THE UNITED REPUBLIC OF TANZANIA

VICE-PRESIDENT'S OFFICE

GUIDELINES FOR MAINSTREAMING SUSTAINABLE CONSUMPTION AND PRODUCTION (SCP) INTO NATIONAL POLICIES AND PLANS

DIVISION OF ENVIRONMENT

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FOREWORD

Majority of the population in the country depends on natural resources which include fertile soils, clean water, biomass and biodiversity. These contribute to the production of a range of goods and services that contribute to income, employment, maintenance of public health and support to economic growth in general. One of the major concerns about production or consumption activities is the environmental impact caused through resource use. Inadequate management of natural resources has contributed to environmental challenges facing the country which include climate change, land degradation, environmental pollution, deforestation, poverty and hunger. Unsustainable patterns of consumption and production, including inefficient use of resources, contribute significantly to these challenges and threaten the process of achieving sustainable development.

The Environmental Management Act (EMA) Cap 191 subsection 79 (2) (d) tasks the Minister for Environment to prescribe guidelines related to mainstreaming Cleaner Production, Sustainable Production and Consumption approaches in relevant policies at government and company levels.

The guidelines on mainstreaming Sustainable Consumption and Production (SCP) into National Policies and Plans cover country situational analysis; mainstreaming guidelines for selected national policies; plans and strategies; institutional arrangement and roles of key stakeholders; monitoring framework and case studies on SCP. In this context, the guidelines have been prepared to serve as a guidance framework for integrating SCP into respective national policies and plans with a view of enhancing their strategies and goals towards sustainability.

Fundamental changes in production and consumption patterns are necessary for achieving sustainable development. Therefore, we need to focus on ways to provide goods and services using fewer resources and preventing emissions and waste for the benefit of the current and future generations. The task of mainstreaming SCP should be at the forefront of development planning and policy formulation across all sectors.

I therefore urge all sectors and other stakeholders to make use of these guidelines for achieving sustainable developments.

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ABBREVIATIONS AND ACRONYM

ARIs	Agricultural Research Institutes
ASDS	Agricultural Sector Development Strategy
CARMATEC	Centre for Agricultural Mechanization and Rural Technology
COSTECH	Tanzania Commission for Science and Technology
CPCT	Cleaner Production Centre of Tanzania
EEE	Electrical and Electronic Equipment
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EPR	Extended Producer Responsibility
FCC	Fair Competition Commission
GDP	Gross Domestic Product
GMOs	Genetically Modified Organisms
IIDS	Integrated Industrial Development Strategy
IPM	Integrated Pest Management
JNIA	Julius Nyerere International Airport
JPOI	Johannesburg Plan of Implementation
KIA	Kilimanjaro International Airport
LGA	Local Government Authority
MDAs	Ministries, Departments and Agencies
MDG	Millenium Development Goals
MEAs	Multilateral Environmental Agreements
MWZ	Mwanza (Airport)
NBSAP	National Biodiversity Strategy and Action Plan
NEAC	National Environmental Advisory Committee
NEAP	National Environmental Action Plan
NEMC	National Environment Management Council
NEP	National Environmental Policy
NIMR	National Institute for Medical Research
NIT	National Institute of Transport
NGO	Non-Governmental Organization
NSCPP	National Sustainable Consumption and Production Programme
NSGRP	National Strategy for Growth and Reduction of Poverty
NWSDS	National Water Sector Development Strategy
PAs	Protected Areas
R&D	Research and Development
3R	Reduce, Reuse and Recycle
REME	Regional Environmental Management Expert
SEA	Strategic Environmental Assessment
SCP	Sustainable Consumption and Production
SIDO	Small Industries Development Organization
SIDP	Sustainable Industrial Development Policy
SMEs	Small and Medium Enterprises
TAFIRI	Tanzania Fisheries Research Institute
TAFORI	Tanzania Forestry Research Institute

