MINISTRY OF FINANCE AND ECONOMIC AFFAIRS

Poverty-Environment Policy Analysis

Revised Final Report

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Acronyms

ASDP	Agricultural Sector Development Programme
ASDS	Agricultural Sector Development Strategy
CBC	Community Based Conservation
CBFM	Community Based Forest Management
DOE	Department of Environment
DP	Development Partners
EEZ	Exclusive Economic Zone
EMA	Environmental management Act
GDP	Gross Domestic Product
HADO	Hifadhi Ardhi Dodoma
HASHI	Hifadhi Ardhi Shinyanga
JFM	Joint Forest Management
LGA	Local Government Authorities
MDA	Ministries, Departments and Agencies
MDGs	Millennium Development Goals
MTEF	Medium term Framework
NEMC	National Environment Management Council
NEP	National Environmental Policy
NSGRP	National Strategy for Growth and reduction of Poverty
NTFP	Non Timber Forest Products
PREM	Poverty Reduction and Management
PRS	Poverty reduction Strategy
RAWG	Research and Analysis Working Group
REDD	Reducing Emissions from Deforestation and Forest Degradation
RDS	Rural Development Strategy
TEV	Total Economic Value
UNDP	United Nations Development Programme
URT	United Republic of Tanzania
VPO	Vice President's Office
WMA	Wildlife Management Areas
WUA	Water User Associations

Executive summary

Poverty and environment has an important relationship especially for developing countries like Tanzania. These two areas do have a complementary relationship which may be positive or negative depending on how they are conceptualized and dealt with. The poor under desperation may cause environmental degradation while a degraded environment in turn could be a source of increased poverty through many avenues including the disappearance or decline in the goods and services which the environment provides to our everyday needs. The natural environment has tremendous values to humans including direct ones such as the NTFP, indirect ones such as environmental functions including carbon sink, water catchment, soil retention, microclimate regulation, and option values such as future use of resources, aesthetic values which provide not only the relaxation and recreation but also tourism business and therefore economic contribution to the nation. Sustainable development requires that these values be conserved and sustainably utilized so that their benefits contribute towards society's wellbeing and poverty reduction today and in the future. To be able to address this duality all related sectors need to recognize, identify, plan and implement activities which facilitate appropriate response towards achieving environmental integrity and poverty reduction. Removing policy conflicts and duplication of activities through coordinating actions is vital for success. To achieve this, an effective operational institutional mechanism must be established to coordinate and take care of activities cutting across various sectors. This includes planning and allocation of resources to the institutional arrangement which will also have to respond to anticipated climate change impacts through taking mitigation and adaptation measures proactively

In June 2001 a group of stakeholders comprising different government institutions, academia and NGOs worked to formulate a program on the integration of environment into the Poverty Reduction Strategy process. The Division of Environment in VPO and NEMC with technical advice from the champions and think tank developed an initial proposal for integration of environment as a crosscutting issue into the PER/MTEF process in2002. This review is the first to look into the implementation of the intended integration of environment into the MKUKUTA process i.e. poverty environment nexus. The reversal of the negative poverty/environmental impacts will depend not only on improved environmental management, but and availability of alternatives sources of livelihood and a supportive enabling institutional and legal framework. Consequently, empowerment and capacity building, good governance, resource tenure, education and awareness are important in creating conducive environment for changing the negative outcomes into positive ones.

This study had three major objectives, first was to assess how policies that promote poverty-environmental issues have been integrated into national development policies and processes. That is looking at the synergies between the environment and poverty policy, policy alignment/harmonization. Secondly, to assess possible policy trades off; Environment/Growth nexus, energy, agriculture, water, long term planning/climate. Thirdly, assess population dynamics as an opportunity and challenge and its implications on sustainability issues, natural resource utilisation, planning process and waste management.

To attain those objectives the following tasks were required to be done. To performing a comparative policy analysis and suggest the best practices of how to address poverty-environment nexus. To assess the extent that the institutional arrangement provided in the EMA is established at all levels of the government and their capacity. The assessment should also study the linkage between these institutions. Assessment of the actual progress made in environmental management and protection in the country. Review of key policies and identify best practice from international experiences. Assess the key capacity development and institutional strengthening needs for achieving national development objectives and MDGs related to poverty and environment. A review of key reports (National & Sectoral level policies, strategies, related programmes & projects document. How they are implemented. Intended benefits and beneficiaries.

Conceptual Framework and methodology

The TEV framework is used in this study to characterize the interaction between the natural environment and society. The natural environment provides what are categorized as use values and non use values to local and global communities. These are grouped as direct use values and the indirect use values. The indirect use values comprise mainly of ecological functions such as watershed services, carbon sequestration etc.

Methodologically, the study used a checklist of questions and a table from the MKUKUTA document requiring relevant institutions to fill the progress they have made in implementing their allocated tasks. A series of focus group discussions at ministerial level were conducted in order to get the general feeling of the situation from a broad perspective. The respondents were selected from the main institutions dealing with both environmental issues and poverty eradication at the ministerial level. Others included NGOs and Development Partners

National Policies and Strategies review

The key environmental policy documents reviewed were: National Environmental Policy (URT, 1997); National Environmental Action Plan (1997); The National Climate Change Adaptation Plan (2006); The National Biodiversity Strategic and Action Plan (2000); The National Action Plan to Combat Desertification (1999). Earlier strategies and plans include: The Coastal Biodiversity Conservation Strategy (1995); The National Environmental Action Plan (1994); and the National Plan for Agenda 21 (1993). Also there are number of sectoral policies which are relevant to the environment, these include: Forestry policy, Fisheries Policy, Livestock Policy, Agricultural Development policy, Irrigation Policy, Industrial policy, Wildlife Policy, Beekeeping Policy, Water Policy, Tourism Policy, mineral policy, energy policy and so on. Most of these sector policies do recognise the environment; however some lack the explicit direct link between poverty and the environment.

The review found that, the Environmental Management Act (EMA) of 2004 is the most current and significant environmental reform process to date. It provides a legal and institutional framework for: sustainable management of the environment; preventing and control of pollution; waste management, environmental quality standards; public participation, environmental compliance and enforcement. The Act also specifies the role of actors at various

levels of government, where coordination is done by VPO Division of Environment while NEMC enforces EMA and the rest of the ministries are implementing agents.

The National Environmental Policy of (1997) being the main policy has the objective to ensure sustainability, security and equitable use of the resources for meeting the basic needs of the present and future generations without degrading the environment. Poverty is the first issue addressed as a cross-sectoral policy-the policy recognizes the linkage between poverty and the environment. The NEP however, needs to be reviewed since it is more than 10 years old and significant changes have occurred since.

The Forestry policy was found to adhere to the principles of the National Environmental Policy; it acknowledges that there is a clear cause and effect relationship between poverty and environmental degradation. One notable issue regarding the policy, like many other sectoral policies is that there is little direct and explicit reference to poverty alleviation per se and the links between improved forest resource management and poverty reduction. The policy provide strong support for PFM through which poor local communities should be able to gain better access to the control of and benefits from forest use. Currently the Forestry Policy is under review, it is expected that it should be able to address emerging issues such as the growing international carbon trade and other conservation mechanisms.

The Fisheries policy acknowledges the linkage between the sustainable exploitation of fish resources and the provision of high quality food, income and employment. Though the linkage between poverty and environment is recognized, the role of poverty as a constraint to sustainable management of fisheries resources, or possibility of developing positive environment/poverty linkages, is not highlighted. The biggest challenge facing the fisheries sector is compliance to regulations in both marine and freshwater fisheries. Non compliance costs the nation lost revenue, sustainable protein through destructive fishing practices. The fisheries policy is also under review and is expected that the new policy should be clearer on rule compliance and enforcement. This should include the issue of registration of fishing vessels, catch limit, transhipment, and inspection and so on. One pre-requisite for the country to benefit from the marine fisheries sector is the construction of a fishing harbour which is non existent at the time being. The government should think about implementing the recommendation of the 5YDP of 2007 with respect to fisheries.

The Wildlife policy seeks to integrate wildlife conservation within rural development where benefit sharing in a way aims at addressing poverty issue is discussed at length. The policy strongly support community based conservation through WMA and the process by which the benefits of wildlife management will go to local communities is given priority. The potential impediment to WMA implementation is the complexity of the process required to establish officially recognized WMA in many areas. The guidelines are detailed and demand a high level of capacity which is lacking in many communities. There is also a clear problem of governance in this area and the government is loosing billions of shillings on this. In order to exploit the

potential for growth and rural development from wildlife resources, it is necessary to ensure greater coherence between different national policies and instruments

The National Water Policy states that "water is considered a key factor in the socio-economic development and the fight against poverty". The policy supports the application of the polluter pays principle and has a specific objective to have in place water management system which protect the environment, ecological system and biodiversity. It is noted in this review also that water for the environment is recognized and there is a clear linkage between water policy and the irrigation policy. Despite these apparent linkages there is no mention in irrigation policy on the efficient use of available water. This is a shortcoming of the irrigation policy as it ignores the fact that not only water is scarce resource but inefficient use is bad for the environment.

The Mineral Policy seeks to alleviate poverty through the development of small as well as large scale mining operations. The policy also requires actions to mitigate the adverse environmental and social aspects of these types of operations. Environment and poverty concerns are therefore addressed though the linkages between them are not mentioned. Despite these however, questions are still being asked about the extent to which the large scale mining sector is contributing to poverty reduction in the areas where they are working. Although local employment is being provided, the macro- economic contribution of the sector in terms of the substantial tax breaks and relatively low royalties and other levies that are paid leaves a lot to be desired. It is argued that the mining sector should be able to make a large contribution to government revenues and, through that, to the country's goal of poverty alleviation. Large scale mining has a major environmental impact, consumes large volumes of water and uses very hazardous chemicals, especially mercury and cyanide and therefore high potential for water pollution. There are real environmental costs and potential hazards, which calls for NEMC to increase its capacity in monitoring and environmental auditing.

Policy Trade-offs

These are inevitable between environment and economic activities, they will always be there. Trade offs between poverty and environment includes those impacts on the environment due to economic activities such as various forms of investment activities and their returns such as industrial production, infrastructural development. Others are agricultural extensification as against deforestation, agricultural intensification against water and soil pollution leading to health problems and also causing costly supply of clean and safe underground water and sometimes rendering the water unfit to human consumption hence causing water unavailability and scarcity. Agriculture expansion could also cause conversion of wetlands. Although agricultural activity could supply a good source of livelihoods in the short run, if done through conversion of wetlands, it may affect the water flow and availability and soil moisture in the long run hence resulting in the soil productivity to fall causing more poverty to the communities around. Biodiversity is important for the functioning of all ecosystems and that excessive loss of biodiversity imposes real costs on resource users (Heywood 1995).

Although these tradeoffs exist, the way these are determined is vital. The important trade-off thresholds have to be established and should not be surpassed for sustainability.

Managing tradeoffs between growth, environmental and poverty reductions is of vital importance. This can partly be achieved in the long run through appropriate design of fiscal measures.

Tradeoffs are not without limits, it is important to know where to go and what to do against where not to go and what not to do lest we surpass the carrying capacity of the natural environment and cause irreversibility's and crushes of ecological systems which are catastrophic and highly undesirable. Among the pre conditions for observing the limits includes thresholds for environment integrity/ecological balance where nature can continue to reproduce itself and continue to produce the expected services.

International Experience

A review of international experience is presented on factors influencing poverty-environmental nexus, poverty reduction and management of natural resources, role of natural resources in poverty reduction, gender aspects in poverty –environmental nexus, the rural urban dimensions of poverty - environment nexus. However, experiences from Asia show that poverty and environment nexus is not universal. The evidence suggests that the nexus concept can provide a useful catalyst for country-specific work, but not a general formula for program design (World Bank, 2006).

Policy and policy implementation conflicts

In terms of existing policies, Agricultural policy, Livestock policy and natural resource policy are in conflict. What is prioritized in agriculture, livestock, natural resources have direct negative impact on natural environment and vice versa particularly in terms of policy implementation. In the process of implementing MKUKUTA, there are policy conflicts that have been reported by key respondents from key ministries. In terms of industrial development, there are cases of conflicts that have emerged. These include conflicts between environment and economic growth through mining, industrialisation among others. These include the Natron Soda ash project, Karibu textiles factory and North Mara gold mine. In all the above, there existed conflict between the expected gains from the industrial setting up. While emphasis was promotion of growth and therefore well being of people, the issue of environmental pollution observed and thus a conflict.

Law enforcement

The Environmental Management Act, 2004, requires industries to undertake EIA before is established, but this law came into force while industries already existed, implementing EIA therefore becomes impractical. However, EMA require the Environmental audit instead.

Although it is not completely hopeless, it is somehow tricky to do audits without baseline information generated by EIA for monitoring. Some investors (private sector) have established industries by presenting EIA report for just one line of production. But as the time goes, they introduce other lines of production having impact to the environment without EIA. There is a conflict between settlements and industrial sites. Due to rising population, and industrial activity, people have moved towards industrial areas and vice versa, this has resulted to the clear noticeable negative impact of industries to people and thus a conflict.

Low implementation capacity

There is low capacity in implementation, monitoring and evaluation of production technologies (human resources and hardware) at all levels e.g. NEMC, ministerial, regional and local government levels. Community understanding of industrial effluents is a problem, and this results to a very high social costs. Awareness creation to communities is needed to that effect. There is low capacity at district level where the actual interaction between people and the environmental resources prevails. Majority environmental officers in districts are engaged with natural resources matters, leaving environmental issues un-attended. This would jeopardize the sustainability of environment. There is a need to strengthen capacity regional and local government, as these are more responsible for the environment at the grass root level. The human resource capacity should include at least 3 fields of expertise i.e. Ecologists, economists and sociologists.

Inadequate Coordination

Government Ministries, Departments and Agencies (MDAs) have been given tasks to fulfil in collaboratively. The IMTC is presumably the responsible body but is inadequate for efficient coordination because it is loaded with a lot of tasks. In some ministries, there is no established Environmental management unit; instead, there is a project which deals with environmental issues. EMA does not stipulate exactly where the environmental unit should be established within the ministry, this made ministries to set up the unit in departments which are not relevant to environmental issues. A more effective inter ministerial and sectoral coordination mechanism should be put in place to improve MKUKUTA implementation.

Inadequate resource allocation

It is observed that, most activities defensive and mitigation are allocated with lower amount compared to what could be spent by the respective ministries. For example, the ministry of agriculture had received less by the average of 11% of the actual disbursed amount compared to what actually requested for during 2005 – 2009. The average expenditure by Ministry of natural resources is 43% less of allocation for the period 2005 – 2009. The average expenditure by the ministry of Energy and Minerals is less by 30%. Also is noted from this review that the government allocated flat rate fund to all ministries for the implementation of EMA. This is a clear indication of lack of planning and strategies of what need to be done during the implementation of EMA. It is important that the fund being allocated according to the requirements and task ahead for each ministry which should be based on respective strategic and action plans. While it is important that MKUKUTA II allocates more funds for the environment,

there is also a need to have a code in the budgetary allocation framework for the environment so that it becomes easy to trace its uses as it currently is with HIV/ Aids.

Recommendations

The review comes up with a total of 9 actionable recommendations as follows. EMU should be established at the department dealing with cross cutting issues, in most cases this should be the Planning and Policy Department. The DPP is a member of the environmental Working Group (EWG), which makes it the more appropriate to house the EMU. The VPO-DoE should be responsible to guide this process in collaboration with the President office-Planning Commission (POPC). Second, there is a need to strengthen capacity regional and local government, as these are more responsible for the environment at the grass root level. The human resource capacity should include at least 3 fields of expertise i.e. Ecologists, economists and sociologists. The VPO – DoE, NEMC and PO RALG should guide and facilitate the process. The third recommendation is that since the current Inter Ministerial Technical Committee is loaded with responsibilities, a more effective inter-sectoral coordination mechanism which is more 'hands on' that reports to the IMTC should be put in place to improve MKUKUTA implementation. The Planning Commission and VPO environment should facilitate the process.

Fourth, while it is important that MKUKUTA II allocates more funds for the environment, there is also a need to have a code in the budgetary allocation framework for the environment so that it becomes easy to trace its uses as it currently is with HIV/ Aids. The Ministry of Finance should take the lead in facilitating this. Fifthly, budgetary allocation should be based on needs of the institution in question based on requirements by line ministries as opposed to the currently flat rate allocation. The Ministry of Finance and VPO Environment should guide the process. Sixth recommendation is that, while economic growth is important for poverty reduction, care should be taken on how tradeoffs are made. In this light we need to balance the personal, societal and national costs and benefits of a decision for sustainability. The VPO environment, NEMC and Ministry of Finance should work on way forward.

Seventh, Poverty and environment nexus should be assessed with the gender divide in mind due to their traditional division of labour at the household level. Similarly targeting of capacity building should follow the same criteria i.e. who is responsible/ doing what at the household level for effective outcomes. The VPO Environment, NEMC and Planning Commission within the Ministry of Finance should lead the process. Eighth, climate change adaptation and impact mitigation should be considered in the next phase of MKUKUTA particularly the management mechanisms for conserving the natural environment involving the rural communities and where incentive options are introduced such as REDD+ where both the communities and the environment win.

Lastly, population dynamics has two implications. One implication is on urbanization growth and its pressure on the existing infrastructure. Therefore planned urbanization has to be effected. (Ministry of Lands and Human Settlement). The second implication is on pressure on resources due to population growth. We need to hasten and land use planning, participatory management

and Strengthening of capacity of NEMC and Local Governments. These activities have to be overseen by PO RALG and the VPO environment. Furthermore, MKUKUTA II has to take these into consideration.

1.0 Introduction

Natural resources and environmental goods and services contribute significantly to peoples' livelihoods and therefore the economy as whole. Environment matters greatly to people living in poverty (Angelsen and Wunder 2003). This would mean that, the sustainability of both environment and the peoples' livelihoods depends on each other and form an important unit for poverty policy analysis. Economic development and poverty reduction should help improve environment and vice versa, that sustainable utilization of natural resources can be an important vehicle for poverty reduction. The relationships between environmental degradation and poverty have been recognized for decades now. Environmental degradation leads to widespread poverty, as it reduces the availability of clean water, productive soils, and other direct and indirect goods and services upon which so many people depend for their health and livelihoods. Apart from commercial activities such as plantation agriculture and indiscriminate harvesting of environmental resources, poverty can be a major cause of environmental degradation as it undermines people's will and capacity to manage resources sustainably. The poor are most affected by environmental degradation due to their vulnerability and low capability to cope.

The eradication of poverty is a major development challenge. While the linkage between economic growth and poverty reduction is generally obvious, the relationship between economic growth and improvement in the environment remains unclear. The enhancement of economic growth is often the major macro-objective of economic development although the associated adverse environmental impacts are recognized. It is expected that poverty reduction will take place through a trickle-down of economic growth: the benefits of economic growth will percolate down to the poorer section of the population and increase their income. Under this premise, the pace of economic growth is maintained as much as possible in order to maximize the pace of poverty reduction. However, policies need to be formulated in order to mitigate the adverse environmental impacts of economic growth and reverse environmental degradation.

