



UNITED REPUBLIC OF TANZANIA



National Report for the United Nations Conference on Sustainable Development, Rio+20



THE VICE PRESIDENT'S OFFICE

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ACRONYMS

AAP	Africa Adaptation Project
AMCEN	African Ministerial Conference on the Environment
ARSCP	African Roundtable on Sustainable Consumption and Production
CAMARTEC	Centre for Agricultural Mechanization and Rural Technology
CBD	Convention on Biological Diversity
COSTECH	Tanzania Commission of Science and Technology
CPCT	Cleaner Production Centre of Tanzania
CSD	United Nations Commission on Sustainable Development
CSO	Civil Society Organization
IFAD	International Fund for Agricultural Development
EAC	East African Community
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMA	Environmental Management Act 2004
EWURA	Energy and Water Utilities Regulatory Authority
FAO	Food and Agricultural Organisation of the United Nations
GDP	Gross Domestic Product
GEF	Global Environmental Facility
IPCC	Intergovernmental Panel on Climate Change
JET	Journalist Environmental Association of Tanzania
LGAs	Local Government Authorities
LKEMP	Lower Kihansi Environmental Management Project
LVEMP	Lake Victoria Environmental Management Programme
MACEMP	Marine and Coastal Environment Management Project
MDGs	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
MKUKUTA	Mkakati wa Kukuza Uchumi na Kuondoa Umaskini Tanzania
MKUZA	Mkakati wa Kukuza Uchumi Zanzibar
MTEF	Medium Term Expenditure Framework
NAP	National Action Plan to Combat Desertification
NAPA	National Adaptation Programme of Action
NARCO	National Ranching Company
NBSAP	National Biodiversity Strategy and Action Plan
NEMC	National Environment Management Council
NEP	National Environmental Policy
NGO	Non-Governmental Organizations
NIDP	National Irrigation Development Plan
NIMP	National Irrigation Master Plan
NORAD	Norwegian Agency for Development Cooperation
NSGRP	National Strategy for Growth and Reduction of Poverty
ODS	Ozone Depleting Substances
PEDP	Primary Education Development Programme
POPs	Persistent Organic Pollutants
RGoZ	Revolutionary Government of Zanzibar
SIDO	Small Industries Development Organisation
SUMATRA	Surface and Maritime Transport Regulatory Authority
TAFSIP	Tanzania Agriculture and Food Security Investment Plan
TANROADS	Tanzania Roads Agency

TANWAT	Tanzania Wattle Company
TaTEDO	Tanzania Traditional Energy Development Organization
TAZARA	Tanzania Zambia Railway
TDV	Tanzania Development Visions 2025
TIRDO	Tanzania Industrial Research and Development Organization
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VICOBA	Village Community Banks
VPO	Vice President's Office
WMA	Wildlife Management Area
WSSD	World Summit on Sustainable Development
ZSGRP	Zanzibar Strategy for Growth and Reduction of Poverty

PREFACE

The world has experienced rapid economic development, arising mainly from the industrial revolution, which resulted to, among other things environmental (atmospheric, soil and water) pollution; and massive unsustainable utilization of the natural resources leading to climate change; desertification; loss of biodiversity; insufficient supply of clean and safe water; poverty; hunger; illiteracy; child mortality; and diseases, particularly in the developing countries.

As we are all aware, long term economic development is dependent on the way we manage the environment today. Protecting and managing the environment and the natural resource base for economic and social development and addressing the unsustainable consumption and production patterns are and will remain fundamental challenges for poverty eradication and sustainable development. There is therefore a need to find ways to manage natural resources judiciously and prevent or minimize environmental pollution; harness alternative sources of energy to replace the use of fossil fuels; establish modern public transportation systems to reduce vehicle emissions, congestion in cities and the health problems caused by polluted air and address water scarcity. In this context therefore, there is a need to redirect international and national plans and policies to ensure that all economic development activities take full consideration of environmental and social impacts.

In recognition to the global social and environmental challenges, the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, took place in Rio de Janeiro, Brazil, from June 2-14, 1992 to discuss solutions for the global challenges and chart out on how to relieve the global environmental system through implementation of sustainable development agenda. This year we are marking the 20th anniversary of UNCED (Rio +20), in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. It is now high time to evaluate performance of the implementation of the Rio 1992 Conference Outcomes, regarding political and financial commitments, progress on the implementation of the outcomes, remaining gaps and new and emerging challenges. Among others, the Conference will focus on two themes: (a) a green economy in the context of sustainable development and poverty eradication; and (b) the institutional framework for sustainable development.

Like all developing countries, Tanzania expect that the Conference to put in place a framework of action focused on implementation and full integration of sustainable development and in accordance with the principle of common but differentiated responsibilities, including provision of new, additional, stable, predictable financial resources to support implementation activities in developing countries; the increase of resources for development, including commitments by developed countries to increase ODA, and the fulfillment of ODA assistance; effective access to and transfer of technologies for developing countries; and effective institutional frameworks at all levels and encourage the participation of all stakeholders for the implementation of the sustainable development agenda.

This National Report for Rio +20 highlights status of implementation of the 1992 Rio outcomes, challenges faced, gaps and recommendations for future improvements. It is therefore anticipated that the Report will be useful for policy makers, academia, private sector, non-governmental organizations and the general public in focusing their efforts towards achieving green economy and sustainable development.

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EXECUTIVE SUMMARY

The National Report for the United Nations Conference on Sustainable Development, Rio+20 has been prepared to show progress made by the United Republic of Tanzania towards sustainable development since Rio Conference in 1992. The report addresses key areas on country's policy, legal and institutional frameworks for sustainable development; their implementation achievements and constraints; domestication/implementation of multilateral environmental agreements; green economy in the context of sustainable development and poverty eradication; new and emerging issues in sustainable development; and opportunities for the post Rio+20 Conference.

The report has been prepared through a consultative process. Experiences from various stakeholders have been sought and integrated in the report reflecting implementation progress of various actions related to sustainable development since Rio 1992 and the associated challenges. The consultations were undertaken between December 2011 and March 2012. The stakeholder groups consulted include Government Ministries in both Mainland Tanzania and Zanzibar; Local Government Authorities; Civil Society Organizations (CSOs); Private Sector; Research and Academic Institutions; Media; Development Partners and the UN system in the country. The key issues that summarises the report include: Country support and political commitment to Multilateral Environmental Agreements; promotion of integrated planning and decision making for sustainable development; specific industry sectors or resource areas where national political commitment to achieve sustainable development goals has been especially strong; Government (national and local) involvement in implementing local Agenda 21; National institutions developed for sustainable development in the country including Ministries' engagement in public policy and planning for sustainable development; the role of UN Agencies in supporting sustainable development in the country; new and emerging challenges to sustainable development; implementation of green economy concept; and finally provides some key conclusions and recommendations.

Country support and political commitment to Multilateral Environmental Agreements

The country supports a number of Multilateral Environmental Agreements (MEAs) and other international agreements which are implemented in both parts of the Union that is Mainland Tanzania and Zanzibar. This implementation is in line with the requirements of MDG 7 (Ensure environmental sustainability). Some MEAs are cross-cutting while others are sector specific. Thus the levels of implementation and focus areas vary in the different sectors. Among the Examples of MEA with crosscutting nature are CBD, UNCCD, and the UNFCCC.

Most of the MEAs that the United Republic of Tanzania is a Party have been mainstreamed into development policies and planning to ensure sustainable development. Presence of relevant sectoral policies that support implementation of various provisions required by these MEAs is a clear indication of political support to ensuring sustainable development. The establishment of Sector Environmental section/units in all Sector Ministries to oversee environmental issues in the relevant sectors is a further evidence of such commitment. Similarly, the establishment of various institutions (e.g. research and training) and/or agencies to guide sustainable development further indicates the national political support in implementing the MEAs and ensuring sustainable development. In addition, following the establishment of the Sector Environmental sections/units, environmental issues are now being integrated in the Medium Term Expenditure Framework (MTEF) budgeting of respective

sectors. Implementation of the MEAs is also mainstreamed in the National Strategy for Growth and Reduction of Poverty (NSGRP), commonly known in Kiswahili as MKUKUTA and Zanzibar Strategy for Growth and Reduction of Poverty, MKUZA.

Despite the fact that the country has been implementing international environmental and other sustainable development commitments, achievement of such efforts have been constrained by various factors. Such factors include, among others, inadequate environmental management awareness among key stakeholders, insufficient resources to adequately address environmental issues as well as lack of efficient and effective alternative sources of energy to reduce dependency of forest resources as the main source of energy, and inadequate awareness on sustainable agriculture and livestock keeping practices. Awareness raising among the local communities regarding environmental management is thus of crucial importance.

Promotion of integrated planning and decision making for sustainable development

Integrated planning and decision making has always been promoted in the country for sustainable development. The Sector Strategic Plans takes into account the sectoral policies and all national strategies and plans such as National Strategy for Growth and Reduction of Poverty (NSGRP - *MKUKUTA*) (2010-2015), The Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP - *MKUZA*)(2010-2015), the Tanzania Development Vision 2025 and Zanzibar Development Vision 2020, the National Environment Action Plan (NEAP), and currently, the National Five Year Development Plan (2011-2015). Integrated planning is undertaken within the national context and in accordance to national policies.

Specific industry sectors or resource areas where national political commitment to achieve sustainable development goals has been especially strong

The national political commitment to achieve sustainable development has been strong in almost all sectors of the economy. Mainstreaming sustainable development issues in various sector policies, strategies and legislation after the Rio Conference of 1992 is a clear evidence of the national political commitment towards achieving sustainable development. Some of the indicators of the national political commitment in this area are discussed hereunder.

In water sector, the National Water Policy (2002) sets out direction for achieving sustainable development and management of the nation's water resources for economy-wide benefits and increased availability of water supply and sanitation services. As a result of implementation of this Policy, there has been an increased water supply and accessibility through use of various sources of water such as rain water harvesting, protected wells and boreholes. Access to basic sanitation is also high with 85% using pit latrine and 5% use ventilated Improved Pit (VIP) latrine. Furthermore, a National Water Sector Development Strategy (2005) was developed and is being implemented to support re-alignment of other water related key sectoral policies of energy, irrigation, industry, mining, and environment. Among the initiatives that demonstrate the national commitment in this area include: promotion of rain water harvesting; management for both urban and rural areas and mapping of water points to ensure sustainability in rural areas; water basin management programme to ensure effective supply and access to both urban areas and as addressing water scarcity; accessing deeper sources of ground water, as shallow well become unusable (in some instances due to salt water intrusion in freshwater systems associated with sea level rise); improvement of infrastructure such as water reservoir in basin to store water; and encouraging utilization of

groundwater and rainwater harvesting structures which help communities to adapt to impacts of climate change.

The United Republic of Tanzania's energy demand is characterised by a low per capita consumption of commercial energy (petroleum and electricity) and a high dependence on non-commercial energies, including biomass fuels in the form of firewood, charcoal and bio-waste. The national energy policy objective is to ensure availability of reliable and affordable energy supplies and their use in a rational and sustainable manner in order to support national development goals, and within the sustainable energy for all context. Among the initiatives towards achieving the sustainable energy for all are the following: Promotion of energy efficient cooking stoves has resulted into reduced fuel consumption, consequently reduced deforestation and air pollution related illnesses; Use of natural gas in generating electricity; Promotion of renewable energy: there is a relative increase in the use of solar power for domestic purposes especially in rural areas as well as wind power especially in pumping ground water; and

Similar initiatives have been made in the Industry sector where promoting cleaner production technologies and techniques in industries begun in 1994 with the establishment of the Cleaner Production Centre of Tanzania (CPCT). To date more than 70 industrial establishments have been involved in cleaner technology assessments and implemented different options contributing to reduction in greenhouse gas emissions and waste as well as rational utilization of resources in terms of utilities and raw materials, which is in line with the principles of sustainable production and consumption.

The United Republic of Tanzania puts strong emphasis on biodiversity conservation. The priority is to conserve Tanzania's unique biodiversity and the natural ecosystems of forests/woodlands; rangelands/grasslands; savannah, wetlands, rivers, lakes and the ocean to ensure provision of ecological services on sustainable basis. This is to ensure that the valuable biodiversity resources within the country continue to contribute significantly to socio-economic development and towards attaining the Tanzania Development Vision 2025 and Zanzibar Development Vision 2020, which call for better life for all Tanzanians. On the other hand, Tanzania's biodiversity in terms of ecosystem types, species richness and high levels of endemism indicate that the country is rich in natural resources. Globally, the United Republic of Tanzania is categorised as one of the 34 biodiversity hotspots in the world, and about 25% of the land area of Tanzania is occupied by crucial ecosystem such as national parks, game and forest reserves as well as key wetlands that are designated as Ramsar sites. It is for this reason that implementation of all sector policies is cognisant of the Convention on Biological Diversity.

The country also supports the green economy initiative. Among the steps towards that direction include the vision and focus on renewable energy, and increased involvement of the private sector in the renewable energy development. Other indicator of political commitment include Fuel switching, where since 2004, more than 25 Dar es Salaam based industries have switched to natural gas instead of fuel oil. This has contributed in reducing indirectly the amount of otherwise undesirable gaseous emissions. Promotion of energy efficiency has been undertaken where there have been efforts in improving energy efficiency in existing manufacturing plants especially with technical assistance from the Tanzania Industrial Research and Development Organization (TIRDO). Over 150 industries have been audited. Audit findings indicate potential savings ranging from 15-40%. Also environmentally friendly waste treatment systems have been adopted in some parts of the country. In Moshi

Municipality, Kilimanjaro region, for example, an integrated municipal wastewater treatment scheme has been constructed consisting of waste stabilization ponds, constructed wetlands and vetiver grass plot.

Government (national and local) involvement in implementing local Agenda 21

A number of actions and programmes relevant to Agenda 21 that have been initiated and implemented, including among others, the following.

- The continuous review of sectoral policies to address sustainable development;
- The preparation of the National Environmental Policy (1997);
- The formulation of a National Energy Policy (1993 and revised in 2003);
- Formulation and implementation of Women and Gender Development Policy (2000);
- Implementation of the Tanzania Development Vision 2025, Zanzibar Vision 2020 and strategies for growth and reduction poverty –MKUKUTA and MKUZA;
- The signing and ratification of several global and regional conventions of relevance to the environment and sustainable development.
- The adoption of Tanzania Development Vision 2025 and Zanzibar Development Vision 2020.
- Implementation of the Environmental Management Act of 2004 has involved establishment of environmental units in all sectoral ministries to address issues of environmental sustainability in line with other development initiatives.

Among the strategies/actions and programmes relevant to Agenda 21 that have been initiated and implemented include the National Strategy on Urgent Actions on Land Degradation and Water Catchments. This Strategy formulated and implemented since 2006 restricts cultivation in the steep slopes in the highlands parts of the United Republic of Tanzania. In such areas some farmers have been relocated to lowland areas following government directives. The strategy is an important step in addressing issues of desertification, which is a major economic, social and environmental problem facing the country. Drought and desertification in the United Republic of Tanzania poses a great challenge to both social and economic development and its impacts are already being felt across the country especially to rural communities. In 2005 the GDP was estimated to grow by 6.9% instead it grew by 6.8% and the main reason for this was severe drought which hit most parts of the country in the last quarter of 2005 (Economic Survey Report, 2005). Agriculture sector was also impacted by drought and desertification. In 2005, the sector grew by 5.2% compared to 5.8% in 2004. The decrease in the growth rate was caused by drought in some parts of the country. As a result of this the production of some food crops particularly wheat, millet and bananas declined triggering food shortages in the country with its associated impacts such as hunger, malnutrition and general deterioration of people's health. These problems not only affect the national efforts to implement the National Strategy for Growth and Reduction of Poverty, but also draws back government initiatives in attaining the MDGs particularly MDG 1 and 7. In this case drought and desertification may pose a challenge to the attainment of sustainable development.

Other initiatives by the government in relation to land management and conservation include the HADO Project, a land conservation project in Dodoma region that has been implemented since the early 1970s; the *Hifadhi Ardhi Shinyanga (HASHI)*, since the mid 1980s; LAMP and SECAP in Arusha and Tanga Regions, respectively. The challenge of some of these initiatives is that while the restricted habitation and cultivation in some areas promote the regeneration of natural vegetation and restoration of ecosystem services, e.g. forests, water

flows in respective areas, it is likely to result in increased land use pressure in destination areas.

National institutions developed for sustainable development in the country

Various institutions are involved with sustainable development in the country. Such institutions include, among others, Vice President's Office - Division of Environment; The National Environment Management Council (NEMC); President's Office – Planning Commission and Sector-based institutions. Most of these institutions have existed for a long time, but their mandates have often been improved to accommodate the policy revisions and emerging global challenges towards sustainable development.

The Environmental Management Act (EMA) 2004 sets up the Institutional Framework for Environmental Management in the country. It confers the task of overall coordination of environmental management in the country and provision of the central support functions to the Ministry responsible for environment, which is the Vice President's Office. These functions concern the overall organization, rules coordination and the establishment of a coherent general context for environmental management. The National Environmental Policy, 1997 and the Environmental Management Act, 2004, guide these functions by providing a policy and legislative framework for coordinating implementation of policies and laws on environmental and natural resources management in the country. The Act confers the role of management of specific natural resources or environmental services, such as agriculture, fisheries, forestry, wildlife, mining, water, and waste management to various Ministries, the Local Government Authorities and departments. These functions are to a large extent directly operational and in addition to EMA they are also guided by sector specific policies and legislations.

The specific institutions for environmental management and their functions include:

- *National Environmental Advisory Committee*: The committee is created to advise the Minister for environment (the Vice President's Office-VPO in this instance) or any sector ministry on any environmental matter which may be referred to it;
- *Minister Responsible for Environment*: The Minister can articulate policy guidelines, make regulations, guidelines, can designate any institution to perform any function or do any activity within a specified time;
- *Director of Environment*: The Director coordinates environmental activities, advice the government on the law and international environmental agreements on the environment, monitor and assess activities of relevant agencies, prepare and issue State of Environment Report;
- *National Environment Management Council (NEMC)*: The functions of the Council includes among others, carrying out environmental audits, surveys, researches; reviewing and recommending for approval of Environmental Impact Assessment; enforce compliance of the National Environmental Quality Standards; initiates procedure for the prevention of accidents which may cause environmental degradation; undertakes programmes to enhance environmental education; publishes and disseminates manuals relating to environmental management; renders advise and technical support to entities engaged in natural resources and environmental

management; and performs any other functions assigned to it by the Minister responsible for environment;

- *Sector Ministries:* Each sector ministry carries out its functions and duties in connection with the environment according to EMA and any other law provided that such law does not conflict with EMA. Involvement of Sector Ministries in environmental management is through a sector environment sections which have been established in each ministry to ensure that ministries comply with the EMA;
- *Regional Secretariat:* The Regional Secretariat is composed of a Regional Environmental Management Expert (REME) charged with the responsibility to advise the Local Government Authorities of that particular region on matters relating to implementation and enforcement of EMA. The REME links the region with the Director of Environment. Since the enactment of EMA, several Regional Secretariats have either designated or employed Regional Environmental Management Experts;
- *Zanzibar Division of Environment:* This is the government institution responsible for environmental matters located in the Zanzibar's First Vice President's Office. According to the Environment Policy for Zanzibar (1992), the Division of Environment, formerly Department of Environment has the following functions: (1) to promote and monitor the implementation of the environmental policy, by all sectors of government and by the people of Zanzibar. (2) To maintain a well organised environmental information bank. (3) To provide environmental input into planning process based on the national environmental policy. (4) To monitor the state of the environment and organise relevant research, (5) to tackle immediate environmental problems and stimulate others to action for environmental protection. (6) to promote awareness of, and training in, environmental issues;
- *Standing Environmental Committees:* These committees are; Standing Committees on Urban Planning and Standing Committees on Economic Affairs, Works and Environment in the Local Government Authorities that have been designated into Environmental Committees;
- *Cabinet Committee on Environment:* The Committee is mandated to advise the President on matters of urgency related to environmental management; and
- *Parliamentary Standing Committee on Land, Natural Resources and Environment:* The Committee, among others, provides overall guidance on environmental issues to the Government.

Ministries' engagement in public policy and planning for sustainable development

All sectoral ministries are involved in planning their sector activities and formulating relevant sectoral policies. The Ministry of Finance and the President's Office - Planning Commissions in both Mainland Tanzania and Zanzibar have been spearheading the national planning process by providing necessary guidance. Since June 2011, the United Republic of Tanzania has also adopted and started implementing a National Five Year Development Plan (FYDP) spanning from 2011/2012-2015/2016. The FYDP is a formal implementation tool of the country's development agenda articulated in the Tanzania Development Vision 2025, in particular taking Tanzania to middle income country status and eradicating poverty.

The role of UN Agencies in supporting sustainable development in the country

The United Republic of Tanzania recognizes the role of the UN system at the country level and the direct support on sustainable development that is provided through the UN system. For instance, UNEP, as a leading global environmental authority that sets the global environmental agenda to promote the coherent implementation of the environmental dimension of sustainable development within the United Nations system, has been extending support from the global, regional, and down to country level in support of implementation of Rio deliberations. The support has come in the form of programmes that established linkages of poverty and environment as well as promoting the understanding and applications of a green economy. UNEP, in partnership with the Government of Tanzania and UNIDO, established a National Cleaner Production Centre/Programme in Tanzania to build local capacity to implement cleaner production and to provide core cleaner production services at the national level. UNDP has been supporting various programmes and projects in the country in relation to sustainable development, including biodiversity conservation and sustainable land management. The UN System together with other development partners has also been in the forefront towards a green economy.

New and emerging challenges that are likely to affect the prospects for sustainable development in the coming decade.

The new and emerging challenges that are likely to affect the prospects for sustainable development in the coming decade include: climate change; world economic crisis; increase of food and oil prices; HIV/AIDS pandemic; natural disasters; market uncertainty especially for primary products such as minerals and crops, as well as population growth and rapid unplanned urbanisation. These challenges need to be further examined since they affect resource use and thus has direct environmental consequences.

Various measures have been undertaken by different sectors to address these challenges such as setting up of stimulus package to mitigate impacts of world economic crisis in the country; provision of free medication for HIV/AIDS patients and education and awareness; and enhancing adaptation to climate change impacts by integrating climate change in the implementation of agricultural development policies, actions and activities at various levels.

Green economy - consensus among policy makers on the meaning of the term green economy in the context of sustainable development and poverty eradication and actions taken

Currently there is no national definition on the meaning of the term ‘green economy’ in the context of sustainable development and poverty eradication. However, green economy is broadly considered as the economy that ensures sustainable development and does not encourage environmental degradation. Different national policies have elements that promote green economy. Such elements include promotion of renewable energies (solar, hydropower, wind, geothermal, biogas), use of energy efficient appliances and equipment, efficient mass transit systems, cleaner production initiatives, fuel switching to natural gas and other alternative energy sources, promotion of energy efficient cooking stoves and promotion of mini-hydro and co-generation projects. It is broadly considered by various sectors in the country as the economy that improves the human wellbeing and manages the environment sustainably; that ensures sustainable development and does not encourage environmental degradation, reduces greenhouse gas emission, integrates issues of social, environment and

economic aspects in the development process, and takes into consideration the sustainability of future generations.

Several, direct and indirect actions have been implemented in the country in support of the green economy initiative. They include the following, among others, promotion, production of electricity from hydropower and other non-fossil fuel sources such as solar; preparation of Biofuel Guidelines; and reduction of tariffs on solar equipments and gadgets so that many people can afford.

Generally, the fact that green economy is invariably equated to sustainable development, and that it should only be considered as a tool to facilitate the delivery of sustainable development and poverty eradication and not to replace them, means that absence of clear definition on the concept may not adversely affect sustainable development and poverty reduction endeavours.

Conclusions

Since Rio Conference in 1992, the country has actively implemented a number of Multilateral Environmental Agreements (MEAs) and sustainable development in general. This implementation has contributed towards attaining environmental sustainability as per Millenium Development Goals (MDGs). While some MEAs such as CBD, UNCCD, and the UNFCCC are cross-cutting, others are sector specific. Most of the MEAs have been mainstreamed into development policies and planning to ensure sustainable development.

Implementation of the MEAs and sustainable development is also mainstreamed in the national development planning including the National Strategy for Growth and Reduction of Poverty (MKUKUTA), Zanzibar Strategy for Growth and Reduction of Poverty (MKUZA), and the Medium Term Expenditure Framework (MTEF) budgeting.

Achieving sustainable development depends much on comprehensive and integrated national plans. Integrated planning and decision making have always been promoted in the country. Integrated planning is undertaken within the national context and in accordance to national policies. The Tanzania Development Vision 2025 and Zanzibar Development Vision 2020 set the national direction and predevelopment priority that guides all the Sector Strategic Plans. These Sector Strategic Plans also take into account other sectoral policies and national strategies and plans such as National Strategy for Growth and Reduction of Poverty 2010-2015, the Zanzibar Strategy for Growth and Reduction of Poverty 2010-2015, the National Environment Action Plan (NEAP), and currently, the National Five Year Development Plan (2011-2015).

The country also supports the green economy initiative in various ways. Among the steps towards that direction include the focus on renewable energy; increased involvement of the private sector in the renewable energy development; promotion of cleaner production technologies and techniques in industries; fuel switching to natural gas instead of fuel; promotion of energy efficient cooking stoves; promoting improvement of energy efficiency in existing industries. However, the relationships between the green economy and key national priorities such as agriculture, trade, employment, poverty eradication and wealth creation need to be examined taking into consideration the existing national and regional realities and differences. Thus Green economy must be aligned with national development goals and fashioned in a way that is relevant and consistent with the social, economic and environmental context.

Political commitment towards sustainable development and country initiatives in green economy have enabled the country to improve growth of the economy, increase water supply and accessibility, improve sanitation, increase provision of universal primary education, reduce child and maternal mortality, reduced loss of biodiversity, improve food security and increase use of renewable energy and improve energy efficiency.

Sustainable development at the national and local level requires that domestic institutions work in a coherent and coordinated manner. It requires not only cross-sectional, but also multi-level coordination with the active involvement of all stakeholders. Tanzania recognizes the role of the UN system at the country level and the support on sustainable development that is provided through the UN system. Enhanced institutional arrangement within the UN system will further promote sustainable development in the country.

Despite the country's commitments in implementing international environmental as well as regional and national environmental agreements, policies, legislation and strategies, achievement of such efforts have been constrained by various factors, including inadequate environmental management awareness among key stakeholders, insufficient resources to adequately address environmental and sustainable development issues, lack of efficient and effective alternative sources of energy to reduce dependency on forest resources as the main source of energy, and inadequate awareness on sustainable agriculture and livestock keeping practices. Awareness raising among the local communities regarding environmental management is thus of crucial importance.

Recommendations

Enhancement of sustainable development and green economy in the context of sustainable development and poverty reduction, needs considerable efforts in the post Rio+20 period. Based on this Report, the following recommendations, clustered according to the main themes of the Rio+20 Conference, are proposed:-

a) Sustainable development

- i) Enhance mainstreaming of sustainable development in all sectors;
- ii) Strengthen provision of education and awareness on sustainable development.
- iii) Ensure that appropriate technologies are available, affordable and accessible to farmers for enhanced productivity;
- iv) New and emerging challenges should be acted upon at UNCSD and beyond;
- v) Ensuring new, additional, predictable and stable funding for addressing sustainable development particularly new and emerging issues;
- vi) Establish a National Sustainable Development Committee for follow up of implementation of post Rio+20 deliberations

b) Institutional Framework for Sustainable Development

- i) Enhanced coordination amongst the Government Institutions and Entities working on the three pillars of Sustainable Development within the Country;
- ii) There is need to promote programmatic cooperation and coordination in the UN system including pooling of resources; establishing a common monitoring and evaluation scheme; enhancing cooperation in capacity building and technical

- assistance; and facilitating the exchange of relevant information between the technical and scientific bodies;
- iii) Strengthen UNEP, as a leading global environmental authority within the UN system that sets the global environmental agenda to promote the coherent implementation of the environmental dimension of sustainable development.
 - iv) Ensure that operational aspects of the existing global institutions are more pro-poor and more engaging in terms of the public private partnership.
 - v) Global institutions to utilize local capacities alongside the efforts for strengthening national institutional structures.
 - vi) GEF and other global financial institutions should simplify the procedure and process to ease access of funds for sustainable development initiatives.
 - vii) Rio+20 should provide the opportunity to launch the process for the international community to agree on a set of Sustainable Development Goals (SDGs) beyond 2015 MDG period.

c) *Green economy*

- i) Green Economy model should be transparent, participatory and should never be used as trade barrier, create technological dependence and/or aid conditionality for developing countries.
- ii) Green economy should enable developing countries to invest in their renewable energy potential such as solar, wind, geothermal and hydropower;
- iii) Green economy should enable developing countries use their natural resources to reduce poverty;
- iv) Green economy must be guided by the principles of equity, justice, sustainability, accountability, inclusiveness, trustworthiness and participation of all, particularly the poor, the marginalized groups and civil society.
- v) Green Economy should promote inclusive growth, conserve livelihoods, and create decent green jobs especially for the youths, lead to greater equity in the access and distribution of resources and benefits. It should enhance social protection while sustaining diversity, environmental resources, ecosystem and its services.
- vi) Green Economy needs to embody values and ethics that protect the rights of communities and people, as well as other species and the natural world, as the only life supporting system.
- vii) Green economy must be aligned with national development goals and fashioned in a way that is relevant and consistent with the national social, economic and environmental priorities.
- viii) Develop a National Strategy on Green Economy

CHAPTER ONE

INTRODUCTION

1.1 Background

The United Nations Commission on Sustainable Development (CSD) was established in December 1992 to ensure effective follow up of the United Nations Conference on Environment and Development (UNCED). The UNCED also known as Earth Summit was convened in June 1992 in Rio de Janeiro Brazil, to address urgent problems of environmental protection and socio-economic development. During the summit, The United Republic of Tanzania was among the States which signed the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD) and the Convention on Biological Diversity (CBD). The heads of states also endorsed the Rio Declaration on Environment and Development (1992) and the Forest Principles and adopted Agenda 21, a plan for achieving sustainable development in the 21st century.

The Johannesburg Plan of Implementation of 2002 further builds on the achievements made since the Rio Summit. In this plan member states committed to undertake concrete actions and measures to enhance international cooperation, taking into account the Rio principles, including, inter alia, the principle of common but differentiated responsibilities as set out in Principle 7 of the Rio Declaration on Environment and Development (1992). The efforts were also intended to promote the integration of the three components of sustainable development economic development, social development and environmental protection as interdependent and mutually reinforcing pillars.

The United Republic of Tanzania has continued to make progress in implementing the internationally agreed commitments on sustainable development. Since the Rio Conference the United Republic of Tanzania has made progress in various areas to ensure that the country follows sustainable development path. These include formulation and implementation of the National Environmental Action Plan of 1994, National Environmental Policy 1997 and Environmental Management Act of 2004. The United Republic of Tanzania also formulated its Tanzania Development Vision 2025 (URT, 1999) and the Zanzibar Development Vision 2020 (RGoZ, 2011a) that integrates environmental and sustainable development issues. The long-term development targets and goals have been translated into strategies such as the National Strategy for Growth and Reduction of Poverty (NSGRP) I and II, from 2005 – 2010 and 2010 – 2015, respectively. Moreover various Sectors have mainstreamed environmental issues in their policies, legislations, strategies and plans. In addition, The United Republic of Tanzania has adopted a national five year plan 2011-2015.

The United Republic of Tanzania also endorsed the Millennium Development Goals (MDGs) in September 2000 as part of the internationally agreed-upon development goals at the General Assembly of the United Nations. MDGs aim at calling upon developed and developing countries to work in partnership towards a world with less poverty, hunger and disease, greater survival prospects for mothers and infants, guaranteeing basic education for children, equal opportunities for women, and a healthier environment in support of the Agenda 21 principles of sustainable development. The MDGs provide a framework of time-bound targets by which progress can be measured and commitment of all nations tracked. In

order to assess progress over the period from 1990 to 2015, when targets were expected to be met, some indicators to be used were formulated.

At the national level, the MDGs have been mainstreamed in national medium-term strategies and aligned with long-term policies such as the Tanzania Development Vision 2025, Zanzibar Development Vision 2020, NSGRP I and II and ZSGRP I and II. The United Republic of Tanzania is therefore committed to ensuring that objectives and outcomes of the Rio Summit and MDGs are implemented effectively. The government is also cognisant that poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of, and essential requirements for, sustainable development. This is substantiated by a number of actions which the government has undertaken with an objective of ensuring sustainable development.

Sustainable development embraces the concept of green economy/development that primarily focuses on the intersection between environment and economy and the ways in which a resource efficient development can accelerate progress in the context of sustainable development and poverty alleviation. In the United Republic of Tanzania and most other developing countries of Africa, natural resources are the most important natural capital for sustainable. Thus environmental protection, sustainable management of land, aquatic and forest resources seem to be the most important priorities for sustaining future economic growth and ensuring livelihoods for local communities in Africa. It is in recognition of this that most of policy interventions, strategies as well as multilateral environmental agreements are focusing their efforts on issues of sustainability. However, emerging challenges such as climate change is an additional and significant factor that has profound impacts on environment and the resources that are already under pressure from other stresses.

1.2 Objective of the UNCS D

UNCS D is a forum where governments can evaluate, measure, assess and report on implementation of various agreements reached at local, national, regional and international levels. UNCS D is expected to provide guidance on emerging issues which require international cooperation in order to ensure sustainable development. In this case therefore, the international cooperation is sought to provide and strengthen support for sustainable development through funding, provision of technical assistance and appropriate technologies, and support for capacity building in various sectors/areas.

The United Nations Conference on Environment and Development (UNCED) will take place in Rio de Janeiro, Brazil in 2012 on the occasion of its 20th anniversary and the 10th anniversary of the World Summit on Sustainable Development held in Johannesburg (2002). The objective of this Conference is to secure renewed political commitment for sustainable development, assessing the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and addressing new and emerging challenges. To this end, the focus is on the following key themes: (a) assessment of progress and gaps in implementation of decisions on sustainable development; (b) impacts of new and emerging challenges on the advancement of the sustainable development agenda; (c) green economy in the context of sustainable development and poverty eradication; and (d) the institutional framework for sustainable development.

1.3 Purpose, scope and preparation of this report

This report has been prepared to show progress made since Rio Conference twenty years ago, challenges faced along the way and opportunities for the future for a post Rio+20 conference framework. The report addresses key areas on country's policy, legal and institutional frameworks for sustainable development; their implementation achievements and constraints; domestication/implementation of multilateral environmental agreements; green economy in the context of sustainable development and poverty eradication; and new and emerging issues in sustainable development.

This National Rio+20 Report for the United Republic of Tanzania has been prepared through a consultative process whereby experiences from various stakeholders have been sought and integrated. The stakeholders consulted in the mainland include: Vice President's Office (Environment); Ministry of Natural Resources and Tourism; Ministry of Livestock and Fisheries Development; Ministry of Water; Ministry of Agriculture, Food Security and Cooperatives; Ministry of Industry, Trade and Marketing; Ministry of Education and Vocational Training; Prime Minister's Office – Regional Administration and Local Governments; Ministry of Foreign Affairs and International Cooperation; Ministry of Energy and Minerals; Ministry of Health and Social Welfare; Ministry of Works; Ministry of Finance; Ministry of Lands, Housing and Human Settlements Development; National Environment Management Council (NEMC); University of Dar es Salaam, United Nations Development Programme (UNDP), Country Office and United Nations Environment Programme (UNEP), the Food and Agriculture organization of the United Nations (FAO), and United Nations Educational Scientific and Cultural Organisation (UNESCO). Also, various Non-Government Organizations, such as the Journalist Environment Association of Tanzania (JET) and Environmental Protection and Management Services (EPMS); Tanzania Traditional Energy development organization (TATEDO), Civil Society Organizations and Private Sector were involved (Annex 1). The consultations were undertaken between December 2011 and March 2012.

In Zanzibar the following sectors/MDAs were consulted: President's Office - Finance, Economy and Development Planning Commission; The Principal Secretary, First Vice President's Office; Division of Environment; Director of Energy – Ministry of Water, Construction, Energy and Lands; Ministry of Agriculture and Natural Resources - Department of Agriculture and Department of Forestry and Non-Renewable Resources; Commission for Tourism; and Ministry of Social Welfare, Youth, Women and Children Development.

CHAPTER TWO

POLICY FRAMEWORK AND POLITICAL COMMITMENT FOR SUSTAINABLE DEVELOPMENT

2.1 Overview

The Government's commitment to sustainable development is manifested in various initiatives that have been taken since the Rio conference, including: preparation of the National Environmental Policy (NEP), 1997 and Environmental Management Act Cap 191 of 2004 which is the framework Act for environmental management in the country; mainstreaming environment into the National Strategy for Growth and Reduction of Poverty (MKUKUTA); mainstreaming environment into sectoral legislation, policies and strategies; and ratifying various regional and Multilateral Environmental Agreements. The policy framework and the political commitment to sustainable development are discussed in the following sections, while achievements in the implementation of these policies and related strategies and programmes are presented in Chapter Five.

2.2 National Plans and Policies

a) The Tanzania Development Vision 2025

The Tanzania Development Vision 2025 was officially launched by the government in 1999 (URT, 2011b) and has three principal objectives - which are; achieving quality and good life for all; good governance and the rule of law; and building a strong and resilient economy that can effectively withstand global competition (URT, 1999). It is envisioned that the society of Tanzanians will be substantially developed with a high quality livelihood, and abject poverty will be a thing of the past. It is further envisioned that Tanzanians will have graduated from a least developed country to a middle-income country by the year 2025 with a high level of human development. The economy will have been transformed from a low productivity agricultural economy to a semi-industrialized one led by modernized and highly productive agricultural activities which are effectively integrated and buttressed by supportive industrial and service activities in the rural and urban areas, competitiveness, quality livelihoods, rule of law, and having in place an educated and pro-learning society. A solid foundation for a competitive and dynamic economy with high productivity will have been laid (URT, 1999).

