medicines and employment.

Biodiversity refers to the quantity and frequency of genes, species and ecosystems existing in a country or region. Uganda's varied topography, geology and equatorial climate give rise to the savannah and grasslands, woodlands and forests, wetlands and other aquatic ecosystems. These capital assets, if managed properly yield a flow of vital services such as catchment protection and erosion control by natural vegetation, carbon sequestration and option and existence benefits. There are many unique ecosystems in the country critical to the conservation of globally important biodiversity, many of which are important to tourism.

There are about 18,500 species known in Uganda, making it rich in species diversity. For example there are 347 genera of birds and 1007 species in Uganda representing 11% of the world's birds. (Draft Uganda NBSAP, 2001).

Table 1: Uganda Land Use/Cover Types

Savannah & bushland 23%

Woodland & forest 20%

Mountain & urban 5%

Wetland & open water 17%

Farmland 35%

2.2.   The nature of value and the value of nature

In 1998, biodiversity dependent sectors of the economy – forestry and fisheries, were formally recorded as contributing only 4% to GDP. (MFEP, 1998).   Emerton and Muramira (1999) quantified the economic benefits of biodiversity to be at least Uganda Shillings 1,112 billion/year or 17% of the GDP   (The GDP in 1997/1998 at factor cost was almost Uganda Shillings 7,000 billion). This figure does not include option and existence benefits of biodiversity as well as other indirect benefits.

2.3.   Forests and Woodlands

Forests and woodlands cover about 4.9 million hectares (Ministry of Water, Lands and Environment, 2001). The vast majority of this is woodland, the remainder is tropical high forest

and forest plantations. About 9% of this land is set aside permanently for the conservation of biodiversity, the protection of environmental services and the sustainable production of domestic and commercial forest produce. Half of the permanent forest estate is as gazetted central and local forest reserves (trust land managed by the Forestry Department and Local Authorities). The other half is forested land in National Parks and Game Reserves. The forest sector provided 1.9% of the GDP in 1998 (NEMA, 1998). About 95% of total energy consumed is provided by the forest sector. Some tropical forest is protected in national parks and forest reserves while about 50% of the woody biomass is outside of protected areas.

2.4. Wildlife

Uganda is rich in Wildlife found in both protected and unprotected areas. Uganda's wildlife resources yield direct benefits because they provide a source of bushmeat, trophies and support tourism activities. Tourism is focused in the protected areas for wildlife (about 21,000 km^2). In 1998, more than US $ 1.53 million was generated by the Uganda Wildlife Authority from entry fees and charges for other recreational activities in National Parks. The wildlife policy enacted in 1996 aims to conserve wildlife for the benefit of the people of Uganda, and places a strong emphasis on community and private participation and economic gain from wildlife.

2.5. Wetlands and water resources

Uganda's wetlands are complex and extensive and are found in almost all areas of the country. They cover about 13% of the country (State of the Environment Report, 1998). Uganda's wetland ecosystem consists of lakes, associated wetlands, river or floodplain wetlands and '*dambos*' that are composed of small, unconnected units with no outlets. They are dependent on water from surrounding uplands. The most common type of wetland is the papyrus swamp (dominated by *Cyperus Papyrus*). A large diversity of plants and animals are supported by wetlands as inventoried by the National Wetlands Programme. The inventory identified ten sites of great biodiversity value including Lake Nabugabo and Kyojja Swamp. (NEMA, 1998).

Wetlands provide a wide variety of products such as a water supply, *ambatch* wood and fishing floats in Lake Victoria, wildlife resources, grasses for grazing, papyrus, typha, phragmites and agricultural products such as rice. There are 22 species of edible wetland plants and 35 species of plants of medicinal value.

2.6. The economy

Before 1971, the economy was stable and Uganda realized rapid economic gains. After this period a series of domestic and external shocks resulted in a rapid decline in investments coupled with a high growth of illegal economic transactions during the Idi Amin era. These continued through to 1987 when the economy stabilized. Uganda's economy has **grown at an average of 6%** during the 1990s. The government has tried to redress the reliance on agriculture by favouring development in the industrial and service sectors. Industry has grown by an **average of 12% a year** since 1986 (NEMA, 1996). This growth is a result of the country's efforts to create a policy framework to encourage sustainable economic development, attract foreign investment and promote export and trade opportunities. Primary education reform is a top government priority, accompanied by a policy to increase school enrolment and retention among girls. Government policy includes devolving the responsibility for most government functions to the 45 districts, providing local communities direct access to local government policy makers.

After 25 years of repressive rule, accompanied by inter-ethnic violence, the country is still struggling for peace and reconciliation. Uganda is a key strategic player in conflicts and tensions in the Great Lakes and Horn of Africa region. Despite impressive economic gains and rich biodiversity, the

country is still confronted by heavy indebtedness, high levels of poverty, widespread corruption and inadequate infrastructure. Growth in the economy has not been sufficiently broad based to address the problems of poverty and poor human development indicators.

2.7. Macroeconomic and development strategy

Uganda's medium term objectives are to ensure social and economic equity and stability at the same time as promoting rapid growth and development. (USAID website, Uganda Overview, 2001). Development policy focuses on the key sectors of agriculture and industry. Adjustment continues to form a basis of macroeconomic strategy with aims to further liberalise prices and markets, rationalize public expenditure, divest public enterprises and reduce subsidies. Poverty alleviation is a major goal, to be achieved through basic infrastructural development, increased access to productive assets and credit, human resource development and the promotion of both agricultural and non-agricultural growth, income and employment. Within the strategy, the environment is explicitly targeted as a crosscutting issue in all sectors of the economy (Emerton and Muramira, 1999).

3. The Macroeconomic & Sectoral Economic Policy Framework as it Relates to Biodiversity

Sustainable development in Uganda has been considered from the perspective of environmental degradation, with less emphasis, until recently, on the social and economic aspects of sustainability. Conversely the economic policies and structure, which have emphasized growth, have not considered the full cost of activities. Threats to long term sustainable yields or services are not reflected in costs to the users. Outputs are maximized without due consideration to the stock of the resources. Where clear property rights are not in evidence, land and resources become open access regimes and there is no control over the joint activity of users resulting in over exploitation.