Analyzing the poverty-environment nexus against the background of the linkages between economic growth and the environment and the associated policies is key in identifying the modalities for strengthening the impact of the policies and to draw the attention of policy makers to the fact that environmental improvement strengthens the impact of economic growth on poverty reduction and that improving the environment is an important element of a pro-poor economic strategy.

The existing literature suggests that the strength of poverty–environment linkages may be affected by many factors including economic policies, resource prices, local institutions, property rights, entitlements to natural resources, and gender relations (Ambler, 1999; Arnold & Bird, 1999; Barbier, 2000; Dasgupta & Ma¨ler, 1994; Ekbom & Bojö, 1999). It is also found that, the relative strength of links between poverty and environment may be very context specific (Bucknall, Kraus, & Pillai, 2000; Chomitz, 1999; Ekbom & Bojö, 1999).

The linkages between environmental conservation and poverty reduction are simultaneous and vibrant processes taking place in urban and rural setting in Tanzania. The excessive birth-rates exert pressure on scarce food resources and social services such as water, electricity, infrastructure and employment. Deficit of these facilities and resources can result into unsustainable resource use that causes environmental degradation that sets the stage for permanence of poverty. Therefore, addressing these poverty – environment linkages must be at the core national effort to eradicate poverty. It is also important to have clear conceptualization of the terminology regarding poverty reduction. Angelsen et al. (2002), poverty reduction is described as a situation where people are becoming measurably better off over time, in absolute or relative terms.

1.1 Impact of the environment on poverty

It is commonly observed that poor households, especially in rural areas, derive their livelihood income from natural resources (for example, land resources for agriculture and water resources for fishing). It is also asserted that the poorer the household is, the greater the share of its income comes from environmental resources. In addition to providing a livelihood, the environment plays a very significant part in influencing the health of the poor. Environmental degradation has a disproportionate negative impact on both the livelihood and the health of the poor. Apart from the natural environment being the major source of traditional medicines; exposures to environmental pollution remain a major source of health risk throughout the world, and risks are generally higher in developing countries, where poverty, lack of investment in modern technology and weak environmental legislation combine to cause high pollution levels (Briggs 2003). About 8–9% of the total disease burden may be attributed to pollution, but considerably more in developing countries. Unsafe water, poor sanitation and poor hygiene are seen to be the major sources of exposure, along with indoor air pollution. It can be seen from the above arguments that the environment has strong linkages with the livelihood, health and vulnerability of the poor. These linkages need to be identified in some detail before options for appropriate policy interventions to benefit the poor can be studied.

Wise use of the environment presents a route for the poor to break out of poverty. It is mainly by making profitable and sustainable use of natural resource that poverty in Tanzania can be reduced. In urban areas the options are more complex, but better planning, recycling, improved solid waste management could all contribute to improved environment and reduced poverty. Policies, strategies and investments should therefore be focusing more strongly on these goals.

On the other hand, there are parts of Tanzania, most notably Dodoma and Singida Regions where low and erratic rainfall is certainly a factor contributing to the poverty of many people. Here, low rainfall and drought years are unavoidable. Poverty can however be reduced by using appropriate technology (growing sorghum rather than maize: cowpeas rather than beans; using simple water harvesting structures; constructing simple compost pits, etc.) and by preparing for the inevitability of drought. Small-scale irrigation offers tremendous local opportunity to harness local resources for poverty reduction. With relatively small levels of investment

considerable impact can be achieved using simple techniques. This is one of the many potentials that have not yet been effectively exploited. Probably the current Kilimo Kwanza strategy could do something with regards to this. It is however important that climatic variability such as drought preparedness should therefore be part of an effective plan to protect the poor from negative environmental conditions.

1.2 Impact of poverty on the environment

The nature of poverty-environment inter-linkages in urban areas is somewhat different from that in a rural setting. Although absolute poverty in the African, Asian and Pacific region is predominantly a rural phenomenon, rapid urbanization and the expansion of urban-based economic activities have recently led to very substantial rural-urban migration. However, the migration process has, to some extent, helped to reduce population pressure on agricultural land and contributed to increasing agricultural productivity and reducing rural poverty in the Asian and Pacific region (Dasgupta, et al. 2005).

There are many cases where local poverty and perceived lack of alternative income sources will lead to environmental degradation. In both urban and rural areas, local population growth puts strain on certain resources, but often there are options which could be applied to redress the situation and avoid degradation if appropriate conditions were established. But even in these areas, poverty *per se* is not usually the only cause, as lack of awareness, personal greed of others using the same resource (e.g. commercial farming, energy production, illegal fishing and hunting etc), inadequate tenure, ineffective controls and enforcement mechanisms, and corruption all contribute to local ecological decline. This highlights the importance of non-income poverty. Cash grants to most rural communities will generally do little to reduce overall poverty until there are also the necessary skills and investment opportunities to use the money to solve the underlying problems.

The reversal of the negative poverty/environmental linkages will depend not only on improved environmental management and profitable livelihood activities, but also on a supportive enabling institutional and legal framework. Consequently, empowerment and capacity building, good governance, resource tenure, education and awareness will be as important in changing the negative outcomes into positive ones as will be access to credit, or improved soil conservation and tree planting techniques.

A review of literature reveals that there are important aspects to consider when analysing the poverty and environment nexus. Experiences from Africa show that poverty environment nexus should be assessed with the gender divide in mind due to their traditional roles and division of labour which has implication on resource use and interaction with the environment (Lufumpa 2005), and also shows that population growth provides opportunities for better management of environmental resources (UNDP 2003) following the problematic approach i.e. hardship one faces is the mother of innovation.

Experiences from Asia show that poverty and environment nexus is not universal. The evidence suggests that the nexus concept can provide a useful catalyst for country-specific work, but not a general formula for program design for all countries to follow. World Bank report (2006) shows that poor households in Cambodia might benefit most strongly from programs that jointly address poverty and household level environmental quality, at the same time, all of Cambodia's citizens, including the poor, would benefit from more effective measures to reduce the rate of deforestation. The welfare of the poor in Cambodia might be significantly enhanced by close integration of poverty-alleviation and environmental strategies. It is revealed and suggested that, the poverty-environmental nexus concept can provide a useful catalyst for country-specific work, but not a general formula for program design. Joint implementation of poverty and environment strategies may be cost effective for some environmental problems, but independent implementation may be preferable in many cases.

It is on the basis of this premises that Tanzania had developed national, sectoral policies and strategies on poverty reduction. In these policies however, the natural environment has been featured as a cross cutting issue to be dealt with by all who have a stake in it. These include the Poverty Reduction Strategy (PRS) of 2000, and the National Strategy for Growth and Reduction of Poverty (MKUKUTA[1]) of 2005. The MKUKUTA document is aligned and committed to implement the Millennium Development Goals (MDGs), which focus on reduction of poverty, hunger diseases, literacy, illiteracy, environmental degradation and discrimination against women by 2015.

The NSGRP (MKUKUTA) elaborates clusters of desired outcomes for poverty reduction as: (i) growth and reduction of income poverty; (ii) improved quality of life and social well-being; and (iii) good governance and accountability. The MKUKUTA notes upfront, a commitment to ensuring that development activities today do not adversely affect the development needs of future generations and places emphasis on sustainable use of the country's natural resources. The second cluster of outcomes: Quality of life and social well being addresses among other things, the environmental sustainability.

In June 2001 a group of stakeholders comprising different government institutions, academia and NGOs worked to formulate a program on the integration of environment into the Poverty Reduction Strategy process. The Division of Environment in VPO and NEMC with technical advice from the champions and think tank developed an initial proposal for integration of environment as a crosscutting issue into the PER/MTEF process in2002.This review is the first to look into the implementation of the intended integration of environment into the MKUKUTA process i.e. poverty environment nexus. The Tanzanian National Strategy for Growth and Reduction of Poverty (NSGRP), clearly states the imperative role of natural resources and environment to fight poverty. Environment and natural resources management have been mainstreamed in the document, with strong emphasis on the role of natural resources for income generation, the importance of good governance, and the need to emphasize local involvement and participation. The MKUKUTA hence strongly recognizes the importance of poverty-environment linkages, and also provides several important entry-points for how to tackle them.

[1] Kiswahili acronym

2.0 Methodology

2.1 Study Approach

This assessment has greatly made use of the various outputs and existing data sets. MKUKUTA and MKUZA monitoring systems have been producing various outputs through various working groups such as Research and Analysis Working Group (RAWG), and Survey and Routine Data Group. Furthermore, various stakeholders such as DPs, Private sector and CSOs have also produced various outputs on different occasion during the course of implementation to assess progress. The review has also involve consultation of the key stakeholders and a review of key reports such as National & Sectoral level policies. The team has also reviewed relevant documentation regarding the existing government programs for mainstreaming environment into poverty eradication initiatives, relevant policies related to these programs. Environment as a cross cutting issue features in several national, sectoral policies, and strategies. These include those sector policies /strategies involving direct use of the resources in production and consumption such as agriculture, mining and industry (production) and transportation by way of use of natural resources.

Collection and review of these documents as well as studies and reports on experiences of other countries form the bases of this review. Also the study has involved consultation with key local and international institutions that could be reached. The consultation (through presentation of the different stages of the report) has the advantage of eliciting first hand information on what is working/is not working. The aim here has been to validate the analyses made by the team and to deepen our understanding of the extent of the problems and where possible successes with respect to the tasks identified above. The consultations were mainly carried out in Dar es Salaam region. The reason for this choice was determined by the design of the assignment by the client due to time and financial constraints. However, Dar es Salaam has most of the data sources from secondary sources and relevant stakeholders to consult. Interviews with the selected key persons within the Government, NGOs, academia, development partners, individuals and related stakeholders have been carried out.

In order to realize the objectives of this study which is to assess the status of the link between poverty and the environment in Tanzania, we have taken stock of the existing government environment and poverty eradication programs and projects including policies and strategies for environmental conservation and how they are implemented, their limitations, intended benefits and beneficiaries and their performance and challenges. To facilitate this, the respondents were selected from the main institutions dealing with both environmental issues and poverty eradication across the spectrum. The checklist consisted of a section inquiring about the activities of the respondent as an institution or individual as the case may be and how they involve other stakeholders particularly their boundary partners in their daily operations. This has helped shade light on whether there is any coordination or cooperation among institutions and authorities dealing with the two important areas of concern. Apart from the check list of questions, focus group discussions were conducted where it was deemed appropriate in order to get the general feeling of the situation from a broad perspective.

2.2 Objectives

1. To assess how policies that promote poverty-environmental issues have been integrated into national development policies and processes. i.e. synergies between the environment and poverty policy, policy alignment/harmonization.
2. To assess possible policy trades off; Environment/Growth nexus, energy, agriculture, water, long term planning/climate.
3. To assess population dynamics as an opportunity and challenge and its implications on Sustainability issues, Natural resource utilisation, Planning process and waste management.

2.3 Tasks

1. To perform a comparative policy analysis and suggest the best practices of how to address poverty-environment nexus.
2. Assess the extent that the institutional arrangement provided in the EMA is established at all levels of the government and their capacity. The assessment should also study the linkage between these institutions.
3. Assessment of the actual progress made in environmental management and protection in the country.
4. Review of key policies and identify best practice from international experiences
5. Assess the key capacity development and institutional strengthening needs for achieving national development objectives and MDGs related to poverty and environment
6. Recommendations/policy options –prioritized

2.4 Conceptual framework

To be able to link the environment more practically we need to identify the various environmental values recognised by communities locally and globally. It is through these values that the interaction between the natural environment and poverty can be clearly seen. The total economic value framework for characterising the interaction between the natural environment and society is seen as useful for our assessment. The natural environment provides what are categorised as use values and non use values to local and global communities. These are further broken down as direct values which include both renewable and non renewable goods and services such as minerals, oil, fish, wildlife, honey, timber, medicine, fodder, recreation etc. The indirect use values comprise mainly of ecological functions such as carbon sequestration, microclimate regulation, watershed services and water purification. Further, lakes, oceans, and rivers assimilate waste, and provide habitats for wildlife; forests prevent soil erosion and encourage soil production; wetlands offer flood control and trap nutrients and sediments. Goods and services may also be valued for their potential to be available in the future. These potential future benefits constitute an option value. This may be looked at as an insurance premium one is willing to pay to ensure the supply of environmental goods and services later in time. For example, people may be willing to pay for preserving biodiversity genetic materials to ensure the option of having these goods in the future. It is the premium that is placed on maintaining resources and landscapes for future possible direct and indirect uses, some of which may not be known currently.

The non-use value category captures those elements of value that are unrelated to a current, future, or potential use. These include existence and bequest values. Existence value reflects benefits from simply knowing that a certain good or service exists. For instance some people derive satisfaction from the fact that many endangered species are protected against extinction. Many people are willing to pay for protection of these species' habitats, even those located in remote, hard to access areas; hence the reason international organizations such as the World Wide Fund for nature (WWF) and International Union for the Conservation of Nature (IUCN) among others are in business for such objectives. Although those placing the value will most likely never travel to these places, or see the species, they nonetheless value the knowledge that such species exist. This is further re-enforced by the fact that the major proportion of knowledge of the biodiversity and their potential values is still not known, the ignorance quotient is just too high. Bequest value, the other non-use component, refers to benefits from ensuring that certain goods will be preserved for future generations. A current example is that of the concern for the impending climate change impacts. Many nations are concerned with future devastating impacts from global warming and would be willing to pay to mitigate them or even to facilitate adaptation towards avoiding or minimizing the anticipated impacts. This willingness is there despite the fact that the vast majority of the damages are expected to become reality long after our generation is gone. So policies associated with such time dimensional concerns consist primarily of bequest value. Among the non use values are existence values, these are the intrinsic values of resources and landscapes, irrespective of their use such as cultural, aesthetic, bequest significance, etc. With aesthetic values, economic benefits from tourism could be among the most important benefits of all intrinsic values in some economies.

Given the conceptual framework delineated above, the existing links between poverty and environment with other sectors are therefore manifested by how each of the sectors interact with the environment through the different value categories, and also how they contribute towards poverty reduction. Almost all sectors do touch and influence the state of poverty and environment. These include; Agriculture, Land, Fisheries, Forestry and Beekeeping, Wildlife, Energy, Minerals, Trade and Industry, Tourism, Transport, Infrastructure, Education and Health.

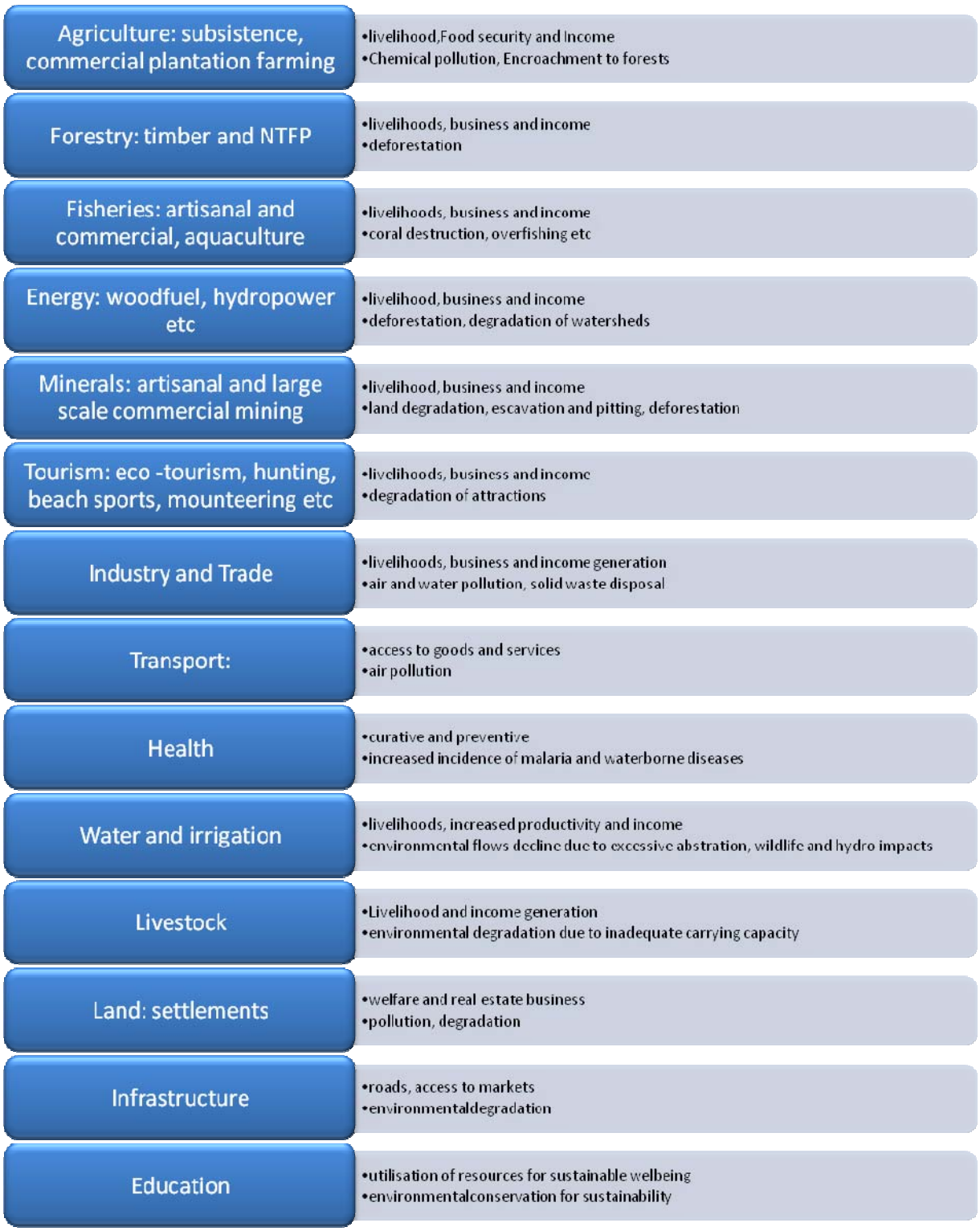

Figure 1: Sectoral links to environment and poverty

3.0 Brief Situation Analysis on Poverty – Environment Policy Analysis

The poverty-environment nexus is a two-way causality: while poverty can lead to environmental degradation, the converse is also true. Evidence shows that, due to lack of (or inadequate) survival options, poor people deplete resources and degrade environment at rates that are incompatible with long-term sustainability. This tendency eventually sets a downward spiral, by further reducing the income and livelihoods of the poor. It is widely held that for any poverty-reducing growth strategy to be sustainable, it must address environmental concerns and ensure efficient and sustainable utilization of generally scarce natural resources. The pattern and rates of environmental degradation vary from place to place throughout the country. There are areas where forest destruction, soil erosion and coastal zone degradation are accelerating at an alarming rate. These include the south eastern coastal zone of Rufiji where logging had been heavily taking place for export to mainly China, Mangrove forests of Ruvu delta for charcoal production, Uluguru and Usambara mountains in the Eastern Arc. Elsewhere, there are vast areas of undisturbed wilderness in near-pristine condition. Human activity is at the heart of much of the problem. But it is not just the activity of the poor that causes degradation, as the rich and influential - as well as those entrusted in enforcing rules and regulations - also have a substantial burden of blame to bear.