A review of the Vision 2025 although there has been relatively high economic growth, low inflation and drastic improvement in the management of the macro-economy over the past two decades, this growth has remained below the trajectory necessary to meet the vision 2025 goals and poverty reduction has remained elusive, especially in the rural areas. The impact of weather vagaries on agricultural production, coupled with persistent rise in global fuel and food prices have led to a rise in inflation and cost of production (URT, 2011b).

b) Zanzibar Development Vision 2020

The Zanzibar Development Vision 2020's objective is to transform Zanzibar into a middle income country and enable it to eradicate absolute poverty in the society through building a strong and competitive economy; achieve high quality livelihoods for citizens and improve good governance and the rule of law without compromising Zanzibar's rich culture. The gist of Zanzibar Development Vision (ZDV) 2020 is that by 2020 Zanzibar should have gone

through an unprecedented economic transformation and development to achieve middle income status; characterized by increasing levels of industrialization, competitiveness, quality livelihoods, rule of law; and having in place an educated and pro-learning society. Specifically, the Zanzibar Development Vision 2020 outlines Zanzibar's social, economic and political aspirations with an underlying drive to reaching the middle income country status, with a per capita income of USD 995 (a threshold for entry into category) by 2015 and 3,000 (in nominal terms) by year 2020 (RGoZ, 2011a). The revisited Vision 2020 will be operationalised through two five-year Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP or MKUZA in Kiswahili) and their respective five-year implementation plans (RGoZ, 2011a).

The Zanzibar Development Vision 2020 is a long term development framework which charts out what Zanzibar aspires to be by the year 2020. The vision, outlines in broad terms, the economic, social and political aspirations of Zanzibar to guide future policies, strategies and plans. To achieve the Visions' aspirations, the RGoZ will overtime continue to employ medium term national strategies as instruments for guiding the implementation of the necessary actions for attaining the Vision. In particular the Government will employ the Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP II or MKUZA II in Kiswahili) as its main strategy for implementing the ZDV 2020. In addition to the ZSGRP, implementation of ZDV 2020 will also employ three other frameworks, namely, the Zanzibar Growth Strategy, the Zanzibar Exports strategy and the Public Sector Reform Programme, over and above sectoral strategies, all of which are informed by the Vision. Empowering people to successfully manage their lives and have a say on the course of their development path is one of the key considerations of the Vision (RGoZ, 2011a). This, as well as other initiatives demonstrates the political commitment to sustainable development in Zanzibar and the United Republic of Tanzania in general.

c) National Environmental Policy 1997

The National Environmental Policy (NEP), 1997 (URT, 1997) recognizes that development is sustainable if it takes place within nature's tolerance limits, both in the short and in the longer-term perspective. It seeks to provide the framework for making fundamental changes that are needed to bring environmental considerations into the mainstream of decision making in Tanzania. It calls for a coherent policy where priorities can be defined for the promotion of long-term economic growth, creating incentives for sustainable utilisation of natural resources, disincentives for environmental pollution and degradation, and effective management of the overall environment. The overall objectives of the policy are as follows:

- a) 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 or safety;
- b) To prevent and control degradation of land, water, vegetation, and air which constitute our life support systems;
- c) To conserve and enhance our natural and man-made heritage, including the biological diversity of the unique ecosystems of Tanzania;
- d) To improve the condition and productivity of degraded areas including rural and urban settlements in order that all Tanzanians may live in safe, healthful, productive and aesthetically pleasing surroundings;
- e) To raise public awareness and understanding of the essential linkages between environment and development, and to promote individual and community participation in environmental action;

- f) To promote international cooperation on the environment agenda, and expand our participation and contribution to relevant bilateral, sub-regional, regional, and global organizations and programs, including implementation of Treaties.

Regarding sectoral policies, NEP acknowledges that in order to achieve sustainable development, environmental goals, objectives and actions have to be mainstreamed in sectoral policies and programmes. Table 1 presents a list some of the sectors with their respective environmental policy objectives highlighted in NEP.

Table 1. Sectoral Policy Objectives in National Environmental Policy, 1997

S/N	Sector	Environmental Policy Objectives
1	Agriculture	<ul style="list-style-type: none"> • Improvement of land husbandry through soil erosion control and soil fertility improvement; • Minimization of encroachment in public lands including forests, woodlands, wetlands and pastures; • Strengthening of environmentally sound use, monitoring, registration and management of agrochemicals; • promotion of mixed farming, to intensify biological processes on farmlands through multiple cropping, intercropping, crop rotation and agro forestry; and • Improvement in water use efficiency in irrigation, including control of water logging and salinization; and • Control of agricultural run-offs of agrochemicals to minimize pollution of both surface and ground water.
2	Livestock	<ul style="list-style-type: none"> • Development and application of environmentally friendly tsetse fly control methods; • Improvement and conservation of grazing lands and preservation of feed resources; • Promotion of mechanisms for resolving conflicts among different land use interests (wildlife protection, forestry, pastoralism and agriculture); and • Management and control of the migration of livestock.
3	Water and Sanitation	<ul style="list-style-type: none"> • Planning and implementation of water resources and other development programmes in an integrated manner and in ways that protect water catchment's areas and their vegetation cover; • Improved management and conservation of wetlands; • Promotion of technology for efficient and safe water use, particularly for water and waste water treatment, and recycling; and • Institution of appropriate user-charges that reflect the full value of water resources; and • Prevention, reduction and control of pollution of the marine and coastal waters, including that from land-based sources of pollution.
4	Health	<ul style="list-style-type: none"> • Provision of community needs for environmental infrastructure, such as safe and efficient water supplies, sewage treatment and waste disposal. services; and • Promotion of other health-related programmes such as food hygiene, separation of toxic/hazardous wastes and pollution control at the household level.
5	Transport	<ul style="list-style-type: none"> • Improvement in mass transport systems to reduce fuel consumption, traffic congestion and pollution; • Control and minimisation of transport emission gases, noise, dust and particulates; and • Disaster/spill prevention and response plans and standards shall be formulated for transportation of hazardous/dangerous materials.
6	Energy	<ul style="list-style-type: none"> • Minimization of wood fuel consumption through the development of alternative energy sources and wood fuel energy efficiency; • Promotion of sustainable renewable energy resources; and • Energy efficiency and conservation.

S/N	Sector	Environmental Policy Objectives
7	Mining	<ul style="list-style-type: none"> • Overall project cycle of mining (including reclamation and restoration of land after use) shall be adequately managed to minimize adverse environmental impacts; • Mining discharges to grounds and water shall be controlled; • Preventive and clean up measures for accidents shall be formulated and implemented; • Air pollution from mining areas shall be controlled. • Strict regulations shall be put in place to control the use of mercury in mining activities, use of retorts will be promoted; and • Regular and periodic environmental audits shall be maintained to ensure the adoption of environmentally sound practices in mining operations.
8	Human Settlement	<ul style="list-style-type: none"> • Integrated planning and improved management of urban centres and designation of urban land uses based on environmental impact considerations; • Decentralisation of urban development through the promotion of intermediate towns and trade centres, on the basis of a human settlement perspective plan at national, regional and district levels; • Development of gardens, parks, open spaces in urban centres for public use; greenbelts with pollution tolerant species; and more generally, planting of shade-giving and fruit-bearing as well as ornamental trees along urban roads, school compounds, hospitals, government and private office building compounds, peripheries of play grounds, water bodies, places of worship, assemblies, markets, etc; • Control of indiscriminate urban development, particularly in vulnerable sites such as coastal beaches, flood-prone and hilly areas; • Promotion of resource-based strategies in the planning and development of human settlements; and • Development of environmentally sound waste management systems especially for urban areas.
9	Industry	<ul style="list-style-type: none"> • Industries shall be planned in a manner that minimizes adverse effects on the environment at all stages (i.e. location, effluent discharge, waste disposal, use and disposal of products); • Industrial emissions shall be controlled; • Application of environmental impact assessment (EIA) as an essential element in industrial planning and development for taking account of potentially harmful activities on the environment; • Environmental audits/inventory shall be carried out for both new and existing industries for pollution control and waste minimisation; • Installation of resource-saving and waste-recycling facilities, use of clean technology and production of safe and less toxic products shall be promoted and supported; • Workers health shall be adequately protected from environmental health hazards; • A review will be made of laws, rules, and regulations governing importation, manufacture, transportation, handling, use, storage and disposal of toxic chemicals, and dangerous products, hazardous wastes and hazardous substances, as appropriate; and • Permissible noise levels in noise-prone industries and construction sites will be prescribed.
10	Tourism	<ul style="list-style-type: none"> • Tourism development will be promoted based on careful assessment of the carrying capacity and prior Environmental Impact Assessment application. • Environmentally friendly tourism (ecotourism) and diversification of tourism activities will be promoted; and • Financial benefits from tourism activities shall accrue in part to the local community to motivate them in conservation of tourism resources.
11	Wildlife	<ul style="list-style-type: none"> • Wildlife resources shall be protected and utilized in a sustainable manner on the basis of careful assessment of natural heritage in flora and fauna fragile ecosystems, sites under pressure and endangered species, with participation of,

S/N	Sector	Environmental Policy Objectives
		<p>and benefits to, the local communities.</p> <ul style="list-style-type: none"> • Environmentally adverse impacts of development projects in wildlife conservation areas (e.g. tourist hotels, rail construction) will be minimized by EIA studies; and • Game ranching and captivity breeding for certain species will be encouraged.
12	Forestry	<ul style="list-style-type: none"> • Rational exploitation of forest resources accompanied with reforestation and afforestation programmes shall be promoted and enforced to meet requirements of domestic consumption and export earnings in a sustainable manner; • Natural forest with biological diversity value and genetic resources shall be conserved; account will be taken of the dangers of monoculture and to the extent possible natural forests will not be replaced by exotic species; and • Farmers, business communities, non-governmental organizations (NGOs), schools and others will be motivated to embark on tree planting.
13	Fisheries	<ul style="list-style-type: none"> • Fisheries shall be developed in a sustainable manner, by using appropriate fishing gear and processing methods; • Destructive fishing and processing methods shall be controlled by regulation and support i.e. making available appropriate fishing gear at affordable prices for fishermen; specifically, dynamite fishing and the use of poisonous chemicals in fishing shall be severely combated; • Alternative fish processing methods shall be promoted to avoid deforestation due to fish smoking; • On the basis of stock assessment, fish stocks shall be conserved to maximize sustainable yield; • Introduction of non-indigenous species shall be controlled; • Post harvest losses will be reduced through improved processing and preservation techniques; • Fragile ecosystems and endangered species will be protected through proper fisheries management, mitigation/prevention of coastal and waterways degradation, and control of industrial pollution; and • Integrated fish farming methods and other environmentally beneficial means of tapping the productivity of the environment through fish farming shall be pursued.

d) The National Environmental Policy for Zanzibar, 1992

Like many African countries, Zanzibar experiences a combination of poverty, rapid economic liberalisation and population growth (Figure 1), which together are putting tremendous pressure on the environment and natural resources. As a tropical island ecosystem, Zanzibar is particularly vulnerable to environmental degradation. Most of her per people depend resources of the land and sea, and may not afford to let those resources be lost or degraded. Recognising how important the environment is to the economy and people's livelihood, the Government of Zanzibar prepared a National Environment Policy and developed institutions to implement it (RGoZ, 1992). At its formulation the environmental policy and programmes rested with the Ministry Of Water, Construction, Energy, Land and Environment (RGoZ, 1992). However, given the crosscutting and cross-sectoral nature, and to accord more political commitment, the environment issues are currently by the First Vice President's Office.

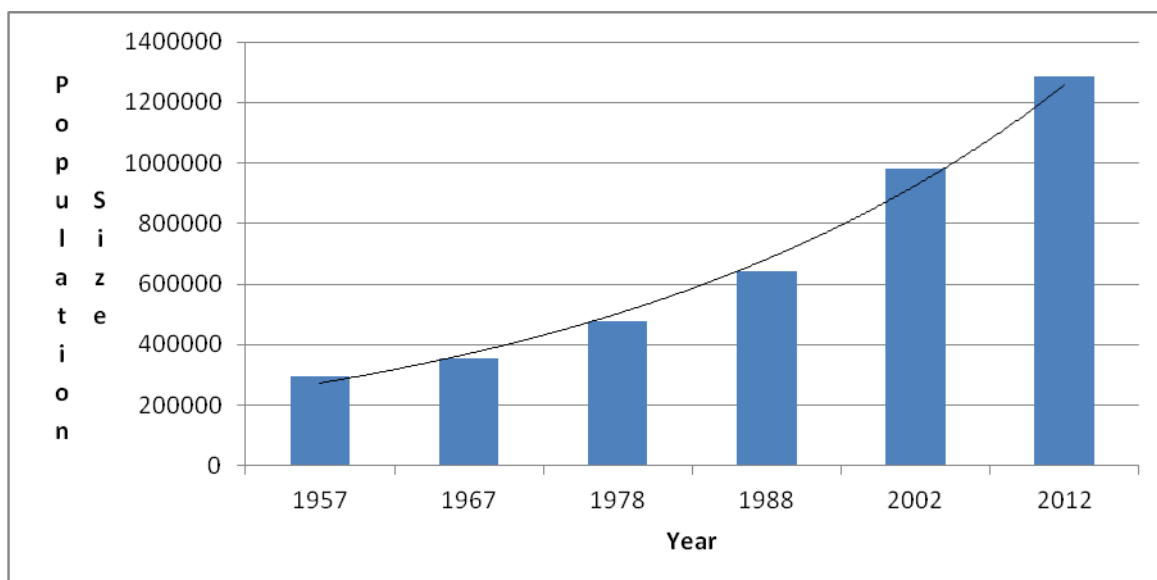


Figure 1: Population trends in Zanzibar 1957-2020

Source: RGoZ (2010)

Preparation of this policy was cognisant of the reality of rapid degradation of the limited resources, such as land, forests, fisheries and water, and to the consequences of unplanned urban development. Similarly the policy had to confront the unplanned development in tourism, agriculture, fisheries and industries, stimulated by economic recovery programmes that was a strong financial incentive but weak in environmental considerations. The primary objective of the National environmental policy for Zanzibar is thus to protect and manage the country's environmental assets, such that their capacity to sustain development is unimpaired and Zanzibar's rich environmental endowment is available for future generations to enjoy and use wisely (RGoZ, 1992).

These policy concerns are reflected in the policy statements (RGoZ, 1992):

- i) Improve coordination in planning and decision making particularly where there are conflicting interests in the utilisation and protection of natural resources.
- ii) Prepare and adhere to integrated land use plans at national and local level.
- iii) Develop a programme of integrated coastal zone management, within the framework of the overall land use plan.
- iv) Improve the management of rural lands, within the framework of the overall land use plan.
- v) Maintain and use an organised bank of information relevant to management of the environment.
- vi) Develop a wide-ranging, long-term programme of research that can lead to better and timely strategies for resource utilisation and environmental protection
- vii) Establish permanent programmes for monitoring the status of the environment.
- viii) Increase public knowledge about the environment and motivate the people to use natural resources wisely.
- ix) Encourage participation of the environmental programme by the community, including public institutions, private individuals, non-governmental organisations and businesses.
- x) Promote control of the population growth rate in order to promote a healthy environment.

- xi) Strengthen conservation of Zanzibar indigenous plants and animals, on land and in the sea.
- xii) Prevent the depletion, degradation or misuse of fresh-water resources
- xiii) Prevent pollution of land , freshwater, sea and air
- xiv) Ensure that the toxic chemicals released into Zanzibar’s environment are not of a kind or quantity to harm the environment.
- xv) Control environmental factors contributing to public health problems
- xvi) Promote the development of sustainable energy supplies.
- xvii) Promote the conservation of Zanzibar’s cultural heritage
- xviii) Incorporate environmental impact assessment into procedures for the design of development projects.
- xix) Promote international cooperation on environmental protection
- xx) Train sufficient environmental scientists and managers to enable policy to be implemented.
- xxi) Enact environmental legislation in support of the policy

All these statement not only address environmental issues but also social and economic development which are all pillars of sustainable development that takes into consideration the

2.3 Sustainable Development and Environmental Mainstreaming in Sectoral Policies

In line with NEP, various sectors have mainstreamed environment in their respective policies, in order to achieve sustainable development goals. Some of the sectoral policies that have mainstreamed environmental issues are discussed below.

a) National Agriculture and Livestock Policy, 1997

According to the National Agriculture and Livestock Policy, 1997, agriculture is critically dependent on environmental resources such as land, water, forest, and air. This implies that unsustainable use of these resources in the production of crops and livestock can have far reaching effects on environmental integrity. To avoid such consequences the Agriculture and Livestock Policy, 1997 realigns with the overall environmental policy that provides guidance for the proper and balanced use of natural resources and in defining sectoral responsibilities for the environmental management. It further emphasizes that for long term future of the country, the natural resources (land, soil, water and forests) must be managed so that agriculture is sustained. To achieve this, the policy outlines agriculture policy statements with respect to environmental management. Following increased emphasis on livestock development a separate policy on livestock was formulated in 2006. Some of the agricultural policy statements that have relevance to sustainable development are to:

- i) Promote intensification and diversification of agriculture production;
- ii) Improve crop husbandry through soil erosion control and soil fertility improvement;
- iii) Implement measures that will minimize encroachment in public lands including forests, woodlands, wetlands and pasture;
- iv) Strengthen agrochemical monitoring and registration;
- v) Promote agro-forestry and organic farming;
- vi) Encourage control of agricultural run-offs of agrochemicals to minimize pollution of both surface and ground water;

- vii) Introduce mechanisms to improve water use efficiency in irrigation including control of water logging and salinization;
- viii) Intensify plant genetic conservation programmes.

b) Zanzibar Agriculture Sector Policy

High dependency on rain-fed crops and prevalence of agricultural and animal diseases are some of the major constraints to achieving higher agricultural productivity. Other constraints are high post-harvest losses, insufficient skilled manpower and inefficient marketing and credit systems. The policy aims at promoting agricultural transformation from a predominantly rural-based subsistence to a modern commercial sector.

The overall goal for Zanzibar Agriculture Sector Policy is to promote sustainable development of the agricultural sector for economic, social and environmental benefits for its people. The specific Objectives of the policy are:

- i) To modernize and commercialize the agricultural sector so as to increase productivity and rural incomes while ensuring an ecologically sustainable environment.
- ii) To attain household and national food security and improve nutritional status of the people particularly children and lactating mothers.
- iii) To increase agricultural exports in order to increase foreign exchange earnings for the nation.
- iv) To raise agricultural contribution to the national economy and hence improve living standards of the people and create employment opportunities.
- v) To improve the quantity and quality of agricultural products for which the country has comparative advantage.
- vi) To promote gender equality in agricultural development and production in order to ensure that women have equitable access to and control over productive resources including land, water, credit and extension services.
- vii) To promote integrated and sustainable use of natural resources.
- viii) To enhance national capacity to manage and develop the agricultural sector in collaboration with other stakeholders.
- ix) To promote primary processing and to provide agricultural raw materials for agro-processing and agro-based industries.

Implementation of the above sectoral policy objectives is reflected in the policy statements are: (1) Liberalise and rationalise production and processing of traditional and non-traditional export crops. (2) Encourage private sector investment in agriculture through attractive incentives for production, processing and exportation of agricultural crops. (3) Promote exports of non-traditional export crops. (4) Encourage increased production of crops, livestock and fisheries by the private sector including smallholders and commercial farmers. (5) Encourage rural agro-processing. (6) Develop sustainable agricultural production. (7) Improve the quality of production, grading and processing stages. (8) Privatise agricultural parastatals. (9) Increase productivity in all agricultural sub-sectors. (10) Embark on further reforms in agricultural marketing and pricing. (11) Promote farmers' and fishers' associations; and (12) Adopt environmentally friendly agricultural technologies.

c) National Livestock Policy, 2006

In 2006, the Government formulated a policy for livestock development. This was a result of the recognition of contribution of the livestock sector to the national socio-economic

development. To ensure sustainable livestock production, the livestock policy outlines the following policy statements, which are to:-

- i) Strengthen technical support services on environmental issues.
- ii) Promote proper land use planning for livestock production.
- iii) Strengthen inter-sectoral coordination on environmental issues.

d) National Land Policy, 1995

One of the objectives of Land Policy is to protect land resources from degradation for sustainable development. To achieve this objective the land policy has outlined policy statements which are intended to guide human practices in order to ensure sustainable utilisation of land resources and avoid land degradation. The policy statements address the following areas: protection of sensitive areas; village land demarcation; unplanned settlements; protection of public open spaces and other urban land for public use; urban agriculture; village land use planning; conflict in land uses; overlapping land use areas (pastoralism and wildlife); coastline land use; and protection of fragile and sensitive lands (Table 2).

Table 2. Land Policy Statements

S/N	Thematic areas	Statement
1.	Protection of sensitive areas	<ol style="list-style-type: none"> (i) Mechanisms for protecting sensitive areas will be created, sensitive areas include: water catchments; small islands; beaches; mountains; forests; national parks; seasonal migration routes of wildlife; national heritage and areas of biodiversity. (ii) All beaches will be public and water front development shall be regulated. (iii) Marginal land areas will be defined as a tenure category requiring special development conditions and punitive charges will be levied for incompatible use and illegal development.
2.	Village land Demarcations	In order to protect the village land rights and promote better and sustainable use of natural resources within those villages, the government will provide guidance on village boundary demarcations.
3.	Unplanned Urban Settlements	<p>The efforts of the Government will be directed towards arresting the growth of unplanned settlements by:-</p> <ol style="list-style-type: none"> (i) Timely planning all the potential areas for urban development in the periphery of all towns; (ii) Designating special areas of low income housing with simplified building regulations and affordable level of services; (iii) Existing areas will not be cleared but will be upgraded and provided with facilities for adequate sanitation and other basic services except for unplanned settlements in hazardous areas; and (iv) Upgrading plans will be prepared and implemented by local authorities with the participation of residents and their local community organizations. Local resources will be mobilized to finance the plans through appropriate cost recovery systems.
5.	Protection of Public Open Spaces and Urban Land for Public Use	<ol style="list-style-type: none"> (i) The Government will ensure that all sites that are set aside for public activities in urban areas are protected from encroachment by developers and that they are used for their intended purpose only; (ii) Public open spaces and other sites will be surveyed to determine their boundaries.
6.	Urban Agriculture	The Government will continue to regulate the conduct of urban agriculture and will ensure that it does not disrupt planned urban development.
7.	Village Land use Planning	Village land use plans will be used to as a tool for implementing policies for better land use and management. Furthermore, village land use plans will

S/N	Thematic areas	Statement
		provide basis for guiding extension services packages including techniques in agriculture, livestock, forestry, wildlife, fisheries, and environmental conservation.
8.	Land use management	The Government will ensure that permits, licenses, claims and rights for exploitation of natural resources are issued in line with land use policies and environmental conservation policies and programmes.
9.	Rangelands and Livestock Keeping	Incentives for proper pastoral land stewardship including the provision of infrastructure like water supply and cattle dips should be provided and modern transhumant pastoralism will be encouraged.
10.	Coastline Land Use	Coastline land development shall be done after an EIA study has been carried out.
11.	Protection of hazard lands	Measures will be taken to building on hazard lands and on fragile environments. Hazard lands should be developed for public uses benefiting the local community.

e) National Human Settlement Policy, 2000

Environmental protection is a strategic issue as far as human settlement development is concerned. Therefore environmental planning and management is needed to ensure that settlements are habitable and sustainable. The key areas addressed by the policy are planning, human health. To achieve this, the policy outlines the following policy statements (Table 3).

Table 3. Human Settlements Policy Statements

S/N	Thematic areas	Policy Statement
1.	Planning	(i) Identification of key planning issues in land and environmental management and in the provision of housing infrastructure services; and (ii) Identification of key planning issues in land and environmental management and in the provision of housing infrastructure and services
2.	Human Health	(i) Ensure that human settlements are kept clean and pollution effects of solid and liquid wastes do not endanger the health of residents; (ii) Set environmental quality standards of gaseous emissions from industries, vehicles etc. and institute a mechanism for monitoring air pollution levels; (iii) Encourage the use of alternative, affordable and appropriate sources of energy; (iv) Encourage and promote afforestation to match harvesting from woodlands, and (v) Prohibit quarrying in river valleys in urban areas.

f) National Forest Policy, 1998

One of the policy objectives for the Forestry Policy is to ensure ecosystem conservation and management by ensuring ecosystem stability through conservation of forest biodiversity, water catchments and soil fertility. To achieve this objective the forest policy outlines the following policy statements:

- i) New forest reserves for biodiversity conservation will be established in areas of high biodiversity value. Forest reserves with protection objectives of national strategic importance may be declared as nature reserves.
- ii) Biodiversity conservation and management will be included in the management plans for all protection forests. Involvement of local communities and other stakeholders in

conservation and management will be encouraged through joint management agreements.

- iii) Biodiversity research and information dissemination will be strengthened in order to improve biodiversity conservation and management.
- iv) Biodiversity conservation will be incorporated in the management regimes of natural production forests and plantations. Biodiversity conservation and management guidelines will be incorporated in the management plans. The replacement of natural forests with exotic plantations will be minimized.
- v) Environmental Impact Assessment (EIA) will be required for the investments which convert forest land to other land use or may cause potential damage to forest environment.

g) The Zanzibar Forest Policy, 1999

The National Forest Policy for Zanzibar aims to enhance conservation and development of forest resources, in line with the principles of sustainability and welfare of the people. The main goal of the National Forest Policy is to protect and develop forest resources for the social, economic and environmental benefit of present and generations of the people of Zanzibar (RGoZ, 1999). The overall objective is implemented through three specific goals, which are:

- Social goal: Strengthen the role of forestry in alleviating poverty and increasing equity in resource management and utilisation.
- Economic goal: Strengthen the role of forest resources in promoting economic development, meeting demand for forest products, in creating income and increasing national revenues efficiently; and
- Environmental goal: Protect and conserve forest resources including wildlife and flora, and enhance the role of forest resources in maintaining soil and water conservation and other environmental benefits.

Through this policy the government of Zanzibar encourages the active involvement of local people in the sustainable planning, management and conservation of forest resources through community forestry programmes. The policy also promotes measures that preserve and enhance the environmental functions of forest resources and enhancing conservation of biodiversity (RGoZ, 1999).

h) The National Energy Policy, 2003

The energy policy adopts the National Environmental Policy, 1997 as its framework for environmental management. According to the Energy Policy, all stages of energy resources (fossil and non-fossil) exploitation, production, conservation, transportation, storage and end-use can have negative impact on the environment. Health, safety and environmental consequences of energy production and utilization have become a major concern. To address these environmental issues, the energy policy puts forward the following policy statements:-

- i) Promote EIA as a requirement for all energy programmes and projects;
- ii) Promote energy efficiency and conservation as a means towards cleaner production and pollution control measures;
- iii) Promote development of alternative energy sources including renewable energies and wood fuel end-use efficient technologies to protect woodlands

- iv) Promote disaster prevention, response plans and introduce standards for exploration, production, conversion, transportation, distribution, storage and fuel end-use.

i) Zanzibar Energy Policy, 2009

Access to reliable supplies of energy is a prerequisite for development and prosperity of the people. The main drivers for the demand for energy are the population increase and demographic, and economic growth. Changes in the supply of energy depend on broader factors such as the global energy markets, technology development, the low flow of domestic and foreign investments, and the development of trade. Satisfying the demand and managing the supply of energy is therefore a major challenge for the society (RGoZ, 2009).

The main objective of the policy is to meet energy needs of Zanzibar population for social and economic development in an environmentally sustainable manner. This is in line with the implementation of the Zanzibar Strategy for Growth and Reduction of Poverty (MKUZA). This is congruent to the specific statements, which are:

- i) Increase the energy efficiency within the energy sector of Zanzibar
- ii) Increase the supply of energy from indigenous renewable energy sources
- iii) Increase the reliability of, affordability and independence of modern energy supply in Zanzibar
- iv) Implement a regulatory regime for the energy sector in Zanzibar to act as a coherent and coordinated framework for all development efforts within the sector
- v) Achieve free market principles within the energy sector, with only well founded transparent regulatory interventions; and
- vi) Involve all main stakeholders in coordinated actions while considering related documents regarding the future social and economic development and poverty reduction in Zanzibar.

The energy policy of Zanzibar recognises that uses energy have consequences on the surrounding society, irrespective of whether it is dealt with from economic, social, political or environmental perspective. It is closely linked to the MDGs. The policy also takes consideration of the goals specified in the National Environmental Policy for Zanzibar, 1992, that requires protection and conservation of the environment, mainstreaming environmental norms into development projects, and raising environmental awareness in Zanzibar (RGoZ, 2009).

j) National Health Policy, 2007

According to the National Environmental Policy 2007, most of the diseases affecting human/community health in the country are related to environmental conditions. The health policy objective towards environmental health is to protect community health by enhancing sustainable environmental health. To achieve this objective, the policy puts forward the following policy statements:-

- i) Ensure that the community adhere to environmental health standards;
- ii) Improve waste management systems including disposal of hospital wastes;
- iii) Improve and monitor the quality of burial places;
- iv) Continue to educate health services providers on the importance of environmental health in their working areas;

- v) Review and enact laws and procedures for conservation and protection of the environment; and
- vi) Continue to involve stakeholders in protecting natural resources in the areas.

k) National Water Policy, 2002

The objective of the water policy among others is to have in place a water management system which protects the environment, ecological systems and biodiversity. To achieve this objective the following policy statements are put forward:-

- i) Determine water for the environment, in terms of quantity and quality and levels; and for both surface and groundwater resources based on scientific information available considering both the temporal and spatial water requirements to maintain the health and viability of riverine and estuary ecosystems and associated flora and fauna;
- ii) Carry out public awareness campaigns to address erosion problems through good land use practices;
- iii) Construct and be rehabilitate old sewage systems and sludge disposal facilities
- iv) Establish and contract cesspit emptying services to the private operators. Cesspit empties should be discharged only at treatment facilities;
- v) Discharge of untreated waste-water to the sea shall be through long and a deep sea-out falls.
- vi) Review legislation requiring industries to pre-treat their wastewater before discharging into municipal sewage system.
- vii) Strengthen legislation enforcement mechanism will be ;
- viii) Urban Water Supply and Sewerage entities to co-operate with industries and other institutions in the research and development of least cost technologies for water treatment and recycling;
- ix) Industries to use environmentally friendly raw materials with less-toxic elements and adapt cleaner production technologies.

l) The National Water Policy for Zanzibar, 2004

The objective of the Zanzibar Water Policy 2004 is to provide guidance to enable Zanzibar to achieve its aim of providing access to clean and safe water for all people and other water users to fulfil the needs of expanding social and economic activities while considering the nature conservation. That is envisaged to be achieved through the following the following goals:

- i) Public ownership of resources to ensure that all Zanzibaris have access to this resource all the time;
- ii) Protection of water resources for quality and use in accordance with water and environmental conservation principles;
- iii) Inter-sectoral linkages for coordinated resource development and management;
- iv) Defining the roles of different stakeholders including beneficiaries, donors, ministries, public, NGOS and private institutions;
- v) Development and provision of water supply and sanitation in a sustainable manner, with demand responsive outlook;
- vi) Institutional development and local capacity building to ensure harmonious environment for the policy to act;
- vii) Proactive measures to prevent and control floods and ensure that lands affected by floods are cleaned and reused;

- viii) Develop and enhance local resources base in terms of skills and materials to promote the local expertise in research and innovation to reduce outside dependence.

m) National Sustainable Industries Development Policy, 1996

The national goal towards the industrial sector is to enhance environmental sustainability and equitable development. In order to ensure promotion of environmentally friendly and ecologically sustainable industrial development, the following will be implemented:-

- i) Carry out sensitization on environmental awareness in its broader application in relation to people, land and wildlife;
- ii) Forge deliberate and mandatory devices to reactivate legal mechanism to enable involved institutions to be more effective in matters of environmental management;
- iii) Provide appropriate motivational mechanism in line with the Investment Promotion Act to promote investments which contain anti-pollution programmes;
- iv) Enforce environmental impact Assessment (EIA) and appropriate mitigation measures for all projects at pre-implementation stages;
- v) Promote the continuous application of an integrated preventive environmental strategy to industrial processes, products and services. The strategy will include propagating efficient use of raw materials and energy; elimination of toxic or dangerous materials, as well as reduction of emissions and wastes at source;
- vi) Develop the capacity within government's institutional machinery and support other initiatives designed to enhance application of cleaner production concept.

n) National Tourism Policy, 1999

The policy acknowledges the relationship between the environment and development of sustainable tourism. Thus the aim is to ensure that development of tourism is based on careful assessment of carrying capacities of tourism products and ensure enhancement and improvement of special environment features in order that tourism development does not conflict with indigenous forests, beaches, mountains and other important vegetation. This policy has two environmental related objectives as follows:

- i) To promote and develop tourism that is ecologically friendly and environmentally sustainable;
- ii) To promote and develop land for tourism in a coordinated manner so as to attract private investment and ensure sustainable tourism development.

To achieve the above objectives, the policy puts forward the following policy statements:-

- i) Develop EIA guidelines and ensure that EIA is carried out and strictly adhered to in all tourism development projects;
- ii) Monitor and review environmental protection measures in tourism; and
- iii) Ensure that laws and regulations governing land use along the coast, rivers and lakes are strictly observed in all tourism development projects and recreational activities.

o) The Zanzibar Tourism Development Policy, 1997

The objective behind “Zanzibar Tourism Development Policy” is to elaborate, taking into account Zanzibar own reality and vision 2020, a framework of reference which will permit

the establishment of the country future tourism development with Sustainability, quality and diversification as the most important factors. The Government of Zanzibar is committed to develop, plan, manage and promote tourism industry that emphasizes sustainability, quality and diversification, and which is culturally responsible, socially desirable, ecologically friendly, environmentally sustainable and economically viable. The image of Zanzibar abroad will work as a promising exclusive holiday destination, basically for historical, cultural attractions and beach holidays. The government of Zanzibar firmly believes that tourism as a vital socio-economic development factor can participate effectively in empowering people of Zanzibar to successfully manage their life and has a say on the course of their development (as stipulated in the ZDV 2020) through achieving the tourism policy and implementing it (RGoZ, 1997).

Tourism has become the biggest economic activity of this day and age. Even in Zanzibar it is the largest income earner, followed by agriculture. Globally, tourism is an important source of international trade receipts. WTO still expects over one billion international tourist arrivals in 2010 and over 1.5 billion tourists and US\$ 2 trillion receipts in 2020. WTO's vision 2020 presents an optimistic picture for the tourism sector in Africa with growth of 5.5% a year forecast of the period 1995 – 2020, as against the global rate of 4.1 percent of the 77 Million international tourist arrivals anticipated in the continent in 2020, an estimated 17 Million will be in the countries of East Africa producing an average growth of 5.3% (RGoZ, 1997). Zanzibar tourism sector has grown fairly fast especially since the late 1980. Although it is still struggling to improve standards, it had attracted 87,511 tourists and attracted foreign earnings of about US\$ 4,471,000 by 2002 (RGoZ, 1997). The exotic natural species, romantic islands, the harmony and hospitality of the isles are among Zanzibar's tourist attractions. Such expanding tourism sector needed policy guidance to enhance its sustainability and to ensure that it contributes to the improvement of the local people's welfare. The policy emphasizes on responsible tourism – tourism which adopt principle of eco-tourism (RGoZ, 1997).

The specific objectives of the Zanzibar tourism policy are:

- i) To utilize more effectively the tourism potential to generate more income, human resources, foreign exchange earnings while protecting the environment, Zanzibar culture and traditions.
- ii) To diversify the tourist attractions in order to achieve a balanced growth of the tourism industry and maximum benefit, and to strengthen the cultural industries including museums, theatres, cultural and community participation as a product diversification to harness tourism.
- iii) To emphasize the best option for the development for the current accommodation in Zanzibar, types, styles and management models.
- iv) To improve the standard of quality for services and facilities to meet the challenges of long-term tourism development.
- v) To enhance the quality of and accessibility to the existing tourism infrastructure and developing one to cope with the demands of high class tourism.
- vi) To formulate and develop marketing plans and promotion programs that maximizes the financial revenues, and the economic, social, cultural and environmental positive impacts.
- vii) To encourage domestic tourism and maximize its significance.
- viii) To address “reducing Tourism Seasonality” as a serious issue affecting Tourism Industry in Zanzibar.
- ix) To enhance the tourist image of Zanzibar to be original, trustful and attractive.

- x) To address tourist safety and security issues cooperative as an important part of the government's larger safety and security concerns.
- xi) To emphasize the fruitful public/private partnership in tourism sector.
- xii) To contribute to the quality of local people lives.
- xiii) To stimulate the participation of local people of the tourism development process.
- xiv) To maximize the "local content" as a vital means to minimize leakage.
- xv) To manage tourism impacts so as to balance costs and benefits (RGoZ, 1997).

Implementation of the Zanzibar tourism Policy is supported by the Zanzibar Tourism Act No. 6 of 2009 (Tourism Commission, 2011) and guided by the Tourism Master plan for Zanzibar and Pemba of 2003 (URT, 2003a).

p) National Wildlife Policy, 1998

The objectives of the Wildlife Policy among others are those focusing on wildlife protection and conservation in order to ensure sustainability of wildlife ecosystems. These include:-

- i) To continue the establishment of Protected Areas (PA) on the basis of systems planning;
- ii) To stress maintenance and development of a PA network in order to enhance biological diversity;
- iii) To promote the conservation of wildlife and its habitats outside the core areas by establishing Wildlife Management Areas (WMAs)
- iv) To enhance the conservation of biological diversity by administering wetlands;
- v) To transfer the management of WMAs to local communities thus taking care of corridors, migration routes and buffer zones and ensure that the local communities obtain substantial tangible benefits from wildlife conservation;
- vi) To prevent illegal use of wildlife throughout the country by taking the appropriate surveillance policing and law enforcement.