3.1. Economic causes of Biodiversity degradation and loss

Economic structural and policy factors constitute the underlying root causes of biodiversity conservation and loss and include economic dependence on activities that impact biodiversity greatly. The high dependence of people on natural resources is exacerbated by the limited and insecure nature of rural livelihoods and the absence of alternative sources of income and subsistence, poverty and land pressure. A lack of comprehensive and integrated mechanisms for the sustainable use of biological resources is the major cause of biodiversity degradation and loss.

Pressing needs for urban and industrial development result in unplanned growth, which affect environmental quality and ecosystem integrity. Sectoral policies in fisheries, water and agriculture make passing reference to sustainability concerns while policies such as industry, mining and urban settlement contain no consideration of biodiversity issues (Emerton and Muramira, 1999.) These aim to maximize production by intensifying extraction without due consideration of the stock of the resources and its place in the ecosystem. The low pricing of raw materials act as direct disincentives to biodiversity conservation. Environmental policies have goals of conservation, sustainable use and benefit sharing but often do not spell out the means by which these goals will be achieved. (Emerton and Muramira,1999). Concrete methods are needed to implement the goals and objectives of environmental and natural resource policies.

Box 1: Factors contributing to wetlands loss

Biodiversity values are not factored into land use planning and management. Ecosystems are economic assets and should be treated as such. Wetlands especially have huge economic value when regarded in this way; Nakivubo swamp, the largest wetland area in Kampala, is responsible for purifying over 90% of domestic sewage and about 1/3 of industrial effluents before they enter lake Victoria (and then re-enter the city's piped water supply less than 5 kilometres downstream). (Emerton, 2000). The annual costs of sewage treatment would be six times this amount. Instead of valuing it as such, Nakivubo swamp is being converted into industrial and residential land. It is considered an uneconomic use of scarce urban land rather than a productive, cost effective and potentially profitable (if commercial and industrial firms were charged for the service.) natural asset. (Emerton, 2000). The Wetlands Inspection Division has now zoned it a green belt and there are efforts to understand how to manage Nakivubo Swamp better to retain the wetland services it provides as well as provide a service to process waste.

Box 2: Factors contributing to forest loss

Forests covered approximately 45% of the land surface in Uganda but presently forests and woodlands cover approximately 20%. Most of this land has been converted to agriculture. About 70% of Uganda's Forest is on private land and these are being depleted due to several reasons; access rights and responsibilities for resources, trade restrictions and hidden subsidies which distort the markets for forest products. Management and policy

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deficiencies in land tenure, market failures including inappropriate royalty rates and poor market information. There is poor regulation by weakened institutions which lack funding and capacity. Population growth and migration has increased demand for agricultural land and energy. (*Ministry of Water, Lands and Environment, 2001*)

Box 3: Causes of Biodiversity Loss

DIRECT CAUSES
Grazing pressure
Over-exploitation of fisheries
Uncontrolled harvesting of forest and plant products
Unsustainable utilisation of wetlands products

INDIRECT CAUSES
Wastes, pollutants and effluents into the environment through production
processes including agriculture, fisheries, forestry, urban and industrial production
Loss of natural vegetation and conversion of ecosystem to agriculture

MACRO CAUSES
Poor planning
Policies encourage the maximization of economic production
Environmental policies do not give full attention to HOW sustainability will be achieved

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The main causes for the loss of biodiversity that are part of the underlying reasons (Box 3), can be summarized as follows;

Policy Deficiencies
The term policy failure refers to a wide range of regulatory instruments, fiscal exchange rate, monetary, price, income and other policies including those on the environment which distort the private cost of environmental resources use so as to make it privately rational and attractive to damage social capital. (OECD, 1994). A framework of workable incentives for the private sector to improve performance and to use natural resources sustainably has been lacking.

A good example is the policy on agriculture modernization which involves the use of agro-chemicals, fertilizers and pesticides) subsidies and machinery without due consideration of the impacts and sustainability of these measures. Other causes are the lack of implementation and regulation of policies that do exist on the environment. This may be as a result of the lack of political will, capacity, appropriate feedback learning loops, etc.

Liberalization policies have promoted increased urban pollution. Materials such as batteries, plastics, polythenes and textile are imported without due consideration to local markets and the disposal of these items.

Market failures
This refers to inappropriate royalty rates, poor market information and hidden subsidies, which distort the markets for environmental products. Market failures result in low prices for biological resources and few economic inducements for investments in conservation. Benefits of biodiversity conservation and costs of its loss are poorly reflected in markets and there is little incorporation of biodiversity economic values into the prices and profits that producers and consumers face in their day-to-day economic activities.

Population Growth
Population growth at 2.5% a year (Ministry of Water, Lands and Environment, 2001) leads to
increased demand of land, food and energy this produces strains on finite resources.

Poverty
The poor target biodiversity to meet their daily needs in order to survive. Short term utilization
does not take into account long term sustainability questions and quality of life. Poverty
disempowers and disenfranchises people, precluding development and entrenching cycles of
biodiversity loss.

Conflicts
In Uganda, conflicts continue to be a cause of biodiversity degradation. The populace has had to
deal with a 13-year insurgency in the north and west parts of the Eastern African region.
Involvement in regional conflicts have resulted in the need to support large numbers of refugees,
chronically food insecure families and displaced people affected by clan disputes burdening already
limited fiscal resources and natural resources in some areas.

Globalization
Other concerns are trends toward growth without due consideration of the finite characteristics of
resources and the pressures ecosystem can withstand. Regional political conflicts are a strain on
any strategic plan and the trends of global economies are a problem too. For example, the new
'General Agreement on Trade in Services (GATS), one of the twenty trade agreements
administered and enforced by the World Trade Organization and is being 'secretly' negotiated now.
The mandate of the GATS is the liberalisation of trade in services, which means basically the
dismantling of government barriers to the privatization of public services through a set of legally
binding constraints. Local private companies and governmental not-for-profit public services will
have no place. GATS also includes authority over 'environmental services'. Public services such as
construction, sewage, garbage disposal, sanitation, tourism and water services would be accessed by
foreign suppliers - corporate chains. What is basically the commons - seeds and genes, air and
water, culture and heritage, education and health could be commodified and sold to the highest
bidder on the open market. (Barlow, 2001). It is trends such as these that have to be carefully
monitored and responded to for they may be potential saboteurs to national strategic and action
plans to manage natural resources.