The issue of the poverty-environmental degradation in Tanzania has been reviewed by several authors (see Baker, 1982; Shechambo and Jambiya, 1995; Linberg, 1996; Jambiya *et al* 1997*;* Mascarenhas, 2000; Mwaipopo, 2002; Ole Sangale, 2002; Mariki, 2002). The majority of these review and analysis however, dwell more on the negative side of the relationship – especially how poverty leads to environmental degradation, and tends to focus more on rural rather urban situations. Little is discussed on how much environmental degradation is the result of the actions, and inactions, of influential individuals, and public and private institutions. There is also only limited discussion on the tremendous potential for stimulating economic growth and supporting poverty alleviation through the sustainable management of Tanzania's very rich natural environment.

What is emerging from the review is that there has long been recognised that there are problems with managing the environment and its natural resources. In the urban environment, industrial and human waste discharges are frequently greater than the capacity to treat or safely store them and uncontrolled settlement leads to a range of health and environmental problems. The National Environmental Policy, 1997, identified six major issues which require urgent action:

- Land degradation – which is reducing the productivity of the soils
- Lack of accessible water
- Environmental pollution – which is affecting the health of rural and urban communities
- Pollution and poor management of lakes, rivers, coastal and marine waters
- Loss of wildlife habitats and biodiversity – which threatens the national heritage and the future of the tourist industry
- Clearance of forest and woodlands – for agriculture, fuel wood and other demands.

Despite its enormous natural wealth Tanzania remains one of the poorest countries in the world. It is estimated that about 50% of all Tanzanians are basically poor. Approximately 33% live in abject poverty and about 48% of households are unable to meet their basic requirements. Poverty in Tanzania is still mainly a rural problem and 87% of the poor population lives in rural areas (HBS 2007). And this is the very areas where the natural wealth is abundant. In general the natural wealth has done little if at all to reduce poverty in Tanzania. Thirty nine percent of rural population live below the basic needs poverty line *versus* 18% in Dar es Salaam and 26% in other urban areas. Although the rate of economic growth per annum has risen strongly from 4.1% over the last decade to 7.1% in 2008 (PHDR 2009), it was however expected to fall to 5% below the growth rate of between 6 - 8% target. Furthermore the agriculture sector slowed down to 4.4% average growth since 2000, well below the 10% by 2010 put by MKUKUTA I making the efforts to eradicate income poverty even more sluggish. This calls for the need of the MKUKUTA II to take more measure to ensure that environment contributes more to the GDP as well as poverty reduction. Such as mining, fisheries especially deep sea fishing in the EEZ could contribute significantly to the growth of the economy and poverty reduction. Another area is on the wildlife especially hunting blocks allocation and pricing. A lesson could be learned from countries such as Botswana, Zimbabwe and South Africa.

Poverty and environment are inter-linked through four main dimensions: livelihoods, resilience to environmental risks, health and economic development. In rural Tanzania, the livelihoods of the majority of the people depend on the health of ecosystems. Thus, deforestation, soil erosion, and loss of biodiversity directly translate into loss of agricultural productivity and thus less food and income. It is also true that the adverse effects of environmental degradation are uneven across the population. For example, the living conditions of the poor offer little protection from air, water, and soil pollution when compared to ability of the non-poor to cope and mitigate the adverse effects of these environmental problems. In general, environmental conditions affect the opportunities, health, and security of poor people. Besides these effects at the household level, degradation of the environment affects productive sectors (e.g. agriculture, water, energy, etc.) and social sectors (e.g. outbreak of diseases). Addressing these effects requires more budgetary resources and can constrain expansion of government investments in other productive sectors of the economy. It is on the basis of this that environment needs to justify its continued support currently receiving from the government. For the support to continue it is crucial that the environment demonstrates its improved benefits where measures to conserve it have been taken and thus provide more revenue to the government coffers. This can only be achieved if concerted efforts are put in place to extract those potentials existing in the environmental resources and tourism, mining, fisheries, wildlife and forestry provide a basis for this. It is expected that MKUKUTA II takes a step further from where its predecessors ended.

3.1 Budgetary Allocation

Despite the fact the Government has allocated enormous amount of money into the environment, there are clear difficulties in tracking the flow of this money in a policy area, such as the environment. This is especially so because it does not have a convention sectoral organizational or governance structure. During the past five years of the implementation of MKUKUTA I the

government increased strategically the allocation of resources to key sectors of the economy (see Table 1). Of all the cross-cutting issues it is only HIV/AIDS that has a code and therefore the money allocated to the sector can be traced. Even though the government has been allocating money for the environment both at NEMC, VPO-DoE and the ministries (See Figure 1), the money cannot be traced as there is no code for the environment. This is dangerous as it encourages reallocation of the money for other pressing issues as may emerge. It is important that MKUKUTA II calls for not only more fund to be allocated for the environment but also a code should be given so that it becomes easy to trace its uses.

Table 1: Resource Allocation to Selected Major Sectors 2008/09

Billion Tshs				**Percent of total budget**	
	Recurrent	**Development**	**Total**	**Recurrent**	**Development**
Education	1,216.40	196.6	1,413.00	25.7	7.9
Health	457	286.6	743.60	9.7	11.5
Water	33.8	199.5	233.30	0.7	8
Agriculture	158.9	137.8	296.70	3.4	5.5
Roads	301.4	668.9	970.30	6.4	26.9
Judiciary	52.6	30.6	83.20	1.1	1.2
HIV/AIDS	19.1	87.9	107.00	0.4	3.5
Energy	43.7	335.2	378.90	0.9	13.5
Sub-total	2,282.90	1943.1	4,226.00	48.3	78
Others	2443.8	548	2,991.80	51.7	22
Grand Total	4,726.70	2,491.10	7,217.80	100	100

Source: MAIR 2009

MKUKUTA I arrived at the time the Environmental Management Act (EMA) (2004) was being finalized. The EMA is an important tool for enforcing and overseeing compliance to the law and policies geared towards environmental and resources conservation/protection. The National Environmental Management Council (NEMC) featured strongly as a champion of environmental policy analysis as it would continue to be a decisive national authority for enforcing the EMA and implementing inspection and carrying out environmental impact assessments. Among other things EMA required all ministries to have Environmental Unit which will be in charge of day to day environmental matters within the ministries. Ministries therefore had tasked to implement EMA. This review found that majority of the Ministries has established the Environmental Unit. With exceptional to Ministry of Infrastructure, the other ministry majority of the ministry established the unit during the 2007/08 financial year. Procurement procedures and other administrative huddles are blamed for these delays. Government have also been allocating money for these units, mainly for Defence and Mitigate measures (See Figures 1-3). It has been observed that there is a flat rate allocation of resources for environment unit in the different ministries. This is deemed not to be appropriate because different sectors have different needs

due to their involvement in environmental issues and poverty. A Ministry like Natural Resources and Tourism has wildlife, Forestry and Bee Keeping and Tourism sectors which are more natural resources and environment based and may need more funds than others.

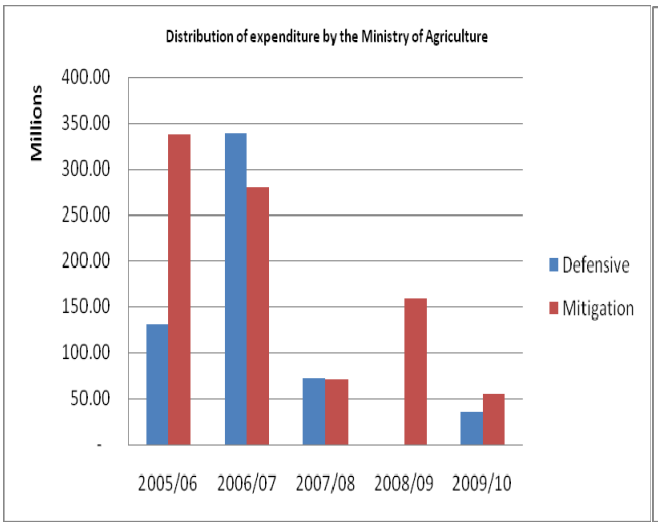

Figure 1: Ministry of Agriculture expenditure Distribution

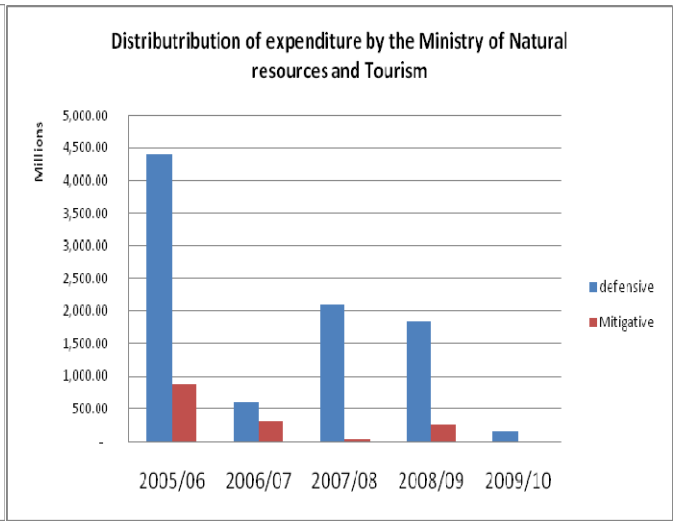

Figure 2: Ministry of Agriculture expenditure Distribution

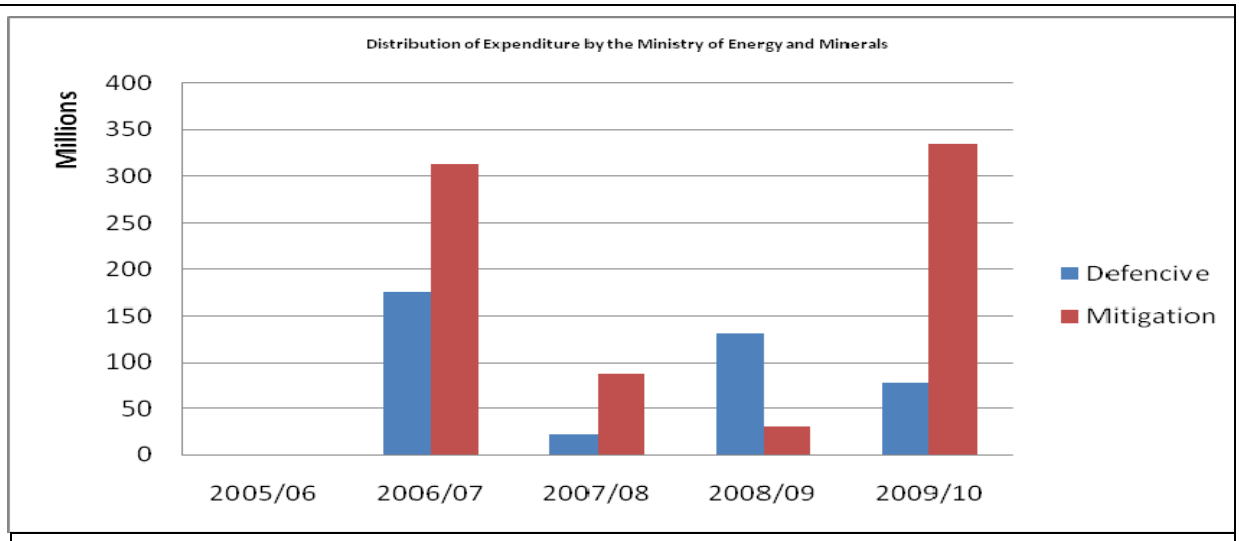

Figure 3: Ministry of Energy and Minerals

Table 2 Budgetary allocation into Environment **(Million Tshs)**

	2006/07 Actual	2007/08 Actual	2008/09 Approved estimate	2009/10 Estimates
VPO (Environment)	**7,924.26**	**9,512.93**	**13,428.52**	**8,893.89**
MoAFSC	**641.14**	**545.33**	**7,442.76**	**73,167.63**
Cleaner Integral utilization of Sisal waste	491.14	467.91	238.13	226.00
Lake Victoria Environment Mgat Project	100.00	77.42	7,204.62	72,470.23
Soil and Water Conservation	50.00	-	-	471.40
EMA implementation support Programme	-	-	-	-
MITM	**-**	**-**	**75.00**	**71.00**
Urban Development and Environmental Mgt.	-	-	75.00	71.00
MoEVT	**-**	**-**	**70.00**	**70.00**
Support to Environment Improvement	-	-	70.00	70.00
Ministry of Lands	**-**	**-**	**75.00**	**71.40**
EMA implementation support programme	-	-	75.00	71.40
Ministry of Water and Irrigation	**224.98**	**20,518.55**	**13,686.60**	**24,798.50**
EMA implementation support programme	-	-	135.00	323.50
Water Quality and Ecosystem Mgt	-	2,456.00	1,371.00	3,110.00
Dvt and Mgt of Water Resources	224.98	18,062.55	12,180.60	21,365.00
Ministry of Home Affairs	**-**	**-**	**100.00**	**75.00**
EMA implementation support programme	-	-	100.00	75.00
PMO-RALG	**-**	**204.77**	**234.89**	**333.79**
Participatory Forest Mgt	-	136.66	234.89	333.79
Land Mgt Program	-	68.11	-	-
Ministry of Energy and Minerals	**1,006.19**	**572.00**	**2,545.00**	**14,175.44**
EMA implementation support programme	-	-	75.00	71.00
Sustainable Mgt of Mineral Resources	-	-	2,470.00	14,104.44
Energy efficiency and Conservation	1,006.19	70.00	-	-
Promotion of Renewable energy in Tanzania	-	372.00	-	-

Environmental Mgt of Kihansi Project	-	130.00	-	-
MoLEYD	**-**	**-**	**75.00**	**71.40**
EMA implementation support programme	-	-	75.00	71.40
Ministry of Natural Resources and Tourism	**18,604.54**	**6,663.95**	**24,386.61**	**19,046.25**
Mgt of Natural Resources Program	1,950.00	-	5,993.45	-
Wildlife	1,584.00	1,161.06	7,311.10	6,647.03
Forestry and Beekeeping	6,470.54	5,502.89	11,082.07	12,399.21
Fisheries	8,600.00	-	-	-
Ministry of Infrastructure Development	**-**	**819.00**	**1,819.00**	**290.30**
Inst. Support to safety and environment Reform	-	819.00	1,749.00	215.10
EMA implementation Support Programme	-	-	70.00	75.20
Ministry of Livestock Development and Fisheries	**-**	**-**	**7,993.83**	**10,652.59**
Marine & Coast Environment Mgt Project (MACEMP)	-	-	7,993.83	10,652.59
Grand Total	**28,401.11**	**38,836.53**	**71,932.20**	**151,717.19**

4.0 National policy and strategy review

This section reviews national policies and strategies in order to assess the extent to which they address both environmental and poverty issues, and attempt to develop linkages between them.

4.1 The National Environmental policy priorities

The key environmental policy documents are the National Environmental Policy (URT, 1997), National Environmental Action Plan (1997), the National Climate Change Adaptation Plan (2006), the National Biodiversity Strategic and Action Plan (2000), and the National Action Plan to Combat Desertification (1999). Earlier policies include the Coastal Biodiversity Conservation Strategy (1995), the National Environmental Action Plan (1994), and the National Plan for Agenda 21 (1993). Tanzania is also signatory to number of key international conventions on the protection of biodiversity; these include endangered species, the ozone layer RAMSAR convention on Wetlands and so on. Also there are number of sectoral policies which are relevant to the environment, these include, Forestry policy, Fisheries Policy, Livestock Policy, Agricultural Development policy, Irrigation Policy, Industrial policy, Wildlife Policy, Beekeeping Policy, Water Policy, Tourism Policy, mineral policy, energy policy and so on. The environmental Management Act (EMA), 2004 is the most significant environmental reform process to date, which provides for a legal and institutional framework for sustainable management of the environment, preventing and control of pollution, waste management, environmental quality standards, public participation, environmental compliance and

enforcement. The Act specifies the role of actors at various levels of government, from local authorities to line ministries and outlines the various environmental management tools such as the Environment Impact Assessments, Strategic Environment Assessment (SEA), environmental standards. Todate the performance of the EIA has not been effectively enforced. Though all major investments are complying with the EIA requirement, there has been weakness in the monitoring and evaluation. The recent Barrick's North Mara Gold mine in Tarime District is a good test for this, the government and the environmental agencies have shown low capacity in monitoring the state of the environmental in the mining area. This is an area which needs huge improvement during the implementation of MKUKUTA II, more especially on the design of monitoring indicators and capacity at the agency level.

The policy and legal framework for promoting local and participatory management of the environment and natural resources has been clearly developed with the Forest Act (2002) and the village Land Act (1999) which devolve management and decision making rights over village land and forest areas to villages. The Budget Guidelines are the basis for annual budget submissions from the MDAs. They reflect the MKUKUTA priorities and are intended to inform the direction of the overall MTEF. The strategic plan of each MDA and LGA translate MKUKUTA into budgets and actions plans. For example the Ministry of Livestock Development and Fisheries (MLDF) has the overall mandate of managing and coordinating the development of livestock and fisheries resources in the country. The mandate implemented through the Medium Term Strategic Plan (MTSP), Medium Term Expenditure Framework (MTEF) and specific sectors development programmes. The ministry does this in cognizance of adopted national socio-economic policies and programmes that include Millennium Development Goals (MDGs), MKUKUTA I, National Livestock Policy of 2006, National Fisheries Policy of 1997, Agriculture Sector Development Strategy (ASDS), Agriculture Sector Development Programme (ASDP), of 2003, National Aquaculture Development Strategy and Fisheries Development and Marine Environment Conservation Programmes (MACEMP). As noted in Howlett, (2004) there is however, a wide gap between policymaking and planning and what actually takes place on the ground. A key challenge is the lack of implementation of activities, enforcement and monitoring to be in line with the intended policy objectives.

4.2 The National Environmental Policy (NEP) 1997

The main objective of the National Environmental Policy (NEP) (1997) is to ensure sustainability, security and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risking health and safety. These are the underlying principles of sustainable development. Poverty is the first issue addressed as a cross-sectoral policy. This is the strongest national policy in recognizing the linkage between poverty and the environment.

Though the basic principles of NEP remain valid, it is now over 10 years old and there have been considerable changes in the structure of the public sector, in local government reform, in land laws and in support for community participation in development. It is probably appropriate now for the policy to go under major review to accommodate the current issues both locally and internationally, e.g. the issue of climate change, alternative energy sources (Biofuels etc).