To achieve these objectives the policy outlines a number of strategies as follow:-

- i) Protecting biodiversity by creating a series of viable conservation areas which include the representative sample of all important habitats and viable populations of all species with particular reference to those that are threatened and endemic to Tanzania.
- ii) Protecting wildlife against illegal use by putting the paramilitary agencies to enforce the law whose staff wear uniforms, carry arms and have power of search and arrest;
- iii) Conserving and managing biological diversity by designating a significant proportion of her surface area to Protected Area network devoted to wildlife conservation;
- iv) Ensuring that wildlife conservation competes with other forms of land use;
- v) Integrating wildlife conservation and rural development
- vi) Recognizing the intrinsic values of wildlife to rural people
- vii) Sharing benefits derived from wildlife and that the sharing of revenue is an important benefit;
- viii) Regulating and developing the wildlife industry
- ix) Addressing women and children issues in wildlife conservation and management;
- x) Solving human-wildlife conflicts;
- xi) Undertake wildlife research and monitoring; and
- xii) Undertake wildlife conservation and education awareness.

q) National Trade Policy, 2003

The goal of Tanzania's National Trade Policy is to facilitate smooth integration into the Multilateral Trading System. It is intended to ensure that liberalisation offers meaningful, identifiable and measurable benefits to the country. According to Trade Policy, growth and development depends on sustainable and optimal use of the world's renewable and non-renewable resources. This entails judicious exploitation of existing resources and the protection and preservation of the environment. To achieve sustainable development, the policy entails strengthening institutions entrusted with the execution and enforcement of environmental law and regulations. Priority measures include the mainstreaming of environmental issues into the development agenda.

r) Fisheries Sector Policy and Strategy Statement, 1997

The National Fisheries sector policy and strategy statement was adopted in December 1997. The statement focuses on the promotion of sustainable exploitation, utilization and marketing to provide food, income, employment foreign exchange earnings and effective protection of aquatic environment to sustain development. The overall goal of the National Fisheries Policy is to promote conservation, development and sustainable management of the Fisheries Resources for the benefit of present and future generations. The policy was formulated to achieve the following objectives:-

- i) Put into efficient use available resources in order to increase fish production so as to improve fish availability as well as contribute to the growth of the economy;
- ii) Encourage and support all initiatives leading to the protection and sustainable use of the fish stock and aquatic resources;
- iii) Enhance knowledge of the fisheries resources base;
- iv) Establish national strategic research programmes that are responsive to the fisheries sector;
- v) Improve fisheries products utilization and their marketability;
- vi) Protect productivity and biological diversity of coastal and aquatic ecosystems through prevention of habitat destruction, pollution and over exploitation;
- vii) Promote sound utilization of the ecological capacity of water-based areas as a means of generating income and diet;
- viii) Improve involvement of the fisher communities in the planning, development and management of fishery resources; and
- ix) Pursue a continuing fisheries integrated programme of effective management of coastal zone to meet the ecological and social economic needs of the present and future generations.

s) Education Sector Policies

The Education Sector policies in the United Republic of Tanzania include the Education and Training Policy (1995), The Education Policy for Zanzibar, (1991), the Science and Technology Policy (1996), and the National Higher Education Policy (1999). The overall goal of education sector is to ensure quality, access and equity at all levels of education. Specifically these policies are aiming at improvement of quality education and training, expansion of the provision of education and training, promotion of science and technology and broadening the base for the financing of education and training. These Education policies are in line with the larger national or macro policy which emphasizes, inter alia, increased

role of private sector in education, introduction of cost sharing measures, and decentralization of education and training management.

A. Education and Training Policy (1995) and the Education Policy for Zanzibar (1991)

This policy is a guide to the future development and provision of education and training in this country as we move into the 21st century. Both the Education and Training Policy for Tanzania (1995) and the Education Policy for Zanzibar (1991) recognise that a good system of education in any country must be effective on two major fronts. On the quantitative level, to ensure access to education and equity in the distribution and allocation of resources to various segments of the society, and on the qualitative level, to ensure that the country produces the skills needed for rapid social, economic and environmental development. According to these policies there is evidence to show a very high correlation between investment in education and the creation of national wealth (URT, 1995, SMZ, 1991).

The policy intends to:

- i) Decentralise education and training by empowering regions, districts, communities and educational institutions to manage and administer education and training.
- ii) Improve the quality of education through strengthening in-service teacher training programmes; the supply of teaching and learning materials; rehabilitation of school/college physical facilities; teacher trainers' programmes; research in education and training, and streamlining the curriculum, examinations and certification.
- iii) Expand the provision of education and training through liberalisation of the provision of education and training, and the promotion and strengthening of formal and non-formal, distance and out-of-school education programmes.
- iv) Promote science and technology through intensification of vocational education and training; rationalisation of tertiary institutions, including establishment of polytechnics; strengthening science and technical education, and development of formal and non-formal programmes for the training of technologists.
- v) Promote access and equity through making access to basic education available to all citizens as a basic right; encouraging equitable distribution of educational institutions and resources; expanding and improving girls' education; screening for related, gifted and disabled children so that they are given appropriate education and training, and developing programmes to ensure access to education to disadvantaged groups.
- vi) Broaden the base for the financing of education and training through cost sharing measures involving individuals, communities, NGOs, parents and end-user, and through the inclusion of education as an area of investment in the Investment Promotion Act.

The Education Policy for Zanzibar, 1991, also emphasises that the education provided must be relevant and in harmony with the existing philosophies of the respective society, so that the society as whole can effectively participate in its planning, implementation, monitoring and evaluation of the education so provided (SMZ, 1991).

B. The National Science and Technology Policy, 1996

The National Science and Technology Policy, 1996, is a tool to develop and manage science and technology in a manner consistent with physical and human endowments of the country. It means to organize and sustain a science and technology capacity that is realistic, efficient

ad appropriate. The broad objectives of the Science and Technology Policy for Tanzania are to (URT, 1996a):

- i) Promote science and technology for economic development, the improvement of human, physical and social well-being, and for the protection of national sovereignty;
- ii) Promote the scientific and technological self-reliance in support of economic activities through the upgrading of the research and development capabilities by the creation of an environment conducive to scientific and technological creativity and improvement of relevant scientific infrastructures;
- iii) Stimulate the generation of scientific and technological knowledge which is to be applied in socio-economic development;
- iv) Inculcate a science and technology culture in the Tanzanian society;
- v) Establish and/or strengthen national science and technology institutions through provision of adequate facilities;
- vi) Provide attractive terms and conditions of service including adequate research facilities and conducive research environment in order to motivate and retain good scientists and technologists making them give their best service to the country;
- vii) Establish appropriate legal framework for the development and transfer of technology including intellectual property right, monitoring and controlling of the choices and transfer of technology, as well as bio-safety;
- viii) Institute a mechanism for identification, promotion and development of special talents, and aptitudes in science and technology among Tanzanians, especially youths, in order to benefit from the rich tapestry of human intellectual capabilities which are necessary for national development;
- ix) Achieve a critical mass of scientific and technological manpower by the year 2000 so as enable the country to fully develop, adopt, adapt, absorb and assimilate indigenous and foreign technologies;
- x) Promote and rational utilisation of natural resources, including energy resources, and environmentally sound technologies in order to maintain sustainable ecological and social balance;
- xi) Promote active participation of women in science and technology by creating enabling environment for them to be innovative and conscious of science and technology in their everyday life;
- xii) Promote appropriate technologies that reduce the chores and drudgery of life of women, hence releasing them to more productive and economic ventures;
- xiii) Acquire a national capability and capacity for endogenous decision making in scientific and technological matters through appropriate institutional framework and linkages;
- xiv) Promote commercialization of research results and technologies generated within the county;
- xv) Promote new and emerging technologies with the view of acquiring capability and capacity to embark on the technologies that accelerate the national economy; and
- xvi) Promoting and encouraging the public and private productive sector in developing science and technology through stimulating the creative genius of the population by proving incentives to individuals, enterprises o institutions. The incentives offered through policy or legal instruments may include financial subsidies, awards, premiums, fiscal incentives, and lending facilities.

t) The Community Development Policy, 1996

Although community development is a result of many elements, including changes in thinking, cultural beliefs, traditions, etc., the following indicators can generally be used to show the levels of development and welfare in communities (URT, 1996b). They include an increase in the social services such as good housing, health, education, nutrition, clean environment, and sufficient clean and safe water, etc. in addition, an increase in income that enables families in a community to meet their needs and set aside savings could be another indicator of community development. A decrease in infant and maternal mortality, demand for modern technology, sustainable use of the environment and the reduction eventual eradication of poverty in the community and the nation in general are also relevant indicators of community development. It is clear that community development will come about as a result of the efforts of many stakeholders, including government, non-governmental organizations, the communities and development partners. Implementation of this policy is thus in line with the implementation of other sectoral policies, such as health, agriculture, water, education, energy, environment, roads, etc. The policy provides guidelines on how to involve the efforts and resources of the community more effectively in the implementation of these policies, among others, and related programmes (URT, 1996).

The aims of the Policy are:

- i) To enable Tanzanians to bring about their own development by working to improve education so that they may have increased income which will enable communities to build a better life through self-reliance and the use of locally available resources. This is the only way poverty can be eradicated in the country.
- ii) To enable Tanzania to use their wealth to improve their welfare and bring about social and economic development.
- iii) To enable the majority of Tanzanians to enter into an economic system in which they can exchange their goods for money and use the money to pay for goods and services that will raise their standard of living.
- iv) To enable Tanzanians to enter into the budget system and spend their income carefully and develop the habit of placing their savings in the bank, and
- v) To enable Tanzanians to join together in groups and increase their commitment to self-development

u) The Mineral Policy of Tanzania, 1997

The mineral sector policy is designed to address the following challenges: (1) To raise significantly the contribution of the mineral sector in the national economy and increase the Gross Domestic Product (GDP), (2) To increase the country's foreign exchange earnings, (3) to increase government revenues, (4) to create gainful and secure employment in the mineral sector and provide alternative source of income particularly for the rural population, and (5) to ensure environmental protection and management.

The Government's policy for the minerals sector development aims to attract and enable the private sector to take the lead in exploration, mining development, mineral beneficiation and marketing (URT, 1997). The role of the public sector will be to stimulate and guide private mining investment by administering, regulating, and promoting the growth of the sector. Accordingly, the policy objectives of the Government for the mineral sector are:

- i) To stimulate exploration and mining development;

- ii) To regularize and improve artisanal mining;
- iii) To ensure that mining wealth supports sustainable economic and social development;
- iv) To minimize or eliminate the adverse social and environmental impacts of mining development;
- v) To promote and facilitate mineral and mineral-based products marketing arrangements;
- vi) To promote and develop Tanzania as the gemstone centre of Africa; and
- vii) To alleviate poverty especially for artisanal and small-scale miners

v) Women and Gender Development Policy, 2000

The Gender and Development policy's overall objective is to promote gender equality and equal participation of men and women in economic, cultural and political matters. Also focuses on - fairer opportunities for women and men and access to education, child care, employment and decision making (URT, 2000).

The policy is implemented by the Ministry of Community Development, Gender and Children. The Gender Development Division has two sections, the Gender Mainstreaming Section and the Women Development Section. The major functions of these sections are:

- i) To initiate, formulate and monitor programmes to effect the implementation of Gender and Development Policy
- ii) To plan, develop, coordinate, monitor and evaluate the implementation of Gender and Development Policy;
- iii) To prepare and disseminate guidelines for the implementation of Gender and Development policy ;
- iv) To advocate the implementation of Gender and Development policy ;
- v) To develop strategies to incorporate gender concerns into legislation, sectoral, policies, plans, programmes and projects ;
- vi) To create gender awareness to policy makers, development planners and communities
- vii) To provide knowledge and skills for gender mainstreaming.
- viii) To coordinate, monitor, evaluate and report on the implementation of international conventions and regional agreements;
- ix) To collect, process and store women related data and statistics for utilization and dissemination
- x) To provide guidelines, monitor and evaluate Credit mechanisms for Women.

The policy demonstrates Tanzania commitment to removing barriers that have prevented women from being full participants in the economy and unlocks their potential as drivers of sustainable development. This is being implemented through promotion of gender equality in all spheres of the society, including education, employment, ownership of resources, access to justice, political representation and participation at all levels of decision-making, care giving and household and community management.

w) Child Development Policy, 1996

Since independence Tanzania has been preparing and implementing policies and programmes directed at the development of people. In practice this meant that priority was given to the provision of basic services to the people, particularly those related to health, education and

safe and clean water. Particular emphasis was placed on the development of rural areas where the majority of the people reside. This policy addresses issues related to a child, that is, a people below the age of eighteen years (URT, 1996c). The definition is in accordance with the United Nations Convention on the Rights of the Child and the National Constitution, and is the one used to protect the rights and interests of the child, particularly in regard to employment and marriage contracts, protection against abuse, punishment and care by parents or guardians.

The objectives of the Child Development Policy are:

- i) To define a child in the Tanzanian context;
- ii) To educate the community on the basic rights of a child;
- iii) To provide direction and guidance on child survival, protection and development;
- iv) To provide direction on the upbringing of children in difficult circumstances;
- v) To enable community to understand the source of problems facing children;
- vi) To give proper direction to children so that they may become good citizens;
- vii) To clarify the role and responsibility of children, parents, guardians, institutions and the government in planning, coordinating and implementing plans for children;
- viii) To emphasise the joint responsibility of both parents (men and women) in caring for and bringing up their children;
- ix) To educate the community in order to ensure that children inherit good traditions and customs; and
- x) To ensure that there are laws which can be used to deal with child abuse.

Implementation of this, as well as other policies, including achievements, opportunities and challenges are detailed in Chapter Five.

2.4 Mainstreaming Environment into the Second National Strategy for Growth and Reduction of Poverty

The National Strategy for Growth and Reduction of Poverty (NSGRP), commonly known in Kiswahili as MKUKUTA, is the national development strategy for growth and reduction of poverty that has been implemented since 2005. The strategy has been implemented in two phases. Phase I (MKUKUTA I) covered the period from 2005-2010 while the second phase (MKUKUTA II) was prepared in 2010 covering a period of five years from 2010-2015. The strategy has three clusters: Growth and Reduction of Income Poverty; Improvement of Quality of Life and Social Welfare; and Good Governance and Accountability. Environment is mainstreamed in all the three clusters. The strategy will be implemented by all sectors while integrating environmental issues in their plans and budgets. In this way the strategy ensures that poverty reduction plans and actions follow the sustainable development path. Annex 2 shows how the environment has been mainstreamed into MKUKUTA II clusters, broad outcomes, goals, operational targets and cluster strategies.

2.5 Mainstreaming Environment into the Zanzibar Second National Strategy for Growth and Reduction of Poverty (MKUZA II), 2010-2015

Poverty eradication in both urban and rural areas means increasing the ability of the people to get the necessities, namely; food, better shelter/housing, adequate and decent clothing, improving democracy and social security. Poverty eradication is considered to be

synonymous to empowering people to successfully manage their lives and have a say on the course of their development (RGoZ, 2011a).

This second five-year strategy is a successor to the first Zanzibar Strategy for Growth and Reduction of Poverty, MKUZA I, which lasted from 2007-2010. The launch of the second strategy coincides with the remaining period of the implementation of the Millennium Development Goals (MDGs). MKUZA II is a tool that the Revolutionary Government of Zanzibar will deploy to realize the MDGs, improve living standards and strengthening good governance (RGoZ, 2010). Like the mainland's MKUKUTA II, MKUZA II addresses three major clusters, Achieved and sustained equitable pro-poor growth; improved social wellbeing and equitable access to quality social services and; Good governance and national unity.

RGoZ (2010) reports remarkable achievements in the implementation of MKUZA I, indicating that interventions that aimed at boosting economic growth paid off. The average real rate of economic growth was 6% in the last three years. It peaked 6.7% in 2009 against a target of between 8 and 10 percent in 2010. On revenue collection, the target for revenue yield set in MKUZA I (18.5% of GDP) was achieved. Similarly, the broader goal for improvement of peoples' lives through quality social services such as the provision of public services including education, health and clean and safe water also reveals significant achievements (RGoZ, 2010).

Similarly, MKUZA I took cognisance of the role of good governance for socio-economic development, including increasing attention to the issues of peoples' participation in development planning and process, gender equality, freedom of the media, accountability, institutional transparency and promotion of human rights. MKUZA II draws lessons from its predecessor, while addressing the challenges encountered during MKUZA I and to fill the necessary gaps (RGoZ, 2010).

2.6 The Tanzania Five Year Development Plan, 2011/2012-2015/2016

Since June 2011 the United Republic of Tanzania has adopted and started implementing a five year development plan spanning from 2011/2012-2015/2016. The five year development plan (FYDP) is a formal implementation tool of the country's development agenda articulated in the Tanzania Development Vision 2025, in particular taking Tanzania to middle income country status and eradicating poverty. The thrust of Tanzania's development agenda since independence has been economic growth and poverty reduction, the prime objective being to ensure that the majority of Tanzanians enjoy the benefits of development (URT, 2011b).

This first FYDP is meant to implement the TDV 2025 goals and objectives. Two other plan are (FYDP II and III) are also planned for the periods 2015/16-2020/26 and 2020/21-2025/26. The series of plans will chart out the growth path, which is dynamically consistent with realisation of the status of a semi-industrialised country, which is capable of withstanding competition in the domestic, regional, and global markets while unleashing hope to citizens. The five year development plan takes into account the overall national development goals and policy objectives; sectoral initiatives, the national strategy for growth and reduction of poverty II (MKUKUTA II), the key benchmarks of long-term perspective plan (LTPP) 2011/2012-2025/2026, as well as findings of review of vision 2025 (URT, 2011b).

The FYDP provides insights into responses of Tanzania to increasing challenges of development; and outlines what will take to succeed, and the expected outcomes in delivering

sustainable development. Like the Tanzania Development Visions 2025 and Zanzibar development Vision 2020, the FYDP is premised on the principles of accountability, equity, credibility, integrity and effective and efficient resource utilisation. To put these principles in practice, the plan has identified key priority areas and strategic interventions that will accelerate economic growth, create employment, and spur industrialisation efforts (URT, 2011b). These core priority areas include infrastructure, agriculture, industry, human resources development, trade, tourism and financial services.

2.7 National Programme on Sustainable Consumption and Production

Sustainable Consumption has been defined (UNCSD, 1995) as “the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations.” Underscored in this definition is that it is about meeting basic needs and changing our patterns of consumption, not “doing without” or consuming less. It is also more than “consuming green” for it is about consuming differently and efficiently (CPCT, 2007).

Changing consumption and production patterns is one of the overarching objectives and essential requirements for sustainable development, as recognized by the Heads of State and Governments in the Johannesburg Declaration (WSSD, 2002).

The Johannesburg Plan of Implementation (2002), as an outcome of the World Summit on Sustainable Development (WSSD) called for the development of a 10-year framework of programmes in support of regional and national initiatives to accelerate the shift towards sustainable consumption and production patterns that will promote social and economic development within the carrying capacity of ecosystems (CPCT, 2007).

The African Region has developed its 10-Year Framework of Programmes on Sustainable Consumption and Production. The process of developing the African 10-Year Framework Programme was facilitated by UNEP and UN-DESA in close consultation with the Secretariats of the African Ministerial Conference on Environment (AMCEN) and the African Roundtable on Sustainable Consumption and Production (ARSCP). The African 10-year framework programme underlines the importance of relating the principle of sustainable consumption and production with the challenge of meeting basic needs of the people (CPCT, 2007).

2.7.1 Sustainable Production

In Tanzania a number of sustainable development measures have been initiated. Different Stakeholders have taken different measures/ initiatives related to sustainable production. Some of these measures/initiatives can be explained as follows:

a) Cleaner production practices: Tanzania has been involved in Cleaner Production initiatives since 1994. These initiatives include the establishment of the Cleaner Production Centre of Tanzania (CPCT). Since its establishment, the CPCT has promoted the cleaner production concept in enterprises and many other stakeholder institutions and organizations in the country. The Centre has demonstrated to the enterprises that investing in cleaner production is not only beneficial to the environment, but it also brings financial savings to the enterprises as well as improving the health and safety of the workers. To-date, about 69

industries have benefited including those in the cities of Mwanza, Dar es Salaam and municipalities of Arusha, Morogoro, Tanga, and Zanzibar. Through the above initiatives, short, medium and long – term technological options and techniques were identified and some of them put into practice. Efficiency in the utilization of raw materials, water and energy has improved remarkably. Outstanding projects and practices being implemented and replicated in various other industries include waste water recycling; solid waste recycling; energy auditing; alternative energy sources; and good housekeeping practices (CPCT, 2007).

b) Sustainable cities programmes: The programme is being implemented in eight municipalities and five cities in the country. The programmes address issues of infrastructure, waste management, resource management, sanitation, and awareness on energy efficiency technologies. Infrastructure rehabilitation/development in planned and unplanned (i.e. serviced and un-serviced) settlements is underway using government subsidies, LGAs and donor funds with the aim of adding stock to existing infrastructure facilities. This programme is also supported and complemented with a programme on *Cities without Slums; a Sub Regional Programme for Eastern and Southern Africa*. Specific attention is on the unplanned settlements and slum upgrading (CPCT, 2007).

c) Urban transport reforms: Efforts are being undertaken to address traffic congestion and associated negative impacts such as air pollution and road accidents in urban centres. The Bus Rapid Transit System branded “Dar es Salaam Rapid Transit-DART” being implemented by Dar es Salaam City Council is one of the key initiatives addressing urban transport challenges. The system will enable the articulation of various positive impacts of sustainable transportation (CPCT, 2007).

d) Utilization of natural gas for thermal applications: Following the discovery of natural gas in the country about twenty industries have switched from using oil, coal or woodfuel to natural gas. Plans to connect more industries are underway. Natural gas is a clean fossil fuel, emitting less CO₂ per unit of energy provided than oil or coal. Natural gas is harvested at SongoSongo Island offshore on the Indian Ocean where the gas reserve is estimated to be 726 billion cubic feet. There is also a significant gas field at Mnazi Bay near Mtwara (CPCT, 2007).

e) Energy co-generation: Currently there are a number of initiatives in place of generating electricity using biomass (in particular agricultural waste). Sugar industries are among the leading sector in biomass co-generation. In total sugar mills generate 38MW of electricity. Sugar industries utilise the bagasse by-product for generating electricity. Other Industries which have made progress in this initiative include TANWAT-2.5MW, Saohill-1.0MW, Mufindi Paper Mills-15.0MW and Hale Sisal Estate (150kW). The biomass energy resource, which comprises fuelwood and charcoal from both natural forest and plantations, accounts for 93 per cent of total energy consumption (CPCT, 2007).

f) Dissemination programmes of efficient cook stoves: Various programmes are ongoing in this area. The targeted group are low-income rural and urban households as well as small businesses and institutions using biomass energy for cooking, baking, heating and other food processing applications. A number of players are involved in research development and dissemination of efficient technologies in this area. They include; TaTEDO, CAMARTEC, SIDO, COSTECH, and Universities, among others (CPCT, 2007).

2.7.2 Sustainable Consumption

Sustainable Consumption has not yet been clearly introduced or formalized in the consumption patterns of our societies. Consumers have in most cases been concerned with prices, whether the product is genuine, lasts longer, country of origin, common in the market etc. Little attention is paid on pertinent issues like labels, data sheets, and inquiry on the product efficiency, environmental friendliness, and disposal methods after life (CPCT, 2007). Consumers are also not sensitive on the accruing costs during its use. Currently Consumer movements are not well established in the country and where they exist, they are mainly concerned with consumer protection. The only institutions which have functions that are more or less related to the protection of the interest of the consumers are the Tanzania Bureau of Standards which is responsible for the administration of product standards issues; The Fair Competition Commission which is an independent Government body to promote and protect effective competition in trade and commerce and prevent unfair and misleading market conduct in order to increase efficiency in the production, distribution and supply of goods and services, promote innovation, maximise the efficient allocation of resources, and protect consumers; and The Weights and Measures Agency which provides protection of consumers in relation to weights and measures.

The other group which can easily facilitate in sustainable consumption are Traders. Whereas it is a well known fact that the efficient technologies/products have been developed and are in the market, but those who play the role of distribution like the Traders do not bring them to our market. This is because, either the traders are not aware of the concept of sustainable consumption, or the products are expensive and therefore may not be fast moving. In most cases we have experienced the markets being flooded with second hand products, especially electrical domestic appliances. However in the process of implementing Cleaner Production Programmes it's been possible to achieve sustainable consumption requirements especially for water and energy consumption. For cases of water consumption most companies have controlled leakages, installed "push button corks" to control water use and carrying out waste water recycling. For example Nyanza Bottling Plant in Mwanza has managed to reduce consumption of water from 5.5 litres of water/litre of beverage to 4.2 litres/litre of beverage. For cases of energy consumption most companies have installed power factor correctors, carrying out energy audits, using energy saving equipment and appliances and good housekeeping (CPCT, 2007).

2.7.3 Programmes on Sustainable Consumption

Energy and Water Utilities Regulatory Authority (EWURA) is an autonomous statutory body created under Cap 414 of the Laws of Tanzania. It is responsible for technical and economic regulation of electricity, water, petroleum and natural gas sectors. The EWURA law requires EWURA to consult with consumers, government and industry, therefore the same Act established EWURA Consumer Consultative Council (EWURA-CCC) to safeguard the interests of consumers of EWURA regulated services. EWURA has also started to institute measures for accounting for water produced and consumed by customers. The measures include strengthening the metering of water consumption. Furthermore EWURA has initiated a programme to sensitize consumers on best practices on energy usage so as to avoid unnecessary bills (CPCT, 2007).

2.8 Regional and Multilateral Environmental Agreements and their impacts on national policies

Environment being a global agenda, The United Republic of Tanzania cooperates with other nations in managing the global environment. In that regard, The United Republic of Tanzania is a party to various international treaties and agreements aimed at environmental management and sustainable development. These treaties and agreements have been mainstreamed in the national policies, legislations, programmes, strategies and plans. Implementation of these treaties and agreements is presented in Chapter Four.

CHAPTER THREE

LEGAL AND INSTITUTIONAL FRAMEWORK FOR SUSTAINABLE DEVELOPMENT

3.1 Overview

This Chapter discusses the legal and institutional framework for sustainable development that plays an important role in furthering The United Republic of Tanzania’s journey towards sustainable development. The quality of legislation and nature of the national institutions as well as political commitment is crucial in providing sustainable development. Legal and institutional framework coordination is an imperative for efficient public delivery and effective functioning of the politico-administrative machinery in the country.

3.2 Legal Framework

The United Republic of Tanzania had several pieces of legislation on natural resources which touched on some issues of environment, social and economic. Most of these pieces of legislation are aimed at regulating use and management of natural resources, have evolved along sector lines governing specific environmental media. Nevertheless, a notable development in The United Republic of Tanzania has been the change in approach in legislating on management of natural resources and the environment.

The United Republic of Tanzania’s overarching environmental legislation is the Environmental Management Act 2004 (EMA), which provides a framework for sustainable management of the environment and repeals all earlier laws and provisions that are inconsistent with it on environmental matters. The Act is a comprehensive management act that includes provisions for institutional roles and responsibilities with regard to environmental management; principle for management; impact and risk assessments; strategic environmental assessment; prevention and control of pollution; waste management; environmental quality standards; public participation; compliance and enforcement; implementation of international instruments on environment; state of the environment reporting; implementation of the National Environment Policy; establishment of the national environmental trust fund; and to provide for other related matters.

The recent pieces of legislation have provisions on environmental management and the use of environmental management instruments such as General Management Plans and Environmental Impact Assessment. Most of the pieces of legislation were enacted after the Rio Conference in 1992. Such legislations are listed in the Table 4.

Table 4. Some of the key legislation related to sustainable development in the United Republic of Tanzania

No.	Environment Related Laws	Relevance to Sustainable Development
A 1	Marine Parks and Reserves Act, 1994	An Act to provide for the establishment, management and monitoring of Marine Parks and Reserves for the purpose of to protect, conserve, and restore the species and genetic diversity of living and non-living marine resources and-the ecosystem processes of marine and coastal areas; to stimulate the rational development of underutilized natural resources; to manage marine and coastal areas so as to promote sustainability of existing resource use, and the

No.	Environment Related Laws	Relevance to Sustainable Development
		recovery of areas and resources that have been over exploited or otherwise damaged; to ensure that villages and other local resident users in the vicinity of, or dependent on, a marine park or marine reserve are involved in all phases of the planning, development and management of that marine park or marine reserve, share in the benefits of the operation of the protected area, and have priority in the resource use and economic opportunity afforded by the establishment of the marine park or reserve; and to establish a Park and Marine reserves unit, and to repeal certain provisions of existing legislation with related matters;
2	The Forest Act, 2002	An Act to provide for the Management of forests, to repeal certain laws relating to forests; provide for undertaking Environmental Impact Assessments of the required certain development projects; provide for establishment of forest management plan for all types of forest for the purpose of its best endeavours to achieve the sustainable management of the forest reserve over the periods of time; and designates Community Forest Reserves, Mangrove Forest Reserves and encourages community-based management and for related matters.
3	The Beekeeping Act, 2002	An Act to make provisions for the orderly conduct of beekeeping, for the improvement of the products of beekeeping and for the prevention and eradication of diseases and pests amongst bees for undertaking Environmental Impact Assessments for set out an environmental management plan and integrated pest management for eliminating and minimizing that impact on the beekeeping environment; provide for establishment and management of beekeeping zones within the national or local authority forestry reserves and general land and for related matters
4	The Fisheries Act, 2003	An Act to repeal and replace the Fisheries Act, 1970, to make provision for sustainable development, protection, conservation, aquaculture development, regulation and control of fish, fish products, aquatic flora and its products; provides for management and control of fishing industry; provides for undertaking Environmental Impact Assessment for development projects and for related matters.
5	The Industrial and Consumer Chemicals (Management and Control) Act, 2003	An Act to provide for the management and control of the production, importation, transportation, exportation, storage, dealing, and disposal of chemicals and for matters connected therewith
6	The Animal Diseases Act No. 17 of 2003	An Act to make provisions for control and prevention of animal diseases for monitoring production of animal products, for disposal of animal carcasses and for other related matters
7	The Tourism Act of 2008	An Act to provide for institutional framework, administration, regulation, registration and licensing of tourism facilities and activities; provides for limitation of liability to operators of a tourism facility or activity and for related matters.
8	The Wildlife Management Act No 5 of 2009,	An Act to make better provisions for the conservation, management, protection and sustainable utilisation of wildlife and wildlife products; to repeal the Wildlife Conversation Act Cap. 283; provides for establishment and management of Wildlife Management Area and benefit sharing; provides for management plans, environmental impact assessment, wildlife impact assessment

No.	Environment Related Laws	Relevance to Sustainable Development
		and environmental audit and monitoring; and to provide for other related matters.
9	The Public Health Act, 2009	An Act to provide for the promotion, preservation and maintenance of public health with a view to ensuring the provisions of comprehensive, functional and sustainable public health services to the general public; provide for solid and liquid waste management, gaseous waste management, excreta waste management; provide for hazardous and health care waste management sewerage and drainage and to provide for other related matters.
12	The Water Resources Management Act No. 11 of 2009	An Act to provide for the institutional and legal framework for sustainable management and development of water Resources; to outline principal for Water Resources management; to provide for prevention and control of water pollution; to provide for participation of stakeholders and general public in implementation of the National Water Policy, repeal of the Water Utilization (Control and Regulations) Act and to provide for related matters.
13	The Water Supply and Sanitation Authority Act No. 12 of 2009;	An Act to provide for sustainable management and adequate operation and transparent regulation of water supply and sanitation services with a view to give effect to the National Water Policy, 2002; to provide for the establishment of water supply and sanitation authorities as well as community owned water supply organisations; to provide for appointment of service providers, repeal of the Waterworks Act; provides for establishment of water supply and sanitation authority; provides for monitoring and regulation of community owned water supply organizations and to provide for related matters.
14	The Animal Welfare No. 19 of 2008	An Act to provide for the humane treatment of animals, establishment of the Animal Welfare advisory Council, monitoring and mitigation of animal abuse, promoting awareness on the importance of animal welfare and to provide for other related matters
15	Grazing-lands and Animal Feed Resources No. 13 of 2010	An Act to provide for the management and control of grazing-lands, animal feed resources and trade; provides for safeguarding and development of grazing; provides for management of communal strategic grazing land; provides for grazing-land development and management; and to provide for other related matters.
16	The Livestock Identification, Registration and Traceability No. 12 of 2010	An Act to provide for the establishment of the National Livestock Identification, Registration and Traceability System for purposes of controlling animal diseases and livestock theft, enhancing food safety assurance; to regulate movement of livestock, improve livestock products and production of animal genetic resources; to promote access to market and to provide for other related matters
17	The Mining Act, 2010	An Act to re-enact with substantial amendments the provisions that regulate the law relating to prospecting for minerals, mining, processing and dealing in minerals, to granting, renewal and termination of mineral rights, payment of royalties, fees and other charges and any other relevant matters.
B	Social Related Laws	
1	Occupational Health and Safety Act no 5 of 2003	An Act to provide for the management and control of the production, importation, transportation, exportation, storage, dealing, and disposal of chemicals; provides for access and safe working place; provides for precaution where dangerous fumes are

No.	Environment Related Laws	Relevance to Sustainable Development
		available to be present; provides for precautions in respect to explosive or inflammable dust, gas, vapour and substance and for matters connected therewith
2	The Worker Compensation Act no 2 of 2008	An Act to provide for compensation to employees for disablement of death caused by or resulting from injuries or diseases sustained or contracted in the course of employment; to establish the Fund for administration and regulation of workers compensation and to provide for related matter
3	The Child Act No. 21 of 2009	An Act to provide for reform and consolidation of laws relating to children, to stipulate rights of the child and to promote, protect and maintain the welfare of a child with a view to giving effect to international and regional conventions on the rights of the child; to provide for affiliation, foster care, adoption and custody of the child; to further regulate employment and apprenticeship; to make provisions with respect to a child in conflict with law and to provide for related matters
4	The Occupational Health and Safety Act, 2003	An Act to repeal the Factories Ordinance; to make provisions for the safety, health and welfare of persons at work in factories and other places of work- to provide for the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with activities of persons at work; and to provide for connected matters
5	The HIV and AIDS (Prevention and Control) Act, 2008	An Act to provide for prevention, treatment, care, support and control of HIV and AIDS, for promotion of public health in relation to HIV and AIDS; to provide for appropriate treatment, care and support using available resources to people living with or at risk of HIV and AIDS and to provide for related matters.
6	The Water Resources Management Act No. 11 of 2009	An Act to provide for the institutional and legal framework for sustainable management and development of water Resources; to outline principal for Water Resources management; to provide for prevention and control of water pollution; to provide for participation of stakeholders and general public in implementation of the National Water Policy, repeal of the Water Utilization (Control and Regulations) Act and to provide for related matters.
7	The Water Supply and Sanitation Authority Act No. 12 of 2009	An Act to provide for sustainable management and adequate operation and transparent regulation of water supply and sanitation services with a view to give effect to the National Water Policy, 2002; to provide for the establishment of water supply and sanitation authorities as well as community owned water supply organisations; to provide for appointment of service providers, repeal of the Waterworks Act and to provide for establishment of community owned water supply organization and provide for monitoring and regulation of community owned water supply organizations related matters.
8	The Public Health Act, 2009	An Act to provide for the promotion, preservation and maintenance of public health with a view to ensuring the provisions of comprehensive, functional and sustainable public health services to the general public ;provides for notification of infectious or communicable and non- communicable diseases; provides for communicable diseases and isolation of infected persons; provides for prevention and control of the spread of infectious diseases or communicable diseases; provides for vaccination against childhood

No.	Environment Related Laws	Relevance to Sustainable Development
		and other communicable diseases control of epidemic and endemic diseases; provides for control of mosquitoes, other disease vector, vermins and any other disease causative agent and to provide for other related matters.
9	The Social Security Act 2008	Provides for establishment of Social Appeal Tribunal
10	Employment and Labour Relation Act No 6 of 2004	An Act to provide for core labour right; establish basic employment standards; provide a framework for collective bargaining; provide for the prevention and settlement of disputes and for related matters. The objectives of the Act are to promote economic development through efficiency productivity and social justice; give the effect to the provision of the constitution of the United Republic of Tanzania of 1977, in so far as they apply to employment and labour relations and conditions of work; and to give the effect to the core conventions of International Labour organisation as well as other ratified conventions.
11	The Persons with Disabilities Act, 2010	An Act to make provisions for the health care, social support, accessibility, rehabilitation, education and vocational training, communication, employment or work protection and promotion of basic rights for the persons with disabilities and to provide for related matters.
C	Economic Related Laws	
1	The Financial Laws (Miscellaneous Amendments) Act, 2003	An Act amend certain financial Laws with the intention to promote the development of a sound and sustainable supply of financial services for householders smallholder farmers small and micro enterprises in urban and rural areas by providing with safe and accessible saving and payment services thereby providing their opportunity to improve their business and their livelihoods by gain access to equate and timely credit services.
2	The Social Security Act 2008	Provides for regulations and supervision of schemes, managers and custodians.
3	The Capital Markets and Securities (Amendments) Act, 2010	An Act to amend the Capital Markets and Securities Act with a view to making better provision for regulating, supervising and coordinating the capital markets activities and to provide for other related matters.
4	The Water Supply and Sanitation Authority Act No. 12 of 2009	An Act to provide for sustainable management and adequate operation and transparent regulation of water supply and sanitation services with a view to give effect to the National Water Policy, 2002; to provide for the establishment of water supply and sanitation authorities as well as community owned water supply organisations; to provide for appointment of service providers, repeal of the Waterworks Act and to provide for establishment of community owned water supply organization and provide for monitoring and regulation of community owned water supply organizations; provide for establishment of National Water Investment Fund; and for accounts and audit of funds of organization related matters.