TaTEDO	Tanzanian Traditional Energy Development Organization
TAWIRI	Tanzania Wildlife Research Institute
TAZARA	Tanzania Zambia Railway Authority
TBS	Tanzania Bureau of Standards
TDV	Tanzania Development Vision
TEMDO	Tanzania Engineering and Manufacturing Design Organisation
TFYDP	Tanzania Five Year Development Plan
TOE	Tonnes of Oil Equivalent
TIRDO	Tanzania Industrial Research and Development Organization
TRL	Tanzania Railways Limited
UN	United Nations
UNEP	United Nations Environment Programme
URT	United Republic of Tanzania
USD	United States Dollar
VETA	Vocational Education Training Authority
VPO	Vice President's Office
WMA	Weights and Measures Agency
WMAs	Wildlife Management Areas

DEFINITION OF TERMS

Demand Side Management (DSM)	Implementation of policies or measures that serve to reduce or otherwise influence the demand (by users or consumers) instead of supply.
Energy efficiency	Energy Efficiency (EE) encompasses all changes that result in a reduction in the energy used for a given energy service such as heating, lighting or level of activity. This reduction in energy consumption is not necessarily associated with technical changes, since it can also result from a better organisation and management or improved economic efficiency in the sector (e.g. overall gains of productivity).
Guidelines	Guidance outlining recommended or acceptable practices, procedures, norms or standards with the aim of improving or enhancing approaches, methods, techniques or planning to achieve a set target goal. However, it should be noted that, generally speaking, Guidelines are not legally binding and therefore allow some discretion in their interpretation, implementation or use.
Mainstreaming	Integrating or incorporating of an issue into national plans, policies, programmes, strategies and budgets and their implementation. Mainstreaming contributes to ensuring policy sustainability and makes it a priority when decisions on budget allocations are made. Issues for mainstreaming vary widely but may include gender, poverty alleviation, environmental management, and informal sector/economy – just to mention a few.
Polluter Pays Principle (PPP)	The principle according to which the polluter should bear the cost of measures to reduce pollution according to the extent of either the damage done to society or the exceeding of an acceptable level (standard) of pollution.
Sustainable Consumption and Production (SCP)	SCP is defined as the use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations. .

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CHAPTER ONE:
INTRODUCTION

1.1 Background

There is wide global recognition that unsustainable patterns of consumption have led to serious social and environmental impacts including climate change, land degradation, environmental (air, water and soil) pollution, depletion of non-renewable resources, poverty and hunger, just to name a few. Chapter 4 of Agenda 21 recognize that 'the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production and call for action to promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity'. The situation requires rethinking of the way we organize everyday life to live in balance and harmony with the natural environment.

A number of policy measures, projects and programmes have been developed and implemented which directly or indirectly aim at addressing some of the causes or impacts of unsustainable production and consumption. However, majority of the measures have been *ad hoc* and reactive in nature resulting into them being ineffective and of limited impact.

The Environmental Management Act (EMA) (Cap. 191) provides for legal and institutional framework for sustainable management of environment. Sections 79 (2) (d) and 230(2)(s) of the Act, empower the Minister responsible for Environment to prescribe guidelines related to mainstreaming sustainable consumption and production approaches in relevant national policies and plans. The Guidelines provides framework for mainstreaming SCP into relevant policies, strategies and plans thus contributing towards achieving sustainable development.

1.2 Objective and Scope of the Guidelines

The main objective of the Guidelines for Mainstreaming Sustainable Consumption and Production (SCP) into Government and Company Policies and Plans is to ensure that relevant policies, plans, programmes, projects and initiatives integrate SCP with a wider-reaching set of outcomes towards achieving sustainable development.

The Guidelines cover country situational analysis of SCP; mainstreaming guidelines for selected national policies, plans and strategies; institutional arrangement and roles of key stakeholders; monitoring framework and case studies on SCP.

1.3 Justification of the Guidelines

Mainstreaming represents an integrated approach to incorporating an issue into development policies, plans, programmes, strategies and budgets. Mainstreaming contributes to ensuring policy sustainability as it lessens the risk of a measure being viewed as a one-off project or programme and makes it a priority when decisions on budget allocations are taken.

Mainstreaming of sustainable consumption and production (SCP) has been identified to be essential to ensuring the development of policies, programmes, actions and initiatives with a wider reaching set of outcomes than if these were to be undertaken on their own. SCP is a cross cutting issue. It can be applied to almost all products and services in society. Apart from products such as food, clothing, hygienic products, telephones, and cars, services such as shelter, travel, entertainment, education, sanitation and health care are relevant for sustainable consumption and production efforts.