4.3 Forestry Policy

National Forestry Policy (URT, 1998) adheres to the principles of the National Environment Policy and acknowledges that "there is a clear cause and effect relationship between poverty and environmental degradation." The overall goal of the policy is to enhance the contribution of the forest sector to sustainable development and the conservation and management of Tanzania's natural resources for the benefit of present and future generations. However, like many other sectoral policies, there is little direct reference to poverty alleviation *per se* and the links between improved forest resource management and poverty reduction are not effectively established. On the other hand, the policy provides strong support for Participatory forest management through which poor local communities should be able to gain better access to the control of, and benefits from, forest resource use. The policy further state explicitly that royalty fees from forest concessions should be based on the market value of the harvested forest products - having either government or local communities capturing the rents is crucial for sensible forest management - but the policy is a bit hazy on how this will actually be done. The policy is often fuzzy when it comes to specifics. For example when it comes to incentives for replanting and for managing standing forests, the policy just states repeatedly that financial incentives need to be put in place but gives no indication of what those incentives should be and how they should be accessed.

Centralised forest management has contributed to both market and policy failures in the sector. The NFP describes the low capacity of government institutions to control and manage the forests as a central constraint. The country's forest reserves have been suffering from degradation due to encroachment, over-utilization, fires, unclear boundaries, lack of systematic management and inadequate resources for controlling illegal harvesting as well as inefficient revenue collection system (MNRT 2001). The NFP also argues that inadequate development of economic activity to absorb increased labour surplus from agriculture and livestock increase pressure on the country's forest resources. The 2004 logging scandal in Rufiji demonstrated that ineffective control systems and government corruption are still by far the greatest challenge that the forest sector has to face. Lack of data and monitoring of forest resources has been a major constraint faced by the Forest Administration both centrally and in the Districts. Efforts are currently underway to streamline existing elements of monitoring into a comprehensive national monitoring system under the National Forest Programme.

Currently the Forest Policy is under review, and it is hoped that major issues of poverty-environment linkages will be addressed more clearly and come up with more specific issues. It is also expected that the new Forest Policy should be able to show how Tanzanian forestry is likely to be affected by the growing international carbon trade. Government schemes that make it easier for local communities and individuals to access, say, REDD+ could become important and should at least be included as one of the likely future growth areas for forestry. These are an area which should be taken up in the MKUKUTA II.

4.4 Beekeeping Policy

The Beekeeping Policy (URT, 1998b) adheres to the NEP principles and aims to "enhance the sustainable contribution of the sector for socio-economic development and environmental

conservation". The link between poverty and the environment is therefore established, even if poverty is not specifically mentioned. The policy talks at length about the local benefits that can accrue from improved beekeeping. The potential role of beekeeping in generating household revenues, and hence poverty reduction, is a central theme of the policy. Bee keeping is seen as a major area for livelihood diversification for fishers and farmers alike.

4.5 Fisheries Sector Policy

The Fisheries Sector Policy and Strategy Statement (URT, 1997) acknowledge the linkage between the sustainable exploitation of fish resources and the provision of high quality food, income and employment. The link between poverty and employment is therefore once again recognised, though the role of poverty as a constraint to sustainable management of fisheries resources, or possibility of developing positive environment/poverty linkages, is not highlighted. Like many other sectoral policies, fisheries policy is also under review. The Fisheries sector has huge potential of contributing to economic growth and poverty reduction. A big challenge is how the sector can increase rule compliance, more especially in the Exclusive Economic Zone (EEZ). The recent caught illegal fishing vessel with more than 200+ tons of high valued fish specie is a good testimony of the significant of the sector to the economy. In 2004 seventy two (72) European vessels were spotted fishing illegally within 12nm of the Tanzania coast, this area is reserved for Tanzanian fishing boats. EU estimates approximately 70 ships operating illegally, targeting tuna, king fish, lobsters and prawns (MRAG, 2005). With catch rate of 4t/day and a season length of 200 days, this will mean that about 56,000tonnes will be harvested in Tanzanian water illegally. It is possible that the 70+ vessels spotted in 2004 could be categorized as IUU thus reaping all the benefits of the catch. The 72 spotted vessels, thus taking the same assumption this will mean that 72 x 4 x200days =57,600 tones, assuming a unit price of US$100/tone, give about US$ 5.8million. The absence of sufficiently severe penalties, combined with limited enforcement enhances the lucrative rewards of illegal fishing.

The policy is expected to be clearer on rule enforcement and compliance. All the legal catches from the registered vessels fishing in the EEZ water do not land their catch in Tanzania from whose waters they were taken. Instead they are often transhipped or landed elsewhere. At present Tanzania do not have the requirement for licensed vessels to enter the Tanzanian ports or land part of their catch, also there is a provision that wherever there is transhipment, should be carried out in Tanzanian ports, but so far the requirement has not been rigorously enforced, as none of the registered vessel from the EEZ come to the Tanzanian port for inspection, thus making inspections particularly difficult to undertake and the threat of misreporting very high (Lokina 2009). The main reason levelled for this is that Tanzania do not have a fishing harbour that could ensure that the country benefits from fishing through enabling fishing vessels to dock, by-catch to be off loaded to provide fish protein to local market, stimulate the economy by providing backward linkages. Export revenue will also be accrued to the country once fish are exported from the country and fish statistics will also improve. By not providing this vital facility, Tanzania is losing billions of shillings that could substantially help the fight against poverty. This is an area where the MKUKUTA II should put emphasis for the full realization of the benefits of the fisheries resources.

Wildlife Policy

This policy, 1998 seeks to integrate wildlife conservation within rural development. No specific mention is made of poverty. Benefit sharing – which should imply poverty reduction in rural areas if it was effectively implemented – is discussed at length, and the establishment of a process by which the benefits of wildlife management will go to local communities is given priority. The policy strongly supports community-based conservation (CBC) which has been shown elsewhere, under the right conditions, to be an effective instrument for poverty alleviation and environmental management.

At the practical level, however, the application of the policy has not been either rapid or widespread. There are a number of pilot projects and regulations and guidelines for the establishment of Wildlife Management Areas (WMA) have been established[2]. Wildlife Management Areas (WMAs) are described in the 1998 Wildlife Policy as land areas managed by communities to provide substantial tangible benefits from wildlife conservation. It remains to be seen; however, to what extent the policy will actually be implemented in the field in the near future over a large area. A potential impediment is the complexity of the process required to establish officially recognised Wildlife Management Areas. The guidelines are detailed and demand a high level of capacity. While the process is still in the early stages, this complexity is likely to be a constraint to the widespread adoption of the WMA principles. Another area that needs to be looked at is on hunting blocks. There is a clear problem of governance in this area, and because of that the government is loosing billions of shillings because of the block allocation method employed. New and more effective methods of hunting blocks allocation could be used (including international auctioning by Government not by those allocated those blocks) to maximise the benefit which may come from wildlife resources and minimise the hegemonic structure which exists now.

The hunting industry is one of the few non-farm industries with potential for economic development in remote rural areas of Tanzania, and hence contributes to poverty alleviation. However, at present rural communities only see minimal or no benefit from an industry that operates on their land. The policy framework in Tanzania focuses mainly on wildlife conservation and not on utilization. The National Tourism Policy stresses wildlife conservation, due to the fact that Tanzania's tourism is largely wildlife based. It states that "*... the government vows to ... improve and implement wildlife conservation regulations and to protect other tourist attractions for the benefits of present and future generations*". Various sources quote, that there is resistance to reform of the industry both within the Wildlife Division (WD) and the private sector. Vested interests between the Government and foreign private sector, lead to sub-optimal decision making that deprive the rural population of economic potential for growth and wealth.

In order to exploit the potential for growth and rural development from wildlife resources, it is necessary to ensure greater coherence between different national policies and instruments, particularly community based wildlife management, tourism development, rural growth strategies, investment regulations and incentives and poverty reduction strategies. It is important

[2] These are considered by many to be far too complicated and likely to discourage rather than encourage rural communities to participate.

that at policy level wildlife should be seen as an asset for rural development and poverty reduction. There is a need of explicitly and effectively involvement of local communities through implementation of the WMA regime. Local communities should have the autonomy to negotiate directly with hunting outfitters in their areas of control (WMAs) through provision of personnel to supervise hunting on their land, participation in setting quotas, and receiving and managing revenue from hunting; Improve monitoring, information and records systems at central government level with a view to monitor wildlife stocks more precisely. This would also improve accountability and transparency in the sector overall and could also be supported through independent monitoring mechanisms. Liberalise procedures for tendering hunting blocks to allow the best outfitters to bid competitively against each other for concessions. Provide enabling frameworks for partnerships between communities and the private sector. It is also crucial that the government implement control of subleasing, which may come naturally through effective market-based competition.

Tourism Policy

The National Tourism Policy, 1999 seeks to "assist in efforts to promote the economy and livelihoods of the people, essentially poverty alleviation, through encouraging the development of sustainable and quality tourism that is culturally and socially acceptable, ecologically friendly and economically viable." The link between poverty and environment in this sector is therefore tangentially acknowledged.

The policy recognises that much of Tanzania's tourism depends on areas of great biodiversity and on the maintenance of a high-quality environment. However, while it is stated that priority must be given to tourist projects that benefit local communities, in reality only a small percentage of the enormous income from tourism currently returns to local communities (see, for example Homewood and Rodgers, 1991 for the case in the Ngorongoro Conservation Area, Goodwin and Santili 2009, Nelson 2009). Furthermore, the policy is unclear on how to plan and implement greater benefit sharing with local communities from this highly sophisticated, extremely profitable and well-structured industry.

Water Policy

The National Water Policy, 2002 was developed over a period of ten years. It echoes the PRSP recognition of "the heavy dependence of the poor on the environment (soil, water forests), in particular household's reliance on environmental resources for income generation". The policy states that "water is considered a key factor in the socio-economic development and the fight against poverty. Deliberate efforts are therefore needed on the management of the resources in order to sustain the desired pattern of growth and consumption. This entails integrated planning, development and river basin management in support of food security and poverty reduction as well as environmental safeguards." As such, the policy is clear on the importance of the linkages between poverty and environment.

The policy also supports the application of the "polluter pays principle" and has a specific objective to "have in place water management system which protects the environment, ecological system and biodiversity". It also emphasises fair and equitable access to water which, in principle and if applied, should protect the interests of the poorest members of society. The

policy also addresses the management of floods and droughts, natural disasters to which the poor are particularly vulnerable, and is supportive of the development of community-level Water User Associations (WUA). There is a need to have a clear linkage and harmonization of the water policy and the irrigation policy. The successful implementation of the irrigation policy would to a large extent depend on how well the water policy is implemented. One needs proper management of water sources and its distribution, to have water for irrigation. But also proper use of irrigation is crucial on this aspect. Despite these linkages there is no mention in irrigation policy on the efficient use of the available water. This is a shortcoming as it ignores the fact that not only water is scarce resources but also too much use of it is not good for the environment.

Land Policy

The Land Policy, of 1997 (URT, 1997), stems from the recognition of the need to respond to a series of changing environmental pressures: human and livestock population growth, increasing urbanization, as well as changes in awareness amongst the population of the value of land and the evolution of customary tenure towards more individualized ownership. The policy is not specifically pro-poor, though it is specific about protecting local communities from external commercial speculation. Similarly, while there is little specific mention of the environment, the policy is concerned that there is appropriate land use and that hazardous lands are properly protected. There is no direct mention of the linkage between poverty and environment. This is unfortunate, as the successful implementation of this policy would, in the medium term, provide a critical element of the national and local framework for effective and simultaneous poverty reduction and improved environmental management.

Minerals Policy

The Mineral Policy of Tanzania, 1997, seeks to alleviate poverty through the development of large-scale mining operations. It also requires actions to mitigate the adverse environmental and social aspects of these types of operations. Environmental and poverty concerns are therefore addressed, though the policy linkages between them are not mentioned. There is, however, linkage in the impact of unregulated mining to severe environmental damage and appalling living conditions in poor artisanal mining communities.

Tanzania is developing her considerable mineral resources. There is increasing interest in developing positive poverty/environmental linkages in the artisanal mining sub-sector. Here, the weakest link in the environmental sustainability chain is poverty. It is the poor who bear the brunt of the opportunity cost of environmental protection.

At the other end of the scale, questions are being asked about the extent to which the commercial mining sector is contributing to poverty reduction in the areas where they are working. The mines provide local employment and many companies contribute to the well-being of the communities around the mines. However, questions have been asked about the macro-economic contribution of the sector in terms of the substantial tax breaks and relatively low royalties that are paid. It is argued that the mining companies should be able to make a larger contribution to government revenues and, through that, to the country's goal of poverty alleviation. Large-scale mining has a major environmental impact, consumes large volumes of water and uses very

hazardous chemicals, especially cyanide. There is a real environmental cost and potential hazards. MKUKUTA II in this regards is should come up with more specific monitoring indicators ring indicators that can be updated regularly.

4.11 Energy Policy

The energy policy of 1992, does not address poverty issues directly, but recognises that wood fuel is the major fuel for cooking and heating for most Tanzanians. It also acknowledges that the energy switch is unlikely to occur if electricity and other alternative forms of energy are going to be more expensive than wood and charcoal. It notes that Tanzania is a relatively small consumer of electricity, and only 5% of the population has access to electricity and wood fuel accounting for 92% of final energy consumption. The forest areas however, are being harvested at a rate faster than the regeneration rate of forests. The policy states that wood fuel in the Tanzania context cannot, therefore, be classified as a renewable source of energy. The policy objectives focus on exploiting hydroelectric sources, developing natural gas and coal resources, and step up petroleum exploration activities. It also aims to arrest wood fuel depletion by evolving more appropriate land management practices and more efficient wood fuel technologies as well as developing and utilising forest and agricultural residues.

5.0 Crosscutting policies and strategies

5.1 Tanzania Development Vision 2025

The 2025 Vision (URT, 1999) projects that in 2025 the Tanzanian population will have attained *"a high quality of life, peace, tranquillity and national unity; good governance; an educated society instilled with an ambition to develop; and an economy which is competitive with sustained growth for the benefit of all people…"*. These objectives not only deal with economic issues, but also include social challenges such as education, health, the environment and increasing involvement of the people in working for their own development. The thrust of these objectives is to attain a sustainable development of the people.

The Vision foresees the alleviation of widespread poverty through improved socio-economic opportunities, good governance, transparency and improved public sector performance. While charting a challenging path for future development, the Vision is not explicit about the role of improved environmental management in the process. Given the importance of environmental factors to the effectiveness of the Vision's implementation, they need to be incorporated *ex post* in both the Targets and the Monitoring, Evaluation and Review components of the Vision's rollout. Making the Vision work has to be a fundamental benchmark in national development.

5.2 Women and Gender Policy

This policy, 2000 aims to improve opportunities for women and men to play their full roles in society, recognizing specific gender requirements. The policy aims to minimize shortcomings

related to limited participation of women in most economic development activities, and focuses on using available resources to increase incomes, eradicate poverty and improve living standards.

The link between poverty and the environment is specifically recognised, as there is special emphasis on creating awareness on how environmental degradation increases poor women's burden[3]. The policy aims for full participation of women in natural resource management and encourages the rational use of natural resources to provide new income generating opportunities.

5.3 Rural Development Strategy (RDS)

The Rural Development Strategy, 2001, accords high priority to poverty reduction, and emphasises that rural poverty has a major impact on the sustainable utilisation of natural resources. Two main constraints are considered to compromise the implementation of the sustainable development strategy. The first is a weak institutional framework for coordination; the second is limited governmental capacity for environmental management. They are both important. The strategy proposes four focus areas to promote sustainable utilisation of natural resources: Environment and economic opportunity; Environment and vulnerability; Environment and empowerment; Environment and health.

Natural resource management is identified as a Strategic Priority Area, with the development objective of ensuring "sustainable utilisation of natural resources for the benefit of the rural and urban population". The link between rural and urban interests in sustainable natural resource management is important. The strategy also identifies quick, medium-term and long-term opportunities for developing the positive aspects of the poverty/environment linkages. Specifically, these include: Creating a conducive framework for the sustainable development of natural resources; Enhancing security of natural resources ownership to the state, communities and private individuals; Improving land use planning as a basis for improved environmental management; Extending and developing the community-based management approach to all districts.

The strategy recognises the linkage between poverty and vulnerability to adverse shocks, most of which are environmentally related. It consequently proposes interventions to diversify income generating activities, to protect the rights of vulnerable groups (particularly women, orphans, disabled and the aged) and to assist to reduce the impact of disasters. The strategy is clear on two additional points. First, no progress will be possible without improved social justice, good governance and transparency. Second, sustainable rural development will depend on the development of effective ties between rural areas and urban centres.

5.4 Agricultural Sector Development Strategy (ASDS)

The Agriculture and Livestock Policies of 1997 did not tackle poverty or environment issues. More recently the Agricultural Sector Development Strategy (ASDS: URT, 2001)) and the subsequent Agricultural Sector Development Programme (ASDP) document (URT, 2002) did. The ASDP is the operational instrument for the ASDS which outlines a five-year, public

[3] Obvious examples of this are increased time and effort to collect fuel wood and water.

investment programme for the sector. The programme focuses on the mobilisation of the agricultural sector for growth. The objective is to create an enabling framework for improving agricultural productivity and profitability, improving farm incomes, reducing rural poverty and ensuring household food security. The links with poverty reduction are evident, and Sector Growth Targets are taken directly from the Poverty Reduction Strategy Paper. The programme importantly recognises that support for subsistence agriculture is support for sustainable poverty, and the only way out of the poverty cycle is to develop profitable agriculture.

The importance of sustainable natural resource management is specifically acknowledged, and environmental management is identified as an important crosscutting issue at national and local government levels. Interventions with neutral or positive environmental impact will be given higher priority investment than environmentally damaging activities; as will activities that have a positive impact on growth and poverty reduction. Despite this recognition in the ASDP there is no mention on the financial allocation for the mitigative or defence expenditure during the implementation of the programme. It is only mentioned in the implementation report that 5% of the budget will be set for cross cutting issues; hopeful environment is one of them. But the obvious difficulty with this is that no one can trace the actual expenditure on the protection of the environment. It is obvious that the implementation of the programme will go hand by hand with the use of fertilizers, pesticides, irrigation, and other type of chemicals which might be harmful to the environment and other resources. Therefore a more significant and clear monitoring, mitigation and defence budget needs to be set aside for the purposes as opposed to the meagre 5% shared with other cross cutting issues.

Livestock deserve special attention within the programme. Tanzania has the third largest cattle population in Africa the majority of which are concentrated in eight Regions. Yet the contribution of this sub-sector to the national economy and local poverty reduction is minimal. Levels of poverty among livestock keepers are high, and the impact of their animals on the environment are sometimes negative if they are not managed well, or during times of drought. On the other hand, there is tremendous potential for the sub-sector to contribute simultaneously to poverty reduction (through improved and profitable animal production) and improved agriculture (particularly through draft power for land preparation and better use of manure within an integrated farming system). This is an area that deserves very much more attention and effective support[4].