4.   Developing the NBSAP in Uganda

The National Environment Policy calls for sustainable use and conservation of biological resources of Uganda.   The Convention on Biological Diversity to which Uganda is a signatory (ratified in Sept 1993) also calls for, in Article 6 and 8, the development of national strategies, plans or programmes for the conservation and sustainable use of biological diversity. Uganda undertook to develop a National Biodiversity Strategy and Action Plan (NBSAP) in 1998, in a process funded by the UNDP-GEF.   The process was managed and led by the National Environment Management Authority, (NEMA).   Later the IUCN World Conservation Union East African Regional Office (IUCN) was called in to provide technical guidance to the process.

The process began in June 1998. At this time task forces were formed in the across various cross sectoral and thematic areas. Sectoral and thematic biodiversity assessment reports on wetlands, wildlife, forestry, aquatic resources, agriculture, domestic animals, plant genetic resources, soils, biotechnology and bio-safety, institutional and legal issues and biodiversity economics were produced by taskforces. These taskforces conducted an assessment of the status of biodiversity in the country by stocktaking and inventory of existing information with regard to Uganda's biodiversity resources. Biodiversity Economics was one of the themes. A training workshop by IUCN was held for all the taskforce members and in June 1999, a national workshop to review the reports of the taskforce and to develop an NBSAP vision, goals and objectives was held. Thereafter a draft NBSAP was produced for wider comment. The process at this time should have been devolved to the Districts, but this did not take place due to the lack of funding. The process of incorporating comments and compiling documents has been slow and a draft ready for government consideration by April 30th 2001. The entire process has taken almost three years.

In addition to these reports a National Biodiversity Assessment Report (NBSAR) was also conducted and written and contains data and information accompanying the NBSAP. The NBSAP has now to be approved by the NEMA Board of Governors, and the Policy Committee on the Environment which is made up of the Prime Minister of Uganda and 11 line Ministers.

5.   Integrating Economics into the NBSAP process

5.1.   IUCN's Role

IUCN was contracted to input into the process of integrating economic aspects into the Uganda NBSAP. This was carried out in three stages. The first includes training and awareness creation; A biodiversity economics core planning team and sectoral task force members went through training and guidance on biodiversity economics. A manual, *A Guide to the Use of Economics for Biodiversity Strategies and Action Plans for Eastern Africa* has already been produced under this stage.

The second is the assessment and the formulation of economic measures for biodiversity conservation, sustainable use and equitable benefit sharing. It involved the assessment of the economic status of biodiversity in Uganda and was carried out in February 1999. Its terms of reference were to assess

- Major impacts of current and planned national economic policies and programmes on biological resource use and conservation;
- Economic value of biodiversity in major economic sectors;
- Economic impacts of biodiversity loss including the consideration of national and sectoral income, income distribution, foreign exchange earnings and employment; and
- Economic impacts of improved biodiversity conservation

This study was carried out by Lucy Emerton (IUCN) and Eugene Muramira (NEMA) and had by far the most influence in the drafting of the NBSAP due to its comprehensiveness and clear presentation.   This document was instrumental in the drafting of the NBSAP and much of the material has been used in this document.

A third stage will be to provide guidance in developing and presenting recommendations for economic measures and instruments which can act as incentives for the conservation and sustainable use of biodiversity, fair sharing of benefit measures and mechanisms for financing future activities in the NBSAP.

5.2.   General lessons learnt

It was felt by those who were consulted that the process of developing the NBSAP had not been participatory enough. Especially at the district level and in regards to community consultation. On the other hand, in country technical expertise played an important role through the sectoral and thematic process which informed the NBSAP itself.

The result of a participatory process would inform the Ugandan populace and instill the all-important sense of ownership for the document. Deeper than this is the need for divergent aspirations to debate and understand fundamental national development policies and processes such as the NBSAP.   For example, a preambular sentence declaring (after appropriate consultation) that all Ugandans have a stake in this document would be useful in broadening the process.   This sentence could for example be "Ugandans recognise and are concerned about an accelerated rate of degradation and deterioration of many of these ecosystems and loss of biodiversity as a result of human activities. We commit to a shared vision to (goal of NBSAP) enhance biodiversity conservation, management and sustainable utilization at all levels."

5.3.   Economics in the environment

Generally economics has not been well embedded into the psyche of environmental managers at the national level. The NBSAP process is a good opportunity to change this. The emphasis has

continued to be on command and control (regulations guidelines, standards) techniques, which have their niche, but have been overriding other ways to conserve biodiversity.

It has been said that managers have not been quick enough to respond to the opportunities presented by environmental economics even despite its presence in formal policy statements. In fact little institutional time has been dedicated to the identification and formulation of a programmatic approach to economics despite the potential of economic instruments to promote environmental goals. For example, more use has to made of them especially in the commercial and industrial sectors through the increased use of taxes and subsidies to make it more profitable for commercial and industrial producers to conserve biodiversity. (Emerton and Muramira, 1999). There are however examples of economic instruments used to conserve biodiversity, and these are visited briefly in the Section 6.

The lack of consolidation of ideas tends to pervade natural resource and environment management institutions in the region. This is the dearth of opportunity to develop strategic plans that bring together similar types of activities into a mainstreamed process which then is institutionalized, implemented, assessed and monitored.

This may be indicative of the larger malaise of the inability to incorporate an analysis of environmental quality in economic activities, structure and policies. It points to the importance of incorporating economics into biodiversity conservation and action plans and vice versa (incorporating biodiversity into economic planning and development and sectoral economic activities and policies on biodiversity.

6. Degree of economic analysis in the Uganda National Assessment

Table 2: Items addressed in the economic assessment

	Degree to *which was* addressed
A critical review of whether adequate assessment of economy-biodiversity linkages, issues, problems and opportunities were identified	✓✓✓
Analysis of economic policy incentives and disincentives to biodiversity conservation	✓✓
Impacts of sectoral economic activities and policies on biodiversity	✓✓✓
Biodiversity economic valuation, and	✓✓✓✓
Presentation of recommendations for the use of economic instruments for biodiversity conservation	✓✓✓

The economic assessment noted the issues which should be especially targeted in the NBSAP as particular areas for change. These include charges for biodiversity damage, benefits for conserving biodiversity; targeting extraction and user fees for water and power, royalties for tourism and land development which are under-priced or not priced at all.