3.3 Institutional Framework for Sustainable Development in the United Republic of Tanzania

The Environmental Management Act (EMA) 2004 sets up the Institutional Framework for Environmental Management in the country. It confers the task of overall coordination of

environmental management in the country and provision of the central support functions to the Ministry Responsible for Environment, which is the Vice President’s Office. These functions concern the overall organization, rules coordination and the establishment of a coherent general context for environmental management. The National Environmental Policy, 1997 and the Environmental Management Act, 2004, guide these functions by providing a policy and legislative framework for coordinating implementation of policies and laws on environmental and natural resources management in the country. The Act confers the role of management of specific natural resources or environmental services, such as agriculture, fisheries, forestry, wildlife, mining, water, and waste management to various Ministries, the Local Government Authorities and departments. These functions are to a large extent directly operational and in addition to EMA they are also guided by sector specific policies and legislations. Figure 2 provides Institutional Arrangement under Environmental Management Act.

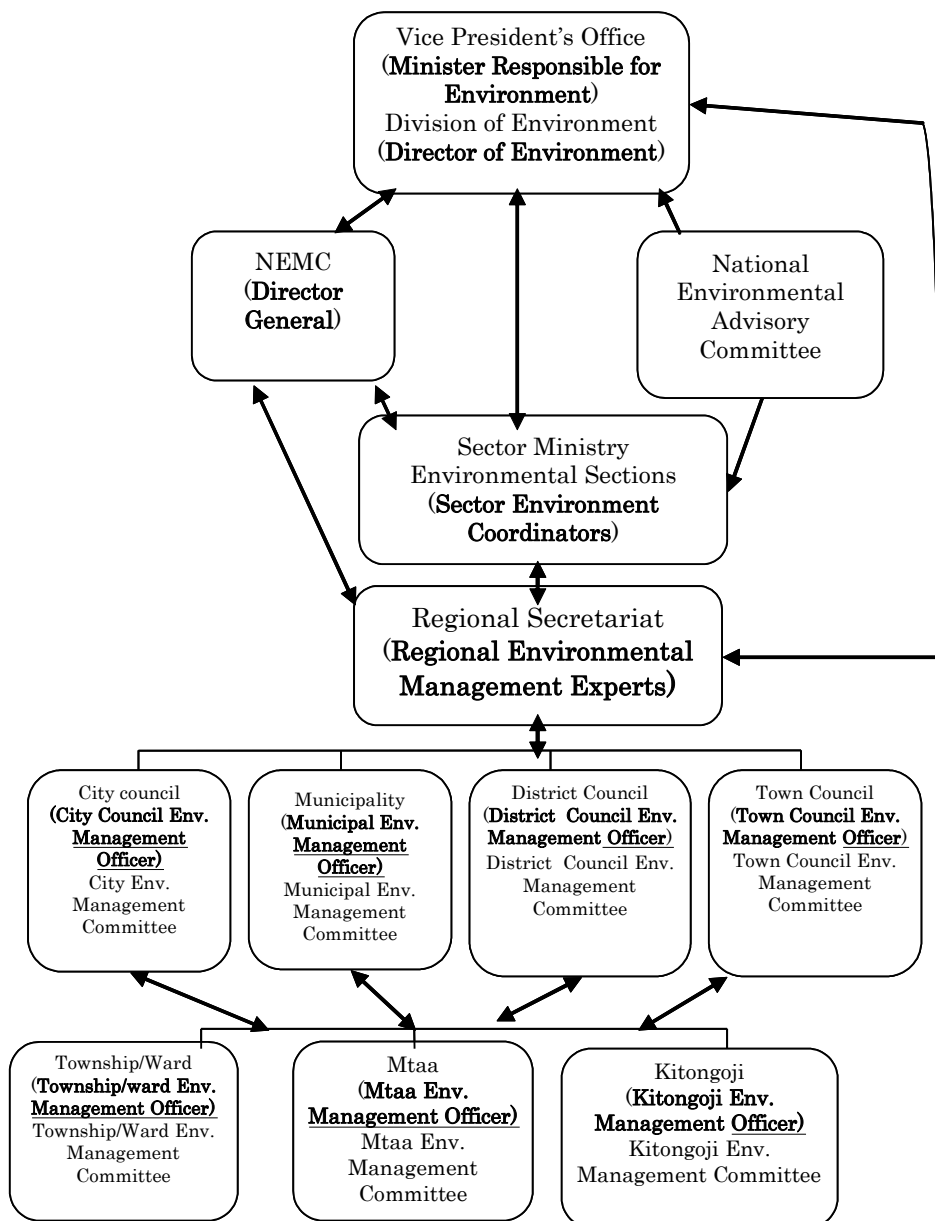


Figure 2: Institutional Arrangements under EMA, 2004

3.3.1 Specific Institutions for Environmental Management and their Functions

(a) The National Environmental Advisory Committee

The committee is created to advise the Minister for environment (the Vice President's Office-VPO in this instance) or any sector ministry on any environmental matter which may be referred to it.

(b) The Minister Responsible for Environment

The Minister can articulate policy guidelines, make regulations, guidelines, can designate any institution to perform any function or do any activity within a specified time. The Minister can make rules for preparation of periodic environmental plans at sector level, can make regulations prescribing the procedure and manner in which Environmental Action Plans may be prepared, adopted and implemented.

(c) The Director of Environment

The Director of Environment coordinates environmental activities, advises the government on the law and international environmental agreements on the environment, monitor and assess activities of relevant agencies, prepares and issue State of Environment Report. These functions are the day to day functions of the Director of Environment.

(d) The National Environment Management Council (NEMC)

The function of the Council among others include carries out environmental audits, surveys, researches; reviews and recommend for approval of Environmental Impact Assessment; enforce compliance of the National Environmental Quality Standards; initiates procedure for the prevention of accidents which may cause environmental degradation; undertakes programmes to enhance environmental education; publishes and disseminate manuals relating to environmental management; renders advise and technical support to entities engaged in natural resources and environmental management; and performs any other functions assigned to it by the Minister responsible for environment. Most of these functions have been made day to day functions of NEMC.

(e) The Sector Ministries

Each sector ministry carries out its functions and duties in connection with the environment according to EMA and any other law provided that such law does not conflict with EMA. Involvement of Sector Ministries in environmental management is through a sector environment sections (SEs) which have been established in each ministry to ensure that ministries comply with the EMA. So far, since the enactment of EMA, Sector Environmental sections have been established in almost all sector ministries and Sector Environmental coordinators have either been designated or employed in such ministries.

(f) The Regional Secretariat

The Regional Secretariat is composed of a Regional Environmental Management Expert (REME) charged with the responsibility to advise the Local Government Authorities of that particular administrative region on matters relating to implementation and enforcement of EMA. The REME links the region with the Director of Environment. Since the enactment of EMA, several Regional Secretariats have either designated or employed Regional Environmental Management Experts.

(g) The Zanzibar Division of Environment

The Division of Environment in Zanzibar is the government institution responsible for environmental matters located in the First Vice President's Office. According to the Environment Policy for Zanzibar (1992), the Division of Environment, formerly Department of Environment has the following functions: (1) to promote and monitor the implementation of the environmental policy, by all sectors of government and by the people of Zanzibar. (2) To maintain a well organised environmental information bank. (3) To provide environmental input into planning process based on the national environmental policy. (4) To monitor the state of the environment and organise relevant research, (5) to tackle immediate environmental problems and stimulate others to action for environmental protection. (6) To promote awareness and training in environmental issues (RGoZ, 1992). However, to fulfil these functions the Division needs full support and cooperation both within Zanzibar and internationally.

3.3.2 Local Government Authorities

Local Government Authorities exist for the purpose of consolidating and giving more power to the people to competently participate in the planning and implementation of development programmes within their respective areas and generally throughout the country. Local Government Authorities are classified into two categories. Urban authorities are responsible for the administration and development of urban areas ranging from townships, municipalities and cities. Rural Authorities commonly known as District Councils form the second category. All Local Government Authorities are mandated to play two main functions of administration, law and order; and economic and development planning in their respective areas of jurisdiction. Implementation of various sustainable development initiatives is implemented at this level, particularly for rural areas. EMA has vested to the Local Government Authorities the function of environmental management. It has created officers and has also designated to some committees certain environmental functions.

3.3.3 Standing Environmental Committees

The EMA also designates to the following committees the status of Environmental Management Committees. These committees are; Standing Committees on Urban Planning and Standing Committees on Economic Affairs, Works and Environment. The powers of these committees under the EMA are provided for in the law to include:-

- Initiate inquiries and investigations about any allegation related to the environment and the implementation or violation of the provisions of EMA;
- Resolve conflict related to environment among individuals, companies, NGOs and Government institutions;
- Require provision of information or explanation about any matter related to environment;
- Examine and inspect premises, street, vehicles, aircraft or any other place or article believed to be pollutant;
- Initiate proceedings of civil or criminal nature against any person, company, department or institution that refuses or fails to comply with any directive issued by any such committee.

The EMA designates these Committees with the status of:

- City Environmental Management Committee
- Municipal Environmental Management Committee

- District Environmental Management Committee

3.3.4 Other Relevant Institutions

- (a) Cabinet Committee on Environment: The Committee is mandated to advise the President on matters of urgency related to environmental management. The Committee is comprised of Ministers responsible for Environment; Natural Resources; Water; Land; Livestock; and Energy and Minerals. The Committee is chaired by the Vice President of the United Republic of Tanzania.
- (b) Parliamentary Standing Committee on Land, Natural Resources and Environment: The Committee, among others, provides overall guidance on environmental issues to the Government. The members of the Committee are appointed by the Speaker of the National Assembly and they serve for a term of 5 years.

3.4 The role of UN Agencies

Tanzania recognizes the role of the UN system at the country level and the direct support on sustainable development that is provided through the UN system. For instance, UNEP, as a leading global environmental authority that sets the global environmental agenda, to promote the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and to serve as an authoritative advocate for the global environment; has been extending support from the global, regional, and down to country level in support of implementation of Rio deliberations. The support has come in the form of programmes that establishes linkages of poverty and environment as well as promoting the understanding and applications of a green economy.

The work done by UNDP and other members of the Country Teams cannot be overemphasised. Various programmes and projects have been implemented in the country in relations to sustainable development, including biodiversity conservation and sustainable land management. The UN System together with other development partners has also been in the forefront towards a greener economy. UNEP, in partnership with the government of Tanzania and UNIDO, established a National Cleaner Production Centre/Programme in Tanzania to build local capacity to implement cleaner production and to provide core cleaner production services at the national level. The programme is based on the premise that cleaner production will only be integrated into a country's industries and policies if local capacity is in place to sustain it.

UNEP should continue with its mandate regarding sustainable development, facilitating access to technical assistance, training, financing, technology, and capacity building, particularly for developing countries. In recognition of this environmental mandate, UNEP needs need to be provided with enough resources to be able to deliver more effectively, and be considered for transformation from being a programme to being an agency and become resident in the developing countries.

Equally important is the role of the Resident Coordinator/ Resident Representative system, providing the leadership for UN system activities at the country level. Tanzania emphasizes the need to strengthen operational activities for sustainable development, through the delivery of the UN system.

3.5 Challenges

- i) Insufficient institutional framework for coordination;
- ii) Inadequate environmental management capacity at various levels;
- iii) Insufficient involvement of local authorities and communities in environmental management and conservation;
- iv) Inadequate awareness on laws among the general public, capacity (financial, human resources and physical); and
- v) Issue of poverty.

3.6 Strategies to Address the Challenges

- i) Establish and operationalise coordination mechanisms that will regulate environmental legislations in various sectors.
- ii) Strengthen institutional capacity on environmental management at all levels, government and the private sector.
- iii) Enhance participation of local authorities and communities in environmental management and conservation.
- iv) Enhance general public awareness on various laws and regulations relating to environmental management and conservation.
- v) Enhance the mainstreaming of natural resources and environmental management in the poverty reduction strategies.

CHAPTER FOUR

DOMESTICATION/IMPLEMENTATION OF INTERNATIONAL AGREEMENTS IN THE UNITED REPUBLIC OF TANZANIA

4.1 Overview

The United Republic of Tanzania is a party to a number of international agreements and it is actively participating in their implementation. All these international agreements contribute to the sustainable development of the country. These agreements address economic issues (trade and investment), social issues (labour and human rights) and environmental issues (Multi-lateral Environmental Agreements – MEAs). All the MEAs as well as other international agreements are implemented in both parts of the union, that is mainland Tanzania and Zanzibar. Implementation of the MEAs and other regional and international agreements is in line with the requirements of MDG 7(Ensure environmental sustainability).

4.2 Multi-lateral Environmental Agreements (MEAs)

The United Republic of Tanzania has ratified various Multilateral Environmental Agreements (MEAs) in order to join the international community efforts in addressing global environmental issues such as climate change, ozone depletion, desertification, and hazardous chemicals and wastes. Through this international cooperation, the country has been implementing a number of projects/programmes to address environmental issues and poverty reduction and subsequently contributing to sustainable development. Below is an account for the MEAs that The United Republic of Tanzania is a party to:

a) United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992 at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil. The Convention aims at stabilizing the concentrations of Green House Gases (GHGs) in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. It entered into force in 1994 and The United Republic of Tanzania ratified the Convention in April 1996. It also ratified the Kyoto Protocol to the UNFCCC in 2002 which aims to bind developed country Parties to reduce greenhouse gases emissions by setting time-bound targets.

Since its ratification, The United Republic of Tanzania has been actively involved in implementing a number of initiatives addressing adaptation and mitigation to climate change with support from the international community in both bilateral and multi-lateral arrangements. Adverse impacts of climate change pose not only global challenges but also affect socio-economic and cultural setting of human kind at national and local levels. Such impacts are now evident in almost every sector of Tanzania's economy despite its least contribution to the problem. Already various initiatives and programmes have been undertaken at the national level in the context of UNFCCC and its Kyoto Protocol. Table 5 summarizes some initiatives undertaken at national level to address climate change.

Despite of the above national initiatives, several challenges are still being experienced. Apart from limited internal capacity to fund adaptation activities, The United Republic of Tanzania

is also constrained by several factors, including (i) extreme poverty of the most vulnerable groups; (ii) poor infrastructure, especially poor rural roads makes it difficult to access rural areas, hence difficulties in delivering farm inputs and accessing markets; (iii) limited credit opportunities for rural communities to allow households easily access farm inputs; (iv) the impact of HIV/AIDS creating a major drain on family energy, cash and food; (v) poor health conditions of resource-poor rural communities; and (vi) limited capability of local personnel to effectively analyse the threats and potential impacts of climate change, so as to develop viable adaptation and mitigation solutions.

Table 5. Some initiatives to address climate change in the United Republic of Tanzania

No.	National initiative/ study	Year	Financing Agency	Remarks
1	Inventory of GHG emissions	1993 -1994	UNEP	The main GHG studied were CO ₂ , CH ₄ and N ₂ O.
2	Technological and other options for GHG Mitigation	1994 -1995	The German Technical Cooperation (GTZ) Agency	The study involved the macro-economic analysis, energy pricing and mitigation cost analysis and a multiple criteria assessment.
3	Assessment of Vulnerability and Adaptation to Climate Change	1994 -1996	United States Country Studies Programme	The main sectors studied were: agriculture (crop production and livestock), water, coastal resources and forestry.
4	Development of Climate Change National Action Plan	1996 -1998	United States Country Studies Programme	Identification of the complimentary actions between climate change and sectoral policies.
5	Adoption of National Environment Policy	1997	Government of The United Republic of Tanzania	The Policy identifies major environmental challenges in the country and policy actions to address them
5	Adoption of national environmental policy for Zanzibar	1992	The Revolutionary Government of Zanzibar	The Policy identifies major environmental challenges in the country and policy actions to address them
6	Enabling Activities Towards preparation of the Initial National Communication to the UNFCCC	1997 -1999	GEF/UNEP	The project updated the previous works of climate change studies, through capacity building
7	Revised National Energy Policy	2003	Government of Tanzania	The Policy promotes environmentally sound technologies
8	National Adaptation Program of Action (NAPA)	2004 -2006	GEF/UNEP	The project identified Urgent and Immediate Adaptation Options to combat climate change impacts
9	Enactment of the Environment Management Act – Cap 191	2004	Government of The United Republic of Tanzania	The Act has specific provision to address climate change issues in The United Republic of Tanzania.
10	Assessment of Technology Needs Assessment (TNA)	2004 -2005	GEF/UNEP	The project identified environmentally friendly technologies to adapt and mitigate climate change impacts in The United Republic of Tanzania
11	Preparation of the	2004	UNCTAD	The Guide provides a framework for

No.	National initiative/ study	Year	Financing Agency	Remarks
	national Clean Development Mechanism – CDM investor’s Guide			CDM project activities in the country.
12	Preparation of National Capacity Needs Self-Assessment and Action Plan	2007	UNEP	The assessment identified capacity gaps for implementing Rio-MEAs in the country. An action plan was also developed to address the gaps
13	National CDM Handbook	2009	Government of The United Republic of Tanzania	The Handbook highlights on procedures for CDM projects.
14	Preparation of National Strategy for Reducing Emissions from Deforestation and Forest degradation (REDD+)	2009	NORAD	The REDD+ Strategy aims to establish mechanisms for The United Republic of Tanzania to participate and benefit from forest carbon trading, based on demonstrated emission reductions from deforestation and forest degradation.
15	Climate Change, Impacts, Adaptation and Mitigation in Tanzania (CCIAM) Programme	2009	NORAD	The Programme was initiated to support the REDD+ implementation capacity in the country.
16	Climate change Impacts Assessment-Tanzania	2009	Government of The United Republic of Tanzania	The study revealed and documented both the key locally based impacts of climate change and their cultural, socio-economic and environmental implications.

b) United Nations Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) was adopted in May 1992 during the UNCED in Rio de Janeiro, Brazil. The main objective of the Convention is to promote the conservation of biological diversity, sustainable use of its components and the fair and equitable sharing arising out of the utilization of genetic resources. The United Republic of Tanzania signed the Convention in 1992 and ratified the same in March, 1996; thereby committing herself to join other global partners aspiring to conserve biological diversity and enhance development opportunities.

The United Republic of Tanzania also ratified the Cartagena Protocol on Biosafety to the Convention on Biological Diversity in 2003. The Protocol addresses the safe transfer, handling and use of Living Modified Organisms (LMOs) that may have adverse effects on Biodiversity with a specific focus on transboundary movements. The Protocol establishes an Advanced Informed Agreement (AIA) procedure for import of LMOs, incorporates the precautionary principal and detailed information and documentation requirements. The main objective of the Protocol is to contribute to ensuring an adequate level of protection in the field of Living Modified Organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into accounts risks to human health, and specifically focusing on transboundary movements.

The United Republic of Tanzania has formulated a number of initiatives geared towards conservation of its biological diversity for sustainable development. Some of these initiatives includes: establishment of the National Biodiversity Framework to manage modern biotechnology, preparation of the National Biosafety Regulations and Guidelines; and implementation of the Lake Tanganyika Biodiversity project (conservation of Lake Tanganyika Biodiversity), Lake Victoria Environmental Management Programme; Eastern Arc Mountain Conservation Programme; Marine and Coastal Environment Management Project (MACEMP); Nile Transboundary-Environmental Action Project; National Biodiversity Strategy and Action Plan (NBSAP); Strategy for Urgent Actions on Land Degradation and Water Catchments; and National Wetlands Management Strategy.

Despite the fact that the country has been implementing international environmental commitments as well as national environmental policies, legislations and strategies, achievement of such efforts have been constrained by various factors, including inadequate environmental management awareness among key stakeholders, insufficient resources to adequately address environmental issues as well as lack of efficient and effective alternative sources of energy to reduce dependency of forest resources as the main source of energy, Inadequate awareness on sustainable agriculture and livestock keeping practices. Awareness raising among the local communities regarding environmental management is of crucial importance.

c) United Nations Convention to Combat Desertification (UNCCD)

The Convention was adopted in June 1994 and The United Republic of Tanzania ratified it in April 1997. The objective of UNCCD is to combat desertification and mitigate the effect of drought in countries experiencing serious droughts and/or desertification, through effective action at all levels.

Desertification/land degradation has reduced and continues to reduce the capacity of the land to produce food and thus exacerbating food shortages leading to frequent famines and starvation in the country. The situation is serious and is growing worse in central areas of the country that include Dodoma and Singida and parts of Mwanza, Shinyanga, Mara, Iringa, Kilimanjaro and Arusha regions..

Since ratification of the UNCCD, several initiatives have been put in place at national and local level to address land degradation and desertification. These include: preparation and implementation of the National Action Plan to combat desertification (NAP); and Strategy for Urgent Actions on Land Degradation and Water Catchments which seeks to halt land degradation and conserve water catchments.

Despite all these efforts in addressing desertification and land degradation, there are still some challenges that hinder full implementation of the Convention. These include inadequate financial resources; insufficient human and technical resources; low awareness on technologies and techniques for combating desertification; and inadequate participation of stakeholders in combating land degradation.

d) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March 1989 and it entered into force in April 1997. The United Republic of Tanzania acceded to the Basel Convention in April 1993. The objectives of this Convention are:

- (a) To reduce trans-boundary movement of hazardous wastes and other wastes to a minimum consistent with their environmentally sound management;
- (b) To treat and dispose hazardous wastes and other wastes as close as possible to their source of generation in environmentally sound manner; and
- (c) To minimize the generation of hazardous wastes and other wastes in terms of both quantity of potential hazards

In order to manage hazardous wastes in the country, Regulations on Hazardous wastes have been prepared as part of implementation of the Environmental Management Act (Cap 191). The Regulations, among other things, provide procedures for both handling and disposal of hazardous wastes in manner that will safeguard the environment. National Waste Management Strategy has also been developed to provide a framework for better management of waste in the country. The United Republic of Tanzania is also participating in the Africa Stockpiles Programme (ASP) which intends to dispose about 1,000 metric tonnes of obsolete pesticides and institute measures that will avoid future stockpiling of pesticides. As of now, inventory of the stockpiles has been carried out and Environmental and Social Impact Assessment of the disposal project has been completed.

e) The Vienna Convention on the Protection of Ozone Layer and Montreal Protocol on Substances that Deplete the Ozone Layer

The United Republic of Tanzania ratified the Vienna Convention on the Protection of Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer in 1993. The objective of these treaties is to protect human health and the environment against adverse effects resulting from modifications of the ozone layer from anthropogenic emissions of substances proved scientifically to have high ozone depleting potential. These Treaties established the starting point for global cooperation on the protection of the ozone layer in the stratosphere.

The United Republic of Tanzania has joined the international community in efforts that aim at halting depletion of the Ozone layer by implementing several initiatives. These include: formulation and enforcement of the Regulations on Ozone Depleting Substances (ODS); Training of Customs Officers on relevant Legislation and Regulations; training of refrigeration and air conditioning service technicians on good refrigeration practices, including ODS dependent equipment. Furthermore, five (5) zonal centres for recycling and retrofitting ODS have been established in Vocational Educational Training Authority (VETA) in Dar es Salaam, Mbeya, Kigoma, Mwanza and Zanzibar.

f) Stockholm Convention on Persistent Organic Pollutants (POPs)

The Stockholm Convention on Persistent Organic Pollutants (POPs) was adopted in 2001 and entered into force in 2004. The United Republic of Tanzania ratified this Convention in 2002.

The objective of the Convention is to protect human health and the environment against adverse effects of POPs.

Following ratification of this Convention, the Government has undertaken various initiatives to implement the Convention including preparation and implementation of the National Implementation Plan (NIP) for the Stockholm Convention on POPs; preparation of national Guidelines for Management of Polychlorinated Biphenyls (PCBs) and Contaminated Sites; and providing education and awareness programmes to the public on effects of POPs to human health and environment.

4.3 Other Treaties and Conventions on Environment

Other treaties and conventions on environment that the United Republic of Tanzania is a party are presented in Table 6.

Table 6. Other treaties and conventions on environment that the URT is a Party

Treaties and Conventions	Year Ratified/ Acceded
1) The convention on the African Migratory Locust, Kano	1962
2) The Convention on Wetlands of International Importance Especially as Waterfowl Habitat (the Ramsar Convention)	1971
3) The convention concerning the Protection of World Cultural and Natural Heritage, Paris	1972
4) The convention on the Prevention of Marine Pollution by Dumping of Wastes and other matters, London	1972
5) The convention on International Trade in Endangered species of Wild Fauna and Flora (CITES), Washington	1973
6) The convention on the Prevention of Marine Pollution from ships (MARPOL)	1973
7) The United Nations Convention on Law of the Sea, Montego Bay,	1982
8) Convention on Development and Protection of Coastal and Marine Environment for the Eastern Africa Region	1985
9) Bamako convention on the Ban of the Import into Africa and the control of Transboundary Movements of Hazardous Wastes within Africa	1990
10) The Vienna Convention on the Protection of Ozone Layer	1993
11) Montreal Protocol on Substances that Deplete the Ozone Layer	1993
12) The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal - adopted on 22 March 1989 and it entered into force in April 1997	1993
13) The Convention on Preservation of Fauna and Flora in their Natural state, London	1993
14) United Nations Framework Convention on Climate Change - adopted in 1992	1996
15) United Nations Convention on Biological Diversity - adopted in May 1992	1996
16) United Nations Convention to Combat Desertification - adopted in	1997

June 1994	
17) Rotterdam Convention of Prior Informed Consent Chemicals	1998
18) Stockholm Convention on Persistent Organic Pollutants (POPs) - adopted in 2001 and entered into force in 2004	2002
19) Convention on Sustainable Management of Lake Tanganyika	2004

CHAPTER FIVE

ACHIEVEMENTS AND CONSTRAINTS IN THE IMPLEMENTATION OF LOCAL AND INTERNATIONAL AGENDA TOWARDS SUSTAINABLE DEVELOPMENT

5.1 Overview

The United Republic of Tanzania, like many other developing countries, is facing two main challenges of attaining sustained high growth rates of the economy and substantial reduction in poverty. Resource gaps (both human and financial), constrain the Government's ability to address these challenges in a comprehensive way. The Government has been implementing a number of policy initiatives and strategies including the Development Vision 2025 and the National Strategy for Growth and Reduction of Poverty (NSGRP). The country is also implementing the resolutions of the World Summit on Sustainable Development, the Millennium Development Goals (MDGs); the United Nations Conventions; Global and Regional agreements; and national policies, legislations, programmes, plans and strategies. Some of these issues are discussed in the following sections.

5.2 Implementation of the Rio Multilateral Environmental Agreements (MEAs) – UNFCCC, UNCCD and CBD

One of the landmark outcomes of the 1992 Earth Summit was the adoption of the Rio Conventions namely the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD) in areas seriously affected by drought and/or desertification particularly in Africa and the United Nations Framework Convention on Climate Change (UNFCCC). The Rio Conventions reflect the commitment of all countries to preserve the global environment, on the basis of common but differentiated responsibilities and respective capabilities. They provide a framework to the collective efforts. Successful implementation of the conventions by the international community is meant to improve living conditions, and reduce poverty, while also helping to alleviate related problems such as migration, social conflict, loss of plant and animal species and climate change impacts.

a) Biodiversity

Sustainable development in The United Republic of Tanzania is highly dependent on her natural endowment in the form of biodiversity resources such as forests and woodlands, wildlife, fisheries and other land resources. The challenge is how best such unique natural ecosystems and biodiversity are being exploited to meet the needs of present users without losing the ability to regenerate and be able to supply the same goods and services to future generations. The issue is what could be done to optimize benefits from tourism, fisheries, wildlife, forestry and beekeeping as well as increased agricultural productivity without causing harm to the environment and the entire ecological base. In most cases the priority is to conserve Tanzania's unique biodiversity and the natural ecosystems of forests/woodlands; rangelands/grasslands; savannah, wetlands, rivers, lakes and the ocean to ensure provision of ecological services on sustainable basis. Thus, the aim is to ensure that the valuable biodiversity resources within the country will continue to contribute significantly to socio-economic development in The United Republic of Tanzania and also towards attaining the Tanzania Development Vision 2025 and Zanzibar Development Vision 2020, which call for better life for all Tanzanians. On the other hand, Tanzania's biodiversity in terms of ecosystem types, species richness and high levels of endemism indicate that the country is

rich in natural resources. Globally, The United Republic of Tanzania is categorised as one of the 34 biodiversity hotspots in the world. About 25% of the land area of mainland Tanzania is occupied by crucial ecosystem such as national parks, game and forest reserves as well as key wetlands that are designated as Ramsar sites (NBSAP, 2000).

b) Desertification

The United Republic of Tanzania is one of the sub-Saharan countries in Africa with all climatic, soil and other attributes favouring the development of desert and desert environment. All signs of desertification are highly pronounced the central and northern part of mainland Tanzania. Areas mostly affected are those with arid to semiarid climate, particularly those that have for a long time been used/occupied by the pastoralists. The decline of rainfall in terms of quantity and distribution exaggerates the issue of desertification as it contributes to decline to nutrient cycle. The influence of desertification and problem of drought in The United Republic of Tanzania has contributed to decline in food security at the community level and now leading to national level. Arable land declining, resulting to low yield leading to food insufficient and low income at community level leading also to low GDP. Despite these challenges, The United Republic of Tanzania has been implementing the obligations of the UNCCD and various achievements have been realised.

c) Climate Change

Over and above loss of biological resources and desertification and land degradation, climate change is seriously threatening the world's sustainable development and survival of mankind. Levels of carbon dioxide and other greenhouse gases in the atmosphere have risen steeply during the industrial era owing to human activities such as heavy fossil fuel use, spurred on by economic and population growth. While climate change is a global problem, its adverse impacts are felt differently by different countries and people, developing countries being more vulnerable. In The United Republic of Tanzania, much has been documented on the impact of climate change on agriculture, water resources, tourism, forestry, fisheries, energy, mining and biodiversity in general. The country has been implementing the UNFCCC obligations and various achievements have been obtained.

5.2.1 Achievements in the implementation of the Rio MEAs

There have been several achievements in the implementation of the Rio MEAs. These achievements are highlighted below.

- i) A number of policies, legislations, programmes, strategies and plans providing for the context to implement national obligations under the conventions are in place as described in Chapters 2 and 3.
- ii) Various action plans, programmes and strategies to address post RIO issues have been prepared and implemented. These include the following:- National Adaptation Programme of Action (NAPA); National Action Plan to Combat Desertification (NAP); National Biodiversity Strategy and Action Plan (NBSAP); National Adaptation Strategy and Action Plan; Initial and second National Communications to the UN Framework Convention on Climate Change (UNFCCC); Technological Needs Assessment; Clean Development Mechanism Investor's Guide; Inventory of the sources and sinks of greenhouse gases; In-depth Analysis of Climate Change impacts on Agriculture, Health and Water sectors (compliment to the NAPA); and National Climate Change Strategy.

- iii) There are a number of government institutions (e.g. the Division of Environment, National Environment Management Council, and Sector Environment sections), Non-Governmental Organisations, Community Based Organisations, Private sector organizations and firms and individual groups that are involved in the implementation of the Conventions and related issues. Also a National Climate Change Steering Committee and National Climate Change Technical Committee have been established.
- iv) Environmental issues have been mainstreamed into the National Strategy for Growth and Reduction of Poverty (NSGRP), as well as Sector and Local Government plans and budgets.
- v) Environmental issues have been incorporated in curricula for schools at various levels and high learning institutions. Also, some research institutions are involved in environmental related research activities.
- vi) There are already a number of key strategies such as the National Strategy for Growth and Reduction of Poverty, Strategy for Urgent Actions on Land Degradation and Water Catchments, Agricultural Sector Development Strategy and the Integrated Coastal Management Strategy have been prepared and implemented.
- vii) The United Republic of Tanzania is actively participating in a number of international, regional, sub-regional negotiations and programmes aimed at meeting obligations under these conventions.
- viii) Because of their cross-cutting and cross-sectoral nature, the coordination of the implementation of Post Rio Conventions and other environmental issues has been placed in one of the highest government office - the Vice President's Office.
- ix) Various environmental programmes and projects have been implemented, for example, the Lake Victoria Environmental Management Programme (LVEMP), Lake Tanganyika Environmental Management Project, the Lower Kihansi Environmental Management Project (LKEMP), the Eastern Arc Mountains Conservation Project, Marine and Coastal Environmental Management Project (MACEMP), Kilimanjaro Sustainable Land Management Project (KSLM), Mtoni Land Fill CDM Project; and the Africa Adaptation Project (AAP). There are also a number of other initiatives by various national and international stakeholders.

5.2.2 Constraints in the implementation of Rio MEAs

- i) Increased human pressure on biodiversity due to increased population coupled with poverty.
- ii) Inadequate knowledge of the resource base and capacity to conserve the country's unique ecosystems and biodiversity.
- iii) Inadequate public awareness on issues related to Post Rio Conventions.
- iv) Inadequate capacity to implement the Conventions' obligations.
- v) Limited affordable alternative energy technologies and renewable energy services.
- vi) Inadequate local capacity to implement Sustainable Land Management practices.
- vii) Inadequate private sector participation in implementing the Conventions.
- viii) Inadequate preparedness to climate variability and climate change.
- ix) High dependency rain-fed agriculture (crops and livestock) and inadequate capacity for exploiting rainwater harvesting and irrigation technologies.
- x) Inadequate information and technology for weather and climate forecasting.
- xi) Inadequate use of indigenous knowledge, e.g., in biodiversity conservation, climate change adaptation, and in addressing land degradation issues.

- xii) Inadequate enforcement of laws and by-laws relating to management of natural resources.
- xiii) Inadequate financial resources for implementation of Post Rio Conventions.
- xiv) Prevalence of diseases, particularly malaria and HIV/AIDS, which constrain national capacity to implement the post RIO conventions.
- xv) Environmental degradation due to refugees and rapid urbanization.
- xvi) Invasive alien species into aquatic and terrestrial systems e.g. Nile perch (*Lates niloticus*) and Water hyacinth (*Eichhrornia crassipes*) in Lake Victoria, Indian house crow (*Corvus splendens*), and trees such as Cedrela (*Cedrela odorata*) and wattle trees (*Acacia mearnsii*).

5.2.3 Priority interventions in MEAs after Rio+20

- i) Develop national communication, education, training and public awareness programmes on post Rio conventions.
- ii) Develop specialised skills and expertise on post Rio Conventions through, inter alia mainstreaming climate change, biodiversity and desertification into school curricula.
- iii) Develop capacity for financial and resource mobilization.
- iv) Assessment of biodiversity loss, land degradation, and adaptation and mitigation options to climate change.
- v) Strengthen adaptive research programmes with regard to climate change, biodiversity conservation and land degradation.
- vi) Strengthen systematic observations and early warning systems.
- vii) Enhance capacity to develop and implement comprehensive plans and integrated Strategies for post Rio Conventions.
- viii) Strengthen national database, information dissemination systems and networking among various stakeholders.
- ix) Develop comprehensive mechanisms for private sector and other non-governmental actors' participation in the implementation of post Rio Conventions.
- x) Enhance capacity for research and development.
- xi) Strengthen capacities for enforcement of laws and by-laws.
- xii) Enhance environmental and gender mainstreaming in development plans, strategies and programmes.
- xiii) Strengthen national coordination, monitoring and evaluation systems.
- xiv) Review policies and legal frameworks to reflect on emerging issues related to post Rio Conventions.

5.3 Implementation of Millennium Development Goals (MDGs)

5.3.1 Eradication of Extreme Poverty and Hunger

Generally poverty remains a rural phenomenon. There is a considerable income gap between urban and rural settings and among individuals within the same setting for both food and basic needs. During the last ten years, Tanzania's GDP growth rate has been impressive. However, between 2000/01 and 2007 the incidence of income poverty did not change significantly. The incidence of income poverty shows, out of every 100 Tanzanians, 36 were poor in 2000/01 compared to 34 in 2007. Income poverty (basic needs and food poverty) was also variable across geographical areas, with the rural areas containing 83.4 percent of the poor in 2007 compared to 87 percent in 2000/01. Households engaged in farming, livestock keeping, fishing, and forestry, were the poorest. Rural growth per annum in the period, as

proxy by growth of the agricultural sector was about 4.5 percent. When this growth is contrasted with the national population growth rate of 2.9 percent the change in rural per capita income becomes small, thus perpetuating poverty situation in rural areas (NBS, 2007; URT, 2012a). Table 7 presents some indicators that for the achievements in eradication of extreme poverty and hunger.

Table 7. Key Indicators from the Household Budget Surveys

Indicators	1991/1992	2000/2001	2007
Housing, Water and Sanitation, Communication (%)			
Households with modern roof	36	43	55
Households with modern walls	16	25	35
Households with electricity	9	12	13
Households with protected water source	46	55	52
Household within km of drinking water	50	55	57
Households using a toilets	93	93	93
Household owning a radio	37	52	66
Households owning a telephone	1	1	25
Education and Health (%)			
Adults men any education	83	83	83
Adults women any education	68	67	71
Literate adults	-	71	73
Primary school net attendance ratio	-	59	84
Children aged 13-Jul years studying	57	61	86
Secondary net enrolment ratio (forms I-IV)	-	5	15
Households within 6km of primary health facility	75	75	76

Source: Household Budget Surveys 1991/92, 2000/01 and 2007 cited in NBS (2011)

The Government has taken a number of policy and legal measures and institutional arrangements to address this challenge in order to improve people's livelihood, particularly those residing in the rural areas. Such measures include:

- i) Formulation and implementation of various poverty eradication related Strategies, plans and programmes. These include MKUKUTA, Zanzibar Strategy for Growth and Reduction of Poverty (MKUZA), Agriculture First (Kilimo Kwanza) declaration, Tanzania Agriculture and Food Security Investment Plan (TAFSIP), and Southern Agricultural Growth Corridor of Tanzania (SAGCOT), among others.
- ii) Establishment of an enabling environment for investment, including establishment of the Tanzania Investment Centre.
- iii) Establishment of a number of micro-financing institutions to assist communities to establish income generation activities, such as SACCOS, VICOBA (Village Community Banks).
- iv) Development of infrastructures such as construction of major roads and rural roads, and establishment of national strategic grain reserves.
- v) Establishment of the Rural Electrification Agency in order to reduce biomass energy use and to speed up rural development.