5.5 National Strategy for Urgent Action on Land Degradation and Water

This is one of the most significant and high profile release of government funding for environmental which took place in 2006 with the launch of the National Strategy for Urgent Action on Land Degradation and Water Catchments. This follows the fourth phase Government putting environment as one of her ten political and economic priorities and in March 2006 a cabinet Secretariat for the Environment was set up in the President's office (as just one of the five specialist committees). The Urgent Action was launched on 1st April 2006 through a government statement issued by the Vice President. This action was taken following the long

[4] For example, farming system research (FSR) is meant to be the basis for all agricultural research in Tanzania. Yet it has been shown that although the work is included in research proposals very little is done (Lewis et al 2001).

drought that hit the country during the 2005-2006 seasons and the associated problems such as power rationing resulting from low hydroelectric power production (Mugurusi 2006). The implementation programme identified 12 challenges that needed attention to address land and water catchment degradation. A total sum of the proposed budget reached 30 billion Tshs but in the event 9.4 billion was allocated. This was unprecedented level of funding explicitly for environmental issues in the history of this country. The coordination and monitoring of the implementation of this strategy was vested under the Division of Environment-VPO. This was a multi-sectoral strategy that cut across number of ministries, and all of them were brought on board, these were ministry of land and human settlement, ministry of water and irrigation, ministry of infrastructure, ministry of Energy and Minerals, ministry of Livestock Development and fisheries, ministry of industry and trade, Ministry of local government, Ministry of Natural Resource Tourism. Each of these ministries were allocated funds for the implementation of the strategy, with the Ministry of Land taking the largest share (4 billion Tshs) for the demarcation of land and the rest to 9 billion other sector ministries. The main focus of attention was on sensitive watershed areas such as Ihefu catchment, the Mtera dam, and the Ruaha and Mbeya regions. Livestock activity, deforestation due to firewood collection and charcoal production were amongst the problems highlighted which resulted in activities such as the relocation of pastoralists and tree-planting.

This strategy demonstrates the high level political interest both in budget allocation and determination of priorities. It provides an example of the political agenda resulting in budgetary release which lay outside the routine process of priority setting through the consultative processes normally associated with the MTEF. This example, suggests an element of reactive planning in response to an immediate crisis. MKUKUTA II is therefore expected to take it up. However, this should also be taken as a lesson, so that the authorities build a culture of enforcing the existing rules and regulations. It is costly to the government for failure to enforce the rules. The 30 billion plus could have been used for other pressing issues of rural infrastructures and other social services if responsible authorities had acted in manner to enforce the stipulated regulations in their respective areas. Good governance issues need to be emphasised in the forthcoming MKUKUTA II.

5.6 National Coastal Zone Management Strategy

This strategy (URT, 2002) strongly supports an integrated, participatory approach to coastal zone management and acknowledges the linkages between poverty and the environment. The strategy recognises that improved, sustainable and profitable natural resource management is essentially the way to reduce poverty amongst coastal communities, and supports a range of approaches to better empower local communities to manage the coastal resources and the building of technical capacity to make the best use of appropriate fishing techniques and improved fishing gear. At the same time, the strategy acknowledges the need to enforce appropriate legislation

6. Policy Trade offs

Policy trade offs between environment and economic growth is inescapable and inevitable. Among the important tradeoffs arise from infrastructural development in pristine areas, wetland conversion for settlement or agricultural activities and industrial activities.,

Others are agricultural extensification as against deforestation, agricultural intensification against water and soil pollution leading to health problems and also causing costly supply of clean and safe underground water and sometimes rendering the water unfit to human consumption hence causing water unavailability and scarcity. Agriculture expansion could also cause conversion of wetlands. Although agricultural activity could supply a good source of livelihoods in the short run, if done through conversion of wetlands, it may affect the water flow and availability and soil moisture in the long run hence resulting in the soil productivity to fall causing more poverty to the communities around. Biodiversity is important for the functioning of all ecosystems and that excessive loss of biodiversity imposes real costs on resource users (Heywood 1995). The tradeoff between environment and growth can be manifested by the energy, agriculture, water sectors. The energy balance of Tanzania is dominated by biomass which has a direct link to the natural environmental health. Here efforts need to be made to reduce dependence and pressure on wood fuel through other sources and by increasing efficiency in utilization of energy. The establishment of the rural energy initiative is the right direction towards this goal.

At the policy level in the energy sector, we have observed that there may be trade-offs between environmental goals and gender/poverty goals. Some environmental NGOs have opposed support for improvements in biomass energy use (such as improved cookstoves), because they oppose any use of tropical forests for fuel due to concerns about deforestation and bio-diversity. Due to climate change concerns, use of fossil fuels is also often actively opposed, in favour of renewable energy as the only energy source for developing countries.

Although these tradeoffs exist, the way these are determined is vital. A case in point is the Ihefu episode. While the welfare of pastoralists is important, it was decided that it would be beneficial to many if they could move away from Ihefu to safeguard the environmental functions of the wetland. Impact on Ihefu had resulted in the drying up of the Great Ruaha affecting wildlife, fisheries and hydropower generation with devastating impacts to industry and commerce, employment and commodity prices etc. Thus the criteria used should always include economic, social and environmental considerations at community and national levels since they are very much interrelated. KILIMO KWANZA also needs to consider the use and control of industrial chemicals so as to protect water and other environment. Water for irrigation and environmental flows need to be balanced. All in all these impacts need to be kept at a minimum so as not to exceed the threshold for sustainability. Population growth has outstripped growth in food production. Urban populations have grown faster than the infrastructure in these areas. Unplanned settlements have mushroomed causing environmental problems of sanitation and pollution. Pressure on environmental goods and services has increased. Demand on wood fuel cause deforestation of peri -urban areas and beyond. Technology has to be used cautiously so

that side-effects are minimised, but also it should be used effectively to enable beneficial trade offs. While populations require more food supply and other basic needs, this should not be done at the expense of encroachment into environmental significant areas such as forest reserves, coral reefs, environmental flow, energy etc. The important trade-off thresholds have to be established and should not be surpassed for sustainability.

Managing tradeoffs between growth, environmental and poverty reductions is of vital importance. This can partly be achieved in the long run through appropriate design of fiscal measures. In order to get long term benefits (sustainable), short term negative impacts have to be borne by all at various levels. Fiscal reforms for poverty reduction and improvement in the environment could be used to reduce and mitigate resource abuse and also effect community benefit sharing. For instance, rationalisation of subsidies, tax structures, distribution of public expenditure and rationalising pricing structure of utilities to favour the poor. These can be applied in the forestry sector through timber tax revenues utilisation for the locals. In the marine fisheries, low license fees and catch levies attract foreign vessels but has fish stock impacts and on small scale fishers livelihoods. Foreign trawlers license fees and charges revenue could be used for managing the number of fishing fleets and therefore reduce environmental impact. In trophy hunting rationalisation could be affected by ensuring benefits also flow to local communities. Also differential pricing in favour of the poor/ locals for accessing National Parks could be used. Other area include reducing unnecessary water use, increased salinity and water logging through designing appropriate charges for irrigation. Subsidies make services unnecessarily cheap hence creating incentives for over pumping causing salinity which in the long run hurts the environment.

In the brown sector, fuel pricing and motor vehicle taxes could be made to reflect environmental externality. Solid waste management could use a rational collection fee structure which will encourage people to participate. Pollution taxes and user charges for waste water treatment could also be imposed to check abuse. Industrial processes like food processing, leather, chemical, textile and electric goods industries are major sources of waste generation and discharge of effluents without treatment into natural environment. River and lake water pollution create health hazards to human, aquatic life and biodiversity. It should be noted that biodiversity conservation and poverty alleviation often are opposing goals accomplished at the cost of the other.

Tradeoffs are not without limits, it is important to know where to go and what to do against where not to go and what not to do lest we surpass the carrying capacity of the natural environment and cause irreversibility's and crushes of ecological systems which are catastrophic and highly undesirable. Among the pre conditions for observing the limits includes thresholds for environment integrity/ecological balance where nature can continue to reproduce itself and continue to produce the expected services.

7. Population Dynamics and Urbanisation

Population growth has outstripped growth in food production such that food insecurity is nowadays around the corner. Urban populations have grown faster than the infrastructure in these areas resulting into unplanned settlements to have mushroomed causing environmental

problems of sanitation and pollution. Pressure on environmental goods and services has increased, demand on wood fuel cause deforestation of peri -urban areas and beyond. Refugees are also a significant factor in environmental degradation (e.g. the case of the impact of refugee influx from DRC, Rwanda and Burundi in Ngara and Kigoma region).

Population is an important resource for development that needs proper planning to ensure sustainability. High population growth has in many places contributed to over-exploitation of natural resources, leading to environmental degradation. This presence of strong linkages between population, resource and social services availability calls for a closer analysis of the population dynamics at various levels. The severity of environmental degradation and relevance of conservation, particularly in the context of sustainable development in Tanzania, have been broadly recognised (Madulu 2004, UN 1993). However, one of the challenges in the context of a rapidly increasing population is how to achieve socio-economic development with minimal environmental degradation. This entails the need for measures to ensure the compatibility of sustainable resource management with rapid population growth and the possibility of turning around a degradation cycle by enhancing environmental conservation initiatives. It is in this context that various initiatives have been undertaken by the government, particularly after independence, to address environmental conservation.

According to the 2002 national population census, Tanzania Mainland population is growing at the rate of 2.9 p.a (URT, 2002), the recent estimate put the figure at 40million (URT 2008). Tanzania has so far undertaken four population censuses since independence in 1961. The first census in 1967 reported a total population of 12.3 million whereas, according to the 2002 census, the population has increased to 34.4 million (see Table 1). Tanzania mainland registered a relatively lower population growth rate compared to Tanzania Zanzibar, growing at the rate of 2.9 per cent per annum in 1988-2002, while that of Tanzania Zanzibar grew at the rate of 3.1 per cent per annum. The different censuses show that rapid population growth has characterized Tanzania for a long time.

The population of Tanzania has continued to be predominantly rural despite the fact that the proportion of urban residents has been increasing over time. The proportion of urban residents was just 6 percent in 1967, compared with 18 percent in 1988, and 23 percent in 2002 (URT, 2006a). Looking at the urban population figures from 1967-2002, we found that it has been growing at an average of 5% percent over a period of ten years. Assuming that the same growth rate will continue over the next forty years, by 2050, approximately 50% of the population will be urban residents. The World Bank has an even ambitious estimate which suggests that more than half of the population in Tanzania will live in urban areas by 2025 due to rural-urban migration among other factors which is a common phenomenon in Tanzania and worldwide (World Bank 2003). Experience around the world shows that as time passes, more people are moving to urban areas and less people remain in the rural areas. This should be considered by MKUKUTA II in planning their strategies as the rural-urban population will switch positions hence the rural –urban dichotomy will have a new look and we should be prepare for this eventuality. We should think about how we allocate resources and develop infrastructures in order to accommodate the increasing populations in the near future.

Furthermore recent study projects Tanzania's population to reach 109.5 million in 2050, leading to increased pressure on available resources, according to the latest State of World Population Report launched in Dar es Salaam recent (UNFPA, 2008). The country's current population is estimated at around 40 million. The projected 2050 population is based on an average growth of 2.9 per cent between 2005 and 2010, according to demographic, social and economic indicators cited in the report.

Table 3 Shows population growth in the thirty –five years 1967-2002

	Total Population				Growth rate (% p.a.)		
	1967	1978	1988	2002	1967-78	1978-88	1988-2002
Tanzania Mainland	11,958,654	17,036,499	22,455,205	33,461,849	3.2	2.8	2.9
Tanzania Zanzibar	354,360	476,111	640,578	981,754	2.9	3.0	3.1

Source: Reports from respective population censuses (URT 2005b).

In Tanzania, areas along the western borders potentially receiving refugees and urban centres experience the most rapid population growth, while densely settled areas with out-migration and sparsely settled areas experience much lower growth rates (Lindi and Kilimanjaro).

Looking at the spatial perspective of population growth in Tanzania we found that about 51% of the regions have their population growing at the rate above 2.5% per annum. This growth is relatively high for the economy to sustain. Demographic and economic literatures (Bloom 2000, Mosley 1984) indicate that any population growth rate above 2 per cent per annum is inimical to economic development as the economy cannot adequately meet the needs of population. From the data we found that 71% of the Tanzanian regions have their population growing at the rate above 2% per annum (Figure 1 illustrate).

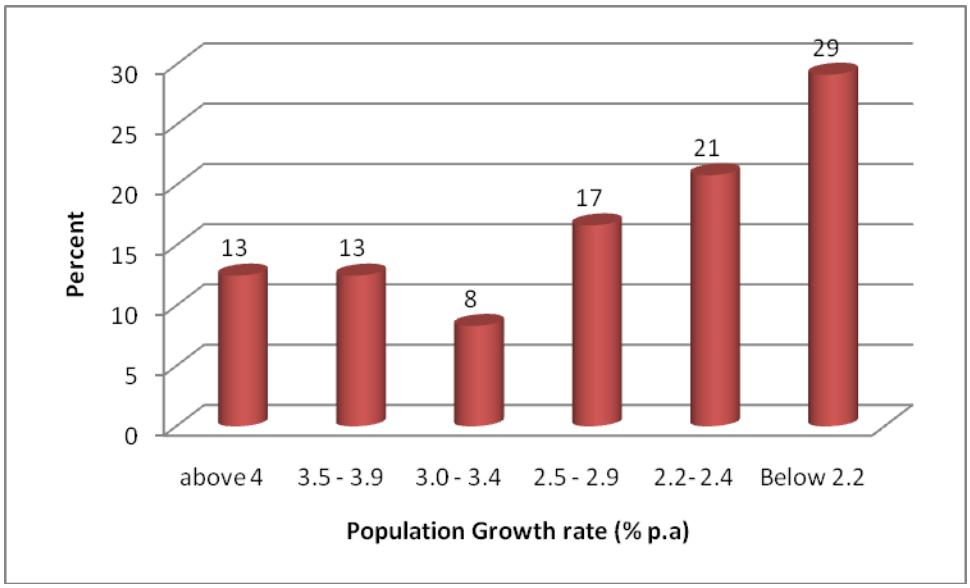

Figure 2 Spatial aspect in Population Distribution in Tanzania
Source: Compiled by the authors from URT, 2002

This rapid increase in population occurred for many reasons. These include improved public health measures, medical services, hygienic practices and other factors contributed to steady declines in mortality earlier in the 20th century (URT, 2006). This resulted into death rates dropped while birth rates remained high and the rate of population growth soared. According to the 2002 Population and Housing Census, the life expectancy at birth for Tanzanians is 51 years (URT 2005b). Table 2 summarizes some of the important details.

Table 4: Basic Demographic Indicators

Selected Demographic Indicators for Tanzania, 1967, 1978, 1988, 2002				
Indicators	Year			
	1967	1978	1988	2002
Population (millions)	12.3	17.5	23.1	34.4
Intercensal growth rate (percent)	2.6	3.2	2.8	2.9
Sex ratio	95.1	96.2	94.2	96.0
Crude birth rate	47	49	46	43
Total fertility rate	6.6	6.9	6.5	6.3
Crude death rate	24	19	15	14
Infant mortality rate	155	137	115	95
Percent urban	6.4	13.8	18.3	23.1
Density (pop/km2	14	20	26	39
Life expectancy at birth (years)	42	44	50	51

Source: URT (1967; 1978; 1988); URT (2002)

8. Population growth and its implication on environmental resources

Conserving natural resources is fundamental for Tanzanian development and for meeting the needs of both present and future generations. However, *The Tanzania Development Vision 2025* cautions that the current trend is a loss and degradation of environmental resources, such as forests, fisheries, fresh water, soils and biodiversity. *MKUKUTA I* also observes that the present use of natural resources is unsustainable, and cites uncontrolled cutting of the forests and farming methods that foster erosion as examples. The rate of population growth affects the ability of the country to preserve its natural resources, this is mainly because will be accompanied by high demand for wood and land, often leading to deforestation, more especially from the fact that only 12% of the population is connected to the National grid and have access to electricity. Woodfuel accounts for more than 90 percent of energy use (*National Forest Programme in Tanzania, 2001–2010*). In part, with the rapid growth of the population, the forests are cut to satisfy basic requirements, including the need for woodfuel, building materials and new agricultural land. The forests are also cut to provide land for livestock grazing. *National Forest Programme in Tanzania, 2001–2010* reports deforestation at a rate of between 130,000 and 500,000 hectares per year. In turn, deforestation contributes to soil erosion and erratic rainfall. With this it is obvious that the speed with which Tanzania is looking to achieve an economic transformation to modern agriculture will put an added burden on the environment. On the fisheries front, increased fishing effort is a result of more people taking up fishing as a source of livelihood in the coastal areas. The increased fishing pressure results into overfishing the traditional near shore fishing grounds and hence illegal gears which destroy the aquatic/marine environment are employed.

Increasing population pressure on agricultural land has in many instances been argued to result in land fragmentation, invasion of marginal lands and unsustainable land use practices that in turn encourage environmental degradation and poverty (Madulu et al. 1993; Mung'ong'o and Mwamfupe 2003). The pressure on the environment is also caused by inadequate or lack of well-coordinated resource use plans (Mbonile and Kivelia 2007) and ineffective implementation of policies. Increasing demand for food, energy and other environmental services has contributed to expansion of agriculture, including marginal areas, and deforestation often leading to environmental degradation. Increased reliance on natural resources for rural livelihoods, subsistence nature of the agricultural sector and limited economic opportunities in rural areas are among the factors leading to rural–rural and rural–urban migrations searching for better livelihood opportunities. However, where relevant resource management policies are effectively implemented, environmental sustainability can be achieved. Tanzania has experienced a number of good land conservation programme these are for example, Hifadhi Ardhi Dodoma—HADO (Mbegu 1988; Mung'ong'o 1995; Kangalawe 2001), Hifadhi Ardhi Shinyanga—HASHI (Mlenge 2004), and Soil Erosion Control and Agroforestry Project—SECAP (Johansson 2001) where the rehabilitated lands now support much bigger populations than ever before.

The National Environmental Policy (NEP), 1997; identified six major environmental concerns that are closely linked with population growth in Tanzania, namely land degradation,

deforestation, lack of accessible water supply and poor water quality, environmental pollution, deterioration of aquatic systems and loss of biodiversity and wildlife habitats (URT 1997, 1994, 1999). These environmental problems have become more frequent and severe, which raises a concern on future environmental sustainability (Assey et al. 2007). Land degradation is mostly manifested in the form of severe soil erosion, due to overgrazing and deforestation; siltation; and loss of soil fertility due to over-cultivation (Mbegu and Mlenge 1984; URT 1994), these have resulted into food insecurity and loss of biodiversity. The need to provide a livelihood to the ever-growing population is among the major reasons for the biodiversity loss and expanded activities in wildlife habitats and other ecosystems. This would suggest therefore that with population growth, environmental resources may be overexploited in some areas if appropriate resource management plans are not in place.