The main benefits of mainstreaming environmental sustainability in national policy and strategy frameworks are:

- Better understanding of the critical development-environment linkages resulting in better management of the synergies;
- Enhanced policy effectiveness at the national level and across sectors, and improved cumulative development gains for society; and
- Improved sustainability of the development process by reducing or managing the adverse environmental impact of the development process.

1.4 Methodology of Developing the Guidelines

The Guidelines were developed in a participatory manner by involving different stakeholders. The document was drafted by a Consultant while Literature review and stakeholder consultations were used in the drafting process. Various mainstreaming guidelines and relevant national policies and legislation within and outside the country were used.

The document was further subjected to a wider national stakeholders' consultative workshop for discussion and review with representation from public and private sectors, civil society organizations, development partners as well as media practitioners. The views of stakeholders were incorporated to finalize the Guidelines.

1.5 Target Audience

The intended use of the Guidelines is to serve as a quick reference and assist stakeholders in planning, implementing, monitoring and evaluating activities in the context of sustainable consumption and production. The Guidelines are also meant for awareness raising and building capacity of stakeholders in fulfilling their roles and responsibilities in pursuit of sustainable development.

These Guidelines targets all those who are involved and/or affected in one way or other with the SCP in the country. The list includes Sector Ministries, Departments and Agencies; Non-Governmental Organizations; Private Sectors; Media and the general public.

CHAPTER TWO:
SITUATION ANALYSIS

2.1 SCP in Sectoral Context

a) Agriculture

Agriculture is still largely oriented towards subsistence farming. Farming and livestock-raising have failed to keep up with the growing population due to economic and environmental constraints. Consequently, food insecurity remains a major concern. A large share of the population remains undernourished, and the degradation of land and ecosystems worsens food insecurity. In urban areas, lifestyle changes have increased the demand for processed and imported food and packaging, leading to significant structural changes in food production systems and the processing industry. From an SCP perspective, these structural changes need to take into account consumer concerns about food safety, quality issues and environmental concerns.

b) Water

Tanzania's annual renewable water resources are 89 cubic kilometers or 2,700 cubic meters of water per person per year in 2001. Based on projected population from estimated 33 million in year 2001 to about 59.8 million by year 2025, annual average available water per capita will be reduced by 45% to about 1,500 cubic meters per person per year which shows that the country will face a water stress situation, considering that below 1,700 cubic meters per person per year signifies water scarcity.

Inefficient water uses, such as low efficiencies of many irrigation schemes, (estimated at 10% to 15%); and leakages from domestic water supplies are estimated to cause water losses up to 50% of water that is supplied; both of which contribute to reduction in water availability. As of June 2012, water supply coverage in Tanzania was 86% and 57% for urban and rural areas respectively, while for For Dar es Salaam City the coverage was 67%.

In Tanzania, basic sanitation coverage is high with about 90% of rural householders' having access to some sort of latrine. However, only around 7% of the rural population and 20% of the urban population has access to an improved sanitation facility. Poor sanitation has been estimated to cost about 1% of the national GDP every year due to premature deaths, illnesses, lost time and productivity due to the burden of poor sanitation.

c) Energy

Tanzania has an estimated annual per capita energy consumption of 0.7 tons of oil equivalent (TOE), far lower than the world average of 1.2 tons of oil equivalent per capita. The country's primary energy consumption is still largely dominated by biomass (mainly wood fuel accounts for about 90% while petroleum and electricity account for about 8% and about 1.2% respectively. Other sources including coal, solar and wind account for less than 1%.

The annual electricity consumption per capita is about 100 kWh and is estimated to be rising at 10% annually. The major end-users of electricity in the country are residential, small commercial and light industries (59.2%); industrial (34%); public lighting (0.1%); Zanzibar bulk supply (6.7%); whereas agriculture and transport consume relatively insignificant levels. The total annual demand for petroleum products is 1.2 million tons. In importing this quantity of petroleum products, Tanzania spends about 30% of its foreign currency earning.

Only about 13% of country's hydro potential has been harnessed and based on the limited initiatives that have been undertaken to date, renewable energy technologies could contribute significantly to the development of the energy sector in the country.