- vi) Tax exemption on Liquefied Petroleum Gas (LPG) in order to reduce dependency on biomass for energy.
- vii) Subsidization and/or tax exemption on agricultural inputs, such as imported farm machinery and fertilizer.
- viii) Promotion and strengthening public environmental education at all levels.
- ix) Preparation of agricultural and livestock sector policies and strategies and Sector reforms for effective use of land and water resources.
- x) Enhanced private sector participation in national development. For example, the Tanzania's macro-economic policy reforms have paved the way for the withdrawal of the Government's involvement in direct production, processing and marketing activities to stimulate agricultural production to a more commercial orientation to increase income and food security.

Implementation of MKUKUTA and MKUZA is in line with Principle 5 of the Rio Declaration on Environment and Development (1992) which states that "All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world" (UNCED, 1992).

5.3.2 Achieving Universal Primary Education

Primary Education is one of the priority areas within the education sector. Among the areas of success as far as MDGs is concerned include:

- i) Primary Education Net Enrolment Ratio (NER) increased from 78.5 percent in 2000 to 95.4 percent in 2010. These achievements have been attributed to the abolition of primary school fees, enrolment-related contributions from parents, and the successful implementation of the Primary Education Development Programme (PEDP). According to the Human Development Report (UNDP, 2010), many countries abolished school fees for primary schools in the 1990s, among them being Ethiopia, Malawi and Uganda and Cambodia, Kenya and Tanzania in the early 2000s. As attendance surged, challenges emerged in seat availability and education quality (UNDP, 2010). The government of Tanzania work closely with the various institution, public and private, as well as NGOs, religious groups and consumer goods throughout East Africa, to provide information through mass media, mobile phones, to empower people on issues of accountable and to bring about change in their communities (UNDP, 2010).
- ii) Under the Primary Education Development Programme (PEDP), more conducive environment for learning has been created through construction of modern and more classrooms, reduction in the book/pupil ratio, and increased number of teachers.
- iii) In Zanzibar, more children now attend schools. The number of pre-primary schools has increased from 235 in 2008 to 261 in 2009 and primary schools have increased from 277 in 2008 to 290 in 2009. Education to girls has also been given a deserving attention. As a result, gender parity has been achieved at primary and basic education levels. On tertiary education, the total number of enrolled students for the three universities in Zanzibar increased from 2,847 students in 2008 to 3,155 in 2009. As for the quality of education, the number of trained teachers

increased from 9,422 in 2008 to 9,788 in 2009, while the number of untrained teachers is currently below a thousand (939). On pupil-teacher ratio, the government managed to bring it back down to 29 from 31 realized in 2007 (RGoZ, 2010).

a) Challenges

- i) Due to the abrupt increase in enrolment following, among other factors, the abolition of school fees under the PEDP, teacher/pupil ratio worsened from 1:41 in 2000 to 1:58 in 2004.
- ii) Success in the implementation of PEDP has created challenges to upper levels of education especially on the inadequate capacity of secondary schools enrolment to cope with the increased number of pupils qualifying for further studies.
- iii) Despite the recorded achievements, a lot remain to be done, as illiteracy remains high. More than 25 percent of Tanzanians cannot read and write.
- iv) Investments in terms of curriculum review and capacity building to teachers is still very low, posing a challenge to an overall performance of the education sector.

b) Priority Interventions Post Rio+20

- i) To build capacity at all levels of the education system in order to improve the access to quality education at both primary and secondary levels;
- ii) Need to expand the Secondary and Tertiary levels of education to cope with the expansion in primary education enrolment; and
- iii) Need to increase the number and raise quality of the teaching staff.

5.3.3 Promotion of Gender Equality and Empower Women

Women constitute about 51% of the population of the United Republic of Tanzania. However, due to traditional values, they are in many cases confined to household chores and therefore are at disadvantage in comparison with men in terms of education, health and participation in the nation's economic and political life. In an effort to ensure gender equity the government formulated a Women and Gender Development Policy (2000) which shows the national commitment to ensure full participation of women in the economy and unlocking their potential as drivers of sustainable development (URT, 2000). Implementation of this policy promotion of gender equality in all spheres of the society, including education, employment, ownership of resources, access to justice, political representation and participation at all levels of decision-making, care giving and household and community management (URT, 2000). Achievements to promote gender equality and empowerment of women include:-

- i) Amendment of the constitution of the United Republic of Tanzania to include a provision for a minimum of 30 percent of women members of parliament in the National Assembly. In 1995 women constituted 17.5 percent of all members of the National Assembly and currently women constitute about 30 percent.
- ii) As for Zanzibar actions of including women in different levels of decisions including political, administration management continue to be implemented. The

Eighth Amendment of Zanzibar constitution of 1984 has increased women seats in the House of Representatives from 15% in 1995 to over 30% to date.

- iii) Primary schools girls' enrolment accounted for 48.7% of total enrolment in 2003 and increased to 48.8% in 2004. In secondary schools (Forms I – VI), the ratio was 46.6% and 47.1% in 2003 and 2004, respectively.
- iv) The Government continued to create employment opportunities and to give women high responsible positions.

Tanzania is also among countries that have passed land reforms that include gender parity in ownership of communal land, others being Namibia and Rwanda are (UNDP, 2010).

a) Challenges

- i) Though there has been a significant improvement of boy/girl ratio in primary education enrolment, there are still gender disparities in enrolment at secondary and tertiary levels.
- ii) The vulnerability of girls to cultural beliefs and customs, early pregnancies and sexual abuse remain important challenges to enrolment and completion of schooling.

b) Priority intervention post Rio+20

- i) Need to create awareness in gender issues in employment opportunities and to give women more responsible positions;
- ii) Need for enhancement of women capacity in different fields;
- iii) Need for adjusting gender related adverse beliefs, customs and traditions;
- iv) Need to increase awareness on women rights; and
- v) Need to address resource constraints and inequitable distribution.

5.3.4 Reducing Child Mortality

Reduction of mortality is one of the important agenda for the Government. Deliberate efforts to reduce children's mortality particularly those of under five years have been given high priority since 1990s, in which the Government aimed to reach an infant mortality rate of 85 per every 1000 under - five by 2003 and to reduce this further to 50 by 2010 and 20 by 2025. Figure 3 shows Child mortality-deaths per 1,000 live births by 1999. According to TDHS of 2010, the under-five mortality rate has been reduced from 143 per 1000 live births in 1999 to 81 per 1000 live births in 2010 and under-five mortality rate from 96 per live births in 1999 to 51 per 1000 live births. The neonatal death declined from 40 per live births in 1999 to 26 per 1000 live births in 2010 (NBS and ICF Macro, 2011). Table 8 presents some attributes of related to this MDG. Among the initiatives to achieve the above targets is the review of the National Health Policy to improve the health and well-being of all Tanzanians with a focus on those most at risk and to encourage the health system to be more responsive to the needs of the population. Consequently, there has been increased number of health facilities and improved service delivery. However, there has been slow progress in achieving targets for this MDG, for instance, the continued prevalence of malaria and HIV/AIDS.

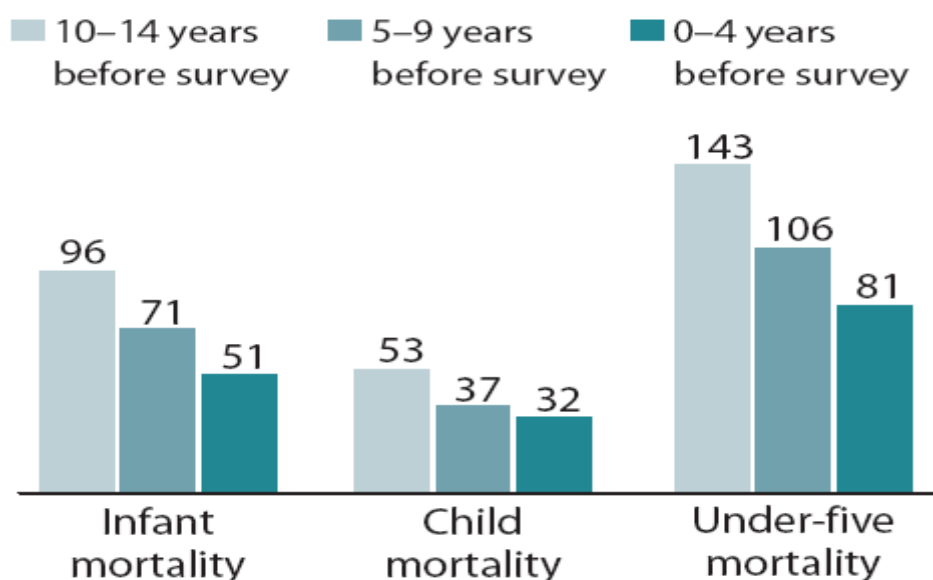


Figure 3: Child mortality-deaths per 1,000 live births

Source: NBS and ICF Macro (2011)

Table 8. Selected attributes related to Maternal and Child Health, nutrition and malaria and HIV/AIDS

Attribute	Total (%)	Urban (%)	Rural (%)
Maternity care			
Pregnant women who received antenatal care from a skilled provider	96	99	95
Births assisted by a skilled provider	51	83	42
Births delivered in a health facility	50	82	42
Child vaccination			
Children 12–23 months fully vaccinated	75	86	73
Childhood Mortality			
Infant mortality (between birth and first birthday)	51	63	60
Under-five mortality (between birth and fifth birthday)	81	94	92
Nutrition			
Children under 5 years who are stunted (moderate or severe)	42	32	45
Children under 5 years who are wasted (moderate or severe)	5	5	5
Children under 5 years who are underweight	16	11	17
Malaria			
Households with at least one insecticide-treated net (ITN)	64	65	63
Children under 5 years who sleeping under an ITN	64	64	64
Pregnant women who sleeping under an ITN	57	47	59
HIV/AIDS-related Knowledge			
Knows ways to avoid HIV (women and men age 15–49):	Women/Men	Women/Men	Women/Men
Having one sexual partner	87/90	94/93	85/89
Using condoms	76/76	79/77	75/75

Knows HIV can be transmitted by breastfeeding	89/81	93/86	87/80
Knows risk of mother to child transmission can be reduced by mother taking special drugs during pregnancy	75/67	86/81	70/61

Source: NBS and ICF Macro (2011).

Zanzibar has also made important strides in the health sector. The period under MKUZA I, for instance, witnessed improvement of health of mothers and children. The infant mortality rate has dropped from 61/1000 live-births in 2004/05, to 54/1000 in 2007/08, the under-five mortality rate dropped from 101/1000 live-births in 2004/05 to 79 per 1,000 live-births in 2007/08 (RGoZ, 2010). Also, the Maternal Mortality Rate decreased to 279 per 100,000 live births in 2009 from 473 deaths per 100,000 in 2006 (RGoZ, 2010).

To address this challenge, the Government has to continue with its deliberate efforts to fight against malaria to infant and pregnant mothers by supplying mosquito treated nets for free and spraying insecticides around the mosquito breeding areas. Furthermore, it has to enhance the promotion of awareness programmes on measures to reduce mortality of infants and children under five years.

5.3.5 Improve Maternal Health

The Government and private sector has continued to improve the provision of health services in the country. This has resulted to better network of health facilities in the country. According to HBS 2000/01, 91.4 percent of the population in the mainland Tanzania lives in less than 10 kilometres from health facility centre and 75.4 percent live in less than 6 kilometres. Also efforts to reduce the number of women dying during childbirth continued. The maternal mortality rate declined from 772 per 100,000 live births in 1990 to 454 per 100,000 per live births in 2010. Furthermore, there have been increased efforts in immunization, family planning, emergency treatment at delivery and delivery services. Despite these achievements, there are some challenges, including: (i) pregnancy-related deaths due to lack of preventive pre-natal care, inadequate access to trained birth attendants; and referrals to emergency obstetric care; and (ii) The HIV and AIDS pandemic which further aggravate the conditions of pregnant women.

More efforts are thus needed to ensure that health facilities are within 5km from surrounding settlements, and to improve and expand health systems and infrastructures and address the financial and human resources crisis in the sector

In Zanzibar, the maternal mortality rate decreased from 473 deaths per 100,000 in 2006 to 279 per 100,000 live births in 2009. MKUZA I implementation also led to the expansion of access to clean and safe water to 80 percent of the population in urban and 60 percent in rural areas (by 2008/09). A combined effect of all these achievements in social services is reflected in the improvement of longevity. Life expectancy at birth has increased from 53 years in 2003 to 60 in 2010 (RGoZ, 2010).

5.3.6 Combating HIV/AIDS, Malaria and Other Diseases

Combating HIV/AIDS

Over the last two decades HIV and AIDS prevalence has aggravated the health status and future prospects of Tanzanians. However, the rate of increase of the disease has been

declining in recent years due to various initiatives that have been undertaken to build a deeper understanding and awareness of the pandemic dynamics, by involving all sectors and stakeholders. The programme has been giving priority to medical care and training of HIV and AIDS patients, counselling and voluntary blood testing; blood safety; diagnosing and treating sexually transmitted diseases; monitoring of HIV and AIDS patients; providing HIV and AIDS health education; conducting research on HIV/AIDS; as well as preventing mother to child HIV and AIDS transmission. Other achievements include the establishment of the Tanzania Commission for AIDS (TACAIDS); and mainstreaming of HIV/AIDS in all ministries, department and agencies (MDAs) in their development agenda. The HIV/AIDS prevalence rate declined from 13% in the 1980s to 5.7% in 2008.

RGoZ (2010) reports that implementation MKUZA I has considerably ensured the health of society. Zanzibar, like many countries in the tropics, was for years much affected by malaria, which was the number one killer disease. Exceptional achievement has been done in this area. Malaria prevalence has remained below one percent since 2007, down from over 40 percent before MKUZA. Similarly, interventions to contain HIV/AIDS have also been expanded in both islands, whereas HIV prevention testing, care and treatment services and monitoring of disease trends have been expanded in risk-prone and general population. As a result, HIV/AIDS prevalence remained low, at 0.6%. This is possibly the lowest rate compared to most Sub-Saharan African countries (RGoZ, 2010).

Incidence and death rates associated with malaria

Malaria is a major public health concern especially for pregnant women and U-5 children. However, incidence of malaria has been decreasing. In the Mainland, for example, malaria incidence decreased from 31,603 malaria cases per 100,000 people in 2003 to 27,030 cases per 100,000 people in 2006. In Zanzibar the prevalence of malaria decreased from 49.2 percent in 2000 to 46.2 percent in 2002, to 44.6 percent during 2005/06 and to 0.8 percent during 2006/07. The proportion of U-5 children with malaria during 2007-08 was 18.1 percent in the Mainland and 0.8 percent in Zanzibar (URT, 2008d).

For years Zanzibar, like many countries in the tropics, was very much affected by malaria, which was the number one killer in Zanzibar. Exceptional achievement has been done in this area. Malaria prevalence has remained below one percent since 2007, down from over 40 percent before MKUZA I. Efforts continue in sustaining the achieved goals while measures to eradicate it are underway (RGoZ, 2010). Implementation of MKUZA has also led to the expansion of access to clean and safe water to 80% of the population in urban and 60% in rural areas by 2008/09 (RGoZ, 2010). This has contributed to reduction of water-borne and hygiene-related diseases. A combined effect of all these achievements in social services is improvement of social, economic and environmental development.

Combating other diseases

In an effort to improve health provision, various health colleges were established to increase the number of health professional in the country. Until 2010, the nation had 7,343 medical physicians, compared to 610 in 1961. Parallel to the increase of health professionals, the government also constructed five national referral hospitals, seven zonal referral hospitals, 33 referral hospital at regional level, 92 district hospitals, 687 health centres and 5394 dispensaries. Similarly, modern diagnostic equipment (see Figure 4) has been installed in many health facilities to improve the quality and timeliness of health care delivery. Accessibility of such modern diagnostic equipment has reduced the costs of referring patients abroad (URT, 2011a; RGoZ, 2010).



Figure 4: MRI Machine (left) and CT - Scanner (right) installed at Muhimbili National Hospital. (Source: URT, 2011a)

However, despite the achievements above there have been some challenges, including inadequate financial and human resources in the health sector; and inadequate maternal services, facilities and trained medical personnel for birth attendances. These could be addressed by strengthening measures to fight against HIV and AIDS including effective HIV and AIDS education, awareness programmes to all levels of the society; increasing budget to the health sector; and continued efforts for provision of ARVs to people Living with HIV/AIDS.

5.3.7 Ensuring Environmental and Socio-Economic Sustainability

The United Republic of Tanzania continued with the implementation of the international environment treaties and conventions including Agenda 21 on Sustainable Development, the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD), the Cartagena Protocol on Biosafety (on safe use of biotechnology for conserving the environment); the Rotterdam Convention on prior informed consent in international trade of certain hazardous chemicals and pesticides; Montreal Protocol on ozone depleting substances; Kyoto Protocol on climate change; and the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal. The country is also implementing regional and national policies, legislation, programmes, plans and strategies related to environmental conservation and sustainable development.

a) Achievements

- i) Preparation and implementation of various policies, legislation, programmes, plans and strategies related to environmental conservation and sustainable development such as the National Environment Policy (1997), the Environmental Management Act (2004) and related Regulations (16 Environmental Regulations have been prepared so far) have been developed to ensure that the environment is appropriately conserved and managed. The act, among others, enforces the preparation of environment management

plans and carrying out of environmental impact assessments (URT, 2011a). Other strategies include the Strategy on Urgent Actions for Conservation of Coastal marine, Lakes, Dams and River environment; and the Strategy for Urgent Actions on Land Degradation and Water Catchments. Others are mentioned in Section 5.2.1

In addition, the government established the National Environment Management Council and National Land Use Commission in 1983 to advise Government on management and conservation of environment and land use. These institutions became operational in 1984 under the Ministry of Lands, Natural Resources and Tourism. Currently, environmental management is under the Office of the Vice President (URT, 2011a). In Zanzibar, the Department of Environment, now the Division of Environment was established in 1992 to manage environmental issues. Their achievements include also the formulation of the National Environmental policy for Zanzibar (1992) and the Environmental Management for Sustainable Development Act, 1996 (Zanzibar), which was been reviewed in 2009.

- ii) Awareness of the community towards environmental management aspects has risen to a considerable extent. For instance, the campaign on the promotion of public participation in environmental management activities a total of 198,331,913 trees were planted in 2009/2010 compared to 66,483,998 trees planted in 2004, 47,863,257 trees planted in 2003 and 82,671,132 trees planted in 2002.

b) Challenges

- i) Inadequate waste management especially in urban areas;
- ii) Increased deforestation and bush fires due to low awareness;
- iii) Environmental degradation caused by mining activities;
- iv) Low level of awareness among the general public on importance of environmental protection and conservation;
- v) Inadequate capacity to address environmental management issues.
- vi) Inadequate participation of communities in environmental activities;
- vii) Insufficient alternative sources of energy; and
- viii) Insufficient financial resources for environmental management.

c) Priority interventions after Rio+20

- i) Need for increased public awareness campaigns and programmes regarding environmental management issues;
- ii) Need for more research on alternative/renewable sources of energy;
- iii) Need for more budgetary allocation to the Sectors implementing environmental management activities;
- iv) Need for funding from the international bodies to address the environmental challenges particularly those related to the Multilateral Agreements; and
- v) Need for transfer of technologies from developed countries to address the environmental challenges in the country.

5.4 Strengthened Political Support for Sustainable Development

Various actions have also been introduced in Tanzania to strengthen political support for sustainable development. For instance, (i) establishment of various coordination institutions

such as Division of Environment (Vice President's Office); National Environment Management Council (NEMC); Tanzania Commission for Science and Technology (COSTECH); Rural Energy Agency (REA); Energy and Water Utility Regulatory Authority (EWURA); Surface and Marine Transport Regulatory Authority (SUMATRA). (ii) Empowerment of Local Government Authorities through Decentralization by Devolution. (iii) Increased participation of various actors including the donor community through Joint Donor-Government Forum for Review of Development Strategies.

The sectors/areas where national political commitment to achieve sustainable development goals has been especially strong are:

- i) Education sector – enrolment expansion at all levels; increase of public higher education institutions; strengthening of teacher education; privatization of education provision; government provide special attention to science and mathematics subjects; introduction of HELSB to enable access to higher education; environmental education is integrated to national curricular; increased enrolment and completion rate.
- ii) Natural resources and tourism – increased sector contribution to national GDP
- iii) Health – decreased infant and maternal mortality rate; increased life expectancy; subsidize mosquito nets to pregnant women and children as well as free medical services to HIV/AIDS and tuberculosis patients;
- iv) Mining – reviewed mining legislation;
- v) Agriculture – Launching of Kilimo Kwanza Programme; subsidy agricultural inputs; promotion of strategic grain reserve at community level.
- vi) Economy – national GDP has been growing annually at an average of 6% for the past 10years; percentage of population below poverty line has decreased considerably; formulation and implementation of National Strategy for Growth and Reduction of Poverty (NSGRP).
- vii) Empowerment – women representation in decision making and legal institutions has increased for example Women Members of Parliament and Women Cabinet Ministers has now reached 30%; increased enrolment of girls to primary, secondary and tertiary education;
- viii) Environmental sustainability – establishment of Parliamentary Standing Committee on Lands, Natural Resources and Environment; tree planting campaigns and establishment of Presidential Awards on Sustainable Environmental Management (tree planting and mining) (URT, 2010)

5.5 Implementation of Activities in Various Sectors

5.5.1 Water

Efforts to enable citizens to access clean and safe water have been undertaken by the government and hence increasing the number of people who have access to clean and safe water. In rural areas proportion of people with access to clean and safe water increased from 6 percent to 57.8 percent in 2011, whereas in urban areas it increased from 25 percent in 1961 to 86 percent during the same period. Furthermore, the construction of dams has increased nearly 20 times more, from dams that could store 255.1 million cubic meters before independence to 5.2 billion cubic meters in 2011. The availability of water for domestic and industrial use and irrigation has increased productivity dramatically in different sectors.

The rapid increase of population and increasing demand for water for various activities has resulted into water stress in many parts of the country. The Water Sector has put in place enabling environment (plans, programmes and policies) that recognise the importance of the water resource as an input for crop production and food security. These include: the National Water Policy; the National Irrigation Development Plan (NIDP); and the National Irrigation Master Plan (NIMP). The current Water Policy calls for incentives for efficient water use and efficient utilization of water resources. Therefore, nine River Basin Management Offices have been established for regulation of water utilization by various stakeholders. The Water Policy allows for private participation and states that emphasis should be placed on construction of dams, charco dams and water wells for livestock and that water requirement for livestock is to be included in rural water supply designs where possible.

The country has a great potential to satisfy its own as well as neighbouring countries' food requirements due to its vast water bodies, which may be tapped for irrigation, fisheries, transportation, hydropower production, industrial and domestic use. They include lakes (Victoria, Tanganyika, Nyasa, Rukwa, Eyasi, Manyara, Chala, and Jipe), dams, rivers (Pangani, Wami, Ruvu, Rufiji, Mbwemkuru, Matandu and Ruvuma), and wetlands. A number of programmes addressing water use in water deficient areas are being implemented. Such Programmes include: Participatory Irrigation Development Programme, which deals with water harvesting, construction of small dams, and water lifting from shallow water wells; Lake Victoria Environmental Management Project, and Participatory Agricultural Development and Empowerment Project. In addition, the sector has robust policies, legal framework and strategies; and has ratified International and regional Conventions that address issues of drought, climate change, water bodies and wetlands.

Like elsewhere in the United Republic of Tanzania, the Revolutionary Government of Zanzibar (RGoZ, 2010) recognizes access to clean, adequate and safe water as well as quality environmental sanitation and hygiene are fundamental rights and instrumental in fostering social and economic development. Water is an important factor for achieving the 2020 vision objectives, while environmental sanitation and hygiene play the key role for the improvement of health and social wellbeing. Under MKUZA II the vision of water sector is to ensure adequate, affordable and sustained water supplies to all users using environmentally sound water resources. This will ensure improved access to water, environmental sanitation and hygiene. Appropriate actions will thus be needed to, among others:

- i) Develop and promote an efficient water supply and management systems that ensures reliable water supply for all purposes at a reasonable cost;
- ii) Establish and protect specific areas for sources of drinking water and expansion of rainwater catchments system;
- iii) Promote community ownership and rights to water supply;
- iv) Enhance equity of access, distribution and sustainable supply of clean water to households in rural and urban areas;
- v) Ensure that installed capacity for water supply functions adequately and is properly maintained and;
- vi) Encourage a broad range of environmental sound technologies in the provision of water, including gravity piped, pumped, deep, shallow and open wells, etc.

a) Constraints

- i) Limited financial capacity of farmers to organise and finance irrigation projects.
- ii) Inadequate initiatives towards development of water harvesting facilities and promotion of alternative sources of energy which need enabling environment in terms of funding;
- iii) Increased demand for water due to population and economic growth;
- iv) Environmental problems such as water pollution and wetlands degradation;
- v) Inadequate capacity of the private sector and local government authorities to implement irrigation projects.
- vi) Conflicts among farmers and livestock keepers for water resources.

b) Priority interventions after Rio+20

- i) Encourage financial institutions to support farmers to finance irrigation projects.
- ii) Facilitate farmers towards development of water harvesting facilities
- iii) Promote the use of alternative sources of energy by providing an enabling environment;
- iv) Increase water provisioning to meet the increased demand due to population and economic growth;
- v) Improve environmental management so as address problems such as water pollution and wetlands degradation;
- vi) Provide an Enabling environment for private sector and local government authorities to invest and implement irrigation projects.
- vii) Enhance water catchment management to avoid conflicts among various water resources user.
- viii) Eliminate loss of scarce water by rehabilitating the antiquated mains and household supply systems
- ix) Facilitate and enhance improvement of databases, mapping and decision-support systems for effective water resources management, customer service, revenue generation and financial management;
- x) Improve policy and administration of the water sector by involving local communities to ensure the sharing of water resources and supply is provided to meet the basic needs of the population (URT, 2002; RGoZ, 2010).

5.5.2 Energy

Currently, about 90% of energy consumed in The United Republic of Tanzania is in form of biomass, 8% is from imported petroleum products, 1.5% is in form of electricity generated by hydropower, natural gas, biomass co-generation, coal and other thermal power plants. Wind, solar, coal for thermal applications and other energy resources account for the remaining 0.5%. The petroleum based energy consumption pattern shows that over 40% of the oil imports in The United Republic of Tanzania go to the transport sector, 25% is absorbed by the manufacturing in the industrial sector, and about 20% is used by the domestic sector. Agriculture, mining and other sectors account for 15%.

a) Strengths in the Energy sector

- i) Presence of underexploited natural gas reserves;

- ii) Presence of rivers, lakes and other bodies that can be exploited for Hydropower - The country's hydropower potential capacity is estimated to be more than 4,700 MW;
- iii) Presence of Geothermal energy, estimated potential for production is about 650 MW.
- iv) Presence of coal reserves estimated to be 1.6 billion tonnes of which 304 million tonnes have been proven;
- v) Presence of adequate wind in many parts of the country which can be tapped for electric power generation. Already some initiatives have started that include, establishing wind power production in Makambako and Singida areas.
- vi) Presence of sufficient insolation for solar power production.

b) Constraints

- i) Insufficient and underdeveloped alternative energy sources;
- ii) The biomass source is depleting at an alarming rate;
- iii) Possibilities of the energy alternatives (such as biofuel) to jeopardize other social needs including competition for land and instability on food security; and
- iv) High Initial costs for development of environmentally and socially sound energy technologies.

c) Priority Interventions after Rio+20

Generally, The United Republic of Tanzania supports the need for having alternative and cleaner sources of energy such as biofuel, natural gas, wind, geothermal resources, etc. However several issues are to be considered critically particularly on:

- i) **Biofuel:** The government should be aware of potential risks related to biofuel production, particularly on food security, land degradation and loss of biodiversity.
- ii) **Wind and solar power:** Solar and wind power production should be enhanced in order to diversify energy sources.
- iii) **Hydro-power:** The country should strive to make sure that more power is produced from the known hydro power potential sites such as Stigler's Gorge.
- iv) **Natural gas:** The government recognizes the importance of natural gas as a source of energy for domestic purposes and production of electricity needed in the industries and homes. The use of natural gas will, to a great extent, reduce the rate of deforestation.
- v) **Agricultural by-products and land-fill wastes:** There is a need to explore further other sources of energy from agro by-products and waste in order to reduce the rate of deforestation.

5.5.3 Agriculture

The agriculture is the leading sector of the economy which accounts for about 46 percent of the GDP; and, about 50 percent of foreign exchange earnings. The sector is the main source of employment and livelihood for more than two-thirds of the Tanzanian population. The sector is economically important in terms of food production, employment generation, production of raw material for industries, generation of foreign exchange earnings and raise rural income levels to alleviate poverty. Over the past decade, the agricultural sector grew at an average of 4.4%. The rate of growth in agriculture is higher than the average annual

population growth rate of 2.9% implying growth in incomes. On average, crop production contributed about 19.0% of GDP and grew at 4.1% while livestock production contributed about 5.9% of the GDP and grew by 4.3%.

a) Strengths

- i) The country is endowed with 94.5 million hectares of land, out of which 44 million hectares are suitable for agricultural production;
- ii) The United Republic of Tanzania has made considerable progress in achieving sustainable environmental management and poverty reduction through implementing various policies, legislations, strategies, programmes, plans and projects related to agricultural production; and
- iii) Some research activities on improvement of both cash and food crops in terms of genetic improvement, input use, and value addition are being carried out by various Research Institutions in the country.

b) Constraints

- i) Reliance on rain-fed agriculture despite a huge irrigation potential.
- ii) Lack of mechanization and inadequate support services to the sector.
- iii) Climate change;
- iv) Inadequate participation of private sector ;
- v) Poor infrastructure in agricultural production areas;
- vi) Crop pest and diseases;
- vii) High cost involved in establishing irrigation schemes;
- viii) Inadequate access to affordable credit facilities;
- ix) Limited capacity of farmers to engage in modern farming practices;
- x) Inadequate extension officers;
- xi) Inadequate capital by cooperative societies for purchasing crops and agro inputs; and
- xii) Conversion of arable lands for biofuel production.

c) Opportunities

- i) There is a great potential for increasing both cash and food crops production for local and export markets due to the fact that most land allocated for agricultural production is very fertile;
- ii) The high diversity of climatic and geographical zones allows for cultivation of a wide range of varieties of annual and perennial crops; and
- iii) Utilization of improved production technologies could make the country to be self-sufficient in food as well as a food basket for neighbouring countries.

d) Priority interventions after Rio+20

- i) There is a need for opening more market of the agricultural crops;
- ii) Need for conducive environment to stimulate commercial agricultural production chain and value addition to increase income while taking into account the whole needs for food security;
- iii) Strengthen implementation of policies and strategies in agricultural production;

- iv) Strengthen and support civil society organizations involved in agricultural production;
- v) Increase agricultural production and productivity;
- vi) Improve coordination in agriculture sector;
- vii) Enhance mainstreaming of cross-cutting and cross-sectoral issues in agricultural production; and
- viii) Realizing the importance of food security, land allocation for biofuel production should be in marginal lands where agriculture cannot be undertaken profitably.

5.5.4 Land

The surface land area of The United Republic of Tanzania is 888,200 km². This land is categorized into three groups, which include Reserved Land, Village Land and General Land. Forests and woodlands occupy about 40% percent of the total land area of the Mainland, whereas protected areas occupy nearly 30 percent of the whole area of the country. There is an ever increasing land demand in the country which is associated with several land use development factors, including: development and expansion of urban areas; private sector expansion/growth; and expansion of agricultural activities and livestock keeping.

a) Strengths

- i) The National Land Policy (1995) and Land Acts [Land Act (No. 4) and Village Land Act (No. 5) of 1999] have been formulated to guide on sustainable and systematic utilization of land and land based natural resources;
- ii) The country has suitable land for various development activities;
- iii) The social and political stability in the country creates conducive environment for various investment activities; and
- iv) There are two Principle legislations which address land use planning in The United Republic of Tanzania namely: the Urban Planning Act No.8 of 2007, and The National Land Use Planning Act No.6 of 2007.

b) Constraints

- i) Land Degradation due to unsustainable farming and mining;
- ii) Overgrazing;
- iii) Uncontrolled tree and bush clearing and uncontrolled wild fires.
- iv) Inadequate awareness and knowledge on relevant land policies and laws and proper management of land and water resources;
- v) Promote urban housing through housing cooperatives, estate development and establishment of housing mortgage facilities;
- vi) Insufficient alternative sources for construction materials;
- vii) Inadequate access to credit facilities that support communities to acquire or develop land;
- viii) Rapid population growth and urbanization; and
- ix) Insufficient resources to effect land use planning, surveying and mapping of village and urban areas.

c) Priority interventions after Rio+20

- i) Enhance sustainable land use and urban planning;

- ii) Strengthen awareness and knowledge on relevant land policies and laws and proper management of land and water resources;
- iii) Promote the development and utilisation of alternative energy sources;
- iv) Encourage credit facilities and other financial institutions to support communities to acquire or develop land;
- v) Mobilise resources for effective land use planning, land valuation, surveying and mapping of village and urban areas;
- vi) Establish land compensation fund; and
- vii) Establish research facilities for geodetic and marine issues.

5.5.5 Livestock

The United Republic of Tanzania possesses about 60 million hectares of rangelands which is ideal for livestock grazing with carrying capacity potential of 20 million Livestock Units. It is estimated that the country has about 18.5 million cattle, 13.1 million goats, 3.5 million sheep, 0.8 million pigs and about 27 million local chickens. Most of the ruminant livestock are concentrated in the semiarid areas (Shinyanga, Arusha, Kilimanjaro, Mara, Dodoma, Iringa and Rukwa) which are more suitable for ruminant livestock than any other form of agriculture. These areas are characterized by extreme seasonal conditions with relatively low rainfall, which cannot reliably produce food and cash crops. Concentration of ruminant livestock in these areas is also attributed to low concentrations of tsetse flies and less competition for land for agriculture.

The United Republic of Tanzania has two main ruminant production systems namely, traditional and commercial systems. The traditional system produces 93% and 99% of the milk and meat consumed in the country, respectively. The commercial system involves large scale livestock farms with livestock numbers, usually above 1000. Most of these commercial farms are owned by private companies, individual farmers and the government represented by the National Ranching Company (NARCO).

a) Strength

- i) The country possesses vast rangelands suitable for commercial livestock production, particularly ranching;
- ii) Policies and legislations regarding livestock management are in place;
- iii) Livestock Training and Research institutions aiming at livestock improvement as well as combating livestock diseases and disease vectors are in place; and
- iv) Large numbers of livestock are found in the country which could boost the country's economy.

b) Constraints

- i) Uncontrolled grazing, overgrazing and loss of biodiversity;
- ii) Land use conflicts between livestock keepers and other land users;
- iii) Unauthorised livestock movements and migrations;
- iv) Livestock diseases, particularly epidemic diseases;
- v) Inadequate access to affordable credit facilities by livestock keepers;
- vi) Unreliable and unavailability of markets for livestock and livestock products;
- vii) Climate change;
- viii) Inadequate livestock extension services;

- ix) Inadequate awareness on appropriate use of pesticides; and
- x) Inadequate livestock related infrastructures such as dip, water facilities, and abattoirs.

c) Priority interventions after Rio+20

- i) Identify survey, lease and develop grazing areas for enhanced sustainability;
- ii) Control unauthorised livestock movements and migrations;
- iii) Minimise land use conflicts between livestock keepers and other land users;
- iv) Control livestock diseases, particularly disease epidemics;
- v) Enhance access to affordable credit facilities by livestock keepers;
- vi) Establish reliable markets for livestock and livestock products;
- vii) Increase resilience of the livestock to climate change;
- viii) Improve livestock extension services;
- ix) Enhance awareness on appropriate use of pesticides;
- x) Improve and establish livestock related infrastructures.

5.5.6 Fisheries

Fisheries sector is among the priority sectors in the National Strategy for Growth and Reduction of Poverty (MKUKUTA). This is in recognition of the role played by the fisheries sector in the national socio-economic development. The fisheries industry provides employment, income, recreation, trade and economic wellbeing for the present and future generations. Currently, the sector employs more than 172,090 full time fishermen and about other 4 million people earn their livelihoods from the fisheries sector. According to the Economic Survey Report of 2010, the sector has been growing at a rate of 1.4 percent and contributing about 1.5 percent to the economy of the country (URT, 2011c).

Tanzania is one of the greatest fisheries nations in Africa, ranking in the top 10 countries in terms of total capture fisheries production. The fishery is categorized into artisanal and commercial fisheries. The artisanal fishery compose of fishing in all the freshwater bodies meaning lakes, rivers, dams, ponds, wetlands as well as fishing for finfish in the territorial waters in the Indian Ocean. The commercial fishery is composed of prawn fishing in the territorial sea and fishing in the EEZ. The common fish species in the EEZ include tuna and tuna-like, marlin, sword fish, and sharks. Fishing gears used include gill nets, hooks and lines, trawling for prawns, purse seining for sardines; and long lining and purse seining in the EEZ.

Some of the achievements recorded during the implementation of the 1997 Fisheries Policy include the following:-

- i) In 2010, the sector employed 176,632 fulltime fishers and over four million people who were engaged in various fisheries related activities. During the same period, fish production from the capture fisheries was 347,156.93 metric tonnes worth TShs. 774.5 billion.
- ii) The fisheries exports have been increasing from 42,252.7 tonnes worth USD 129.6 million in 2003 to 39,771.83 tonnes and ornamental fish 40,552 worth USD 187.43 million by 2010. During the same period, the average government revenue from exports was TShs. 6.6 billion per annum.