Deforestation is a major environmental problem in Tanzania. This is mainly because of the expanding agricultural frontiers, followed by an increased demand for wood products such as timber and building poles (URT 2008b) and woodfuel. Tanzania is estimated to be losing about 92,000ha of forests and woodland annually (URT 2008b), with deforestation and depletion of grass cover being reported to be the most important environmental conservation problems (URT 2002). Various studies have shown that in the Usambara Mountains, for example, almost 70% of the rainforests have been destroyed since 1954 (Shishira and Yanda 1998). Deforestation is particularly high in tobacco growing areas of Tabora, Shinyanga and Ruvuma regions, where tree felling for tobacco cultivation and curing is rampant (Shishira and Yanda 1998; URT 2008b). The Tanzania's 2008 State of the Environment Report indicates that flue curing of 1,000 kg of tobacco leaves require 12 m3 of solid wood (URT 2008b) in such a situation, this would suggests that increasing population in such areas will most likely compound the existing environmental problems through their engagement in production of crops like tobacco.

Biomass energy consumption by rural and urban households is another important cause of deforestation, since only 5% of the Tanzania's population has access to electricity. The problem will be compounded even further with the growing population pressures in urban areas. It is also shown that woodfuel accounts for more than 90% of total energy consumption (Madulu 2004; URT 2008b), with a per capita consumption of wood fuel estimated as 1 m3 per year. These aspects may increase with increasing population if alternative and affordable energy sources are not effectively utilised. Rural electrification is reported as a long-term national priority, as availability of electricity in rural areas and commercial centres would increase livelihood opportunities in such areas and stimulate the much-needed social and economic development. And the government's initiative to establish the Rural Energy Agency (REA) is an effort in the right direction. The functions of Rural Energy Agency (REA) is to operationalise the national energy policy by facilitating modern rural energy projects, promotion of modern rural energy services and provision of technical assistance to energy developers (Uisso and Mwihava 2005). Other proposed initiatives include the establishment of Rural Energy Fund (URT 2005c) and the formulation of a national energy strategy.

Increased reliance on natural resources for rural livelihoods, subsistence nature of the agricultural sector and limited economic opportunities in rural areas are among the factors

leading to rural–rural (livestock pastoralist) and rural–urban migrations searching for better livelihood opportunities. High urban demand for food, timber and biomass energy from rural areas has also contributed to rural deforestation and overall environmental degradation. Unplanned urbanisation also has negative impacts on the environment and the social well-being.

Although the population factor is not explicit in many environmental conservation programmes implemented in the country, better managed environments support bigger populations than otherwise. This is evident where conservation initiatives such as HADO, HASHI and SECAP, among others, have managed to rehabilitate the respective areas to the extent that they can now support larger populations than ever before. It can thus be argued that effective implementation of development and resources management policies can lead to environmental sustainability even with growing populations. Despite an increasing population, environmental degradation can be reversed by appropriate policies, adequate and improved infrastructure, as well as technological development with community participation. The HADO, HASHI, SECAP and other similar initiative provide clear examples of successful interventions demonstrate the outcomes of effective policy implementation. Such examples ought to be emulated elsewhere in the country with similar environmental problems. However, the importance of population planning remains a crucial consideration in addressing sustainable development.

9. Poverty and environment linkages

This section attempts to analyse the linkages between poverty and environment in Tanzania. This is undertaken first for policy and second for operational issues.

9.1 Linkages in policy

The current generation of national policies and strategies is more pro-poor and pro-environment than its predecessors. The National Environment Policy, the Poverty Reduction Strategy Paper, the Rural Development Policy, the National Water Policy and the Gender and Women Policy all acknowledge environment/poverty linkages in some way, but stress the negative aspects: especially that poverty is a cause of environmental degradation. Many other national policies recognise the importance of poverty and environment, but fail to make the specific, explicit link. More work is needed to highlight the case for the advantages of developing positive synergies in both central and sectoral policies, and to analyse the extent and the different ways by which rich and poor contribute to overall environmental degradation in Tanzania.

At the policy level, there is little analysis of the nature of poverty/environment relationships, and even less guidance on the steps that can be taken to reduce the negative and enhance the positive aspects. Furthermore, while there is recognition that the potentially profitable natural resource management sectors, such as mining, tourism, forestry, fisheries or agriculture, can make a contribution to poverty reduction through increased GDP, there is only limited analysis of how this can be translated to real poverty reduction at the community and household level. In most cases the benefit distribution from natural resource use can be highly inequitable and the poor frequently loose out.

Furthermore, there is little analysis of how the weakly developed cross-sectoral and multi-sectoral policy coordination functions at district and national levels can be improved to maximize poverty reduction and environmental management. The Rural Development Strategy Paper (URT, 2001) has made progress in this direction, and the Agricultural Sector Development Programme (URT, 2002) acknowledges the importance of other sectors' policy for sustainable and profitable agriculture. Here there are practical problems with the linkages due to sectoral "boxing" at the national level and limited technical capacity at the district level.

National policy on decentralisation is clear and as local government reform evolves, it is going to become increasingly important that new national policies – including those relating to poverty reduction and environmental management – are used to guide local government development priorities. However, given the low level of awareness of many recent policies at the district level, and the many other demands on limited technical capacity, there is an enormous amount of work that needs to be done before a satisfactory situation is achieved. This represents a major challenge if tackling poverty reduction and improving environmental management is really to move from the domain of theory and pilot projects, to implementation in the field on a major scale.

9.2 Linkages in operations

Most analysis of the linkages between poverty and environment focus on the negative aspects of the relationship: poverty as the cause of environmental degradation, and environmental degradation as the cause of poverty. There is little analysis of how the positive aspects of the relationship can be used to reduce degradation and reduce poverty. However, increasing experience from an assortment of different projects is beginning to show the positive side of this relationship.

There is also growing awareness that poverty needs to be overcome by profitable and sustainable use of environmental goods and services. This approach breaks down the "boxed" ideas that environment is mainly about tree planting, and poverty reduction being the work of humanitarian NGOs and Community Development Officers.

9.3 Implementation Issues

There are a number of additional issues that relate to the implementation of policies supporting poverty reduction and environmental management. This is important as an approach which only addresses the macro- and sectoral policy aspects of environment and poverty without taking into account the details of the main constraints and opportunities for implementation is unlikely to have any durable impact. Good policy ideas do not work on their own: they have to be made to work, and this requires practical operational approaches in support of policy initiatives.

9.3.1 Participatory planning and development

The policy shift towards decentralised, participatory planning and implementation is part of many of the newer national policies. By involving local communities there is a significant increase in empowerment. This will enable communities to work together better and to control the use of their own resources. This is certainly an area where improved environmental

management and poverty reduction can move forward with the support of effective and well understood national policies. Furthermore the implementations are however constrained by inadequate human and financial resources constrain the capacity of most Local Government Authorities, and the widespread adoption of new approaches will not happen without significant additional support. The implementation of even the basic Local Government Reform Programme is proceeding slower than anticipated, and it is therefore important to be realistic about what can be achieved in the immediate future. Improved awareness – a relatively low-cost activity – can have a significant impact, but improved awareness alone will not suffice.

Districts have inadequate funding for many of their own for development activities and generally believe they can only begin to implement new policies if there is some additional source of funds to finance it. While it is certainly possible to implement some national policies at a district level without additional funding there are significant financial implications to achieving rapid and widespread adoption of new national policies in local District Development Plans.

Second, a simple and effective way needs to be found to scale-up the process so that it can have an impact throughout the country. Some projects are using very detailed, complex participatory systems that are expensive and slow, and as a result they have worked with only a few villages.

Third, there is a growing number of participatory planning guidelines. There is a National Framework on Participatory District Planning and Budgeting (URT, 2002d), and guidelines for Wildlife Management Areas (WMA), Joint Forest Management (JFM), Community Based Forest Management (CBFM), District Agricultural Development Plans (DADP,) and Participatory Land Use Management (PLUM). Most are complicated with many different steps. They can not be used by villages without significant external help. Given the limited capacity and resources currently at the district level this could rapidly lead to a problem of "Guideline Overload". The President's Office – Regional Administration and Local Government will need to intervene to rationalise and harmonise the situation before it is too late.

9.3.2 Regional Administration

The Regional Secretariats (RS) are required to ensure that national policies are effectively reflected in the District Development Plans (DDPs: URT, 2000). This function is not being effectively implemented at the moment, and the review by Regional Secretariats of DDPs does not seem to include systematic control of the application of national poverty reduction and environmental management policies. This is another area where more work is required, and progress could be made, at little cost, to mainstream environmental considerations into district development – and thus poverty reduction – activities. For this to happen, there would need to be a clear allocation of responsibility for poverty and environmental issues and support for capacity building to officials at the regional secretariat.

9.4 An Overview of Institutional and Legal Framework for Environmental Management

The presence of institutional and legal framework is a prerequisite for effective implementation of environmental policy objectives at all levels (national, sectoral, regional, district and village levels). To achieve that goal the Government of Tanzania (GOT) commissioned a study on

Institutional and Legal Framework for Environmental Management Project (ILFEMP) Phase I and Phase II, respectively. Whereas ILFEMP Phase I was mainly concerned with formulation of institutional framework, Phase II was responsible for development of legal framework.

The institutional mandates and responsibilities for environmental management is well elaborated from central level down to local government and local community levels. For example, the current institutional framework shows the presence of Environmental Management Officers at Municipal/District/Township/Ward/Village levels. However, it seems future implementation of environmental management functions at district and village levels would require capacity building support from the central level (VPO / NEMC). One of the important roles of VPO and NEMC in this case would be to conduct Environmental Training Programmes for the Environmental Management Officers. Currently majority of these Environmental Management officers are former District/Regional Natural resources officers. The problem with this is that, there is a danger of translating environment to mean natural resource, that's fisheries, forestry, mining etc. It is important that environment is interpreted into its broad sense and should not be taken to mean natural resource. This is only possible if proper training and awareness campaign are undertaken. As per EMA Act (2004) it is recommended that the sector ministries should be allocated some funds to facilitate establishment of Environmental Management Units (EMU) and recruitment of Environmental Coordinators. This will facilitate increased linkage and coordination between the central level and sectoral levels. This has started with a flat rate of approximately Tshs 71million being allocated annually to sector ministries.

A good example is the road sector, whereby under the Road Sector Programme Support (RSPS) through DANIDA the Ministry of Works has established an environmental unit, headed by Environmental Coordinator. Some progress on capacity building is already evident in terms of preparation of Environmental Assessment and Management Guidelines for Road Sector Stakeholders, Sustainable Strategy for Environmental Management in the Road Sector and the Training Manual for Environment Assessment and Management. Other ministries which have also established Sector Environmental Unit include; Ministry of Water and Irrigation, Ministry of Livestock Development and Fisheries, Ministry Mineral and Energy, Ministry of Natural Resources and Tourism.

10. International Experience in Poverty – environment nexus

A review of international experience is presented on factors influencing poverty-environmental nexus, poverty reduction and management of natural resources, role of natural resources in poverty reduction, gender aspects in poverty –environmental nexus, the rural urban dimensions of poverty - environment nexus. However, experiences from Asia show that poverty and environment nexus is not universal. The evidence suggests that the nexus concept can provide a useful catalyst for country-specific work, but not a general formula for program design (World Bank, 2006).

10.1 Factors influencing poverty-environmental nexus

The existing literature suggests that the strength of poverty–environment linkages may be affected by many factors including economic policies, resource prices, local institutions, property rights, entitlements to natural resources, and gender relations (Ambler, 1999; Arnold & Bird, 1999; Barbier, 2000; Dasgupta & Ma¨ ler, 1994; Dutt & Rao, 1996; Ekbom & Bojo¨ , 1999; Eskeland & Kong, 1998; Heath &Binswanger, 1996; Leach & Mearns, 1991;Roe, 1998). It is also found that, the relative strength of links between poverty and environment may be very context specific (Bucknall, Kraus, & Pillai, 2000; Chomitz, 1999; Ekbom & Bojo¨ , 1999). This means therefore, the poverty environment nexus can not be generalised to suit all conditions and circumstances. Each area and group of people has their salient features which have to be taken into account when analysing these relationships in temporal and spatial aspects, cultural and resource endowment aspects.

10.2 Poverty reduction versus management of natural resources

Key studies in other countries points out the danger of efforts geared towards reducing poverty from the harvesting of environmental goods and services. Poverty reduction associated with opening of access tends to be short-lived, likely to be followed by increasing poverty over the long term. Although both non-poor and poor households may initially benefit from the opening of access to natural resources (for example, cancellation of forest concessions or fishing lots), this poverty reduction is likely to be short-lived. Opening access, - with no clear management structure to fill the vacuum, - results in a period of overexploitation, often involving destructive practices that will likely be followed by increasing poverty over the long term as the resource base declines. On the other hand, strict controls on previously accessed resources can increase poverty and cause sub-optimal use of resources. This impact has been noted in numerous rural livelihood studies (Oxfam GB 2000; Chan and Acharya 2002; McKenney and Prom 2002; IFSR 2004; World Bank 2005b.

Natural resource management at the “extremes” is not pro-poor; both highly restrictive regimes and open access management appear to result in negative outcomes for the poor compared to the non-poor. Clearly, restricting the rural population’s access to natural resources (as has been the case for many forest, fishing, and economic/land concession areas) takes away productive resources that support rural livelihoods. While this can make the surrounding rural population worse off, the impact can be especially severe for food poor households, which tend to be more dependent on these resources. On the other hand, “open access” (or a management vacuum) - may not be much of an improvement for the poor over the long run.

- First, the poor tend to be less able to take advantage of open access to exploit resources as profitably as non-poor actors, because they lack the capital means (equipment, transportation).
- Second, “open access” generally is not fully open, but rather involves paying a range of informal fees for access—a disproportionate burden for the poor.

- Lastly, the poor tend to be more dependent on natural resources and have fewer alternative options for income generation. As a result, when open access exploitation leads to resource decline, the impact on livelihoods is again felt disproportionately by the poor.

10.3 Role of environmental resources on poverty reduction

Natural resources provide an important safety net for the poor, but not often a pathway out of poverty. The poor are disproportionately dependent on natural resources for ncome/consumption, and these resources play a critical role in helping households cope with crises, such as floods and droughts. Despite the important role of natural resources in rural livelihoods, income generation activities (fishing and forest product collection) appear to play little or no role in moving households out of poverty. This has been so in the case of Cambodia and Vietnam as shown by the World Bank study (2006).

10.4 Gender aspect in environment-poverty nexus

Experiences from Africa show that poverty environment nexus should be assessed with the gender divide in mind due to their traditional roles and division of labour which has implication on resource use and interaction with the environment. Men and women use resources differently and have different roles in society. To be effective, strategies to decrease poverty and preserve the environment must therefore pay close attention to the impact of disparities between women and men on access to resources and opportunities. Moreover, there is much evidence that gender equality and empowerment of women has positive effects on a variety of other important aspects of development – notably population growth and health (OECD 2001). Efforts to reduce poverty and inequality must consider gender differences. To be effective, strategies to decrease poverty and preserve the environment must therefore pay close attention to the impact of disparities between women and men with regard to access to resources and opportunities. Moreover, there is much evidence that gender equality and empowerment of women has positive effects on a variety of other important aspects of development - notably population growth and health. Notwithstanding the above, addressing gender disparities should not be reduced to a means of ensuring the effectiveness of poverty reduction strategies. Gender equality is a development objective in its own right, and sustainable development strategies must aim to foster women's empowerment and effective participation. This implies involving women and men as partners and allies in formulating and pursuing strategies for more equal societies (OECD 2001).

In the Poverty Reduction and Management (PREM) Programme it is proposed that there should be further empirical studies of the poverty-inequality-environment nexus, focusing on specific resources, gender issues, policies and populations, in order to provide clear results. Research projects should address poverty, gender and environment linkages both for rural areas and natural resources (e.g. land, forests, wildlife), as well as in an urban context (e.g. water, sanitation, waste, transport, housing).

10.5 Urban versus rural setting

The nature of poverty-environment interlinkages in urban areas is therefore somewhat different from that in a rural setting. Although absolute poverty in the Asian and Pacific region is predominantly a rural phenomenon, rapid urbanization and the expansion of urban-based economic activities have recently led to very substantial rural-urban migration. The migration process has, to some extent, helped to reduce population pressure on agricultural land and contributed to increasing agricultural productivity and reducing rural poverty (Dasgupta, et al. 2005). It is commonly observed that poor households, especially in rural areas, derive their livelihood income from natural resources (for example, land resources for agriculture and water resources for fishing). It is also found that the poorer the household, the greater is the share of its income from environmental resources. In addition to providing a livelihood, the environment plays a very significant part in influencing the health of the poor; while the incidence of disease in poor countries is about twice that of rich countries, the disease burden from environmental risks is 10 times greater in poor countries. Environmental degradation has a disproportionate negative impact on both the livelihood and the health of the poor. It can be seen from the above arguments that the environment has strong linkages with the livelihood, health and vulnerability of the poor. These linkages need to be identified in some detail before options for appropriate policy interventions to benefit the poor can be studied.

World Bank report (2006), shows that poor households in Cambodia might benefit most strongly from programs that jointly address poverty and household level environmental quality. At the same time, all of Cambodia's citizens, including the poor, would benefit from more effective measures to reduce the rate of deforestation. The welfare of the poor in Cambodia might be significantly enhanced by close integration of poverty-alleviation and environmental strategies. It is revealed and suggested that, the poverty-environmental nexus concept can provide a useful catalyst for country-specific work, but not a general formula for program design. Joint implementation of poverty and environment strategies may be cost effective for some environmental problems, but independent implementation may be preferable in many cases.

11. Poverty and Environment and the onset of climate change impacts

11.1 Climate Change

The link between poverty and environment is further strengthened by the emergence of climate change as an environmental element. Without climate change, poverty and environment were linked in a stable relationship with variations in weather patterns from time to time. The onset of climate change introduces a situation of immense challenge due to foreseen and unforeseen impacts to the relationship between poverty and the natural environment. Some climate change indicators show that Tanzania as well as many other African countries has started to experience this phenomenon. The melting and shrinkage of the glaciers of Mount Kilimanjaro is cited as being one of the indicators of global warming which is the trigger of climate change. Climate change and climatic extremes such as floods and droughts are natural phenomena whose effects cut across rich and poor, however, the poor are most vulnerable.