The assessment recommended changes in the allocation of fishing activities, timber concession and rights over forest and wildlife areas so that they respond to the different rates and degrees of extraction and use, and incorporate scarcity and sustainability concerns (through auctions, bidding and tradeable permits). These are summarised below:

Box 4: Economic Issues addressed in the National Assessment – Part One: Industry & Urban Areas

- Taxes and subsidies: raise the cost of biodiversity degrading technologies and products in line with the costs of damage they cause and discourage people from using them and do the opposite with products and technologies that conserve biodiversity.
- Financial instruments including loans, grants and investment facilities can be earmarked specifically for biodiversity conservation. Business people can use it for mobilizing and channeling funds for equipment, technologies and production processes, which are greener and cleaner. Credits and loans on easy terms for this purpose.
- Bonds and Deposits, levied on products or processes that degrade biodiversity to pay against possibility of harm taking place. Depositors have the incentive to avoid damage and reclaim their deposit or bond. The National Environment Statute already specifies these as tools.
- Institute pollution and waste clean up fees.

(*Emerton and Muramira, 1999*)

Box 5: Economic Issues addressed in the National Assessment – Part Two: Community economic incentives and benefit sharing measures.

- Property rights are changing in forest, wildlife and wetlands. Joint management, collaboration and partnership arrangements are powerful tool for biodiversity conservation;
- Biodiversity Markets. High value goods, small scale, local as well as larger scale and tourism can improve benefit sharing from biodiversity.
- Financial instruments – sharing revenue in parks with local people in the wetlands, wildlife and forest sector.
(*Emerton and Muramira, 1999*)

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7. Integration of Economics into the Uganda NBSAP

The government has not yet adopted the NBSAP, but at the time of writing a <u>First Edition</u> of the Plan had been completed and submitted.

The economic assessment conducted by Muramira and Emerton (1999) clearly demonstrated that the use of economics in biodiversity conservation was imperative by highlighting that :
- Economic benefits associated with biodiversity are high and spread through the economy and society of Uganda,
- There is an unequal distribution of costs and benefits of biodiversity
- Multiple economic forces drive biodiversity degradation and loss.

The NBSAP thus noted that "Biodiversity is tied intimately to sustainable and equitable socio-economic development and poverty alleviation in Uganda". (NBSAP First Edition p. 19, 2001). The Plan reiterates that the lack of consideration of economics in the NBSAP would be a serious omission.

The NBSAP has a set of principles which guide implementation. These reflect and support the integration of economics in the Plan and include *inter alia* the understanding that a community based approach to natural resource management is vital to successful biodiversity conservation and sustainable use of resources. Communities dependent upon natural resources are the most vulnerable to loss of productivity and negative perturbations in ecosystems which can be caused by a combination of internal and external factors. In Uganda, over 80% of the population is dependent on natural resources (NEMA 1999).

A community based approach resuscitates the necessary links between people and natural resources and aims to fairly distribute benefits and costs of resource use and environmental conservation amongst the women and men who are in closest proximity to the marine, freshwater, forest, wetland and dryland ecosystems. The enunciation of a community based approach in the NBSAP is important as it would further expand the enabling environment for CBNRM. As experience in community based approaches and collaborative management increase, the knowledge generated will help to improve the type of arrangements which conserve biodiversity and sustain livelihoods.

Economic instruments which address these enabling conditions such as property rights which are the formal arrangement people make to define and control their use of natural capital, respond to the need for arrangements which distribute costs and benefits of biodiversity conservation and use more equitably.
Another guiding principle which supports economic integration is the "utilization of biological resources should be based on the principle of equitable sharing of benefits, costs and knowledge". On paper these issues have been recognized and reiterated. It will be now be important to articulate these in greater detail with consultation with relevant institutions, district administration, communities and natural resource managers etc.

The NBSAP states how a range of instruments to address over-exploitation, ecosystem conversion and pollution will be developed. Efforts will be made to dismantle perverse incentives and subsidies that degrade biodiversity through the use of inappropriate technologies and land and resource use practices. Another area is the development of local economic incentives for communities to conserve biodiversity.

The logical framework of the NBSAP points to specific activities to be integrated into the strategy.

Table 3: Practical test cases of the responses in the NBSAP on biodiversity issues and perceived gaps

Underlying Causes of Biodiversity Loss	RESPONSES IN THE NBSAP	GAPS in the NBSAP
Polluters do not pay for the cost of clean up (or foot health bills)	• Encourage private sector investment in biodiversity • Develop and publicize incentives • Document and disseminate good practices in Biodiversity incentives	Need to target specific industries and instigate polluter pays principles
Commercial loggers pay low prices to saw millers	• Build capacity for and undertake economic valuation* of forestry resources and develop and implement economic instruments • Develop and implement improved forest management practices	Address the 'middleman' position. Valuation should include – see below
Farmers do not have incentives to employ sustainable land use methods	• Assess and document level of dependence on biodiversity for livelihood • Undertake soil biodiversity valuation* • Document and disseminate economic potential or PGR • Update policies on irrigation and water use and management and land use planning, develop regulations and standards on soil conservation	Reward sustainable land use practices
People who own land do not gain from conserving wildlife and maintaining ecosystem services	• Develop economic instruments for biodiversity • Institutionalize collaborative management	Incentive measures for the conservation of biodiversity (wildlife) on private land
People who use wetlands products sustainably do not gain	• Demonstrate wise use options for wetlands	Reward sustainable land use practices
Fishers do not profit in the short term by taking less fish out of the lakes.	• Set fishing quotas, develop standards on appropriate fishing methods and gear. • Develop and implement appropriate economic instruments.	

Specific activities related to Economic instruments in the NBSAP are contained in Chapter 12.

7.1.   General Gaps on Valuation in the NBSAP

Principles of Valuation; Three fundamental steps require an integration of ecological and economic understanding

Identification of alternatives. For example, looking beyond different physical treatments plants to ecosystem approaches, wetland or watershed management;

All impacts be identified and measured for each alternative, including trying to quantify uncertainties and the risks of proceeding;

Opportunity costs. Consequences of maintaining the status quo and opting for each alternative into comparable units of impact on human well-being, now and in the future.

7.2. Issues

The National Biodiversity Strategy and Action Plan (NBSAP) demonstrates a commendable effort in bringing in economics into the environment as demonstrated by Boxes Eight and Nine. There are however weaknesses in the elucidation of how these will be done especially relating to funding and partnerships with other institutions and organisations at all levels.

The NBSAP needs to be sufficiently detailed in order for it to become a tool that can be used to implement biodiversity strategies at the national, district and local levels. In its present state it mirrors what has already been mentioned in other major policy documents relating to biodiversity such as the National Environment Action Plan for Uganda. In spite of the fact that the scope and extent of economics biodiversity incorporation is ahead of that of other countries in the region, the entire plan does not converge into a compelling driving force to integrate economics into biodiversity conservation.