- iii) Between 2000 and 2010 the amount of fish harvested per annum from cold water was between 271,000 and 294,474 tonnes and between 50,000 and 52,683 tonnes from the marine water respectively.
- iv) Production trend of Tuna fish species over the last 8 years in the Exclusive Economy Zone (EEZ) has been up and down. For example production was 2,505.98 tonnes in 2001; 48,833.51 tonnes in 2004; 2,005.25 tonnes in 2007 and 10,141.14 tonnes in 2008.
- v) In 2008 a total of 23,066 ornamental fishes worth TShs. 240,106,146 were exported and a total of Tsh. 17,378,126.10 was collected as royalties. Also, 39,771.9 tonnes of fish products and 40,552 live ornamental fish worth 263.1 billion shillings were exported.
- vi) In 2010, total mariculture production in Tanzania was 8,256 tonnes whereby seaweed farming accounted for the majority of this production (8,000 tonnes) worth Tshs. 1.7 billion, followed by prawns (250 tonnes) worth TShs. 2.5 billion, milk fish (5 tonnes) valued at Tshs. 15 million, mud crab fattening (1 ton) valued at Tshs. 4 million and pearl oyster (148 pieces) valued at Tshs. 9.6 million.
- vii) In 2010 there were 19,039 fish ponds mainly stocked with tilapia and catfish species which are scattered throughout the country. Annual production from these ponds was 1,200 tonnes valued at Tshs. 3.36 billion.
- viii) There has been continued compliance to regional and international quality and standards requirements;
- ix) Mainstreaming of cross sectoral and cross cutting issues is being undertaken in the fisheries sector.

Despite the positive performance of the fisheries policy, there are challenges that are facing the development of the fisheries sector that need to be addressed so as to attain the intended objectives. These challenges include:

- i) Low sector growth and contribution to the GDP;
- ii) inadequate management and control of the fisheries resources;
- iii) Inadequate investment in fisheries and aquaculture infrastructure and processing facilities;
- iv) Increasing illegal fishing and trafficking of fish products;
- v) Inadequate enforcement of legal and regulatory framework for the management of fisheries resources with respect to national, regional and international requirements;
- vi) Inadequate capacity to manage the fisheries resources, such as fish diseases diagnosis, control and treatment;
- vii) Inadequate commercial utilization of deep sea fishery resources;
- viii) Inadequate development of commercially and environmentally sustainable aquaculture; and
- ix) Inadequate adaptation and mitigation of climate change.

5.5.7 Forestry and wildlife in Mainland Tanzania

Considerable achievements have been made in the forest and wildlife sectors in the United Republic of Tanzania. In the mainland Tanzania forestation and wildlife conservation has improved; secondary forests have increased from 14 to 16, while natural forests have increased from 597 to 802 since independence. Further reserved forests increased from 9 to 28. Wetlands forests, which did not exist before independence, have now increased to 44 and national parks are 15 in total, and the Government has successfully established 33 wildlife management areas (WMAs). In addition, 2,328 villages, equal to about 22 percent of all villages in the country, are under the participatory forest conservation arrangements and managing 4,122,500 hectares, which is 12 percent of all forests in the country. A total of 16 forests are fairly accessible with a road network of 2,700km and 530 buildings. Similarly, the Government has established 1,687 “*Malihai*” clubs in primary and secondary schools, with the aim of introducing these clubs to environmental sustainability and creating awareness on the importance of conservation to the community (URT, 2011a).

5.5.8 Forestry and wildlife in Zanzibar

In Zanzibar, forest conservation is also an important component in the realisation of MKUZA II. It is for this reason that there are a number of targets MKUZA that relate to strengthening conservation management and sustainable utilisation of forests and marine resources (RGoZ, 2010). The government commitment towards sustainable management of forest resources is demonstrated in the Zanzibar Forest policy and the Zanzibar National Forest Resources Management Plan 2009 – 2020 (RGoZ, 2009b). This plan seeks to undertake three programmes which address six operational targets and their corresponding goals, objectives, strategies and activities. The purpose is to meet the demand of the Zanzibar national forest policy frameworks, contribute to the realization of the Vision 2020, ZGPRP, MDGs and on-going policy reform affecting forestry development in Zanzibar.

After RIO Summit 1992, Zanzibar developed appropriate national strategies, action plans and programmes for the conservation and sustainable utilization of its biological resources; and integration of these into relevant sectoral or cross-sectoral plans, programmes and policies- (in line with article 6 of the Convention). Generally, the forestry sector has in Zanzibar had undergone major changes after Rio Summit of 1992, that enhanced forest resources conservation and community participation in the management and protection of biodiversity resources. For instance, through the formulation of the First Zanzibar Forest Policy of 1995, with the goal to “Protect, conserve and develop forest resources for the social, economic and environmental benefits of present and future generation of the people of Zanzibar”.

During this period the forestry sector also Formulation of Community Forestry Management Agreement (CoFMA), which gives community inclusive rights of forest management, forest resources utilization and share benefits accrued from forest resources at community level.

Through the Zanzibar forest master plan, Zanzibar upgraded the protected areas and other forest into new status. For instance, Forest Reserves to National Park (Jozani from 2500ha to 5,000ha) and Nature forest reserve (Ngezi), rot example closed forest to Forest reserve (Kiwengwa-Pongwe Forest Reserve (3,481ha), the areas covered by forest and other protected areas in Zanzibar are presented in Table 9.

Table 9. Forest Protected Areas of Zanzibar

Name of the Protected Area	Area (ha)
Jozani-Chwaka Bay National Park	5,000
Kiwengwa-Pongwe Forest Reserve	3,481
Ngezi-Vumawimbi Nature Forest Reserve	2,900
Ras Kiuyu Forest Reserve	270
Masingini Forest Reserve	285
Msitu Mkuu Forest Reserve	180
Total	11, 960

Source: Forest Department (2012)

5.5.9 Transport

The Government realises that transportation is one of the key sectors towards sustainable development. The network of paved roads has expanded to 6,385km and that of gravel roads to a total of 84,800km by mid 2010. This is an outstanding achievement compared to the situation in 1961 when the country had only 1,300km of paved road and 29,500km of gravel roads. In addition, the railway network has increased from 2,300 km at independence to 4,460km in 2010 (URT, 2011a). The distribution of the different types of roads and coverage is presented in Table 10 (NBS, 2011). Zanzibar has also made remarkable achievement in the infrastructure sectors, where about 70% of major roads in Zanzibar are now tarmac or work is in progress to tarmac them (RGoZ, 2010). To achieve this, several measures have been taken towards sustainable development in the transport sector both in the mainland Tanzania and in Zanzibar.

Table 10. Road network (km) of Tanzania by December 2010

Road type	Paved	Unpaved	Total
Trunk roads	5,478	7,308	12,786
Regional roads	840	19,385	20,225
District roads	--	--	29,537
Feeder roads	--	--	21,191
Urban roads	773	5,124	5,897
Total	--	--	89,636

Source: NBS (2011)

- i) Decentralization of the roles of the central government in order to enhance efficiency in the transportation sector for instance, road construction and maintenance of transport infrastructure, whereby rural roads construction and maintenance are implemented by the Local Government Authorities, while supervision on the construction and maintenance of major roads is the responsibility given to the Tanzania Roads Agency (TANROADS), which is a semi-autonomous body;

- ii) Putting in place legal and regulatory framework for efficient and effective sustainable transport operations in the country, Such as the National Transport Policy 2003, Civil Aviation Act of 2003, Surface and Maritime Transport Regulatory Authority (SUMATRA) Act (2001), The Transport Licensing Act of 2009, and the Railways Act No. 4 of 2002.
- iii) Establishment of a regulatory body to oversee the safety and economic aspects regarding the surface and marine transport systems under SUMATRA.
- iv) Establishment of an authority responsible in designing and operationalising rapid transport network for the Dar es Salaam City (Dar es Salaam Rapid Transport Agency) in order to mitigate the traffic congestion.
- v) Review of the Tanzania Civil Aviation Act (2003) to enable Tanzania Civil Aviation Authority to perform safety and regulatory functions and enhance protection efforts of consumers and environment.
- vi) Increased participation of the private sector for efficient air transport services;
- vii) Development of common East Africa Community transport and communications programmes and projects aiming at simplifying transport and communications in the region in order to enhance cross-border trade and investments;
- viii) Commitment in development of transport corridors with view of facilitating transit trade with neighbouring countries. There are four major development corridors which need to be developed, including Central corridor (Dar es Salaam - Kigoma railway network); Tanzania Zambia Railway (TAZARA); Mtwara corridor (extending from Mtwara port in the southern part of The United Republic of Tanzania and joins the Dar es Salaam Corridor at Tunduma in Mbeya region); and Tanga Corridor (extending from Tanga port in the Northern part of Tanzania to Uganda through Lake Victoria).

a) Constraints

- i) Dilapidated railway infrastructure, wagons, engines and other machineries;
- ii) Inadequate financial resources to cater for the railway infrastructure rehabilitation;
- iii) High operational costs in railway systems;
- iv) Inadequate capacity of seaports to handle large marine vessels;
- v) Inadequate capacity for the road and railway system to clear goods from the seaports;
- vi) Piracy in the Indian Ocean that affect marine vessels plying to Tanzania's harbours.
- vii) Not having a strong national airline;
- viii) Rapid technological advancement in the air transportation that require massive investments.

b) Priority interventions after Rio+20

- i) Rehabilitation of railway infrastructure, wagons, engines and other machineries;
- ii) Mobilisation of financial resources for operational activities and revamping the railway, roads and ports infrastructures;
- iii) Implement the ports master plan for increasing the capacity of seaports to handle large marine vessels.
- iv) Improve capacity of the road and railway systems to clear goods from the seaports.
- v) Increase surveillance in the Indian Ocean to enhance safety of marine vessels plying to Tanzania's harbours.
- vi) Revamp and strengthen the national airline to make it more competitive.
- vii) Increase investments in technological advancement in the air transportation system.

5.5.10 Mining sector

The United Republic of Tanzania is endowed with a variety of minerals such as gold, diamonds, tanzanite, uranium, gemstones, base metals, industrial minerals and building materials. It is the continent's second largest gold producer after South Africa. Mining is currently the fastest-growing sector in The United Republic of Tanzania in terms of its share of exports. There are both large-scale and small-scale mining operations in The United Republic of Tanzania. Small-scale and artisanal mining, primarily of gold and tanzanite, is an important economic activity, undertaken in remote rural areas, employing over 500,000 people. Various initiatives/measures have been undertaken in the sector with considerable economic achievements. Among the economic achievements include.

- i) Increased investment in the mining sector, which increased from USD 1.3 billion in 1997 to USD 2.5 billion in 2010.
- ii) Increased national income from mining activities from Tsh 457.4 billion in 2005 to Tshs 840 billion in 2010.
- iii) Increased employment in the large-scale mines from 1,700 in 1997 to 7,391 in 2010.
- iv) Establishment of a fund to support small-scale miners. By 2011 Tsh 525 million were contributed to the fund.
- v) Increased contribution of the mining sector to the national GDP from 0.3% in 1988 to 2.6% in 2010.

Environmentally, a number of measures have been undertaken in the mining sector including the following.

- i) Operationalising the use of cleaner and safe technology in gold recovery in the mining industry through introduction of alternative technologies instead of mercury in gold mining;
- ii) Carrying out baseline environmental surveys in all mining areas to establish conditions that will be used as benchmark for future monitoring and reporting on environment conditions;
- iii) Carrying out capacity building programmes to the regulating authority to conduct proper environmental inspection, monitoring and reporting, including Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA) and development of Environmental Management System (EMS) and Emergency Prevention Preparedness (EPP) plans; and
- iv) Issuance of a Public Notice to evacuate all illegal miners particularly in the more fragile areas.

- v) Government has also instituted a new Mineral Policy (2009) and enacted a Mining Act (2010) which among others addresses issues related to environmental conservation and protection.

a) Challenges

- i) Inadequate contribution of the mining sector to the national GDP;
- ii) Inadequate contribution of the mining sector to government revenue;
- iii) Inadequate capacity of small-scale mining;
- iv) Inadequate mineral processing technologies among small-scale miners (need for value addition of minerals);
- v) Environmental degradation due to mining activities (e.g. deforestation, soil erosion, loss of biodiversity and contamination of water bodies);
- vi) Conflicts between traditional land users and mining enterprises;
- vii) Spread of communicable diseases such as HIV/AIDS in mining areas.

b) Priority interventions after Rio+20

- i) Increase the contribution of the mining sector to the national GDP;
- ii) Increase the contribution of the mining sector of government revenue;
- iii) Increase awareness and knowledge of small-scale mining to access credit facilities and modern technology;
- iv) Improve mineral processing technologies among small-scale miners for mineral value addition);
- v) improve environmental management in the mining activities;
- vi) Minimise conflicts between traditional land users and mining enterprises through comprehensive land use planning, compensation and good neighbourhood;
- vii) Increased awareness on communicable diseases such as HIV/AIDS in mining areas.

5.5.11 Waste Management

Waste management is increasingly becoming a serious concern in the United Republic of Tanzania especially in urban areas due to limited sorting at source, improper collection, storage, transportation, treatment and final disposal. This implies that significant proportion of the waste generated end up in an unacceptable ways of disposal. In addition, the practice of mixing different types of waste including hazardous waste in crude/uncontrolled dump sites accentuates environmental and public health risks. The waste management problem is more pronounced in squatter settlements, where 70-80% of the urban population resides without the necessary infrastructure and social services.

Environmental pollution, including water pollution, is one of the significant effects of inadequate waste management. The main pollution sources include municipal wastewater, industrial effluent, leachate from dumpsites, agricultural activities, gaseous emissions from industrial establishments and transportation activities and noise. The trend seems to worsen particularly in urban areas due to concentration of socio-economic activities and escalating population growth.

It is estimated that the quantity of municipal solid waste generated countrywide amounts to more than 10,000 tonnes per day. The indicative generation rate ranges from 0.1–1.0 kg/cap/day. As much as 70-90% of solid waste generated in urban areas is not collected and

most of the domestic waste, which accounts for about 60 % of the total solid waste generated daily, is disposed of by burning or burying. The remaining wastes may end up in dumpsites or drains. The main reasons for the failure to collect solid waste are lack of equipment, low priority given to solid waste services by municipalities and inadequate financial resources.

Among the initiatives undertaken regarding waste management in the country are the following.

- i) Engagement of the private sector, Non-Governmental Organizations and Community Based Organizations in solid waste management services, which has reduced the amount of solid waste in urban areas, although more efforts are still required.
- ii) Encouragement private sector and investors' involvement in solid waste recycling systems in order to minimize the amount of the non-degradable waste materials. These materials include waste paper, metal, glass, plastic bottles and used tyres.
- iii) banning the manufacturing, importation, selling, buying, and use of plastic bags under 30 microns (or 0.03 mm) thickness and those with 65 microns (or 0.065 mm) used for water and juice packaging.
- iv) Promotion of production and use of alternative bags in place of plastic bags, such as paper manufactured bags.
- v) Encouraging various stakeholders to exploit the potential of decomposing solid waste for generation of electricity. Recently, electricity production from sisal waste was inaugurated in one of sisal processing plants in Tanga Region. Likewise, biogases are used by some sugar factories as fuel for producing steam and electricity
- vi) Some industries have started using waste materials for economic purposes. .
- vii) A National Waste Management Strategy and Action Plan and the Regulations on Solid and Hazardous Waste have been prepared.

5.5.12 The private sector

The private sector provides an impetus to the country's economic growth, while private investments will increase the gross domestic product and create employment for many Tanzanians. In response to this opportunity, the Government has established an enabling environment for trade and investment to facilitate the private sector to play its important role in national economic growth. The Government has developed and begun implementing reform programmes to create a conducive environment for investment and trade. The implementation of the programme has resulted in more simplified procedures for registering business, paying taxes, transfer of title deeds of fixed property, and registration of land title deeds (URT, 2011a).

In 1998 the Private Sector Foundation was established to unite the private sector on issues of common interest such as developing long-term plans, managing and promoting sustainable process of negotiations; promote production and business activities and fostering economic growth in general. This Foundation was established for coordinating issues of the private sector, including commercial disputes, to assist private sector stakeholders in getting professional, financial and institutional assistance. The institution supports stakeholders in private industry to have one voice on key issues concerning their development. The organization comprises of various stakeholders in the private sector including the association of agricultural traders, the confederation of industrial owners, association of bank owners, and the association of stakeholders in the fishing industry (URT, 2011a).

The biggest challenges to the economy include the rising prices of goods and services caused by increase in oil prices in the world market the depreciation of the Tanzania shilling and unreliable electricity supply (URT, 2011a), which limit the effective contribution of the private sector to the economic development.

5.5.13 Employment

Employment is the main link between growth and reduction of income poverty. According to PHDR (2009), 630,000 new jobs were created annually between 2001 and 2006, mainly in the informal sector, which matches with labour force growth. However, the quality of jobs created is important in explaining the stagnation in poverty levels. The unemployment rate of person aged 15 and above declines slowly - from 12.9 percent 2006 (ILFS) to 11.7 percent in 2007 Household Budget Survey. Unemployment among youth (age 18-34) stood at 13.4 percent in 2006 (ILFS, 2006). It is highest among female youth – about 15.4 percent compared 14.3 percent for male youth (ILFS, 2006). Moreover, women constituted 24.7 percent of paid employees, 42.3 percent of unpaid helpers, and 53.9 percent of agricultural labour force and only 20 percent of self-employed; moreover, the unemployment rate was higher for females than for males, except in the rural areas. In Dar es Salaam, the unemployment rate for females was 40.3% in 2006, as contrasted to 19.2 percent for males.

The majority of those in poverty lack social protection, including the unemployed given the absence of unemployment or other benefits for those who lose their jobs. Affordable measures to address the lack of protection among the unemployed, the self-employed and the vast majority of workers who are involved in informal sector activities remain one of the challenges in ensuring social security. The challenge is linked to the fact that 94 of the Tanzanian labour force works in the informal sector. This has implications for both the size of the revenue base and the type of policy interventions geared to extending social protection in Tanzania (URT, 2012a).

In terms of sources of livelihood, the share of household farm income declined from 51.4 percent in 2000/01 to 39.7 percent in 2007. Correspondingly, the share of non-farm incomes increased although not to the extent of leveraging people out of poverty. Poverty incidence among government or parastatal employees is around 10 percent, and it is 20 percent among other paid employees. A higher percentage in the latter indicates inadequate decent jobs in terms of adequate pay in those sectors, particularly in the private sector (URT, 2012a).

5.5.14 Gender and Community Development

As noted in Chapter two, community development is a result of efforts from various sectors and stakeholders, and similarly is gender considerations. Overall there have been considerable achievements in these aspects. Among the achievements is the formulation and implementation of the National Strategy for Gender Development (NSGD) by the Ministry of Community Development Gender and Children; and the Zanzibar Strategic Plan: July 2011-June 2015 for the Ministry of Social Welfare, Youth, Women, and Children Development (MSWYWCD).

i) Implementation of the National Strategy for Gender Development (NSGD)

The socio-economic development of United Republic of Tanzania is dependent on the full utilization of its human resource, both women and men. The Constitution of the United

Republic of Tanzania endorses gender equality and equity and guarantees full participation of women and men in social, economic and political life (URT, 2008c). The Government is also implementing international commitments as enshrined in the United Nations Charter and on the Human Rights Declaration (1948), the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (1979), the Convention on the Rights of the Child (CRC) (1989), Beijing Declaration and Platform for Action (1995), AU Solemn Declaration on Gender Equality and the Protocol to the African Charter on Human and Peoples Rights on the Rights of Women (2003) World Summit 2005 Resolution on Gender Equality and Empowerment of Women, Policy on Women and Gender Development (2000), SADC Declaration on Gender and Development (1999) Addendum on Prevention and Elimination of Violence Against Women and Children (1998), and the East African Community (EAC) Treaty (1998). Despite efforts to implement these Declarations and Conventions, gender imbalances still exist in various aspects.

The Government has also established mechanisms for gender policy formulation, coordination, monitoring and evaluation of implementation of gender development policy, gender mainstreaming programmes and plans. The mechanisms include establishment of a Ministry responsible for gender development, setting up Gender Desks in Ministries, Independent Departments, Regional and District Authorities (URT, 2008c).

The Government has taken measures to address gender concerns in the Constitution of the United Republic of Tanzania, macro and micro policies, strategies and programmes. The Government amended the 1977 Constitution in 2000 and 2004 among other things, to increase women's participation in the National Parliament and Local Authorities. The Government also formulated the Women and Gender Development Policy (2000) to put more emphasis on the Women in Development Policy (1992) in line with the Beijing Platform for Action.

To ensure effective implementation of the Women and Gender Development Policy, 2000 (URT, 2000), a National Strategy for Gender Development (NSGD) to promote gender equality and equity has been prepared. The aim of the NSGD is to consolidate and speed up implementation of the Women and Gender Development Policy, which strives to redress gender gaps and inequalities between men and women. It also aims to guide implementers to incorporate gender concerns into their policies, plans, strategies and programmes with a view to implementing commitments at international, regional and national levels. The goal of the NSGD is to achieve gender equality and equity in Tanzania as stipulated in the national Constitution and the Women and Gender Development Policy. The Objective of NSGD is to guide and involve all stakeholders to bring about gender equality in a more harmonized manner for enhanced development (URT, 2008c). This is also in line with Principle 20 of the Rio declaration on Environment and development (1992) that recognises the vital role women have in environmental management and development, where their full participation is essential to achieve sustainable development (UNCED, 1992).

The government of the United Republic of Tanzania has thus made a firm political commitment to support any initiatives that are focused at alleviating gender inequality in economic, education, training and employment at all levels. This is in recognition of Gender as a crosscutting issue, having many actors who are playing various roles in all aspects of development. The main actors are government institutions, private sector, civil society, communities and development partners (URT, 2008c).

ii) The Strategic Plan: July 2011-June 2015. Ministry of Social Welfare, Youth, Women, and Children Development (MSWYWCD)

In Zanzibar issues of gender and community development are dealt through implementation of the Ministry of Social Welfare, Youth, Women, and Children Development's Strategic Plan for July 2011-June 2015. This document is a useful management tool that guide the Ministry's planning, providing a base from which progress can be measured, and establishing mechanisms for informed change whenever needed. It is a tool intended to translate MKUZA II into actions. According to MKUZA II sectoral ministries are obliged to interpret this national development framework in their respective strategic plans, annual plans and budgets so as to realise Vision 2020 and the Millennium Development Goals (RGoZ, 2011b). In response, the Ministry of Social Welfare, Youth, Women and Children Development (MSWYWCD) has undertaken a sector review taking into consideration the revised mandate of the Ministry, existing policies, and the goals and targets of MKUZA II. The Ministry's Strategic Plan 2011-2015 envisages a well-protected and empowered society that observes human rights and safeguards the interests and concerns of youth, women, children, the elderly and other vulnerable groups for better living conditions. Implantation of the Vision 2020 and MKUZA discussed elsewhere in this report reveals considerable achievements in these aspects.

Through this strategic plan, the Ministry is determined to achieve the following objectives (RGoZ, 2011b):

- i) Priority gaps in national policies and legislation pertaining to children, women, youth and elderly addressed;
- ii) MSWYWCD's capacity to fulfil its mandate enhanced;
- iii) Coordinated MDA and CSO services and response on issues pertaining to children, women, youth and elderly;
- iv) Increased community awareness in priority areas pertaining to children, women, youth and elderly;
- v) Increased access and quality of care and protection services for children, women, youth and elderly; and
- vi) Situation of the rights of children, women, youth and elderly are periodically monitored and reported.

The objectives of the Strategic Plan 2011-2015 are fully informed by and aligned to goals and objectives of Vision 2020. They are also in line with the goals of MKUZA II, specifically:

- i) Cluster I, Goal 3 – Reduce income poverty and attain overall food security;
- ii) Cluster II, Goal 6 – Improved safety nets and social protection for poor and vulnerable groups;
- iii) Cluster III, Goal 1 – Ensure greater citizens' participation in democratic governance; and
- iv) Cluster III, Goal 2 – Strengthen the rule of law, respect for human rights and access to justice.

Finally, the Ministry's objectives aim to contribute to achievement of the Millennium Development Goals, specifically:

- MDG 1 – Eradicate extreme poverty and hunger; MDG 3 – Promote gender equality and empower women; and MDG 6 – Combat HIV/AIDS, malaria and other diseases.

a) Challenges

- i) Patriarchal system, customs and traditions that discriminate women continue to perpetuate gender inequalities, gender capacity and institutional aspects.
- ii) Continued marginalization and under-utilization of women is a major obstacle to rapid socio-economic development;
- iii) Inadequate empowerment of both women and men equally on the basis of merit;
- iv) Inadequate sensitivity of macro and micro policies to gender concerns;
- v) Inadequate sensitivity of the legal framework to gender concerns;
- vi) Inadequate institutional mechanisms for gender development;
- vii) Ensuring sustainable partnerships and collaboration;
- viii) Inadequate resources are available to address gender inequalities; and
- ix) Inadequate capacities for coordination, monitoring, evaluation, advocacy and follow-up of implementation of policies, strategies, plans and programmes.

b) Priority interventions after Rio+20

Efforts to promote gender equality and equity encounter the following challenges: -

- i) Empowerment of both women and men equally on the basis of merit;
- ii) Ensuring that macro and micro policies are gender sensitive;
- iii) Ensuring that the Legal Framework is gender sensitive;
- iv) Strengthening institutional mechanisms for gender development;
- v) Ensuring sustainable partnerships and collaboration;
- vi) Ensuring that adequate resources are available to address gender inequalities and
- vii) Building capacities for coordination, monitoring, evaluation, advocacy and follow-up of implementation of policies, strategies, plans and programmes related to gender at all levels.

5.6 Some Lessons Learnt

Various lessons can be learnt from the implementation of various aspects related to sustainable development in the country. The implementation of integrated planning and decision making for sustainable development adopted by the government in, for NSDS, MKUKUTA/MKUZA, Five Year Plan, MTEF, and NEAP, among others, has brought up a number lessons. These lessons include.

- i) Accelerates progress of integrated planning and decision-making for sustainable development;
- ii) Improved participation of stakeholders e.g. formulation of Public Private Partnership Policy. strong public-private partnerships for sustainable development in your country have been promoted, for example, in education – schools from primary to tertiary level; health – health services (dispensaries, health centres and hospitals); natural resources and tourism industry – investment in wildlife protected areas; information and communication technology – regulation and provision of services.
- iii) Promotes community ownership of programmes;

- iv) Implementation of the poverty reduction strategies is not sufficient in ensuring sustained long term growth, so there is need for strategic investments that can make the economy grow and reduce poverty;
- v) Successes and benefits recorded in macro-economic performance and reforms laid foundation for addressing socio-economic development and poverty reduction;
- vi) There is a need to strengthen local government authorities (LGAs) in monitoring poverty reduction.
- vii) Measures such as sensitization and awareness among different actors; economic incentives such as tax exemption on environmentally friendly technologies; reward for conservation efforts through mechanism such as ecosystem services, among others can, if well implemented, promote effective voluntary actions and partnerships.
- viii) There has been increased national government's political commitment to sustainable development as compared to 1992. A number of sectoral policies, strategies and legislation have been reviewed to reflect the increased political commitment, for example, Mining Act (2009); Wildlife Act (2009); National Livestock Policy (2006); Wildlife Policy (2007).
- ix) The major challenges for enhancing sustainable development through integrated planning and decision-making have been (i) Inadequate financial and human resources, (ii) Involvement of a wide spectrum of actors tend to be challenging, (iii) Different levels of understanding and commitment among actors, (iv) Additional and unplanned burden of climate change impacts particularly in the context of extreme weather events.

CHAPTER SIX

GREEN ECONOMY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT AND POVERTY ERADICATION

6.1 Overview

The concept of Green Economy has emerged recently, particularly over the last two years, advocating holistic and programmatic approach among the three pillars of sustainable development - economy, social welfare and the environment. Currently there is no national definition on the meaning of the term 'green economy' in the context of sustainable development and poverty eradication. However, different national policies have elements that promote green economy. Such elements include promotion of renewable energies (solar, hydropower, wind, geothermal, biogas), use of energy efficient appliances and equipment, efficient mass transit systems, cleaner production initiatives, fuel switching to natural gas and other alternative energy sources, promotion of energy efficient cooking stoves and promotion of mini-hydro and co-generation projects (URT, 2010c). It is broadly considered by various sectors in the country as the economy that improves the human wellbeing and manages the environment sustainably; that ensures sustainable development and does not encourage environmental degradation, reduces greenhouse gas emission, integrates issues of social, environment and economic aspects in the development process, and takes into consideration the sustainability of future generations.

According to the United Nations Environment Programme (UNEP), a green economy is defined "as the one that results in improved well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP, 2010). Some of the key elements of green economy include investing in natural capital; advocating for poverty alleviation; promoting renewable energy and low-carbon technologies; enhanced resource and energy efficiency; and sustainable urban living and low carbon mobility (UNEP, 2010). Green economy has further been defined as development and use of products and services that promote environmental protection and energy security. It is composed of industries and businesses that are engaged in energy efficiency, renewable energy, preventing and reducing pollution, and mitigating or cleaning up pollution.

Green Economy is expected to deliver three types of outcomes:

- i) New sources of income and jobs;
- ii) Low carbon emissions, reduced use of resources, and reduced generation of waste and pollution; and
- iii) Contributions to broader societal goals of sustainable development, social equity and poverty reduction.

A key feature of a green economy is that it seeks to provide diverse opportunities for economic development and poverty alleviation without liquidating or eroding a country's natural assets. This is particularly necessary in low-income countries, where ecosystem goods and services are a large component of the livelihoods of poor rural communities and ecosystems and their services provide a safety net against natural disasters and economic shocks. Green economy should only be considered as a tool to facilitate the delivery of sustainable development and poverty eradication and not to replace them.

The main perceived benefits of implementing a national green economy strategy may include the following: (i) Social benefits - Health, such as avoided air pollution; (ii) Economic benefits – income/employment opportunity, for example, from waste recycling; and reduced energy bills from use of energy saving bulbs; and (iii) Environmental benefits - reduced deforestation, environmental pollution and land degradation (URT, 2010c).

6.2 Internalization/Domestication of the Concept of Green Economy

African leaders have already embraced the green economy concept as exemplified in several declarations and resolutions, namely: the 3rd African Ministerial Conference on Financing for Development (May, 2009); the 13th Session of the African Ministerial Conference on the Environment (AMCEN) of June 2010; the 1st Pan African Biodiversity Conference (September 2010); the 7th African Development Forum (October 2010), and most recently, the 18th Ordinary Session of the Executive Council of the African Union (January 2011).

During the Fourth Special Session of the African Ministerial Conference on the Environment (AMCEN), which was held in Bamako, Mali, from 12 to 16 September 2011, the Ministers adopted a decision on the green economy, in which they welcomed the green economy as offering new opportunities to advance the achievement of Africa’s sustainable development and recognized that the transition to a green economy entails additional costs, which require new and additional financing (ECA, 2012).

However, in The United Republic of Tanzania there is no national definition on the meaning of the term ‘green economy’ in the context of sustainable development and poverty eradication. Nevertheless, there various existing national policies, plans and strategies supporting elements that promotes green economy. Such elements include promotion of renewable energies (solar, hydropower, wind, geothermal, biogas), use of energy efficient appliances and equipment, efficient mass transit systems, cleaner production initiatives, fuel switching to natural gas and other alternative energy sources, promotion of energy efficient cooking stoves and promotion of mini-hydro and co-generation projects.

6.3 Policy Framework Supporting Green Economy

Despite not having a specific national policy or strategy on green economy, the country has a significant number of development frameworks and sectoral policies, plans and strategies which address many of the elements of green economy. Most of them address the issue of sustainability to a great extent, which is an important feature of green economy. Therefore, the existing sectoral policies, plans and strategies have potential (strength and opportunity) to bring positive changes towards green economy, though some of them may require review to refocus their priorities and strategic objectives. Some of the development framework and sectoral policies which have elements relevant to green economy in The United Republic of Tanzania are discussed the following sections.

a) Tanzania Development Vision 2025

The Tanzania Development Vision 2025 aims at achieving a high quality livelihood for its people to attain good governance through the rule of law and develop a strong and competitive economy. Some of the specific targets of the Tanzania Development Vision 2025 that are of relevance to elements of the green economy are:-

- i) A high quality livelihood characterized by sustainable and shared growth (equity), and freedom from abject poverty in a democratic environment.
 - Food self-sufficiency and security
 - Universal primary education and extension of tertiary education
 - Gender equality
 - Universal access to primary health care
 - Universal access to safe water,
 - Absence of abject poverty
- ii) Good governance and the rule of law
 - Moral and cultural uprightness
 - Adherence to the rule of law
 - Elimination of corruption.
- iii) A strong and competitive economy capable of producing sustainable growth and shared benefits
 - A diversified and semi-industrialized economy
 - Macro-economic stability
 - Physical infrastructure development
 - An active and competitive player in regional and global markets.

b) The Second National Strategy for Growth and Reduction of Poverty (NSGRP II-MKUKUTA II), 2010-2015 and the Zanzibar strategy for Growth and Reduction of Poverty (MKUZA II), 2010-201.

NSGRP II is a continuation of the government and national commitments to accelerating economic growth and fighting poverty. It is a successor to the first National Strategy for Growth and Reduction of Poverty implemented from 2005/06 to 2009/10. NSGRP II, like its predecessor, is a vehicle for realizing Tanzania's Development Vision 2025 and the Millennium Development Goals (MDGs) of transforming The United Republic of Tanzania into a middle income country by 2025.

The adoption of a results-based strategy brought forth a number of prerequisites in its implementation. These include:-(i) recognition of cross-sectoral contribution to outcomes and inter-sectoral linkages and synergies; (ii) emphasis on mainstreaming cross cutting issues; (iii) integration of MDGs into cluster strategies; (iv) adoption of a five-year implementation period to give ample time to implementation and monitoring; (v) greater role of private sector, economic growth and good governance; and (vi) recognition of the need to address vulnerability, human rights and social protection issues. Annex 3 presents some of the priority areas identified under the NSGRP II that address many of the elements of green economy.

c) Sectoral policies

The commitment to accelerate economic growth and fight poverty has been consistently implemented through a series of strategies and plans ranging from sector specific policies to multi-sectoral policies. Table 11 presents some of the sectoral policies indicating their relevance to elements of green economy.

Table 11. Some of the sectoral policies that promote elements of green economy

Sectoral Policy	Some of the elements of green economy									
	Poverty alleviation and	Sustainability of natural resources	Renewable energy and low carbon	Urban living and low carbon mobility	Energy efficiency	Economic instruments for protection of the	Incentives for Private sector involvement	Innovation, R&D and technology dissemination	Climate change mitigation and	Regional and global integration
National Environmental Policy (1997)	●	●	●	●	●	●		●	●	●
National Agricultural Policy (1997) (under review)	●	●				●	●	●		●
National Forest Policy (1998)	●	●	●			●	●		●	
National Water Policy (2002)	●	●	●			●	●		●	●
National Wildlife Policy (1998)	●	●				●	●			●
National Fisheries Sector Policy and Strategy Statement (1997)	●	●				●	●			●
National Human Settlements Development Policy (2000)	●	●	●	●	●	●	●			
National Energy Policy (2003)	●	●	●		●	●	●		●	●
National Mineral Policy (1997?)	●					●	●			
Sustainable Industrial Development Policy (1996-2020)	●	●	●			●	●	●	●	●
National Transport Policy (2003)	●	●	●	●	●	●	●		●	
National Tourism Policy (1998)	●	●				●	●			●
National Land Policy (1999)	●	●				●				
National Trade Policy (2003)	●	●		●		●	●			●
National Health Policy (2007)	●		●	●		●	●			

d) Existing green economy initiatives

Apart from the development frameworks, sectoral policies, plans and programmes, there are also existing initiatives that have relevance to green economy. Some of these are:

- a) Promotion of improved, low-cost and environmentally friendly technologies and practices, including the following.

- Promotion of organic farming and Integrated Pest Management (IPM) in agriculture;
 - Introduction of drip irrigation systems, using wind mill and treadle pumps in different parts of the country;
 - Enhanced deployment of renewable energies;
 - Introduction of biofuel production in the country;
 - Encouraging energy efficient appliances and equipment (e.g.; improved cooking stoves, energy saver electric bulbs). For instance, biomass energy use constitutes about 90%, mostly used by poor populations. In this context, promotion of energy efficient cooking stoves has resulted into reduced fuel consumption, consequently reduced deforestation and air pollution related illnesses. This has contributed to both poverty eradication and overall sustainable development.
 - Power trading with neighbouring countries to allow for optimised use of electricity generated from cleaner sources of energy and cleaner technologies;
 - Fuel switching to alternative environmental friendly energy sources. For instance, majority of the low income earners in the urban areas use charcoal for cooking. Tax exemption on natural gas has enabled most of urban residents to switch to natural gas for cooking. This has reduced deforestation, domestic air pollution and consequently improving health conditions of the communities;
 - Promoting and demonstrating cleaner production in manufacturing firms countrywide;
 - Dissemination of knowledge on rainwater harvesting at household level;
 - Promoting resource recovery and waste recycling (solid waste and waste water); and
 - Initiating implementation of mass transport system (Bus Rapid Transit) in major cities.
 - Tanzania promotes and supports fast adoption of the ‘sustainable energy for all’ and green technology initiatives. However, in order to maintain the momentum achieved, more enforcement, education and financial resources for sustainable development are needed. Education is the key to changing the mindsets of various actors of sustainable development, people in government, private sector, business and the public.
- b) Participatory natural resources conservation
- Implementation of Participatory Forest Management (PFM) programme whereby communities collaborate with government in managing forest resources and
 - Establishment of Wildlife Management Areas (WMAs) to enable communities living adjacent to wildlife protected areas to benefit from the wildlife resources and participate in their management
- c) Tax exemptions to environmentally friendly products and equipment as well as basic machinery.
- Tax exemption on agricultural machinery including threshers, rice dryers and mills, planters and power tillers; as well as spare parts for sprayers, harrows and grain conveyors;
 - Tax exemption on solar powered equipment and energy saving bulbs; Tax exemption on Liquefied Petroleum Gas (LPG) and LPG cylinders to encourage the use of LPG as an alternative source of energy instead of charcoal and firewood with a view to preserving the environment. For instance, biomass energy use

constitutes about 90%, mostly used by poor populations. In this context, tax exemption of imported natural gas and promotion of energy efficient cooking stoves may bring significant impact in pursuing green economy.