Lack of access to modern energy results in air pollution, acute health problems and environmental problems linked to over-consumption or inadequate management of forest resources.

d) Industry/Manufacturing

The manufacturing sector contributes about 19% of export earnings and 9% of GDP. Industrial sector employment accounts for about 18% of total wage employment and remains the largest single source of urban employment in the country.

In general, manufacturing sector is still small and spread-out, with no specific industrialization pattern. Most impressive development trends have occurred in consumer goods, food, beverages, edible oils, textiles and garments, and metals. In some sub-sectors there have been virtual declines, in particular wood, paper, furniture and machinery. Manufacturing exports have generally remained of low knowledge and technology intensity, hence of low value.

However, implementation of cleaner production programmes in a number of industries country-wide has been possible to improve resource efficiency especially for water and energy consumption. For cases of water consumption, most of the companies have controlled leakages, installed "push button corks" to control water use and carrying out wastewater recycling.

e) Tourism

Tourism and travel accounts for about 13% of GDP and contributes about 25% of foreign exchange earnings (second only to gold exports), and more than half of export earnings from services in 2010. Eco-tourism is a rapidly growing tourism product in the country.

Over 90% of the tourists participate in tours based on wildlife and nature including photographic safaris, walking safaris and hunting. Tourism based on marine or coastal resources are presently minimal. The sector is estimated to directly support some 30,000 jobs and probably as many indirect jobs.

The ecological footprint of tourism activity is significant and the tourism industry and its associated infrastructure tend to be concentrated in biodiversity hotspots. The tourism industry in the country is characterized by a large number of small and medium-sized enterprises (SMEs) that in many cases lack the financial and human resources necessary to provide quality products and integrate sustainable tourism principles.

f) Forestry

Forests cover about 33.5 million hectares which is equivalent to 37.8% of the total land mass and contributes about 4.6% of the national GDP. Still, the forests contain such a high level of biologically diverse resources that Tanzania is one of the richest countries in terms of biodiversity in the world, among the 12 most diverse countries. In addition, the forests provide over 90% of the energy resources, support the development of other important sectors (such as agriculture and tourism) through provision of water resources and catchments, maintain hydrological balance and soil protection, recycle atmospheric gases, provide construction materials, employment sources and others. However, it is estimated that between 130,000 to 500,000 ha of forest annually are lost as a result of uncontrolled socio-economic human activities resulting into land degradation and loss of biodiversity.

g) Mining

Tanzania is endowed with varieties of minerals ranging from precious metals, precious colored gemstones, diamonds, base metals, platinum group of metals (pgm), coal, agro-minerals, chemical minerals and industrial minerals. Mining sector contributes about 3.5% of the national GDP and about 43% of total exports. More than 1,000,000 people are engaged in mining with over 90% engaged in small-scale and artisanal mining.

Despite the abundance of mineral resources, very little value is added to mineral products. On the contrary, the increased commodity demand has led to an increase in exports of ores and concentrates.

h) Fisheries

The fisheries sector contributes about 1.5% of the national GDP, 10% of the national foreign exchange earnings and employs more than 4 million people engaged in fisheries and fisheries related activities while more than 400,000 fisheries operators are directly employed in the sector.

The annual fish production is about 341,000 tones while the fish potential is estimated at 2,665,360 metric tons based on stock assessment conducted in various water bodies in the country. The per capita fish consumption is 8.0 kg and about 30% of animal protein consumption in the country is from fish. Inappropriate fishing facilities, inadequate financial resources and technological skills prevent the country from benefiting from fisheries sector.

i) Wildlife

Tanzania is endowed with diverse wildlife such as the elephant, lion, leopard and buffalo that are found throughout the country. Tanzania has 19% of her surface area devoted to wildlife in protected areas (PAs) where no human settlement is allowed (national parks and game reserves) and 9% of its surface area to PAs where wildlife co-exist with humans. In total, wildlife protected area (PA) network covers 24% of the total land surface area. Forest reserves cover around 15% of Tanzania's surface area, of which 3% overlap with PAs devoted to wildlife conservation. The forms of wildlife utilization currently practiced include game viewing; tourist hunting; resident's hunting; wildlife farming, breeding and ranching; eco-tourism; and zoos and game sanctuary. Some of the major challenges facing the wildlife sector includes failure of the wildlife conservation as a form of land use to compete with other forms of land use, especially to the village communities; and inadequate capacity to ensure sustainable wildlife and wetland resource utilization.

j) Transport

Road transport: Road transport is the dominant mode in Tanzania and carries over 80% passengers and over 75% of freight traffic. However, Tanzania has the lowest road density in the East Africa region (only 103 m/km^2), and only 7.4 m/km^2 are paved roads. Available statistics reveal that only 28 percent of the rural population is living within 2 km of an all-weather road.