This said however, it was noted by NEMA that the next steps are to get the document approved so that it will be possible to then proactively consult with the stakeholders at the district level to integrate localized aspects of biodiversity into the planning framework.

There is need like in other countries of the region, to publicize and popularize the NBSAP so that it can be used by other institutions (apart from NEMA who was actively involved) at the national and local level to coordinate activities and to initiate and implement them according to the cross cutting guiding principles of the NBSAP. For example, instruments in the Forestry, Wetland and Wildlife Sectors on benefit sharing and incentives and disincentives for conservation would be appropriately dovetailed into the NBSAP process.

If the NBSAP can become a document which reflects the needs and aspirations of Ugandans for Biodiversity, then it will be worth the time and effort it has taken to compile the document (since 1998) and will be justified in efforts to then broaden and activate its strategic objectives. A strong component of economics in the NBSAP will only help to make the NBSAP more realistic and feasible.

The importance of tackling the integration of economics within a planned institutional framework that designates instruments and measures for sectors rather than revolving around discrete donor driven activities needs to be strongly emphasized. This involves the consideration of innovative financial instruments. This would obviate the need to focus at the project instead of the programmatic level and would mitigate against product delivery overriding strategic planning of generic components of biodiversity management.

As always funding for activities is a normative consideration. The Ugandan NBSAP mentions that new, innovative and sustainable ways of generating finances to supplement existing sources of funds are needed. It also mentions that the integration of a range of instruments that aim to make conservation financially profitable and economically worthwhile such as market and charge systems, taxes and subsidies, loans and grants and bonds and deposits to decrease biodiversity degrading behaviour are required. (see Box Eight and Annex Two).

A major emphasis of the NBSAP is on valuation (see Box Ten for a note on the shortcomings of valuation). In addition there are no time frames of allocation of activities to different stakeholders. In relation to valuation – this needs to be applied at the general level of collection of information and policy formulation.

A major gap noted in the Uganda Biodiversity Economics Assessment was the low level to which private and community rights to resource ownership, use and management are covered by environmental policies. In some vital areas such as land use and biodiversity itself, no policies exist. The NBSAP agrees that there is no national land use policy or national biodiversity conservation policy and sets out to develop a range of instruments that aim to make conservation financially profitable and economically worthwhile to the groups whose activities have the most potential to impact on biodiversity – the private sector and local communities.

Box 6: Shortcomings of Valuation

The Uganda NBSAP emphasizes valuation of natural resources in all the sectors.

An article about valuation in *Science* by Daily et al, *(2000)* notes *"In practice, valuation involves some of the oldest problems in economics, revealing and aggregating preferences and addressing uncertainty. There are drawbacks associating with most ways of inferring values. Market prices do not reflect the full social costs of production and most services are not presently traded on markets".* Aggregating individual values into a social value assumes that all people are equal which is appealing but not accurate. "*Measurements of incremental values work best when the increments are small, so that change in one service will have minimal feedbacks through the rest of the system*". This condition does not apply as well when considering ecosystems services where small changes here in one place may mean large changes there in another place..

Although this article was about ecosystem valuation, the caution given in regards to valuation is general and can be extrapolated to biodiversity. Valuation is a way of organising information to guide decisions but not a solution or end in itself. If the activities in the strategy are an end in themselves and a means to biodiversity conservation then they are not enough. They must be combined with financial instruments and institutional arrangements. Valuation must then be used in a process to weigh decisions and understand impacts better.

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8.   Economic Measures for Conservation

Since the NBSAP has not been implemented I look to the general situation in regards to the integration of economic measures for conservation in biodiversity and environmental sectors.

8.1.   General areas

- At present every policy is subjected to an environmental economics analysis.
- A cabinet paper is in process which proposes a number of taxes on solid waste management.
- The government will privatize garbage collection, and use the market to improve the condition of the environment.   A refund scheme for all types of containers is being developed (similar to the deposit system for bottles.)
- The Institute of Natural Resources has an environmental economics course.
- The National Environment Management Authority has incorporated environmental economics in programme and budgets.

8.2.   Wildlife

8.2.1.   Revenue sharing programme around Protected Areas

In the effort to sustainably use and share benefits for the long term, The Government of Uganda passed revenue sharing legislation under the Uganda Wildlife Statute, 1996.   The objective is to share part of the revenue generated from protected areas with local communities neighboring protected areas.   This recognizes that communities adjacent to protected areas bear the greatest cost (through opportunity costs) for the existence of these areas and yet benefits are minimal. The Uganda Wildlife Authority (UWA) with stakeholders has set about formulating arrangements to reduce the costs and increase benefits through revenue sharing in which a protected areas shares its income with communities located around it.

Funds from revenues sharing are not intended to substitute local government budgets, but are to be used in accordance with agreed conditions between the UWA, the community and local governments – a tripartite memorandum of understanding. Section 70 (4) of the Uganda Wildlife Statute, 1996 states "The Board shall subject to subsection (3) of section 23, pay 20% of park entry fees collected from a wildlife protected area to the local government of the areas surrounding the wildlife protected areas from which the fees were collected."

Uganda's decentralization process allows for bodies and agencies charged with rural development and land management to establish relationships with local government. The sub-county local government entity is the most relevant and forms the core for projects that can be implemented as a result of revenue sharing.   There are a number of sectoral committees, which are tied into the process of project cycle in the District. These include the District Councils and the Environment and Production Committees (Specs) and the sub-county councils and environment and production committees. (SPECS). Interface between local administration and community is at the Community Protected Area Institution.   Wardens from UWA are to be members of these institutions to provide technical expertise and screen and recommend projects that will not compromise the integrity of protected area ecosystems.

In order to operationalise the revenue sharing scheme, the Uganda Wildlife Authority last year, issued a document which laid out goals and objectives for revenue sharing. This included the strategy for implementation which included institutional roles and responsibilities, guidelines and procedures, management of accounts and disbursement of funds, and reporting, monitoring and evaluation.

At present, communities do not feel that 20% (pers. comm. Moses Turyaho) is adequate. If this
scheme is to work communities have to be part of the process that designates what is fair,
otherwise this incentive measure will not be successful.