- d) Levies and penalties
 - Imposition of an excise duty of 20% on imported used non-utility motor vehicles aged 10 years or more;
 - On-the-spot penalty for littering; and
 - Effluent charges for discharging wastewater into water bodies through issuance of discharge permits.

- e) Increased involvement of private sector in providing public services
 - Provision of special support to investments in agricultural processing particularly in fruits and vegetables;
 - Privatization of large farms with the aim of promoting irrigation and large scale farming for the improvement of food self-sufficiency and export of farm products as well as creating employment opportunities in the sector;
 - Privatization of solid and liquid waste management services in some of the urban areas to improve service delivery.

6.4 Achievements and Success Factors

6.4.1 Achievements of existing policies towards green economy

The implementation of sectoral policies, plans and strategies towards green economy has contributed towards poverty eradication and other specific sustainable development goals. Some of these achievements are summarized hereunder.

- a) *Agriculture*
 - Overall food security for the country has been assured;
 - Many intensive crop cultivation areas have been established in connections with processing industries;
 - Value added to agricultural products through processing is rapidly increasing;
 - The export of agricultural commodity products has been increasing;
 - Reduction of pre and post-harvest losses;
 - Application of Integrated Pest Management (IPM) in agriculture particularly in cotton has resulted into 50% reduction in pesticide use and reduced environmental impacts;
 - Phasing out of the use of ozone-depleting substances such as methyl bromide applied in the agricultural sector.

- b) *Energy*
 - Promotion of energy efficient cooking stoves has resulted into reduced fuel consumption, consequently reduced deforestation and air pollution related illnesses.
 - *Use of natural gas in generating electricity:* Currently, a total of 122 MW are being generated in the country using natural gas from Songosongo and Mnazi Bay, accounting for 45% of total thermal power generation connected to the national electricity grid. This indirectly reduces emissions that would be generated say from thermal power plants.

- Promotion of renewable energy: there is a relative increase in the use of solar power for domestic purposes especially in rural areas as well as wind power especially in pumping ground water. To date, it is estimated that about 1.2 MWp of PV has been installed countrywide for various power applications in The United Republic of Tanzania, and 30-40% of the total installed capacity is contributed by solar home systems, with an estimated average sales of about 500-600 PV systems per annum.

c) *Manufacturing Industries*

- *Promoting cleaner production:* The promotion of cleaner production technologies and techniques in industries begun in 1994 with the establishment of the Cleaner Production Centre of Tanzania (CPCT). The main activities are information dissemination, training, demonstration and assessments in various manufacturing industries. More than 69 industrial establishments have been involved in cleaner technology assessments and implemented different options contributing to reduction in emissions and waste as well as rational utilization of resources in terms of utilities and raw materials.
- *Fuel switching:* Since 2004, more than 25 Dar es Salaam based industries have switched to natural gas instead of fuel oil including the Tanzania Portland Cement Company (Dar es Salaam), Tanzania Breweries Ltd and others. This has contributed in reducing indirectly the amount of otherwise undesirable gaseous emissions.
- *Promoting energy efficiency:* There have been efforts in improving energy efficiency in existing manufacturing plants especially with technical assistance from the Tanzania Industrial Research and Development Organization (TIRDO). Over 150 industries have been audited. Audit findings indicate potential savings ranging from 15-40%. Energy savings in most industries can be achieved through improved combustion efficiency in boilers and furnaces; steam and condensate management and efficient utilization of electricity, maintenance, improvements to motor drive systems, co-generation and power factor correction;
- *Ozone friendly technology:* The United Republic of Tanzania is a Party to several MEAs that are of relevance to mitigation of air pollution. These include the Vienna Convention on the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer. A total of four industries producing polyurethane foams have switched to non-ozone depleting substances. Furthermore, awareness on using non-ozone depleting substances has increased for especially in ozone-friendly refrigerants. The United Republic of Tanzania has significantly reduced the use of ozone-depleting substances such as chlorofluorocarbons (CFCs) and methyl bromide.

d) *Mining*

- Reduced environmental degradation associated with mining activities;
- Improved management of waste water in mining activities;
- Increasing use of environmental friendly technologies in mineral processing (e.g. use of retort technology in gold processing by artisanal miners)

e) *Tourism*

- Successful conservation of wildlife through protected areas and community involvement through WMAs;

- Diversification of tourism including community based tourism
- f) *Water and sanitation*
- Increased water supply and accessibility through use of various sources of water such as rain water harvesting, protected wells and boreholes;
 - Access to basic sanitation is high with 85% using pit latrine and 5% use ventilated Improved Pit (VIP) latrine.
- g) *Waste management*
- Landfill electricity generation: There are initiatives in Cities to produce electricity from closed dump sites. For example the Mtoni dump site in Dar es Salaam is generating about 2.5 MW of electricity. These initiatives will further reduce greenhouse gas emissions;
 - Controlled tipping: Some municipalities in the countries including Dar es Salaam City Council, Moshi and Mwanza have designated areas for solid waste disposal that involves daily covering of the waste with soil to minimize odour, flies, vermin as well as fire.
 - Increased employment opportunities and income in urban population for those involved in providing waste management services such as collection as well as those involved in waste recycling;
 - Environmentally friendly waste treatment systems have been adopted in some parts of the country. Such an example is an integrated municipal wastewater treatment scheme in Moshi Municipality, Kilimanjaro region which consists of waste stabilization ponds, constructed wetlands and vetiver grass plot. The purpose of the design of the system is to reuse part of the treated wastewater for fish pond and irrigating paddy farm.
- h) *Transport*
- Phasing out of leaded gasoline: transport sector consumed more than 40% of the imported petroleum products and therefore significantly contributing to gaseous emissions. The Government phased out the importation of leaded fuel in November 2005 this has helped reducing lead emissions into the environment.
 - *Pre-inspection and verification of motor vehicles*: TBS has appointed inspecting agents in various exporting countries so as to cover the variant sources of used vehicle suppliers for The United Republic of Tanzania. These agents inspect and certify the vehicles.
 - *Planning for rapid public transport*: Mass transit is one of the options that can help in improving urban air quality. The Dar es Salaam City Council is introducing Bus Rapid Transit (BRT). This will help reduce congestion as well as gaseous emission associated with small capacity of existing buses (15-30 pax).

6.4.2 Success factors

Some of the reasons or factors that contributed significantly for the achievements made so far include the following:

- i) Policy, legal and institutional reforms across many sectors such as Local Governments; planning; public finance management, public procurement, agriculture, energy, water and sanitation and public service. These reforms provide a

- supportive platform for making progress and contributing in the Government efforts to address economic development and poverty alleviation;
- ii) Strong political commitment and support at all levels in implementing developmental policies, strategies and plans at both national and Local Government Authority levels strengthened collective efforts, interest and attitude in dealing with national developmental issues;
 - iii) Engagement of a wide spectrum of stakeholders in many sectors and in different settings including civil society and business sector drew their support, commitment and sense of ownership in playing their roles and responsibilities and thus complementing Government efforts in addressing national developmental challenges;
 - iv) Technology transfer, though in limited in scope and volume, facilitated improve productivity in a number of sectors and therefore enhancing resource and environmental conservation;
 - v) International support in terms of financial and technical assistance has been instrumental in a significant number of areas particularly in propelling and strengthening national economic capacity; and
 - vi) Mainstreaming of environmental issues into development policies, plans and strategies at both national and Local Government Authority levels

6.5 Expected Key Thematic Outcomes of the Rio+20 Conference

- i) Comprehensive assessment on progress made, lessons learnt and remaining gaps and optimal pathways for pursuing green economy;
- ii) Agreed milestones/plan of action for green economy strategy in the medium term;
- iii) Agreed mechanism for financing of green economy particularly in developing countries;
- iv) Support mechanisms for technology transfer and capacity building to developing countries. This is a requirement of Principle 9 of the Rio on Environment and Development (1992) that “States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies” (UNCED, 1992).
- v) Need to identify opportunities from green economy that can benefit Tanzania
- vi) Enhanced south- south cooperation
- vii) Comprehensive mechanisms for carbon trading
- viii) Rio +20 to provide clear definition of Green Economy that will widely be accepted and representative to both Annex I and Annex II countries.
- ix) On Capacity building, there has to be established a green economy capacity development scheme to provide countries with specific advice and to assist in accessing available funds. This could be integrated into the existing structure for international capacity support to countries e.g. through the UN system and the Resident Coordinator system.
- x) There need for immediate implementation of the Bali Strategic Plan for technology Support and Capacity Building at the country level, including the overarching sustainable development agenda that spans all the three pillars of sustainable development.

6.6 Risks

Although Tanzania does not have green economy policies as such, it has sustainable development policies that take on board what is advocated in the green economy concept. So far, there has not been conflict between the national sustainable development policies and other policy documents mainly due to the fact that development of such policies involves all sectors and undertaken in an integrated manner (URT, 2010c). However, the following need to be considered as they may be in potential conflicts with the green economy concept.

a) Cases of conflict between green economic policies with other policies and policy domains

- i) *Food-biofuel conflict*: Although biofuel production in the country is at infancy stage, there are growing concerns that biofuel especially when produced on a large scale may divert agricultural production away from food crops and drive prices up; and
- ii) Introduction of Genetically Modified Organisms (GMOs) may lead to adverse cross contamination of the indigenous plants and crops;
- iii) Increased use of natural gas lead to reduced demand for charcoal which is important business for poor people in peri-urban areas;
- iv) Over protectionism (environmental protection) at the expense of economic and social development

b) Addressing conflicts

- i) Guidelines on Biofuel Development have been developed. The Guidelines support the development of effective land use strategies such as agro-ecological mapping and zoning; and
- ii) Policy, legal and institutional framework has been put in place to ensure safe use of GMOs.

CHAPTER SEVEN

NEW AND EMERGING ISSUES IN SUSTAINABLE DEVELOPMENT

7.1 Overview

There are several new and emerging challenges that are likely to affect the prospects for sustainable development in The United Republic of Tanzania in the coming decade. Among these include: biodiversity and ecosystem loss; water scarcity; climate change; food crisis; desertification; energy crisis; global financial and economic crisis; rapid urbanization and youth unemployment. These challenges are discussed in this chapter, including various measures that have been attempted to address them at the both local and national level.

7.2 New and Emerging Challenges

7.2.1 Biodiversity and ecosystem loss including invasive alien species

Biodiversity loss is occurring at an alarming rate in the country. Natural resources sustain the livelihoods of majority of the population in the country. For instance, tourism based largely on its ecosystems, wildlife and landscapes both terrestrial and marine, contributes more than 12% of the national GDP. These earnings accrued from the biodiversity resources are likely to cease with the threats posed by loss of the biodiversity. Expanding agriculture, clearing of forests for charcoal and firewood, climate change, and desertification are the primary causes of loss of biodiversity. Addressing biodiversity loss requires permanent and long term solutions in the form of development and implementation of appropriate policies guidelines, institutional capacity building and deployment of adequate resources to halt and reduce the intensity of biodiversity loss.

7.2.2 Water scarcity

Water resources are critical to Tanzania's economy, for instance in agriculture sector. Piped water systems provide input for industrial production and support the workforce in urban areas. Water in rivers and reservoirs generate over half of the country's hydropower grid electricity, and water flows through the ecosystem provide numerous provisioning and environmental services and supporting the tourism sector. Currently The United Republic of Tanzania is not classified as water scarce country but due to projected population growth, it is expected to be so by 2015. The country is also challenged by a high degree of water resource variability, particularly from rainfall, both spatially and temporally. For instance, while the national mean annual rainfall is 1,071 mm, the Lake Tanganyika basin and the southern highlands receives up to 3,000 mm annually while about half the country receives less than 762 mm annually. Temporally, the northern parts of The United Republic of Tanzania experience a bimodal rainfall pattern (long rains from March to May and short rains from October to December) while the rest of country is unimodal, with majority of rainfall coming between December to April.

Piped water systems in the largest cities in The United Republic of Tanzania source their water from country's rivers. Urban areas also use ground water as a supplemental source to meet demand. In rural areas, domestic water comes from surface water (river and springs) and from groundwater accessed through public and private wells. Due to rapid urbanization, access to improved sources of drinking water has actually declined over the last decade, though there has been an upward trend since 2005; currently only about 56% of The United

Republic of Tanzania have access to an improved source of drinking water. Urban water supply issue include over abstraction of flows upstream and catchment degradation; while in rural areas, non-functioning of water points is an additional problem. Possible lower and or intra-seasonal shifts in rainfall and/or lower river flows, combined with population growth and rapid urbanization rates, will complicate planning for adaptation in Tanzania domestic water supply sector.

7.2.3 Climate change

Climate change is now considered as one of the most serious global threats to sustainable development, with adverse impacts already vivid on the environment, human health, food security, human settlements, economic activities, natural resources and physical infrastructure. It is a serious risk to poverty reduction and threatens to undo decades of development efforts. Scientists have proved that over 200 years, there has been a rapid burning of fossils fuel by the industrialized countries releasing enormous amount of CO₂ in the atmosphere leading to changes in the climate system, making the globe warmer, leading to sea-level rise, increased frequencies and intensity of extreme weather events such as droughts, heat waves, and heavy rainfall and the associated impacts. Unfortunately, although poor countries like The United Republic of Tanzania have contributed the least in the problem, the adverse impacts are more pronounced in such countries due to their least adaptive capacity and weak early warning systems.

According to the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report published in 2007, warming of the global system is unequivocal. The report predicts that progression of global warming will increase the frequency of extreme weather events such as heavy floods and droughts, and increased health hazards through infectious diseases. It may also lead to food crisis resulting from depletion of water resources. The Report puts Africa at a high risk of suffering seriously as a result of this phenomenon. Addressing climate change is therefore an urgent challenge for Africa, given its vulnerability to the adverse impacts of climate change.

In the United Republic of Tanzania, the impacts of global warming are already evident in almost all sectors of the economy and throughout the country. In recent years the country has witnessed occurrence of extreme weather events such as frequent and serious droughts and floods. The droughts that gripped some parts of our country in 2003, 2005, 2010 and 2011 severely affected agriculture, energy and business sectors. The environmental and ecological impacts of these droughts were alarming. Agriculture in the affected areas was crippled, a lot of livestock and wildlife perished due to starvation and lack of water. An assessment of the impact of climate change on food security undertaken by the Ministry of Agriculture, Food and Cooperatives (URT, 2008b) revealed that semiarid areas experienced more food shortages and insecurity compared to other districts. Climate related factors significantly contribute to the reported food shortages and insecurity, with much of the food shortage being experienced in years with drought and floods. Major causes for the food shortages included drought, increased incidences of crop and livestock pests and diseases, low soil fertility and low household incomes. Tanzania's NAPA (URT, 2007) ranked agriculture and food security as the most vulnerable and important sector that is hardly hit by climate change and advocated for more detailed studies on the impact of climate change in agriculture and food security as a prioritized activity to be conducted.

Following these droughts, the country also suffered serious energy crisis which had severe social and economic implications. As a result of increasing climate variability, over the last years, the country has experienced increasing incidents of recurrent and prolonged droughts with severe implications in hydro power generation. Power rationing and black outs have become a common phenomena in Tanzania. This affects individual, households and industrial income generating activities. Consequently, additional resources which were committed for other development programmes are sometimes being reallocated for thermal electricity generation. This has compelled the Government of Tanzania to seriously consider diversification of energy sources in order to get a secure and sustainable future power supply in the country (URT, 2012b).

Incidences of floods in recent years had also tremendous impacts on infrastructure and human lives. The 2011 floods that hit the Dar es Salaam City had devastating impacts where several human deaths were reported leaving thousands of people displaced. These are just few examples which provide a signal that adverse impacts of climate change could undermine national efforts to attain the Millennium Development Goals and place poverty reduction efforts in jeopardy.

Climate change also impacts on other businesses such as tourism. Tourism is considered to be a highly climate sensitive economic sector. Climate determines the length and quality of tourism seasons and plays a major role in destination choice and tourist spending. Climate affects a wide range of the environmental resources that are key attractions for tourism, such as snow conditions, wildlife productivity and biodiversity, water levels and quality. Climate also has an important influence on environmental conditions that can deter tourists, including infectious disease, wildfires, insect or waterborne pests, and extreme events such as cyclones. Apart from the impacts of sea level rise, which have destroyed cultural, historical, archaeological and heritage sites along coastal areas in the country, heat stress and drought have caused massive wildlife deaths in the northern tourist zone of the country. Destruction of infrastructure such as roads and bridges, due to floods, is devastating. For example in the 2006, El Niño rains, left many park roads impassable for a long period of time, and resulted in reduced tourist visits and loss of revenue. In places like Ruaha National Park ecosystem, droughts have had significant impacts on wildlife and hence tourism (URT, 2002).

Adaptation to the impacts of climate change is a priority to the United Republic of Tanzania in order to strengthen resilience of the communities to these impacts. However adaptation technologies come with a wide range of costs. In this case addressing the impacts of climate change may undermine decades of government's efforts in achieving sustainable development. Section 7.3 highlights some of the measures that have been implemented to date to enhance community resilience to climate change impacts.

As reiterated by the Heads of State of the East African Community in 2010 (EAC, 2010), addressing the impacts of climate change for ensured community livelihoods is of paramount importance. Aware that climate variability and change is a serious global concern that is increasingly impacting negatively the EAC region's ecosystems, the natural resources productivity, people's livelihoods and indeed all development efforts; and conscious of the adverse impacts of climate change especially on environment, agriculture and food security in the region; the heads of states declared a firm commitment in combating climate change as an urgent and priority area to be addressed in the region, in order to mitigate its negative impacts on the socio-economic development of the region for current and future generations (EAC, 2010).

7.2.4 Food crisis

Agriculture forms an integral part of Tanzania's economy, at both macro- and micro-economic levels. Whereas food security is dependent on agriculture, the sector is the nexus where food security and climate meet. The importance of the agricultural sector to the economy is portrayed by the following: It contributes about 26.5 percent of GDP; it employs more than 70 percent of the labour force; it provides more than 95 percent of food requirement; it contributes about 14.5 percent (USD. 290. million) of export earnings; and it supplies raw materials to manufacturing sector e.g. textiles, food processing, etc. Any negative effect to the agricultural sector implies detriment to the economy and livelihoods of the majority of the population, as it is the mainstay of the economy for more than 80 percent of the population.

The sector is highly vulnerable to weather sensitivity and environmental changes and ranks top in the list of sectors vulnerable to climate change. As such, production (of crops, livestock, and fisheries) failure due to the impacts of climate change among other factors contributes to food insecurity. Some of these impacts include (i) increases in extreme weather events such as droughts coupled with poor distribution of rainfall affecting, water sources, production of food, cash and other crops and land resources as soil moisture and nutrients are depleted; (ii) Similarly floods which affects crop yields leading to reduced food production and availability; (iii) The effect on infrastructure in turn affects transportation/food distribution leading to food shortage in deficit areas and higher food prices thereby adversely affecting food access particularly to market dependent resource poor households. Climate change has been observed to impact on the entire spectrum of food security.

In recent years several parts of the country have registered food surpluses of varying magnitudes on an annual basis. However, there are regions and districts with pockets of persistent food shortage. Vulnerability to food insecurity has increased especially in the last ten years. Food deficit regions and districts with vulnerable areas have ranged between 4 to 14 and 21 to 62 respectively. On average 37 districts in central and northern parts of the country are repeatedly mainly vulnerable to drought and/or floods inevitably attracting substantial intervention from Government and other stakeholders.

At the lower levels, such as the household, efforts to support increased agricultural productivity and production notwithstanding, food insecurity continues to be a challenge to some section of the population in both rural and urban areas. Even in times when food availability is deemed satisfactory, food access is still a challenge to rural households that produce less than 30 percent of their annual requirements due to among other things rudimentary production tools and agricultural technologies and climate change.

7.2.5 Desertification

Desertification is a major economic, social, and environmental problem facing 900 million people all over the world. About 70 percent of the world's dry lands used for agriculture are already degraded. In Africa, desertification is a chronic problem in dry lands where it has claimed about 73 percent of the total land area. It has reduced and continues to reduce the capacity of the land to produce food and thus exacerbating food shortages leading to frequent famines and starvation. Desertification is the final outcome and last phase of a degradation process of vegetation and soil. This is brought about by a combination of natural and man-

made processes which can be grouped into two categories, namely, direct and indirect causes. The direct causes have a clear and visible bearing on the vegetation and the soil. These include overgrazing, poor crop cultivation practices, removal of vegetation cover, bushfires, and natural causes.

Drought and desertification in The United Republic of Tanzania poses a great challenge to both social and economic development and its impacts are already being felt across the country especially to rural communities. In 2005 the GDP was estimated to grow by 6.9% instead it grew by 6.8% and the main reason for this was severe drought which hit most parts of the country in the last quarter of 2005 (Economic Survey Report, 2005). Agriculture sector was also impacted by drought and desertification. In 2005 the sector grew by 5.2% compared to 5.8% in 2004. The decrease in the growth rate was caused by drought in some parts of the country. As a result of this the production of some food crops particularly wheat, millet and bananas declined triggering food shortages in the country with its associated impacts such as hunger, malnutrition and general deterioration of people's health. The energy sector has continued to suffer as a result of droughts triggering the power crisis in the country and the associated economic implications.

Drought and desertification compounds more the problems of food production in drylands which by virtue of their nature they receive very erratic and unreliable rainfall. These are the areas where poverty is quite looming with most people surviving under the poverty line. Desertification and drought effects exacerbate the problems in these areas with regards to food production and health posing a challenge in poverty reduction initiatives. These problems not only affect the national efforts to implement the National Strategy for Growth and Reduction of Poverty (NSGRP), (famously referred to as MKUKUTA in Kiswahili), but also draws back government initiatives in attaining the MDGs particularly MDG 1 and 7. In this case drought and desertification may pose a challenge to the attainment of sustainable development.

7.2.6 Global financial and economic crisis

The Global Financial Crisis that has been brewing for a while, started to show its effects in the middle of 2007 and into 2008. Around the world stock markets fell, large financial institutions collapsed, and governments in even the wealthiest nations had to come up with rescue packages to bail out their financial systems. The United Republic of Tanzania economy was affected by Global Economic Crisis both through financial channels and real channels. The financial channels include effects through stock markets, banking sector (borrowing from advanced economies, foreign ownership of banks and exposure to sub-prime markets), and Foreign Direct Investments (FDI). Real channels include effects through remittances, exports, imports, terms of trade and aid.

By 2009, there was already an indication that the crisis had already affected a number of sectors including the agriculture, tourism and mining; thus adversely affecting economic growth projections which was projected to grow at 8%, but only grew at 5-6% in 2009/10. In agriculture, for instance demand for cotton products declined in the world market leading to a domestic market crisis as international prices fell by 40%, leading to a pile up of unsold cotton in warehouses. The floriculture area was also affected due to decline demand of flowers in the developed countries. In response, the Government called for concerted effort to boost agriculture and curbing excessive spending. The concerted efforts included mobilising funds for bailing out banks following persistent failure of farmers and traders to service or

reschedule their loans. The effects of global economic crisis in The United Republic of Tanzania were also seen in declining of financial aid from some of the country's traditional donors, affecting the whole national budget. The impact of global financial crisis consequently has been hampering efforts towards achieving the Millennium Development Goals (MDGs) and various other Government plans.

7.2.7 E-waste management

The fast growing use of information and communication technology and rapid turn-over in technology is creating a growing e-waste stream not only in industrialized countries but also developing countries. Another major concern is the importation into developing countries including The United Republic of Tanzania of near-end-of-life electrical and electronic equipment which are not shipped as waste but as goods which makes them not subject to the Basel Convention control. The challenge of e-waste is even of greater concern in developing countries because of lack of capacity for handling the hazardous materials contained in e-waste. This leads to disposal of both e-waste and municipal waste in dumpsites hence polluting the environment. In this context, the current flood of 'e-waste' into the country is considered a risk factor to the attainment of sustainable development and the millennium development goals.

7.2.8 Youth Unemployment

Youth unemployment is due to a number of factors, including lack of skills and training, lack of credit facilities, problems of transition. These problems affect youths, particularly those aged between 15 – 19 years who have just completed primary education. Even in the rural areas which offer unique opportunities because youths learn different occupations from childhood, employment is limited during the off farming season because there are not enough off farm activities to occupy the youths (Integrated Labour Force Survey, 2000/01 – Analytical Report). Youth are the most affected group; youth unemployed is 17 percent as compared to 12.9 percent of the general unemployment rate in The United Republic of Tanzania.

In most developing countries, the youth unemployment rate is high in urban areas than in rural areas. In rural areas most of youth are employed in subsistence agriculture and family based livelihood activities such as handcraft, shops, fishing, seaweed farming and tailoring. Agriculture being the biggest employer of the rural population, its performance is suboptimal due to several factors, which include unfavourable weather conditions, low use of improved agricultural technologies, poor extension and marketing systems etc. This brings the shift of young people from the rural sector to urban informal sector, which is characterized with low income, poor working conditions and hence unemployment rate increase in urban areas. The biggest challenge of rural areas therefore is the high underemployment rather than the high unemployment rates.

Youth unemployment is also a problem in Zanzibar. The Human Development Report of 2009 showed that employment elasticity of growth for Zanzibar for 2007 and 2008 was higher in the private sector than in the public sector; which means that efforts to revitalize the private sector would be good for employment generation. This aspect is addressed in MKUZA II that has a specific goal that targets the promotion of a vibrant private sector for broad-based and pro-poor economic growth (RGoZ, 2010).

The 2009 Zanzibar Human Development Report further showed that tourism, which is one of the drivers of growth in Zanzibar, has not generated as much employment as would be required and there is a feeling among the local communities that it is people from outside Zanzibar that are benefiting from the employment opportunities generated in the tourism industry, leaving the local community to bear the full brunt of the environmental and cultural costs of tourism. The report further shows that tourism has a very weak linkage with the rest of the economy, thus limiting potential multiplier effects in terms of employment and income creation. MKUZA II addresses this issue by strategising on improvement of the quality of the workforce in key growth sectors, including tourism (RGoZ, 2010).

7.2.9 Unguided Rapid Urbanization

Rapid urbanization is a common phenomenon in many cities in developing countries. Whilst urban population was only 4% of the national population of Tanzania at independence in 1961, it rose to 23% during the 2002 national population census and is projected to be about 34% in year 2012. With this trend it is estimated that by the year 2030, 50% of the national population will be urbanized through natural growth, inward migration and transformation of rural settlements into urban centres. This is expected to be a positive evolution if it is well guided. However history shows that over the years of pre- and post-independence of many developing countries the difference in livelihood between urban and rural areas has catalyzed rural-urban migration. Of late, climate change and other weather vulgarities have caused instability in peasantry activities in rural areas hence aggravated rural to urban migration. This migration is mostly eroding rural youth labour to urban areas hence scramble for the limited employment opportunities in towns (as explained in Section 7.2.8). It exerts pressure to the existing social and physical infrastructure besides increasing social security risks in urban centres. Among these is urban sprawl, which exacerbates the already existing inefficient urban public transportation, waste management and hygiene. Programmes for sustainable cities and safer cities now implemented (specifically in Dar es Salaam) seem not adequately addressing the urbanization challenges. The Government has now to have more stringent national policies and strategies focusing more on urbanization and strengthen intensive rural production to maintain positive rural-urban continuum amidst the changing stand (MLHSD, nd).

7.2.10 Population Growth

Population growth and rapid unplanned urbanisation exert pressure to the existing social and physical infrastructure besides increasing social security risks in both rural and urban centres. These challenges need to be further examined since they affect resource use and thus have direct environmental consequences.

7.2.11 Housing

Housing is a challenge to all urban and rural settlements in terms of both quality and quantity. Housing finance has long been pertinent issue. Alternative low cost building materials and building technology have inadequately been addressed in terms of research and construction. Whilst rural areas are more faced with poor quality of houses, in towns shortage and poor hygiene prevail especially in unplanned settlements. Encroachment in hazardous areas has also become a commonplace. There is an arbitrary shortage of 2,000,000 housing units each year. There is no established Housing Bank for long term loans for building new houses and/or improving housing conditions. However, the Government of the United Republic of

Tanzania is doing a number of programmes to increase and improve housing condition in the country. Some of the recent programmes include formalization of properties in unplanned settlements (a programme known in Kiswahili as MKURABITA), with the assistance of the World Bank is implementing Community Infrastructure Upgrading in parts of the major cities, and is transforming the National Housing Corporation to deliver as master developer initiative. Other initiatives taken by the government are the implementation of The Sustainable Cities Programme and the Safer Cities Programme. It has also enacted the Unit Titles Act of 2008, Mortgage Financing (Special Provisions) Act of 2008 and the establishment of the Tanzania Mortgage Refinancing Company in year 2010. Despite of the initiatives taken, the country lacks appropriate housing development strategies. There is also unconscious house design to the impacts of climate change. Emphasis is to be put on building research technology especially on the use of low cost building materials, equity and housing conditions and infrastructure.

7.3 Measures Implemented to Address New and Emerging Challenges

Various mechanisms have also been put in place and implemented in the country to address these challenges. Some of these measures implemented at the local or the national levels are discussed in this chapter. Most of the measures at the national level have policy orientation.

7.3.1 At the local level

a) Use of local varieties and seed selection

The Government in collaboration with the private sector has been involved in production and distribution of quality seeds. Patenting for producers of new type of seeds was legislated in 2002 to motivate researchers. The main objective of seed industry is to develop and disseminate quality seed of different varieties acceptable to farmers at affordable costs. The potential annual requirement for improved seeds of cereals, legumes and oil seeds in the country has estimated to 120,000 tonnes. Currently farmers use only 12,800 tonnes (10%) of improved seed in their production, which means there is large room for increasing productivity in future. The short term target is to reach 30,000 tonnes of improved seed, which is about 25% of the potential requirement (URT, 2008a).

b) Promoting drought tolerant crops in drought prone areas

Rural communities in the countries have a diverse set of approaches that they undertake to adapt to changing environmental conditions, for instance, drought. Growing of fast maturing crop varieties is a major approach in adapting to drought conditions, followed by growing drought tolerant crops (URT, 2008b). Buying supplementary foods is also reported to be an important coping strategy in drought prone areas, especially during years of food shortage.

Growing of drought tolerant crops is also a particular adaptation for the drought prone areas of mainland Tanzania (e.g. Dodoma, parts of Arusha and Iringa, Singida, Shinyanga, Mwanza, Muleba and parts of Kilimanjaro regions). This points to a long term experience of drought conditions to the extent that nearly all members of the community understand the importance of using drought tolerant crops/crop varieties. However, it should be noted that while drought is an existing challenge to such drought prone areas, the impacts are felt more now with climate change, which necessitates the use of more rigorous and elaborate adaptation measures.

c) *Inter-cropping and crop diversification*

Inter-cropping and mixed cropping, involving crops with different growth requirements is another important practice undertaken by farmers in the rural areas as a safety measure against drought and other factors like pests and disease. In this case if one crop fails because of these factors other crops would perhaps perform better. The practice also enhances food security by extending crop harvests in both time and space (URT, 2008b).

The focus in agriculture as a contributor to sustainable development in the country's is based on the fact that agriculture is the mainstay of the economy, employing about 80% of the work force and accounting for over 50% of Gross Domestic Product (GDP) at factor cost and over 50% of foreign exchange earnings. It is also the major source of food supply and raw material for the industrial sector and provides the market for industrial products. Thus agricultural sector development has been undertaken with the objective of increasing the production of food and cash crops in order to improve food security, generate foreign exchange, supply domestic industries with raw materials, and raise rural income levels to alleviate poverty (UNDP, 1997).

d) *Measures to address water scarcity*

- i) Promotion of rain water harvesting: Rain water harvesting is a system of collection rainwater and conserving for future needs has traditionally. The traditional systems were time-tested;
- ii) Management for both urban and rural areas and mapping of water points to ensure sustainability in rural areas;
- iii) Water basin management programme would be effective for both urban areas as country approach to water scarcity;
- iv) Accessing deeper sources of ground water, as shallow well become unusable;
- v) Improve infrastructure such as water reservoir in basin to store water; and
- vi) Encourage groundwater well and rainwater harvesting structure which can help communities to adapt when aquifers subside or dry up due to climate change.

e) *Promotion of rangeland management and Pasture reserves (such as 'ngitiri' schemes)*

The main livestock feed resources in The United Republic of Tanzania mainly natural grasslands, established pastures, cereals and root crops, and agricultural by-products. Livestock is largely concentrated in the semi-arid savannah areas of north and central Tanzania, where grasses are associated with widely scattered shrubs and stunted trees. Two fifths of the livestock population is concentrated in Arusha, Shinyanga, and Mwanza regions, which account for only one fifth of the human population. In many regions the livestock population far exceeds the carrying capacity of the land resulting in overgrazing. The bulk of the livestock in the country are under traditional production systems in which the animals are expected to fend for themselves to a large extent in the rangelands. Thus rangelands have to be well managed. At the local level, this has been a cause for the establishment of pasture reserves such as '*ngitiri*' practiced in the Lake Victoria basin. Other adaptation/coping mechanisms include seasonal migration of livestock keepers and/or distributing livestock herds in different places, this has particularly been the case where increasing environmental change, such as land use change, shrinkage and diminishing size and capacity of rangelands

has limited the potential of rangelands to accommodate large numbers of livestock. In some rangelands rainwater harvesting has been implemented in form of charco dams to provide water for livestock.

f) Promotion of post-harvest technologies

To improve food security enhancement of post-harvest technologies, development and dissemination is of particular importance. The ASDP recommended the promotion of the involvement of the private sector in the provision of post-harvest technologies and development and dissemination of post-harvest technologies. As part of the implementation of these recommendations, post-harvest technologies were disseminated to over 39 districts in the country, involving 290 extension officers and 480 farmers nationwide. Promotion of private sector involvement was a focus area particularly during the 2009/2010 financial year.

7.3.2 At the national level

a) Measures to address food insecurity

The country has been implementing short-term interventions in terms of safety nets programme aimed at enabling vulnerable communities to cope with food insecurity, including: (i) emergency food distribution programmes aimed at sustaining livelihoods of vulnerable communities; (ii) building the capacity of National Food Reserve Agency to address food shortages and implementing post harvest management initiatives such as storage and trade supporting mechanisms such as the warehouse receipt system.

On the other hand it has been implementing medium and long term programmes including the Agriculture Sector Development Programme (ASDP) which has the objectives of achieving a sustained agricultural growth rate of 5 percent per annum, through the transformation of agriculture from subsistence to commercial. This is a Sector wide approach with the main focus at sub-national level where Districts design and implement agriculture and food security programmes and projects. These include: (1) Food and livestock production and processing with emphasis on integrated soil and water management, promotion and support to irrigation development; (ii) Implementation of agricultural and livestock intensification aimed at increasing productivity and production through targeted smart input subsidies and bring about a green revolution; and (iii) Implementing public private partnership initiatives as demonstrated by the Kilimo Kwanza (Agriculture First) resolve whereby Government investments in agriculture and food security are complemented by private investments.

Policy Measures to address food insecurity include the following.

- Concretizing the adaptation actions that are supportive to agricultural modernization and transformation such as improved varieties, modern irrigation and agricultural related technologies;
- Strengthening the mechanisms for continuous monitoring and assessment of food security at all levels and take measures to ensure food availability in the country;
- Improving and strengthening weather forecasting and early warning systems particularly as it relates to disaster management in floods, drought, heat waves, hurricanes, and other climate change related catastrophes.
- Addressing the increasing problems of extreme weather events particularly drought through for example modern irrigation, water harvesting, and water use efficiency technologies.

- Creating climate resilience in the agriculture and other related sectors (such as infrastructure, energy, and water) by integrating climate change in the implementation of agricultural development policies and actions and activities at various levels.
- Enhancing collaboration with other stakeholders to improve adaptation measures to current and future climate change;
- Supporting the establishment and strengthening of national and regional centres of excellence as important nodes for national institutional capacities, for building research capacities and sharing knowledge and experience on food security issues;
- Providing climate services that support institutional capacities, training research and systematic observation actions that will allow the country to build a critical mass of endogenous capacity to deal with climate change challenges in food security agricultural sector in general.

b) Implementation of the National Adaptation Programme of Action (NAPA) for addressing climate change impacts

The Tanzania National Adaptation Programme of Action (NAPA) provides an opportunity to look at the country's climate change related vulnerabilities in various sectors which are important for the economy (URT, 2007). The overall vision of Tanzania's NAPA is to identify immediate and urgent climate change adaptation actions that are robust enough to lead to long-term sustainable development in a changing climate, as well as to identify climate change adaptation activities that most effectively reduce the risks that a changing climate poses to sustainable development (URT, 2007). In addition, the NAPA Framework was strategically formulated to be in line with the Environmental Management Act, 2004, which provides clear directives towards sustainable environmental management in the country.

The main objectives of NAPA are: (i) To identify and develop immediate and urgent NAPA activities to adapt to climate change and climate variability; (ii) To protect life and livelihoods of the people, infrastructure, biodiversity and environment; (iii) To mainstream adaptation activities into national and sectoral development policies and strategies, development goals, visions and objectives; (iv) To increase public awareness to climate change impacts and adaptation activities in communities, civil society and government officials; (v) To assist communities to improve and sustain human and technological capacity for environmentally friendly exploitation of natural resources in a more sustainable way in a changing climate; (vi) To complement national and community development activities which are hampered by adverse effects of climate change; and (vii) To create a long-term sustainable livelihood and development activities at both community and national level in a changing climatic condition.