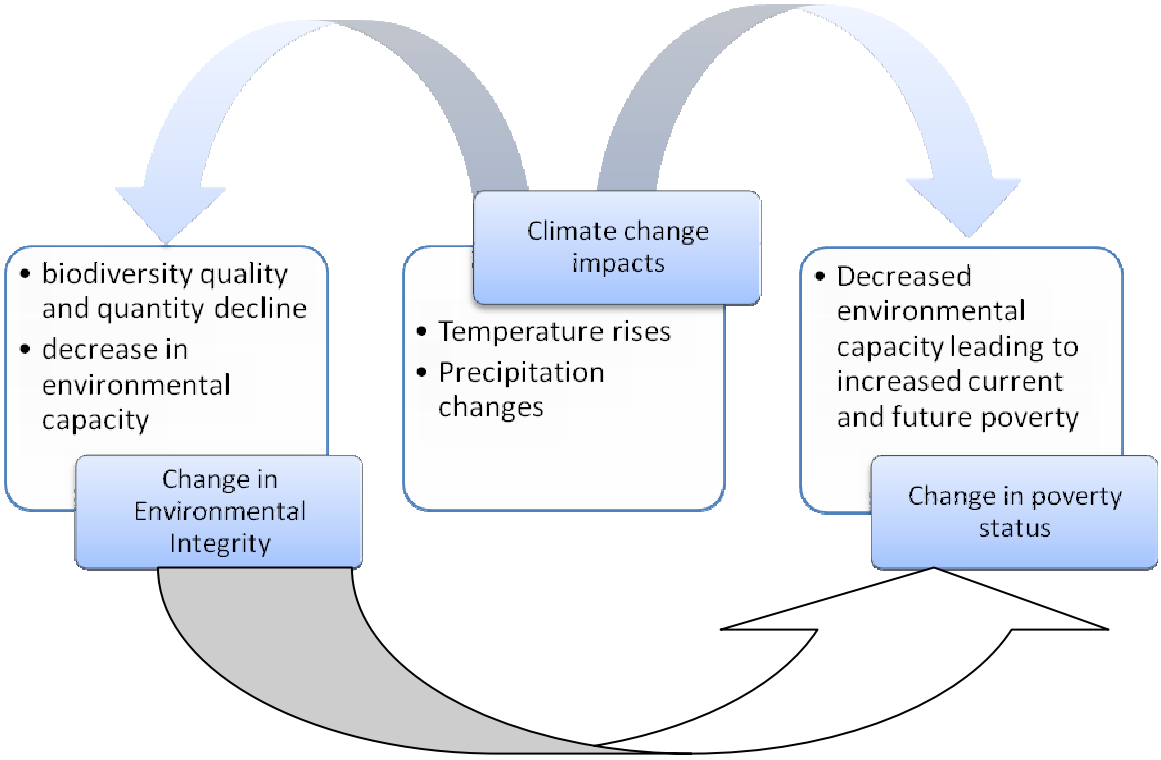

Figure 3: Climate change link to poverty and environment

For example, the majority of Tanzania's rural population is dependent on agriculture, which is particularly sensitive to changes in environmental conditions and has few livelihood options. Irrigated agriculture is poorly developed and more than 90% of the farmers in Tanzania depend on rain-fed production. Consequently, drought or any erratic behaviour of climate results in severe food shortage and food insecurity to this category of people. A climate change scenario with these unfavourable climatic conditions being the ordinary feature will bring about considerable impacts to the environment and wellbeing of societies which are less capable to guard against or even to adjust accordingly. Both positive and negative effects are expected to occur at different magnitudes and different places but not all at the same location. Some areas will experience increased precipitation while others decline in precipitation. Both changes however, may spell disaster to the ill prepared and vulnerable communities.

Climate change is illustrated here as being represented by change in precipitation and temperature. These changes could both be increase or decrease in precipitation or increase in temperatures with concomitant impacts in the areas shown below. All in all African countries of which Tanzania is one are forecasted to be affected more. Taking precipitation and temperature as change agents for the climate, all sectors will be impacted either directly or indirectly through other mechanisms. The three areas we adopt for our analysis are the three pillars of sustainable development i.e. economic, environmental and social aspects. This implies that, climate change will impact upon the foundations of sustainable development itself.

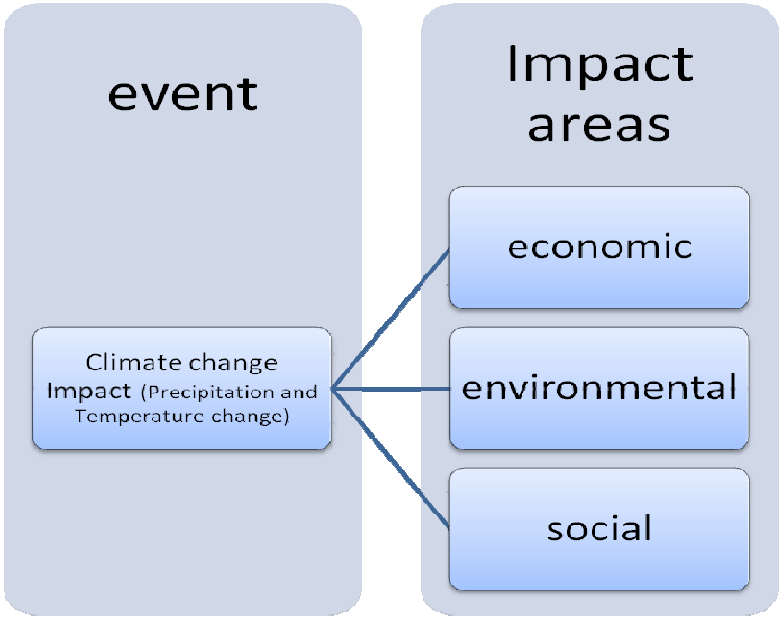

Figure 4: Climate Change Impact relationship to Economic, Social and Environmental.

Figure 6 depicts that increased rainfall may cause floods causing property damage including settlements, farms and social and economic infrastructure, while decreased rainfall may bring about decline in agricultural production and food insecurity.

Changes in rainfall and inappropriate land-use exacerbate the process of land degradation, particularly in the ecologically sensitive semi-arid areas in central Tanzania (Dodoma and Singida) and parts of Arusha, and Manyara regions. In addition, due to environmental degradation in the catchments many rivers and streams in Tanzania are increasingly sensitive to climate variation and changes in the catchment characteristics. Decrease in long-term run off and water availability will cause water conflicts between the different users, for example hydroelectric production, industrial and mining use, agriculture, livestock and domestic use. Conflicts between different users are already occurring in parts of Tanzania in areas such as the Pangani and Ruaha basins. Other consequences of climate change include the change in the pattern and distribution of weeds and vector diseases as well as the change in cropping patterns (McGranahan *et al*, 1999).

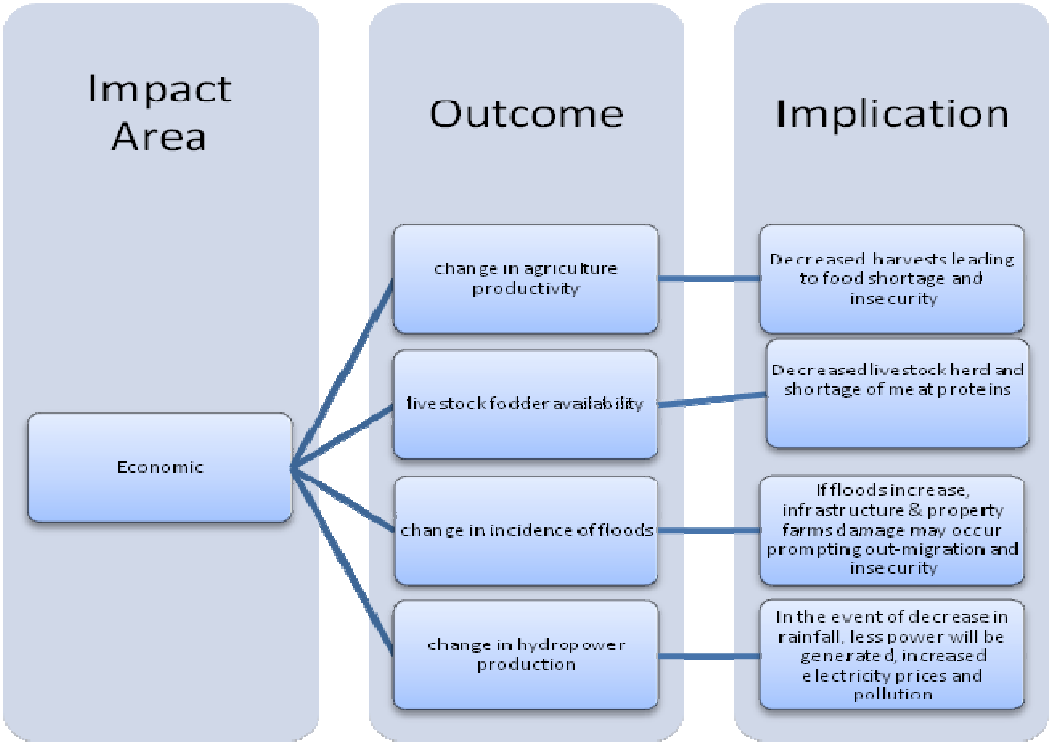

Figure 7: Economic Impacts and implications due to Climate Change.

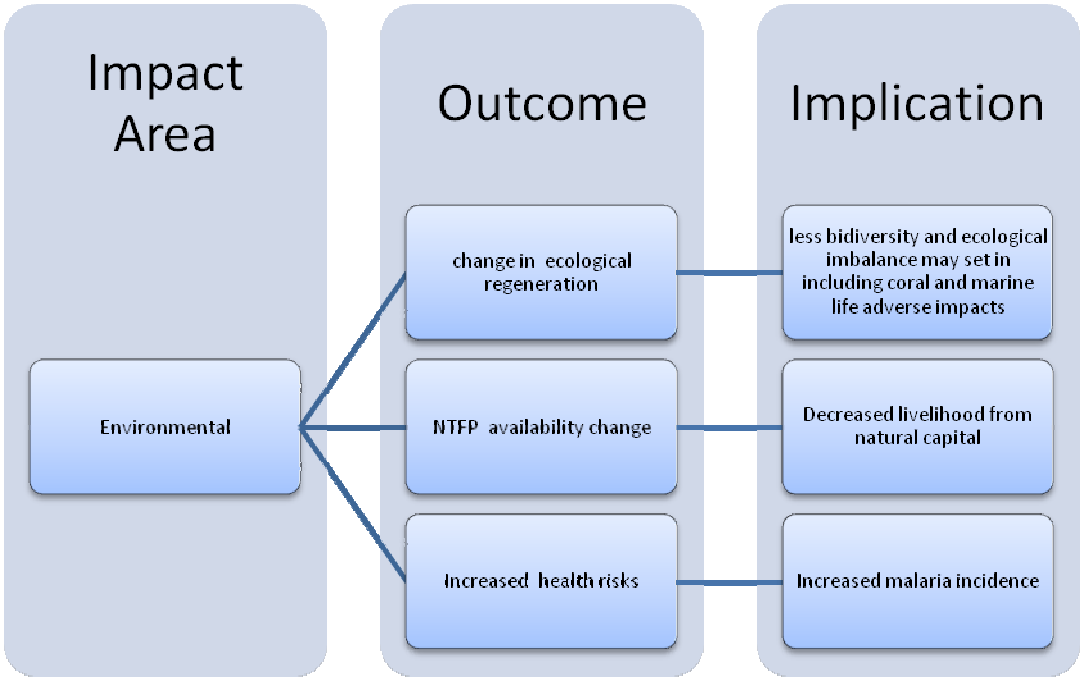

Figure 8: Environmental Impacts and implications due to Climate Change.

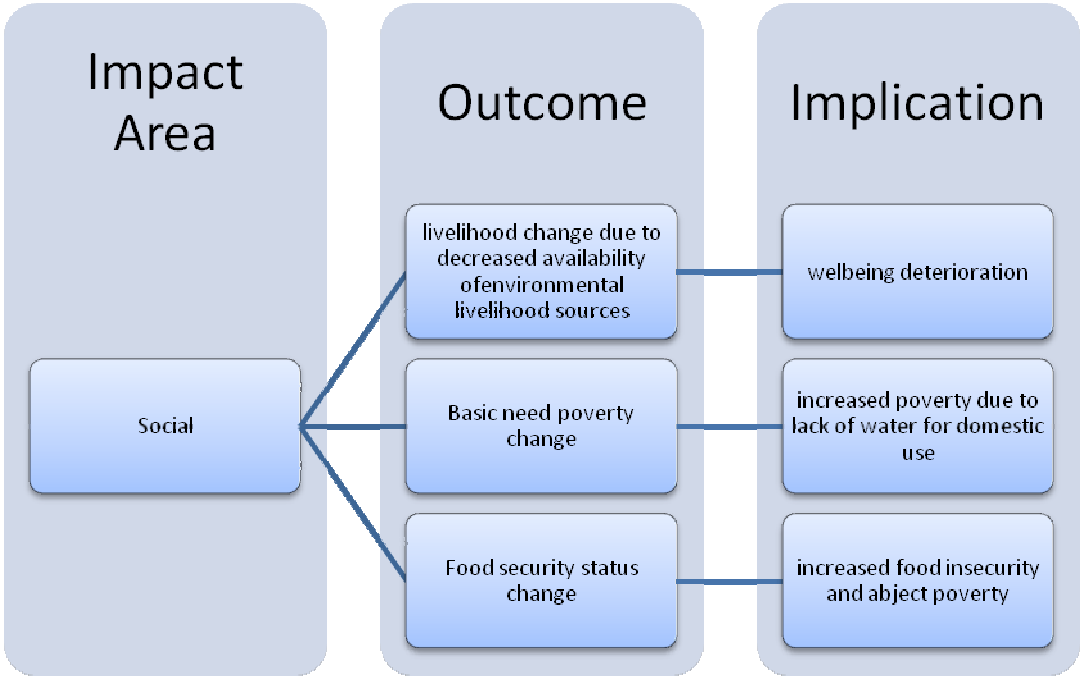

Figure 9: Social Impacts and implications due to Climate Change.

In recent years periodic floods have swept away crops and destroyed rural and urban infrastructure leading to food shortages: and here again, it is the poor who suffer most. The exceptionally high rains associated with the 1997/98 *El Nino* phenomenon resulting in severe floods affecting food production and distribution. The floods also led to the loss of property and life in urban areas particularly where unplanned settlements had been constructed on marginal land such as steep slopes, areas with poor drainage, and river flood plains.

On the other hand, increased temperatures may cause havoc by causing costs of production and doing business in general to soar due to increased demand of energy for cooling. If this is accompanied by decreased rainfall, then hydropower contribution to total electricity maybe decreased and hence raising the cost per unit of electricity to consumers with crippling results to the economy in general. Environmentally, biodiversity and water supply will be adversely affected. Socially health risks will increase particularly malaria incidence and epidemics in highlands. Increased temperatures create conducive environment for malaria spreading mosquito's o breed. Further to this rural livelihoods will also be affected resulting into worsening the wellbeing of the majority of rural and some urban populations.

Tanzania ratified the UN Framework on Climate Change (UNFCCC) and subsequently acceded to the Kyoto Protocol to this Convention on April, 1996 and February, 2003, respectively. Tanzania officially submitted her Initial National Communication (INC) to the UNFCCC on February, 2003. During the development and following the completion of the INC, Tanzania has made effort in creating public awareness on climate change issues within relevant sectors and

agencies, thereby trying to mainstream and integrate climate change issues across all sectors of government.

Tanzania's commitment to sustainably managing its natural resources is further demonstrated by its management of obligations as a Party to many other Multilateral Environmental Agreements (MEAs). Such agreements include: Convention on Biological Diversity (CBD) and its Biosafety protocol, the Stockholm Convention on Persistent Organic Pollutants, Ozone Depletion, and the UN Convention Combating Desertification (UNCCD), among others.

The National Adaptation Programme of Action (NAPA) process is another milestone that the country has reached in integrate adaptation issues in the development process. . It is on the base of these expected climate changes that the National Adaptation Programme of Action (NAPA) was published in January 2007. This preparation of the NAPA has been a timely opportunity to look at the country's climate change related vulnerabilities in various sectors which are important for the economy. Tanzania NAPA has been prepared as part of the overall integrated plans, policies, and programs for sustainable development at national level. Since Tanzania's economy is largely dependent on agriculture, it is deemed that sustainable development can be achieved when strategic actions, both short term and long term are put in place to address climate change impacts on agriculture and other key economic sectors. The process of NAPA preparation involved looking at the effects of climate change as a threat mainly to the agrarian population that still depends on subsistence agriculture for their daily livelihood.

The past trend on droughts and floods; the frequency of extreme weather events such as El Nino floods in 1997/98 and poor harvest in 2005/2006 which caused hunger in most parts of the country, are few but important reminders of the deadly effects of climate change to Tanzania. Furthermore the disappearance of the ice cap at Mount Kilimanjaro is now more than ever imminent evidence of climate change due to evident temperature increases caused by global warming. In this context, the Tanzania NAPA identifies priority areas in various sectors, and further prioritizes project activities in those sectors. These activities are those which need immediate and urgent actions for the country to adapt to such climate change effects on a short term basis as well as putting in place mechanisms for addressing long-term adaptation initiatives.

Following the invaluable stakeholder consultations at grassroots level fourteen top most possible adaptation activities that would address the country's most urgent needs from all sectors were prioritized. These were drawn from 72 project activities which were initially proposed with a breakdown of 11 in agriculture sector; while water, energy, forestry, health and wildlife sectors had 7 project activities each. Industry and coastal and marine resources sectors had 6 project activities each; human settlements had 9 and finally, tourism had 5. The selection criteria was based on the Tanzania condition and the local environment. The project activities were further ranked in accordance with their importance regarding impacts on poverty reduction and health, reliability, replicability of the technique and sustainability. The 14 selected projects activities are:

1) Water efficiency in crop production irrigation to boost production and conserve water in all areas

2) Alternative farming systems and water harvesting
3) Develop alternative water storage programs and technology for communities
4) Community based catchments conservation and management programs
5) Explore and invest in alternative clean energy sources e.g. Wind, Solar, biodiesel, etc. to compensate for lost hydro potential
6) promotion of application of cogeneration in the industry sector for lost hydro potential
7) Afforestation programmes in degraded lands using more adaptive and fast growing tree species
8) Develop community forest fire prevention plans and programmes
9) Establishing and Strengthening community awareness programmes on preventable major health hazards
10) Implement sustainable tourism activities in the coastal areas and relocation of vulnerable communities from low-lying areas.
11) Enhance wildlife extension services and assistance to rural communities in managing wildlife resources
12) Water harvesting and recycling
13) Construction of artificial structures, e.g., sea walls, artificially placing sand on the beaches and coastal drain beach management system
14) Establish good land tenure system and facilitate sustainable human settlements

The proposed project activities form the basis of required financial and technical assistance from national level as well as the international community. Given the current subsistence farming and status of natural resources which the large community depend on for their daily livelihoods, delaying the implementation of these projects will further negatively affect development in health care and nutrition, life expectancy, primary education, improvement in agriculture and livestock development, roads and communication infrastructure, which are top agenda of the fourth phase of the Tanzanian government.