8.2.2. Wildlife use rights: conservation of wildlife outside Protected Areas – sustainable wildlife utilization

Consumptive wildlife utilization was banned in Uganda so as to allow populations to recover after
the heavy poaching and hunting that took place in the Amin era. Presently, due to human wildlife
conflict, community revenue sharing and benefit sharing forms a keystone of government wildlife
management efforts in the country.

The Uganda Wildlife Statute 1996, vests ownership of wildlife in the State but does have provisions
where any person can lawfully use wildlife. The guiding principle is sustainable use of wildlife,
diversification of wildlife rural livelihoods and poverty alleviation. The assumption is that
economic benefit sharing will trigger a more sustainable use of wildlife through controlled ways,
will help to ensure the survival of wildlife outside parks, diversify rural livelihood and diversify
income to the Uganda Wildlife Authority. (UWA).

The regulations pertain to class 'A' - Hunting, 'B', Farming, 'C', Ranching, 'D', Trade, 'E', Using
wildlife for educational or scientific purposes, and 'F', General Extraction. Certain areas have been
identified for the consideration of their potential for different classes of wildlife use rights. These
include private land in Luweero and Buruli and Ankole; pastoral areas and communal grazing areas,
ranching schemes and wildlife reserves in Pian Upe and Kigezi; animal and forests sanctuaries in Mt
Kei , Otze and Dufile; and communal hunting areas in Lipan and Buhuka.

Whether this will actually take place is under question since these use rights are new in Uganda. In
the past Wildlife Use rights for Class 'D' has been ongoing on an experimental basis.
Guidelines have been laid out for the other Classes and are being discussed (UWA, 2001). As with
other measures, there needs to be discussion and consultation between agencies to move forward in
a complementary manner to avoid management conflicts and situations where there are incentives
to degrade or unsustainably exploit biodiversity.   For example, when the Forest Department
increased royalties from timber in 1999, UWA did not increase its royalties from UWA-managed
plantation forests (when some forests were declared national parks and transferred to UWA) These
plantations were then 'rushed upon'resulting in a market distortion for timber products. (Kazoora,
2000).

8.3.   The Districts and the Budgetary Process:

This section illustrates the decentralisation process that is already taking place at the District.
Conservation issues should be integrated at this stage so that funding can be allocated to activities
that will be detailed for the NBSAP.   Another associated tools is the District Environment Action
Plans (DEAPS) which some districts have finalized.

Opportunities for using economic instruments at the District level make the most sense since this is
where the budget process is undertaken.   Local government representatives are members of Sector
Working Groups which consist of representatives of the Sector Ministry, Ministry of Finance,
Planning and Economic Development, NGOs, district representatives, the private sector, and
donors. Sectors include Law and Order, Agriculture, Water and Sanitation, Health, Roads and
Works, Education, Security, Public Administration and Economic Functions (Land, Energy etc.)
Poverty, Local Government and Macro Economic Working Groups.

Each working group writes a paper that reflects the following;

- The mission, goal and objectives of the sector;
- A review of the services and outputs of that sector
- A review of how best sector outputs and outcomes can be achieved by using the private sector in service delivery so that more Government money can be used for priority areas.
- The group's view on problems
- Agreement on planned activities, outputs and proposed money allocations for the coming year

These papers are presented for further discussions in the consultative meetings held towards the end of November.

See Annex Three for the Central Government Budget Process. Different types of economic measures for conservation need to be in-built into this process.

8.4. Forestry Sector.

The Uganda Wildlife Authority entered into agreement with Forests that Absorb Carbon Emission Foundation (FACE).   The foundation is a non profit organisation set up by the Dutch Electricity Generating Board to create long term stable stores of carbon in the form of naturally regenerating forests.   With financial support from FACE, Mt. Elgon and Kibale National Parks were reforested by 2584 ha and 2720 hectares in Mt. Elgon and Kibale National Parks respectively.   FACE's objective is to offset emissions from a 600 MW power station situated in the Netherlands. (Kazoora, 2001)

In 1994, the Government of Uganda established Mgahinga and Bwindi Impenetrable Forest Conservation Trust (MBICFT).   The trust started up with US$4 million from the Global Environment Facility.   The trust has now grown to US$ 7.3 million.   The policy is that 60% of the revenue goes to support community projects, 20% supports research and 20% supports administrative costs.   To date, 43 community based (schools, health centres, roads, purchase of land) projects have been carried out. 18 research projects have been completed.   A local steering committee made up of all the members of the sub-county including 5 women, select and verify community projects to be funded and make necessary recommendations to the Board. (Kazoora, 2001).   Other examples include the creation of markets for forest based ecotourism in Bwindi Impenetrable and Mgahinga National Parks.   Visitors have increased in Mt. Elgon but decreased in Kibale and Bwindi due to rebel activities.   Unfavourable political conditions are inappropriate for market creation and operation and diminish incentives for conservation.

It would be useful to take these experiences and deal with them in a more programmatic rather than project approach. For example economic instruments in forestry sector for Costa Rica have been applied sector wide and include income tax deductions, exemption of capital inputs from import taxes, forestry credit, donations and credit. About 290,000 hectares have been accumulated. (Kazoora, 2001) On private land, since 1997, Costa Rica pays landowners (about $50 per hectare) for ecosystem services such as carbon sequestration, protection of watersheds, biodiversity conservation and the areas of scenic beauty. The payment is partly financed by a tax on fossil fuels and has resulted in significant forest conservation and restoration (Daily et al. 2000).

Certification – The objective of certification is to improve management of all forests reducing deforestation and degradation of forest ecosystems. At the national level, management systems and practices that maintain should maintain the multiple functions of forests. At the company level, certifying wood products maintains or increases market access and profits and improves the company's image. (Kazoora, 2001). Since 1995, the amount of forest under certification has increased fivefold in fifteen years to about 19 Million Hectares.

Whereas the NEAP process recognized that command and control techniques were not effective
and worked hard to look at other methods, NEMA, the chief environment agency's methods have
not changed substantively and there is heavy emphasis on regulations, standards and laws.   It was
admitted that the weakest link is economics. The articulation of practical methods has been slow,
and hardly proactive.   There are a few visible instruments used by various institutions which
demonstrate economics in biodiversity conservation but these are still piecemeal. The potential for
replication is being lost.

There is no collaboration between institutions for example, between the Forestry Research Institute
and the Uganda Wildlife Authority.