The Tanzania NAPA identifies several priority areas for adaptation in various sectors, which are ranked as (1) agriculture and food security (including livestock); (2) water; (3) energy; (4) forestry; (5) health; (6) wildlife; (7) tourism; (8) industry; (9) coastal and marine resources; (10) human settlements; and (11) wetlands. The NAPA also prioritizes various project activities in those sectors; such as Water efficiency in crop production irrigation to boost production and conserve water in all areas; Alternative farming systems, water harvesting and recycling; Developing alternative water storage programmes and technology for communities; Community based catchments conservation and management programmes; Exploring and investing in alternative clean energy sources e.g. wind, solar, bio-diesel, etc. to compensate for lost hydro potential (attributable to declining water resources); supporting

afforestation programmes in degraded lands using more adaptive and fast growing tree species; Development of community forest fire prevention plans and programmes; Since The United Republic of Tanzania's economy is largely dependent on agriculture, it is deemed that sustainable development can only be achieved when strategic actions, both short-term and long-term are put in place to address climate change impacts on agriculture and food security, as well as other key economic sectors (URT, 2007); and Development of early warning systems.

c) Agriculture as a National Priority through a policy declaration - Kilimo Kwanza

Kilimo Kwanza is Tanzania's green revolution to transform its agriculture into a modern and commercial sector. Cognisant of the fact that more than eighty percent of Tanzanians depend on agriculture for their livelihood, Kilimo Kwanza recognises that the greatest challenge facing The United Republic of Tanzania is to combat poverty mainly through enhanced agricultural productivity. This is possible particularly considering the Tanzania's endowment of agricultural land, livestock and marine resources, which a large proportion is currently underutilized.

The resolution comprises ten actionable pillars. Those that may directly enhance sustainable development are: (i) the political will to push our agricultural transformation. (ii) enhanced financing for agriculture. (iii) paradigm shift to strategic agricultural production. (iv) incentives to stimulate investments in agriculture. (v) industrialization for agricultural transformation. (vi) science, technology and human resources to support agricultural transformation. (vii) Infrastructure development to support agricultural transformation.

d) National Strategy on Urgent Actions on Land Degradation and Water Catchments

National Strategy on Urgent Actions on Land Degradation and Water Catchments - restricts cultivation in the steep slopes in the highlands parts of The United Republic of Tanzania. In such areas some farmers have been relocated to lowland areas following government directives (cf. NEMC, 2008). While the restricted habitation and cultivation in such areas promote the regeneration of natural vegetation, e.g. forests, in respective areas, it increases occupation and exploitation of the lowland areas. This is likely to result in increased land use pressure in destination areas.

Other initiatives by the government in relation to land management and conservation include the HADO Project, a land conservation project in Dodoma region that has been implemented since the early 1970s; the *Hifadhi Ardhi Shinyanga (HASHI)*, since the mid 1980s; LAMP and SECAP in Arusha and Tanga Regions, respectively. The challenge of some of these initiatives is that while the restricted habitation and cultivation in some areas promote the regeneration of natural vegetation and restoration of ecosystem services, e.g. forests, water flows in respective areas, it is likely to result in increased land use pressure in destination areas.

e) Implementation of poverty reduction strategies namely, Poverty Reduction Strategy Paper (2000-2005); National Strategy for Growth and Reduction of Poverty I (2005-2010) and II (2010-2015) (MKUKUTA); and Zanzibar Strategy for Growth and Reduction of Poverty (MKUZA)

These poverty reduction strategies are based on the achievement of three major clusters of broad outcomes for poverty reduction, namely: (i) growth and reduction of income poverty; (ii) improved quality of life and social well-being; and, (iii) good governance and accountability. The NSGRP and ZSGRP recognise that poverty is largely a rural phenomenon and that the rural poor depend solely or to a greater extent on natural resources. They set broad targets of reducing the proportion of the population below the poverty line from 48% to 24%, reduce the proportion of the rural poor by 7.5% and reduce the proportion of the poor by 3.5%. To reach these targets among other activities proposed these strategies have effectively mainstreamed environmental issues in their formulation and implementation. Among the activities include promoting the use of rainwater harvesting to support irrigation schemes in arid and semiarid areas, sustained effort in re-afforestation, enforcement of water quality laws, regulations and standards in water sources, empowering local authorities and communities to protect water sources.

f) Implementation of the National Water Sector Development Strategy (2005) through the Water Sector Development Programme

This National Water Sector Development Strategy is a blueprint for prioritised timely and appropriate interventions to address the Water Sector challenges in the process of achieving all the targets narrated in the National Strategy for Growth and Reduction of Poverty (MKUKUTA and MKUZA), the Millennium Development Goals by 2015, and contributes towards achieving the Tanzania Development Vision targets by 2025. The National Water Sector Development Strategy has been developed to support re-alignment of other water related key sectoral policies of energy, irrigation, industry, mining, and environment. In the implementation of comprehensive and prioritised water conservation and environmental protection measures the strategy is guided by the Urgent Actions on land degradation and water catchments, and the protection of marine, lakes, rivers and dams environment prepared by the Vice President's Office.

g) Implementation of the National Water Policy (2002), which among others, promotes integrated water management through basin wide approach

National Water Policy (2002) sets out the future direction for the Water Sector in achieving sustainable development and management of the Nation's water resources for economy-wide benefits and an increase in the availability of water supply and sanitation services. The water resources aspects of the National Water Policy have implications for all water using key sectors of the economy, such as agriculture, energy, industry, livestock, mining, environment, tourism and fisheries, as well as for domestic supply. Generally, the Water Policy (2002) develops a comprehensive framework for promoting the optimal, sustainable and equitable development and management of the nation's water resources for the benefit of all Tanzanians, based on a clear set of guiding principles, and effective legal and institutional framework. Among the specific objectives of the water resources management that directly address issues of sustainable development are: (i) to develop equal and fair procedures in access and allocation of the water resources; (ii) To ensure that social and productive sectors and the environment receive their adequate share of the water resources; (iii) to ensure effectiveness and efficiency of water resources utilization; (iv) to promote the management of water quality and conservation; (v) to improve the management and conservation of ecosystems and wetlands; (vi) to promote integrated planning and management of water resources; (vii) to raise public awareness and broaden stakeholder participation in the planning and management of water resources; (viii) to promote regional and international

cooperation in the planning, management and utilization of water; and (ix) to provide the basis for future institutional framework and legislation for water resources management.

The Water Policy aims at addressing cross-sectoral interests in water, watershed management and integrated and participatory approaches for water resources planning, development and management. Also, the policy lays a foundation for sustainable development and management of water resources in the changing roles of the Government from service provider to that of coordination, policy and guidelines formulation, and regulation. The Water Policy, together with The Tanzania Development Vision 2025 and the Zanzibar Development Vision 2020 aims at achieving a high quality livelihood for its people, attain good governance through the rule of law and develop a strong and competitive economy (URT, 2002; RGoZ, 2011a). Water is one of the most important agents to enable Tanzania achieve its Development Vision objectives such as poverty eradication, attaining water and food security, sustaining biodiversity and sensitive ecosystems. Furthermore, the National Water Policy, 2002, is believed to have rectified all the previous policy shortfalls and has introduced decentralisation of water supply management in line with Agenda 21 of the United Nations Environment Meeting held in Rio de Janeiro in 1992, which emphasised the “subsidiarity principle” whereby water supply management should be at the lowest appropriate level

h) Implementation of the National Forest Policy (1998)

The National Forest Policy (URT, 1998a) among other aspects deals with biodiversity conservation; describes the importance of forest ecosystems for maintaining biodiversity and the threats to biodiversity. One of the main objectives envisaged in the policy (Chapter 3) focuses on ensured ecosystem stability through conservation of forest biodiversity, water catchments, and soil fertility which translate into one of the policy areas relating to ecosystem conservation and management, namely Forest land management – the policy states that forests reserves of national strategic importance such as critical watersheds and forest areas with high biodiversity or endemism may remain under central government. However, the long-term goal is to delegate the management of these reserves to executive agencies when they have developed sufficient proven capacity. The policy also addresses issues of Watershed management, where it states that new catchment forest reserves for watershed management and soil conservation will be established in critical watershed areas. It can be seen from the above that although sustainable development is not mentioned directly, the policy directions touch on issues of sustainability through conservation, biodiversity and water catchments management (URT, 1998a).

i) Implementation of the National Energy Policy (2003)

The United Republic of Tanzania’s energy demand is characterised by a low per capita consumption of commercial energy (petroleum and electricity) and a high dependence on non-commercial energies, including biomass fuels in the form of firewood, charcoal and bio-waste. Woodfuel such as fuelwood, charcoal, agricultural residues account for about 90% of final energy consumption (URT, 1992). Other potential renewable energy resources such as biogas, solar thermal, micro-hydro, geothermal, wind and solar energy (URT, 2003b). The national energy policy objectives are to ensure availability of reliable and affordable energy supplies and their use in a rational and sustainable manner in order to support national development goals. The aim is to ensure that the energy sector provides an input in the sustainable development process of the country by establishing a reliable and efficient energy

production, procurement, transportation, distribution and end-use system in an environmentally sound manner, and within the sustainable energy for all context.

The Energy policy recognizes also the need to address economic, cultural and social barriers on the local capacity to design, develop, manufacture, market, distribute renewable energy technologies and provide after-sales services. One of the concerns in the energy policy is the due regard to gender issues. The Energy Policy also recognizes environmental management as a crosscutting concern that should be addressed in all energy sub-sectors, including the need for assessing, in all sources of energy, the environmental impacts of energy exploration, production, distribution and consumption. The aim is to ensure that both production and consumption of energy should not endanger the quality of life of present and future generations, which is whole essence of sustainable development.

j) Implementation of Agricultural Sector Development Strategy (ASDS) through Agriculture Sector Development Program (ASDP) and District Agricultural Development Plans (DADPs) in all Local Government Authorities (LGAs)

The Agricultural Sector Development Strategy (ASDS) is an integral component of the on-going macroeconomic adjustment and structural reforms being implemented by The United Republic of Tanzania. The medium term objectives are aligned to the National Strategy for Growth and Poverty Reduction of Poverty (MKUKUTA/MKUZA) and the long term goals by the Tanzania Development Vision 2025 and the Zanzibar Development Vision 2020. Agriculture is important to Tanzania's immediate and long term economic and social development goals for three reasons. First, widespread improvements in farm incomes are a precondition to reduction of rural poverty. Second, any strategy for addressing food security must involve actions to improve agricultural and livestock production and farm incomes. Third, agriculture, as the single major contributor to national GDP, is key to the country's overall economic development now and in the near future. The Agricultural Sector Development Strategy (ASDS) provides a basis for action by both the public and private sectors to support The United Republic of Tanzania's efforts to stimulate agricultural growth and to reduce rural poverty. Its objectives are (i) to enable farmers to have better access to, and use of, agricultural knowledge, technologies, marketing systems and infrastructure, all of which contribute to higher productivity, profitability and farm incomes; and (ii) to promote agricultural private sector investments based on improved regulatory and policy environment.

k) Establishment of National Empowerment Fund and Agricultural Input Trust Fund which provide loans particularly to small farmers

The Agricultural Inputs Trust Fund, for instance, ensures that farmers in particular, the small holders have timely access to essential agricultural inputs and modern farm implements and machinery, in adequate quantities and at affordable prices. The Fund issues short term soft loans to agro-inputs stockists/retailers, farmers individually or in groups (SACCOS), District Inputs Funds, tractor hiring centres and various institutions involved in agricultural production or render agro-inputs services to farmers. Among the Major Achievements of these funds include the issuance of loans worth 1.5 billion shillings for purchasing 1,959 metric tonnes of mineral fertilizers, 32.4 MT of certified seeds and 13,171 litres of agrochemicals; and about 3.0 billion shillings loans for purchasing 99 new tractors, 7 power tillers and rehabilitation of used tractors.

l) Measures to address global financial and economic crisis

Future strategies to anchor Tanzania's economic stability and resilience to crisis will include: pro-poor growth strategies, enhanced management of macro-economic variables, prudent management of the banking and financial sector and mobilising domestic and international support to mitigate crisis impacts. This will entail maintaining fiscal stability via both revenue mobilisation and prudent expenditure management, and controlling the money supply to meet inflation and economic growth targets, as well as maintaining an adequate level of foreign exchange reserves.

7.3.3 Other measures to address the emerging and new development challenges

- i) Review of the 1997 Agricultural and Livestock Policy so as to take on board new developments and changes;
- ii) Implementation integrated coastal management strategy
- iii) Implementation of the Nairobi Convention
- iv) Implementation of the Mini Tiger 2020 Plan which aims at increasing the rate of economic growth and the per capita income including job opportunities;
- v) Extending support to Community-initiated activities and projects to mitigate poverty and create wealth by TASAF;
- vi) Provision of loans to promote SMEs through National Entrepreneurship Development Fund arrangement; and
- vii) Implementation of the Properties and Business Formulation Program itself aiming at mainstreaming informal sector into formal sector to increase accessibility of credit to the poor.
- viii) Pursuance of Macroeconomic Policies that motivate investment in agriculture by smallholder farmers;
- ix) Creation of enabling environment to provide proactive support to private operators, farmers' organizations, NGOs and CBOs supplying inputs and credit to small farmers and ensuring a strong regulatory mechanism;
 - x) Raising of budgetary allocations in agriculture research and extension services;
 - xi) Providing special support to investments in agricultural processing initiatives particularly in fruits and vegetables;
- xii) Privatization of large farms with the aim of promoting irrigation and large scale farming for the improvement of food safety, food self sufficiency and export of farm products as well as creating employment opportunities in the sector;
- xiii) The National Food Security Policy and the National Food Security Strategy are being finalized;
- xiv) Strengthening Crop Monitoring and Early Warning System in the agriculture sector;
 - xv) Promoting crop resistant food crops;
 - xvi) Carrying out consistently of pre and post food harvest assessment surveys;
 - xvii) Use of Bio-control technologies to control pests;
- xviii) IPM has been piloted in the western cotton growing area and northern zone area where pesticides are used on coffee and vegetable production;
- xix) Control of outbreak/migratory pests using mass capture technique and bio-pesticide to minimize the use of synthetic pesticides;
- xx) Implementing Africa Stockpile Program (ASP) of obsolete agrochemicals with an intention of getting rid of such chemicals in the country;
- xxi) Commitment has been made by the government through the National Irrigation Master Plan (NIMP) to rehabilitate traditional irrigation system;

- xxii) Improvement of Water use efficiency from 10% under traditional irrigation to 30% under improved irrigation system;
- xxiii) Introduction of drip irrigation systems, using wind mill and treadle pumps in Lake Victoria Basin; and
- xxiv) Improvement of National early warning system for monitoring food supply and demand and household access to food.

CHAPTER EIGHT

CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

The National Report for United Nations Conference on Sustainable Development, Rio+20 has been prepared to show progress made by the United Republic of Tanzania towards sustainable development since the Rio Conference in 1992. The report addresses key areas on country's policy, legal and institutional frameworks for sustainable development; their implementation achievements and constraints; domestication/implementation of multilateral environmental agreements; green economy in the context of sustainable development and poverty eradication; and new and emerging issues in sustainable development and opportunities for the post Rio+20 Conference.

Since Rio Conference in 1992 the country actively supported a number of Multilateral Environmental Agreements (MEAs) and sustainable development in general. This implementation has contributed towards attaining environmental sustainability as per MDG. While some of MEAs, such as CBD, UNCCD, and the UNFCCC are cross-cutting, others are sector specific. Most of the MEAs have been mainstreamed into development policies and planning to ensure sustainable development.

Sustainable development at the national and local level requires that domestic institutions work in a coherent and coordinated manner. It requires not only cross-sectional, but also multi-level coordination with the active involvement of all stakeholders. As part of its commitment to ensure sustainable development, the United Republic of Tanzania has established various institutions including Ministry Responsible for Environment at the Vice President's Office (URT); the Division of Environment in First Vice President's Office in Zanzibar, the National Environment Management Council (NEMC); Sector Environmental Sections; Environmental Committees at Local Government Authorities; research and training, and/or agencies to guide the sustainable development process. Tanzania recognizes the role of the UN system at the country level and support on sustainable development that is provided through the UN system. Enhanced institutional arrangement within the UN system will further contribute to sustainable development in the country.

Achieving sustainable development depends much on comprehensive and integrated national plans. Integrated planning and decision making have always been promoted in the country. Integrated planning is undertaken within the national context and in accordance to national policies. The Tanzania Development Vision 2025 and Zanzibar Development Vision 2020 set the national direction and predevelopment priority that guides all the Sector Strategic Plans. These Sector Strategic Plans also take into account other sectoral policies and national strategies and plans such as National Strategy for Growth and Reduction of Poverty 2010-2015, the Zanzibar Strategy for Growth and Reduction of Poverty 2010-2015, the National Environment Action Plan (NEAP) and the National Five Year Development Plan (2011-2015). In addition, environmental issues are currently being integrated into the Medium Term Expenditure Framework (MTEF) budgeting of respective sectors, and receives budgetary allocations. However the resources allocated are generally inadequate.

Furthermore, the government has shown national political commitment to achieve sustainable development goals in various ways. Formulation of various sector policies, strategies and legislation after the Rio Conference of 1992 is a clear evidence of this commitment. There has also been significant commitment and achievements in ensuring sustainable land management and biodiversity conservation (which fulfils the requirements for MDG 7). Provision of social services has also been improved. There has been increased water supply and accessibility through use of various sources of water such as rain water harvesting, protected wells and boreholes. Access to clean and safe water and basic sanitation has improved. Considerable achievements have been attained in other MDGs, for instance increased provision of universal primary education, and reduced child and maternal mortality.

The country also supports the green economy initiative in various ways. Among the steps towards that direction include the focus on renewable energy; increased involvement of the private sector in the renewable energy development; promotion of cleaner production technologies and techniques in industries; fuel switching to natural gas; promotion of energy efficiency cooking stoves; and improvement of energy efficiency in existing industries.

Although there is no national definition of ‘green economy’, it is broadly considered as economy that ensures sustainable development and does not encourage environmental degradation. However, the relationships between the green economy and key national priorities such as agriculture, trade, employment, poverty eradication and wealth creation need to be examined taking into consideration the existing national and regional realities and differences. Thus Green economy must be aligned with national development goals and fashioned in a way that is relevant and consistent with the social, economic and environmental context.

Despite the country’s commitments in implementing international environmental agreements as well as regional and national environmental policies, legislation and strategies, achievement of such efforts have been constrained by various factors, including inadequate environmental management awareness among key stakeholders, insufficient resources to adequately address environmental and sustainable development issues, lack of efficient and effective alternative sources of energy to reduce dependency on forest resources as the main source of energy, and inadequate awareness on sustainable agriculture and livestock keeping practices. Awareness raising among the local communities regarding environmental management is thus of crucial importance.

8.2 Recommendations

Enhancement of sustainable development and green economy in the context of sustainable development and poverty reduction, needs considerable efforts in the post Rio+20 period. Based on this Report, the following recommendations, clustered according to the main themes of the Rio+20 Conference, are proposed:-

a) Sustainable development

- i) Enhance mainstreaming of sustainable development in all sectors;
- ii) Strengthen provision of education and awareness on sustainable development.
- iii) Ensure that appropriate technologies are available, affordable and accessible to farmers for enhanced productivity;
- iv) New and emerging challenges should be acted upon at UNCSA and beyond;

- v) Ensuring new, additional, predictable and stable funding for addressing sustainable development particularly new and emerging issues;
- vi) Establish a National Sustainable Development Committee for follow up of implementation of post Rio+20 deliberations

b) Institutional Framework for Sustainable Development

- i) Enhanced coordination amongst the Government Institutions and Entities working on the three pillars of Sustainable Development within the Country;
- ii) There is need to promote programmatic cooperation and coordination in the UN system including pooling of resources; establishing a common monitoring and evaluation scheme; enhancing cooperation in capacity building and technical assistance; and facilitating the exchange of relevant information between the technical and scientific bodies;
- iii) Strengthen UNEP, as a leading global environmental authority within the UN system that sets the global environmental agenda to promote the coherent implementation of the environmental dimension of sustainable development.
- iv) Ensure that operational aspects of the existing global institutions are more pro-poor and more engaging in terms of the public private partnership.
- v) Global institutions to utilize local capacities alongside the efforts for strengthening national institutional structures.
- vi) GEF and other global financial institutions should simplify the procedure and process to ease access of funds for sustainable development initiatives.
- vii) Rio+20 should provide the opportunity to launch the process for the international community to agree on a set of Sustainable Development Goals (SDGs) beyond 2015 MDG period.

c) Green economy

- i) Green Economy model should be transparent, participatory and should never be used as trade barrier, create technological dependence and/or aid conditionality for developing countries.
- ii) Green economy should enable developing countries to invest in their renewable energy potential such as solar, wind, geothermal and hydropower;
- iii) Green economy should enable developing countries use their natural resources to reduce poverty;
- iv) Green economy must be guided by the principles of equity, justice, sustainability, accountability, inclusiveness, trustworthiness and participation of all, particularly the poor, the marginalized groups and civil society.
- v) Green Economy should promote inclusive growth, conserve livelihoods, and create decent green jobs especially for the youths, lead to greater equity in the access and distribution of resources and benefits. It should enhance social protection while sustaining diversity, environmental resources, ecosystem and its services.
- vi) Green Economy needs to embody values and ethics that protect the rights of communities and people, as well as other species and the natural world, as the only life supporting system.
- vii) Green economy must be aligned with national development goals and fashioned in a way that is relevant and consistent with the national social, economic and environmental priorities.

viii) Develop a National Strategy on Green Economy

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ANNEXES

ANNEX 1: LIST OF INSTITUTIONS CONSULTED

A. Mainland

1. Vice President's Office (Environment)
2. Ministry of Finance
3. Ministry of Foreign Affairs and International Cooperation
4. Ministry of Education and Vocational Training
5. Ministry of Agriculture, Food Security and Cooperatives
6. Ministry of Natural Resources and Tourism
7. Ministry of Industries, Trade and Marketing
8. Ministry of Energy and Minerals
9. Ministry of Water
10. Ministry of Livestock and Fisheries Development
11. Ministry of Health and Social Welfare
12. Ministry of Lands, Housing and Human Settlements Development
13. Prime Minister's Office- Regional Administration and Local Government (PMO-RALG)
14. Ministry of Works
15. National Environment Management Council (NEMC)

16. Environmental Protection and Management Services (EPMS)
17. Tanzania Traditional energy development organization (TATEDO)
18. Journalist environmental association of Tanzania (JET)

19. UNDP United Nations Development Programme
20. UNEP United Nations Environment Programme
21. FAO Food and Agriculture Organization of the United Nations
22. UNESCO United Nations Educational Scientific and Cultural Organisation

B. Zanzibar

23. Deputy Principal Secretary, First Vice President's Office
24. Policy and Planning Commission, First Vice President's Office
25. President's Office, Finance, Economy and Development Planning Commission
26. Division of Environment, First Vice President's Office
27. Environmental Impact Assessment Section, of Environment, First Vice President's Office
28. Department of Energy and Minerals– Ministry of Water, Construction, Energy and Lands
29. Department of Agriculture
30. Commission for Tourism
31. Ministry of Social Welfare, Youth, Women and Children Development
32. Department of Forestry and Non-Renewable Resources

ANNEX 2: ENVIRONMENTAL MAINSTREAMING INTO MKUKUTA

Cluster	Broad Outcome relevant to the Environment	Cluster Goals Relevant to Environment	Operational targets relevant to the Environment	Cluster Strategies relevant to the Environment
Cluster I: Growth and Reduction of Income Poverty	Inclusive and Accelerated Growth Achieved and Sustained.	Reducing income poverty through promoting inclusive, sustainable and employment enhancing growth and development	Access to clean and affordable substitute for wood fuel for cooking increased from 10% in 2010 to 20% in 2015	Integrating, harmonizing and coordinating environmentally sustainable policies and strategies for growth in key growth sectors including climate change adaptation and mitigation
			Different parts of the country linked and connected to regional and global networks by efficient transport systems; raise growth of transport sector from 6% in 2009 to 9.12 % in 2015.	Mitigating and adapting to climate change by supporting research programs to improve and develop new technologies, quality seeds, pest control, and agronomic practices, E.g. tillage, soils and water conservation techniques and irrigation measures and livestock management practice, information collection and dissemination of early warning.
				Promoting measures to cushion farmers, livestock farmers, fishers from famine/droughts impacts, including piloting and scaling up farm crops/livestock insurance.
				Enforcing security and adherence to laws, regulations and environmental considerations including compliance to labour standards, occupation health and safety at work places.
				Ensuring sustainable extraction, maintaining health and safety standards and equitable distribution of proceed to local stakeholders
				Promoting use of energy-efficient appliances and equipment, use of natural gas for industrial heating and domestic cooking.
				Promoting energy saving technology at household, firm, institutions and community levels.
				Promoting energy efficient and conservation as well as integrated environmental management.
				Promoting projects which qualify for carbon credit through CDM window
				Demarcating and conservation of water sources in all basins in order to protect them from environmental depletion and pollution
	Establishing water use and efficient discharge permit register for proper recording of water extraction and			

Cluster	Broad Outcome relevant to the Environment	Cluster Goals Relevant to Environment	Operational targets relevant to the Environment	Cluster Strategies relevant to the Environment
				enforcement of water quality standards
		Goal 4: Ensuring food and nutrition security, environmental sustainability and climate change adaptation and mitigation.	Crop and livestock varieties suited to adverse conditions brought about by climate change introduced and adopted	Promoting increased fish production through aquaculture to complement declining capture fisheries
			Climate change projection and early warning and natural disaster response, coordination framework strengthened.	Improving sustainable fisheries resources development, management, conservation and utilization
				Enhancing sustainable forest management for improved governance, livelihoods, forest conditions, resilience of forest ecosystems and trees outside forest and more efficient use of wood resources.
				Creating awareness on climate change and adaptation strategies
				Supporting research in introducing and promoting adaptation of crops, livestock, and fish varieties and breeds suited to adverse conditions brought about by climate change
				Increasing farmers, livestock farmers, fisheries and aqua farmers awareness on the full impacts of climate change on agriculture
				Designing sustainable crop production and farming systems reflective of climate change scenarios such as breeding pest resistant crops and livestock
				Providing specific adaptation and mitigation options according to regional conditions.
				Strengthening weather projection and early warning systems
				Facilitating development of market based mechanism for climate change mitigation and adaptation and leveraging private sector resources.
		Supporting accelerated development and deployment of new technologies that ensure adaptation and mitigation actions.		
		Enhancing policy research, knowledge and capacity building in areas of climate change and its impacts.		
		Goal 5: Leveraging returns of natural resources	Sustainable utilization of natural resources ensured with	Enhancing sustainable management and utilization of natural and cultural resources.
				Improving legislation on ownership/ access to environment and natural

Cluster	Broad Outcome relevant to the Environment	Cluster Goals Relevant to Environment	Operational targets relevant to the Environment	Cluster Strategies relevant to the Environment
		(both within and outside) for enhancing growth and benefits to the country at large and of communities in particular especially in rural areas	benefits to local communities.	resources.
Cluster II: Improvement of Quality of Life and Social Well-being	Increasing access to affordable, clean and safe water, sanitation and hygiene	Goal 4: Increasing access to affordable, clean and safe water, sanitation and hygiene	Proportion of households in rural settlements provided with improved sources of water increased from 58% in 2009 to 65% by 2015	Rehabilitation of water facilities and construction of low-cost appropriate water sources
	Developing decent human settlements while sustaining environmental quality.		Proportion of households in small towns provided with improved sources of water increased from 53% in 2009 to 57% by 2015	Registration of all community owned water supply and sanitation organizations at district level
	Providing adequate social protection and rights to the vulnerable and need groups.		Proportion of households in urban authorities provided with improved sources of water increased from 84% in 2010 to 95% by 2015	Conducting water point mapping country wide; followed by quarterly monitoring of all mapped water points to determine their status of functionality.
			Proportion of households in rural areas provided with improved sources of water increased from 68% in 2010	Facilitating the supply chain of essential tools and spare parts in rural settlements for ensuring sustainable water facility maintenance

Cluster	Broad Outcome relevant to the Environment	Cluster Goals Relevant to Environment	Operational targets relevant to the Environment	Cluster Strategies relevant to the Environment
			to 75% in 2015	
			Access to improved toilets and functional hand washing facilities at household and public places, particularly schools, health facilities, transport facilities (improved toilets at household level increased from 23% rural and 27% urban (in 2010) to 35% rural and 45% urban in 2015.	Rehabilitation and expansion of water supply systems; and construction of water sources and distribution networks in all small town district headquarters, and all major regional urban centers
			Proportion of population with access to improved sanitation facilities increased.	Conducting regular monitoring of water supply networks to determine leakages and take necessary measures to reduce infrastructure water loss.
			Proportion of schools with access to improved sanitation facilities increased	Ensuring that schools and health facilities have adequate water provision
			Proportion of households connected to the public sewage system increased from 18% in 2010 to 22% in 2015.	Strengthening solid waste management in urban areas
			Solid waste collected in urban centers increased from 47% in 2008 to 85% in 2015	Strengthening drainage and storm water management in urban areas

Cluster	Broad Outcome relevant to the Environment	Cluster Goals Relevant to Environment	Operational targets relevant to the Environment	Cluster Strategies relevant to the Environment
			Storm water management in urban centers strengthened.	<p>Developing and implementing clear sanitation and hygiene policy and plan for participatory sanitation and hygiene promotion and marketing.</p> <p>Establishing a dedicated budget, supported by monitoring of resources, outcomes and outputs.</p> <p>Rehabilitation of expanding sanitation and hygiene facilities and ensuring systems for sustainability</p> <p>Enhancing and expand impact evaluation.</p>
		Goal 5: Developing Decent Human Settlements while sustaining Environmental Quality	Planned and serviced urban settlements with functioning town planning procedures, including improved solid and liquid waste management, use of sustainable transport and cleaner energy ensured.	Supporting municipalities and councils to prepare integrated human settlement plans, surveys and gender balanced issuance of land titles at least in cities, municipalities and towns.
			Implications of rapid urban population growth settlements addressed.	<p>Undertaking preparation of base maps and other forms of data, e.g. Environmental profiles with a view to enhancing access to serviced land of different sizes commensurate with the demand by various social groups and their affordability levels</p> <p>Establishing land reserves in peri-urban areas with a view to among others, ensuring sustainable public use.</p> <p>Scaling up regularization of unplanned settlements</p> <p>Implementing orderly urban land development.</p> <p>Establishing land rangers and building inspectors units in order to efficiently manage land development.</p> <p>Building capacity of local leaders and socially grafted institutions in enhanced security of tenure and protecting land parcels</p> <p>Providing education and awareness on land rights obligations, laws and national land tenure to women, men and vulnerable groups</p> <p>Reviewing on regular basis as need arises, the Land Act, with a view to making land</p>

Cluster	Broad Outcome relevant to the Environment	Cluster Goals Relevant to Environment	Operational targets relevant to the Environment	Cluster Strategies relevant to the Environment
				tenure more inclusive.
Cluster III: Good Governance and Accountability	Equity in accessing public resources and services ensured.	Enhancing national and personal security and safety of properties.	Capacity to adapt to adverse impacts of climate change and mitigate natural and human made disasters enhanced.	Strengthening institutions dealing with early warning systems, risk management and preparedness, and disaster management and response
				Developing and instituting methods for adapting to adverse impacts brought about by climate change and disasters
				Revising laws, regulations and guidelines on risk management, protection, mitigation and reduction of effects of human-made and natural disasters.
				Scaling up national capacity and disaster preparedness to handle human-made and natural disasters
				Stepping up training and mass campaigns on management of disasters.
				Promoting voluntary assistance to victims of human made and natural disasters.
				Developing regional and international collaboration on information sharing.

ANNEX 3: SOME OF THE PRIORITY AREAS UNDER THE SECOND NATIONAL STRATEGY FOR GROWTH AND REDUCTION OF POVERTY (NSGRP II) THAT ARE OF RELEVANCE TO THE GREEN ECONOMY

Cluster I Growth for Reduction of Income Poverty	
<p>Goal 1: Pursuing Sound Macro-economic Management</p> <ul style="list-style-type: none"> i) Consistency of macroeconomic policies. ii) Promotion of trade <p>Goal 2: Reducing Income Poverty Through Promoting Inclusive, Sustainable, and Employment-Enhancing Growth and Development</p> <p><i>2(a) Agriculture</i></p> <ul style="list-style-type: none"> i) Supportive physical infrastructure; ii) Water and irrigation infrastructure; iii) Financial and extension services; and incentives to promote investments Knowledge and information; iv) Value addition activities (agro, livestock and fish-processing, and mechanization); and v) Trade/export development services. <p><i>2(b) Manufacturing</i></p> <ul style="list-style-type: none"> i) Energy/electricity, ii) Knowledge and skills, iii) Information Communication Technology (ICT), iv) Marketing interventions, v) Financial, technology research and development services, vi) Legal environment and Intellectual Property Rights. <p><i>2(c) Tourism</i></p> <ul style="list-style-type: none"> i) Business environment ii) The People in Tourism – skills iii) Marketing and promotion iv) Competitiveness and Value for Money v) Expanded access to transport vi) Product development and innovation. <p><i>2(d) Mining</i></p> <ul style="list-style-type: none"> i) Value addition and improving fiscal regime; ii) Training of local experts (engineering, law); iii) Financing (local investors); iv) Small artisanal miners (technology, skills, start-up capital, environmental v) management etc); 	<p><i>2(f) Energy</i></p> <ul style="list-style-type: none"> i) new power plants; ii) renewable energies; iii) rural electrification; iv) Expanding and strengthening the National Grid; v) Promoting projects which qualify for carbon credit; vi) Promoting participation of local land owners in generation. <p><i>2(g) Water</i></p> <ul style="list-style-type: none"> i) Strengthening basin water resource management; ii) Rehabilitating non functioning systems; iii) Constructing new dams; iv) Integrated management of water resources. <p>Goal 3: Ensuring Creation and Sustenance of Productive and Decent Employment, Especially for Women, Youth and People with Disabilities</p> <ul style="list-style-type: none"> i) Improving labour market information system; ii) Implementing affirmative action in employment creation; iii) Providing selective and customized investment in human capital; iv) Addressing underemployment in rural areas; v) Boosting cultural, sports and creative industries for income generation (and growth of the economy). <p>Goal 4: Ensuring Food and Nutrition Security, Environmental Sustainability and Climate Change Adaptation and Mitigation</p> <ul style="list-style-type: none"> i) Promoting skills among farmers; ii) Maintaining strategic Grain Reserve; iii) Promoting nutrition of infants, young children and mothers iv) Supporting research, training and extension; v) Increasing farmers' awareness vi) Providing specific adaptation and mitigation options; vii) Strengthening weather projection and early warning systems; viii) Promoting private sector investments. <p>Goal 5: Leveraging Returns on National Resources (both within and outside) for Enhancing Growth</p>

<ul style="list-style-type: none"> vi) Marketing interventions; vii) Increasing government shareholding and monitoring. <p><i>2(e) transport physical infrastructure</i></p> <ul style="list-style-type: none"> i) Primary infrastructure in rural areas (feeder, collector, community roads; ii) Labor-based methods in rural roads construction and maintenance; iii) Transit traffic facilitation (port and maritime); iv) Trunk and regional roads; v) Rail and air transport and sea ports; vi) Urban transport. 	<p>and Benefits to the Country at Large and Communities in Particular, Especially in Rural Areas</p> <ul style="list-style-type: none"> i) Strengthening capacity for administration and monitoring; ii) Strengthening the capacity of TRA; iii) Supporting the private sector; iv) Enhancing community-based natural resource management arrangements. v) Strengthening weather projection and early warning systems; vi) Promoting private sector investments.
Cluster II Improvement of Quality of Life and Social Well-being	
<p>Goal 1: Ensuring equitable Access to Quality Early Childhood Development (ECD) Programmes, Primary and Secondary Education for all girls and boys</p> <ul style="list-style-type: none"> i) Improved quality of education at primary and secondary levels through training, recruiting, and deploying qualified teachers and school inspectors; ii) Increased access, especially in upper secondary. <p>Goal 2: Ensuring Expansion of Quality Technical and Vocational Education and Training, Higher Education, and Adult, Non-formal and Continuing Education</p> <ul style="list-style-type: none"> i) Increased access and quality of technical education and vocational training and higher education ii) Improved quality and relevance of tertiary education iii) Expanding and improving education infrastructure, for effective use of schools and continuing education for out-of-school children <p>Goal 3: Improving survival, Health, Nutrition and Well Being, Especially for Children, Women and Vulnerable Groups</p> <ul style="list-style-type: none"> i) Improve human resources for health system (training, deployment, and ii) retention) iii) Improve maternal health iv) Improve health facilities and service delivery 	<p>Goal 4: Increasing Access to Affordable Clean and Safe Water; Sanitation and Hygiene</p> <ul style="list-style-type: none"> i) Rehabilitation of water facilities ii) Construction of additional low-cost appropriate water sources iii) Sanitation, especially in public facilities/places <p>Goal 5: Developing Decent Human Settlements while Sustaining Environmental Quality</p> <ul style="list-style-type: none"> i) Plans, surveys, and issuance of land titles ii) Regularization of unplanned settlements and enforcement of urban land use plans <p>Goal 6: Providing Adequate Social Protection and Rights to the Vulnerable and Needy Groups</p> <ul style="list-style-type: none"> i) Exemption and waiver schemes for PWDs, OVCs, eligible elderly people living with HIV and other vulnerable groups ii) Systems and institutions for effective delivery of social protection packages