In order to implement those projects, the relevant key sectors in collaboration with the Vice President's Office will be the main custodian of the NAPA while project activities will be implemented by relevant sectors local communities.

12. Emerging Issues

These are issues arising from the analysis above which is based on the TOR. We find these relevant to the current focus of the study and need to be considered in order to facilitate successful implementation of policy and action should be taken to correct and remove the deficiencies.

12.1 Policy Conflict

In the process of implementing MKUKUTA, there are policy conflicts that have been reported by key respondents from key ministries. In terms of industrial development,

there are cases of conflicts that have emerged. These include the Natron project, Karibu textile, North Mara issue. In both, there existed conflict between the expected gains from the industrial setting up. While emphasis was promotion of growth, the wellbeing of people was not given the requisite priority, and hence the issue of environmental pollution occurred with undesirable effects to people's wellbeing and thus a conflict.

In terms of existing policies, Agricultural policy, Livestock policy and natural resource policy are in conflict. What is prioritized in agriculture, livestock have direct negative impact on natural resources and vice versa. Mining has demonstrated conflict with the environment in many cases in Tanzania including gold mining both small and large scale in Geita, Mara and elsewhere. Mining provides the highly needed employment and revenue to the government with high multiplier effects to the economy. However, mining tailings and effluents containing highly toxic chemicals used to process the mineral do have real environmental and health effects to people and animals alike (e.g. Barrick North Mara Gold mine).

12.2 Law Enforcement

Environmental law requires industries to undertake EIA before is established, but these law came into force while industries exists. Implementing EIA becomes impractical. However, EMA require the Environmental audit instead. Some investors (private sector) have established industries by presenting EIA report for just one line of production. But as the time goes, they introduce other line of production having impact to the environment. The environmental audit in this case could be of importance, but it is difficult to implement as the concerned industry has no EIA report.

Settlements and industrial sites: Due to rising population, people have moved towards industrial areas, this has resulted to the clear noticeable negative impact of industries to people and thus a conflict.

12.3 Low Implementation Capacity

There is low capacity in implementation, monitoring and evaluation of production technologies (human resources and hardware) at all levels e.g. NEMC, ministerial, regional and local government levels . (Barrick North Mara Goldmine)

Community understanding of industrial effluents is a problem, and this results to a very high social costs. Awareness creation to communities is needed to that effect. There is also low capacity at district level where the actual interaction between people and the environmental resources prevails. Majority environmental officers in districts are engaged with natural resources matters, leaving environmental issues un attended. The use of executive agencies by district councils has resulted to concentrate more on revenue collection. This is would jeopardize the sustainability of environment.

Ministry of water and irrigation is mandated for the drainage of storm water management, however, due to the nature of the activities, the ministry is not able to effectively implement this as a result flooding occurs bringing with it outbreaks of diseases.

12.4 Inadequate Coordination

Ministries have given tasks to fulfill in collaboration with other ministries. The IMTC is presumably the responsible body but is inadequate for efficient coordination because it is loaded with a lot of tasks. In some ministries, there is no established Environmental management unit; instead, there is a project which deals with environmental issues.

EMA does not stipulate exactly where the environmental unit should be established within the ministry, this made ministries to set up the unit in departments which are not relevant to environmental issues. For instance at the Ministry of Livestock and Fisheries Development, the environmental unit is located to Pastoral System Development department and managed by a livestock officer; at the ministry of Natural resources and tourism, the project dealing with environment is located at the department of wildlife. At the Ministry of energy, the unit is located at Mineral department. At the ministry of home affairs, the unit is at the Administration department. At ministry of water & irrigation, the unit is at Policy Planning. There is a need therefore to harmonize the way the Unit dealing with the environmental management issues are established. It recommended that the EMU should be at the planning department and being answerable to the DPP. The DPP is a member of EWG which is important organ in environmental matters in the country.

12.5 Inadequate Resource Allocation

It is observed that, most activities defensive and mitigation are allocated with lower amount compared to what could be spend by the respective ministries. For example, the ministry of agriculture had received less by the average of 11% of the actual disbursed amount compared to what actually requested for during 2005 – 2009. The average expenditure by Ministry of natural resources is 43% less of allocation for the period 2005 – 2009 and the average expenditure by the ministry of Energy and Minerals is less by 30%

13. Actionable Recommendations

13.1 EMU should be established at the department dealing with cross cutting issues, in most cases this should be the Planning and Policy Department. Lack of this guidance during the MKUKUTA I and EMA introduction resulted into the EMU being arbitrarily housed by each ministry. For example in the MNRT the unit is under the wildlife division, Ministry of Livestock and Fisheries Development is under Livestock division, ministry of Mineral and Energy report directly to the Permanent Secretary. For effective execution of its duties, we recommend here that EMU be established under the planning and policy Department and therefore report to the DPP. Furthermore, the DPP is also a member of the environmental Working Group (EWG), which makes it the more appropriate to house the EMU. The VPO-DoE should be responsible to guide this process in collaboration with the President office-Planning Commission (POPC).

13.2 There is a need to strengthen capacity regional and local government, as these are more responsible for the environment at the grass root level. The human resource capacity should

include at least 3 fields of expertise i.e. Ecologists, economists and sociologists. The VPO – DoE, NEMC and PO RALG should guide and facilitate the process

13.3 Since the current Inter Ministerial Technical Committee is loaded with responsibilities, a more effective inter-sectoral coordination mechanism which is more 'hands on' that reports to the IMTC should be put in place to improve MKUKUTA implementation. The Planning Commission and VPO environment should facilitate the process

13.4 While it is important that MKUKUTA II allocates more funds for the environment, there is also a need to have a code in the budgetary allocation framework for the environment so that it becomes easy to trace its uses as it currently is with HIV/ Aids. The Ministry of Finance should take the lead in facilitating this.

13.5 Budgetary allocation should be based on needs of the institution in question based on requirements by line ministries as opposed to the currently flat rate allocation. The Ministry of Finance and VPO Environment should guide the process.

13.6 While economic growth is important for poverty reduction, care should be taken on how tradeoffs are made. In this light we need to balance the personal, societal and national costs and benefits of a decision for sustainability. In some cases personal costs and benefits seem to want to override societal or even national costs and benefits (The Ihefu livestock experience). The VPO environment, NEMC and Ministry of Finance to prepare guidelines or mechanism for decision making to include analysis of costs and benefits of environmental resources at personal, communities and at national levels.

13.7 Poverty and environment nexus should be assessed with the gender divide in mind due to their traditional division of labour at the household level. Similarly targeting of capacity building should follow the same criteria i.e. who is responsible/ doing what at the household level for effective outcomes. The VPO Environment, NEMC and Planning Commission within the Ministry of Finance should lead the process.

13.8 Climate change adaptation and impact mitigation should be considered in the next phase of MKUKUTA particularly the management mechanisms for conserving the natural environment involving the rural communities and where incentive options are introduced such as REDD+ where both the communities and the environment win.

13.9 Population dynamics has two implications. One implication is on urbanization growth and its pressure on the existing infrastructure. Therefore planned urbanization has to be effected. (Ministry of Lands and Human Settlement). The second implication is on pressure on resources due to population growth. We need to hasten and land use planning, participatory management and Strengthening of capacity of NEMC and Local Governments. These activities have to be overseen by PO RALG and the VPO environment. Furthermore, MKUKUTA II has to take these into consideration.

13.10 MKUKUTA II need to ensure measures to ensure that environmental resources contribute more to GDP and poverty reduction with a focus on fisheries (deep sea fishing), wildlife (hunting blocks)

13.11 Additional public resources should be allocated to addressing the vulnerability of the poor to the effects of environmental degradation on productive sectors and the limited ability of the poor to cope and mitigate the adverse effects of environmental problems (air, water and soil pollution) (pg 23)

13.12 Capacity at the district level should be enhanced to integrate poverty and environment issue in district planning processes: (i)assist in harmonizing the growing number of guidelines for participatory planning from various sources (PMO-RALG); ensure national policies are reflected in DDPs with clear roles and responsibilities for Regional Secretariat to support this process; (iii) training of newly appointed environment management officers under NEMA (VPO/NEMC) (pg 48)

14. Conclusions:

14.1 The reversal of unsustainable use of environment resources linked to poverty will depend on improved environmental management, profitable and sustainable use of environmental goods and services, and an enabling institutional and legal framework i.e. incentives for sustainable utilization.

14.2 Adequate response to population growth provide opportunities for better management of environmental resources.

14.3 There is limited empirical analysis in Tanzania on the extent to which environmental degradation is the result of actions, actions of influential individuals and public/private institutions

14.4 The environmental sector needs to demonstrate (empirical evidence) the tremendous potential for stimulating economic growth and supporting poverty alleviation through the sustainable management of Tanzania's very rich natural environment e.g. through additional revenue, employment, food-security.

14.5 Resources allocated to promoting environmental sustainability in sector ministries (and district) are currently difficult to trace. In addition to advocating for more resources for environment in sectors & district budgets, the operationalisation of the environment budget code is required for ease of monitoring. This should be supported by appropriate guidance for sectors in identifying critical interventions to promote environmental sustainability in respective sectors.

14.6 The environmental management units in each sector/ministry as required by the EMA have been set up, however, the placement and funding for environmental mitigation and defense measures by sectors is not yet optimal. Currently a flat rate is provided not linked to specific activities required in each sector and these funds cannot be monitored adequately as the environment budget code has not been operationalised.

14.7 There is a policy shift towards decentralized, participatory planning and implementation and the integration of national policies in district development plans. However, there is inadequate human and financial capacity at local government level to drive the Local Government Reform Program.

Table 5: Summary Table

Sectors/Policies	Level of Integration of P/E issues & P/E issues not addressed in policy	Actual/potential Policy Conflicts	Opportunities for Positive Synergies: (Growth, Poverty Reduction, Environmental Sustainability)
National Environment Policy (1997)	• Policy aims to ensure sustainability, security and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment • The policy is quite dated and needs to integrate new areas/recent development including bio-fuels, alternative/renewable energy, change is governance structures – more participatory community management of resources	• Trade offs between safeguarding community livelihoods and preserving environment functions e.g. wetlands/water catchments areas e.g. the pastoralists in Ihefu and the dying up of the Great Ruaha which affects wildlife, fisheries and hydropower generation	• Addressing bio-fuels and renewable energy provide potential for poverty reduction (linked to health, education) and environmental sustainability by reducing dependence on bio-mass/wood fuel • Need to consistently use economic, social and environmental valuation/cost benefit techniques in evaluating proposed interventions for community and national benefit
EMA (2004)	• Provides legal and institutional framework for sustainable management of environment, preventing and control of pollution, waste management, environmental quality standards, public participation, environmental compliance and enforcement • Requires environmental audits for monitoring impact but lack baseline information • EMA does not stipulate the location of environment management units (EMU) within ministries • The government allocates a flat fund for EMA implementation in ministries not linked to planned activities/tasks for EMA implementation in each ministry	• Weak monitoring capacity means industries not complying with EI regulation	• Funds for EMA implementation linked to specific tasks in each Ministry • Improved implementation/compliance with EMA legal and institutional framework including environmental standards & monitoring will ensure sustainable utilization of environmental resources (need to address capacity constraints at all levels)
Forestry Policy (1998) ***[under review]*** **Forest Act (2002)** **Village Land Act (1999)**	• FP acknowledges the causal relationship between poverty and environmental degradation and promote participatory forest management (PFM) but is not clear on specific incentives/mechanism for sustainable management of standing forests • FP does not include explicit reference to poverty alleviation and the links between improved forest resource management and poverty reduction • Emerging issue such and international carbon trading not captured in current forest policy • FA and VLA promote local and participatory management of ENR by devolving management and decision making rights over village land and forest areas to villages	• Devolution of management and decision making rights over village and forest areas to villages creates potential conflicts with sector specific policies and create the need for greater harmonization and capacity development at district levels for proper implementation.	• Implementation of participatory forest management can benefit poor local communities who will gain better access to and control of benefits from forest use

Sectors/Policies	Level of Integration of P/E issues & P/E issues not addressed in policy	Actual/potential Policy Conflicts	Opportunities for Positive Synergies: (Growth, Poverty Reduction, Environmental Sustainability)
Fisheries Policy (1997) ***[under review]***	• Acknowledges the link between sustainable exploitation of fish resources and high quality food, income and employment • Does not recognize the role of poverty as a constraint to sustainable management of fisheries resources		• Improved enforcement of regulations would result in sustainable fishing practices and improved revenue collection • Implementation of 5YDP (2007) would improve returns from marine fishing sector i.e. construction of fishing harbor would lead to full realization of benefits from fisheries resources
Wildlife Policy (1998)	• Seeks to integrate wildlife conservation within rural development with benefit sharing as a way to address poverty • Supports community based conservation but application of the policy is not widespread due to complex process of establishing recognized Wildlife Management Areas (WMA) • Wildlife policies focus mainly on wildlife conservation and not on sustainable utilization	• Governance issues related to management of wildlife resources (leading to loss of revenue) • Lack of coherence in national policies dealing with wildlife – community based wildlife management, tourism development, rural growth strategies, investment regulations and incentives and poverty reduction strategies • Vested interests of government and foreign private investors lead to sub-optimal decision making that deprives rural population of economic potential for growth and wealth	• Liberalise procedures for tendering hunting blocks to allow the best outfitters to bid competitively against each other for concessions. • Provide enabling frameworks for partnerships between communities and the private sector. • It is also crucial that the government implement control of subleasing, which may come naturally through effective market-based competition. • Speedup the WMA process to ensure maximum participation of the communities in the wildlife management
Tourism policy (1999)	• Although policy states that priority must be given to tourist projects that benefit local communities, in reality only a small percentage of the income from tourism returns to local communities e.g. Ngorongoro Conservation area • Policy is unclear on how to implement greater benefit sharing with local communities from this profitable industry		
Water Policy (2002)	• Water is considered a key factor in socio-economic development and fight against poverty • Supports application of 'polluter pays principle' and fair and equitable access to water, addresses the management of floods/droughts/natural disasters and support eh development of community level water user associations – all which benefit poor people.	• Water and irrigation policies are linked but only water policy mentions linkage – there is a need to have clear links/harmonization between water and irrignation policy • No mention in irrigation policy on the efficient use of available water (yet water is a scarce resource)	
Minerals Policy	• Seeks to alleviate poverty through development of small and large scale mining operations including actions to mitigate	• Demand for water resources is high • Use of hazardous chemicals has high	

Sectors/Policies	Level of Integration of P/E issues & P/E issues not addressed in policy	Actual/potential Policy Conflicts	Opportunities for Positive Synergies: (Growth, Poverty Reduction, Environmental Sustainability)
(1997)	adverse environmental and social aspects	potential for water pollution	
Energy Policy (1992)	• Recognizes that wood fuel is the major fuel for cooking and heating in Tanzania (only 5% of population has access to electricity and wood fuel accounts for 92% of final energy consumption) • Policy objectives focus on exploiting hydro-electric sources, developing natural gas and coal resources and step up petroleum exploration activities. • Missing focus on developing renewable energy sources although the rural energy initiative is a step in the right direction	• Potential conflict with water policy from reliance on expanding hydro-electric sources of electricity • Strong links and potential conflict with environment management policy and minerals policy from exploitation of natural gas, coal and petroleum exploration. • Conflict between promoting the use of fossil fuel rather than renewable energy in the face of concerns about climate change • Policy conflict between policy to improve the efficiency of biomass energy use (woodfuel) and the concerns about deforestation and loss of biodiversity	
Rural Development Strategy (2001)	• High priority accorded to poverty reduction and the impact of rural poverty but weak institutional framework for coordination and limited government capacity for environmental management • Policy recognizes the sustainable utilization of natural resources for the benefit of rural and urban populations	• In response to population growth and rural-urban migration, a shifting focus on urban issues and conflict in land use between rural and urban use,	• Implementation of the following priority areas in the policy will reduce poverty and enhance sustainable utilization of resources: enhancing security of natural resource ownership; improved land use planning; and extension of the community based management approach to all districts & development of effective ties between rural and urban areas
Agriculture:KILIMO KWANZA (agriculture)		• Use and control of industrial chemicals – soil and water degradation • Use of water for irrigation – potential conflict over efficient use of scarce water resources and exceeding the threshold for sustainability	• Improved soil and water productivity from sustainable land and water management practices
Agricultural Sector Development Strategy (2001) & Agricultural Sector Development	• Recognizes the importance of sustainable natural resource management as an important crosscutting issue at national and local government levels with higher priority accorded to interventions with neutral or positive environment impact. • However no specific financial allocation in ASDP for environmental mitigative/defensive expenditure during	•	• Attention to increasing productivity in the livestock sub-sector has the potential for increasing contribution to the national economy and local poverty reduction. • Dedicated funding should be set aside in ASDP for sustainable natural resource management

Sectors/Policies	Level of Integration of P/E issues & P/E issues not addressed in policy	Actual/potential Policy Conflicts	Opportunities for Positive Synergies: (Growth, Poverty Reduction, Environmental Sustainability)
Program (2002)	program implementation beyond the 5% set aside for all cross-cutting issues including environment • Little attention given to livestock sub-sector, that provides livelihoods to a significant proportion of the population yet productivity is currently low.		

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Annex1: List of people met

S.N.	Name of Officer	Position and Institution
1.	Catherine Joseph	DPP, Ministry of Livestock and fisheries
2.	Mr Damas Shirima	DPP, Ministry of Water and Irrigation
3.	Mr Emmanuel Achayo	DPP, Ministry of Agriculture and food Security
4.	Mr Invocavit Swai	DPP, Ministry of Minerals and Energy
5.	Mr Rose Wambura	Budget section–Ministry of Minerals and Energy
6.	Mr Joseph Kakunda	Ministry of Water and Irrigation
7.	Mr Kubena	Ministry of Water and irrigation
8.	Mr David Biswalo	Ministry of Agriculture and Food Security
8.	Dr Ningu	Ministry of Agriculture and Food Security
9.	Mr Benard Lubogo	Ministry of Natural Resources and Tourism
10.	Mr Elias Daniel Kitundu	Ministry of industries, Trade and Marketing
11.	Mr Ezamo S. Maponde	Ministry of industries, Trade and Marketing
12.	Mr A.J Chilumanga	Ministry of industries, Trade and Marketing
13.	Ms Bertha Nyange	Ministry of Natural Resources and Tourism
14.	Mr Peter Lyatuu	Ministry of Natural Resources and Tourism
15.	Ms Dafroza Sanga	Ministry of Natural Resources and Tourism
16.	Ms. Bure Nasibu	Ministry of Natural Resources and Tourism
17.	Mr Faraja Garageza	VPO, Division of Environment
18.	Ms Anna Maembe	DP-National Environmental Management Council (NEMC)
19.	Ivar Jorgensen	Royal Norwegian Embassy, Dar es Salaam