9. Broad comparative review of the NBSAP process in Eritrea, Ethiopia, Kenya, Seychelles, Sudan, Tanzania and Uganda

9.1. Tanzania

In Tanzania there appears to be, at least on paper, a commitment to the integration of economics in the Biodiversity Strategy and Action Plan. The process began in March 1998 and about 20 institutions were consulted.

A statement in the Tanzania Country Study on Biological Diversity (Government of the United Republic of Tanzania, Vice President's Office, 1998) by the Vice President's Office notes that there are "gaps in knowledge and biased economic policies which fail to value the cost to the environment of conserving and using natural resources. The opportunity cost or benefits arising from conserving or not conserving biological diversity are overlooked. The Government is aware of this dilemma and this study offers some recommendations for solving this problem."

The overall vision of the NBSAP is to build a society that values all the biodiversity richness, using it sustainably and equitably, while taking responsibility for actions that meet both the competing requirements of the present and the legitimate claims of the future generations. (NBSAP, 1999). Cross sectoral goals and objectives do not however, highlight or emphasise economics or economic instruments.

The theory behind option, bequest and existence values are discussed. In Tanzania, like in the other countries in this section on comparative analysis, biodiversity degradation is caused by the failure of markets to reflect the full value of natural resources.

The priority action that are identified in the NBSAP do not specifically point to the use of economic instruments to deal with biodiversity loss and degradation and to augment biodiversity conservation efforts.

9.2. Eritrea

The NBSAP looks at the very few economic instruments, although it emphasises sustainable use it does not provide for specific economic instruments. It encourages community involvement but does not say how this will be done. There is generally a strong recognition of the need to ensure that Eritrea's future economic growth is sustainable, with a focus on optimising rather than maximising natural resource use (GSE 1997). The following are measures taken to integrate economics.

- Introducing biodiversity economics concepts, tools and methods for assessment to the National Biodiversity Strategy and Action Plan Core Planning Teams and Working Groups and to other members of the Department of Environment during a workshop on biodiversity planning and economics;

- Consulting and briefing members of relevant line ministries, and collecting available data on Eritrea's biodiversity and economy;

- Carrying out an economic assessment of Eritrea's biodiversity and identifying economic tools and measures which can be used in Eritrea for biodiversity conservation, sustainable use and equitable benefit sharing.

The economic assessment forms part of a wider assessment of Eritrea's biodiversity being carried out by the Department of Environment as part of the process of preparing a National Biodiversity Strategy and Action Plan.

9.3. Kenya

The guiding principles in the NBSAP say that conservation and sustainable utilization of Kenya's biodiversity is key to improving agricultural productivity and sustainability, thereby contributing to national development, food security and poverty alleviation. Economics has not been integrated into the NBSAP.

9.4. Djibouti

The Economic assessment for Djibouti outlined recommendations for specific economic components, supportive incentive measures and supportive financing mechanisms. It was detailed and provided guidance for the NBSAP. The NBSAP notes that the support for measures that encourage good environmental practices is needed through means which will allow the state to fund these activities. A wide range of economic measures are suggested such as environmental taxes, licences, duties and fees to encourage or provide disincentives for consumers, industrialists, managers etc.

10. Conclusions and Recommendations

The National Biodiversity Strategy and Action Plan of Uganda (Draft First Edition) provides as its central theme the integration of economics into the environment. There is great opportunity and immense potential to create the capacity and infuse or mainstream economics.
However without the political and managerial will to undertake these reforms, the NBSAP will ring with a hollow tone.

There is need to gather information and generate knowledge about the scattered examples of where economics has been integrated in projects and programmes in Uganda
The Wildlife Statute has the best intentions and the Forestry Sector demonstrates some piecemeal experience. However for example in the Forest Rules it was found that property rights regimes provide disincentives to the wise use of natural resources these are now being addressed. It is important that NEMA collaborates with the other institutions when instruments are being developed in order to address conflicts and discrepancies in economic instruments.

The NBSAP must build on and show a clear added value to the natural resource management policies in place such as the
- Wildlife Policy
- Wetlands Policy
- National Environment Policy
- Forestry Policy

Since these policies begin to better integrate the conservation and sustainable use of the resources, the NBSAP is a timely document that can strengthen the way in which biodiversity conservation and sustainable use strategies within these sectors are carried out in more holistic and integrated manner.

The NBSAP describes in details the economics of the plan, but in the corresponding strategy, the economics assessment should be used to reflect detailed instruments, partners and a time frame. Within NEMA itself, there needs to be commitment to follow up with the NBSAP and reflect it in the activities of the organization and on activities on the ground.

The degree of economic analysis in the Uganda NBSAP shows that a number of issues have been recognised as demonstrated by the proposed strategies. In general, a framework has been identified to develop the main economic instruments which include biodiversity valuation (under the promotion of sustainable use and equitable sharing of costs and benefits of biodiversity conservation), economic incentive measures and economic policies (under develop, strengthen, coordination and measures for frameworks for biodiversity). In the sectoral areas, the same framework applies but is related to specific areas. Whilst there is need for the development of economic instruments in the various sectors, it will also be important to do an analysis of the type of perverse incentives that exist to encourage biodiversity loss. These need to be identified and removed.

A command and control regime remains dominant, however positive incentives which reward consumers and producers for biodiversity conservation because they save money, increase production efficiency or decrease production costs have shown to be more effective, appropriate and acceptable than economic instruments which penalise producers and consumers by raising prices.

In regards to benefits sharing and sustainable use, providing community economic incentives that are based on allowing local communities to benefit from conservation is a powerful and effective

tool.   Economic incentives need to be appropriate in this regard and formulated in a participatory way to effectively link the socio-economic situation with the conservation of biodiversity.

In order for the NBSAP to gain broader acceptance and to be practically operational it should make conservation activities economically attractive. Consultation then needs to take place especially at the District level, with communities and with different economic and natural resource institutions. The political obstacles which act as landmines to the process should be dealt with by NEMA if the national biodiversity strategy and action plan is developed

The NBSAP needs to explain how more expertise in environmental economics will be created. Even more important will be a clear understanding about how innovative financing mechanisms for biodiversity will be developed, who will develop them and at what levels (see Box Eleven).

Box 7: Integrative ideas for the future: Ecosystem Goods and Services	
Value of Ecosystem goods and services: A hypothetical Ugandan farm business in 20 years time. In this model, traditional agricultural commodities account for 55% of revenues as opposed to 100% today. Other income derives from a mature market for ecosystem goods and services. (Papaya and Papyrus changed from Wheat and Wool, and taken from C.Binning and R.Smith, 2000)	
Commodity	Share of Farm Business
Papyrus	40
Papaya	15
Water Filtration	15
Timber	10
Carbon Sequestration	7.5
Salinity Control	7.5
Biodiversity	5

New Markets
"An Australian Firm called Earth Sanctuaries, Ltd., was listed on the Australian Stock Exchange in May, making it the first world's conservation company to go public.   Worth US$25 million, it buys up land and restores indigenous vegetation and wildlife, earning income from tourism, consulting and wildlife sales. The firm lobbied for and won a change in accounting law so as to include its rare native animals as assets.   Meanwhile the Sydney Futures Exchange is positioning itself to be a global leader in the trading of ecosystem services from carbon sequestration to 'new environmental products' such as credits for clean water and biodiversity." (Daily et al.2000)

Currently there is an ongoing process where the Poverty Eradication Action Plan (PEAP) is trying to integrate environmental issues from an economic standpoint. It will be very pertinent to link this with the NBSAP process.

There is need to detail the activities in the plan with specific time lines and budget in convergence with District Environmental Action Plans and in consultation with local authorities, related institutions and other important stakeholders. At another level, integration into the planning and national budget process should be initiated so that funds for the activities are available.

A successful strategic framework on integrating economics in biodiversity depends on the extent to which the agencies charged with natural resource management and environment can collaborate to exchange and learn and to find common grounds to implement economic policies which integrate the environment.

Integrating Economics into NBSAPs is a necessary and useful step and is should be part of a greater attempt to integrate environmental quality into decision making and to embed into every aspect of human activity and settlement, ecosystem and landscape management principles.

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Bob Ogwang – National Resource Management Specialist, Biodiversity and Range – NEMA
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Cornelius Kazoora – Director, Sustainable Development Centre
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Moses Turyaho, Senior Community Conservation Officer, Uganda Wildlife Authority
Y. Moyini, Environmental Economics Association of Uganda.

12. Proposed Economic Strategies in the Uganda NBSAP

This Annex shows the economic strategies in the NBSAP. Table 4 contains general measures as presented in the logical framework of the document, Table 5 contains proposed sectoral strategies. The numbering within the tables correspond to the numbers on the logical framework contained in the Uganda NBSAP.

Table 4: General economic measures proposed in the Uganda NBSAP

OBJECTIVE	OUTPUT	STRATEGY	ACTIVITY
1. To Develop and Strengthen Coordination, Measures and Frameworks for Biodiversity (BD)	2. Measures for BD measures enhanced.	5. Strengthen the role of communities in BD management (take from LAE paper on CBNRM)	Assess and document level of dependence on BD for livelihood Develop CBNRM approaches
	4. BD related policies and legislation strengthened	2. Initiate policy development to address policy gaps.	Update policies and legislation on economic instruments
	5. Funding for BD management secured	2. Promote BD economic incentives	Develop and publicise incentives Integrate BD incentives into policy frameworks
4. To promote the sustainable use and equitable sharing of costs and benefits	1. Economic returns from BD resources optimised	1. Develop mechanisms	Develop Economic instruments for BD Build capacity for economic valuation of BD Undertake economic valuation of BD Training for CB programmes
	3. Mechanism for sharing costs and benefits established	1. Establish mechanism	Strengthen implementation of law on patent and property rights
	4. Role of community in BD management strengthened	1. Develop/strengthen legal frameworks for ensuring sharing of benefits and costs.	Integrate BD costs and benefits into micro-and macro-economic framework

Table 5: Sectoral economic measures proposed in the Uganda NBSAP

Wetlands	No economic instruments, EIA, CBA, funding, per se		
Aquatic Resources 1. To Develop and Strengthen Coordination, Measures and Frameworks for Management of Aquatic Resources.	2. Capacity for aquatic resources management strengthened	1. Strengthen Fisheries policy.	Set fishing quotas
2. To facilitate research, information management and exchange of aquatic resources	1. Research activities strengthened	1. strengthen research on aquatic biodiversity	Undertake impact assessment on aquatic resources by (sic) introduced species Undertake impact assessment by (sic) pollution, eutrophication

4. To promote the sustainable use and equitable sharing of costs and benefits of aquatic resources	2.Costs and benefits of aquatic resource management shared	1. Develop mechanism for sharing costs and benefits	Develop and implement appropriate economic instruments (e.g licenses taxation, etc.)
FORESTRY	Management of privately owned forests improved.		No economic instrument per se
4. To promote sustainable use and equitable sharing of costs and benefits of forest resources	1. Use of Economic instruments for forestry management promoted	Integrate economic values in forestry management Promote integration of forestry resources values into macroeconomic frameworks	Build capacity for economic valuation of forestry resources Undertake economic valuation of forestry resources, Develop and implement economic instruments Integrate forestry values into macroeconomic frameworks.
	2. Costs and benefits of forestry shared	Develop mechanisms for sharing costs and benefits of forestry resources Develop mechanisms for ensuring contribution to forestry management	Integrate access rights into policies and leg Implement activities that promote access. Develop and implement suitable economic tools for sharing the costs involved in forestry management.
WILDLIFE 4. To promote sustainable use and equitable sharing of costs and benefits of forest resources	1. Use of economic instruments values in wildlife management	Integrate economic values in wildlife management	Build capacity for wildlife economic valuation Undertake economic valuation of wildlife Develop and implement economic instruments Integrate wildlife into macroeconomic frameworks
DOMESTIC ANIMAL DIVERSITY 3. To reduce and manage negative impacts on domestic animal diversity	1. Capacity for planning, monitoring and evaluation strengthened.	Promote traditional management practices	Initiate incentives to promote traditional domestic animal diversity
SOIL DIVERSITY 4. Value of Soil Biodiversity understood	1. Value of Soil biodiversity understood	1. Develop measures to increase understanding of the values of soil biodiv.	Undertake soil biodiversity valuation
PLANT GENETIC RESOURCES 2.To facilitate research , information management and exchange	2. Information on PGR improved.	Update information on Plant Genetic Resources	Document and disseminate economic potential of PGR
4. To promote the sustainable use and equitable sharing of costs and benefits	1. Costs and benefits of biotechnology shared	Develop mechanisms for sharing costs and benefits of biotechnology	Review relevant regulations and streamline issues of cost and benefit sharing of intellectual property rights measures