Railway transport: The railways system boasts a total track length of 3,676 km, which are operated by two railway systems: the Tanzania Railway Limited (TRL)-2,706km and Tanzania-Zambia Railway Authority (TAZARA)-970 km. Over the past decade, the performance of the railways has declined substantially. The decline is explained by a dilapidated infrastructure, due to inadequate investment in maintenance and rehabilitation of railways; old locomotives and wagons; and outdated permanent ways leading to high maintenance costs.

Marine transport: Tanzania has both sea and inland waterways ports. The main Indian Ocean ports are Dar es Salaam, Mtwara and Tanga. The port of Dar es Salaam is one of the key entry points into the East Coast of Africa handling about 93% of Tanzania's port traffic. The major inland waterways ports are Mwanza, Kemondo Bay, Bukoba and Musoma on Lake Victoria; Itungi on Lake Nyasa; and Kigoma on Lake Tanganyika.

Air transport: There are 125 airports in Tanzania including airstrips serving domestic and international traffic. 62 out of that total of airports are owned and managed by the government. Tanzania has four international airports located in Dar es Salaam, Zanzibar, Kilimanjaro and Mwanza. Air transport plays an important role in the economy, particularly for the tourism sector and horticulture. However, the conditions of basic airport infrastructures, such as runways, aprons and taxiways remain poor for most of the airports in Tanzania.

Pipeline: The pipeline system consists of 1,750 km used to transport crude oil products from Dar es Salaam to Ndola refinery in Zambia, and 232 km used to transport natural gas from Songo Songo to Dar es Salaam.

k) Public Health

Total expenditure on health services amounts to about 6% of the national GDP. It is estimated that approximately 90% of the population lives within 5 km of a primary healthcare facility.

There has been an improvement in the infant and under-five mortality rate, largely due to the coverage of child immunization, vitamin A supplementation, and gains in malaria control through improved diagnosis and treatment, as well as prevention through increased use of insecticide treated nets. Despite all these efforts, health services in the country are still not satisfactory. Challenges include limited financial and human resources, inadequate healthcare facilities and shortage of essential medical supplies.

l) Environment

The National Environmental Policy (1997) has identified six of the most pressing environmental challenge including: loss of wildlife habitats; deforestation; land degradation; deterioration of aquatic systems; lack of quality water; and environmental pollution. Other emerging environmental challenges include climate change, electronic waste, biofuels, Genetically Modified organisms (GMOs) and invasive alien species.

For instance, the costs from climate change impacts is expected to be as high as 2% of GDP by 2030 and owing to rising sea level a loss of 274 km^2 of land is forecasted.

2.2 Consumer Behaviour

Consumers in the country are in most cases concerned with prices, whether the product is genuine, lasts longer, country of origin and whether it is common in the market. Little attention is paid on pertinent issues like labels, materials data sheets and inquiry on the product efficiency environmentally friendly and disposal method after its useful life. 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 institutions which have functions that are more or less related to the protection of the interest of the consumers include:

- Tanzania Bureau of Standards (TBS) which is responsible for the setting up and enforcing product and environmental quality standards;
- The Fair Competition Commission (FCC) which promotes and protects 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, maximize the efficient allocation of resources and protect consumers; and

- The Weights and Measures Agency (WMA) which was established to provide protection of consumers in relation to weights and measures.

Traders have also a key role in facilitating sustainable consumption. 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 local 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.

CHAPTER THREE:

GUIDELINES FOR MAINSTREAMING SCP INTO NATIONAL POLICIES AND PLANS

This Chapter provides framework guidelines for mainstreaming SCP into Government policies and plans. This includes macro-economic development plans and strategies as well as sectoral policies, plans and strategies.

The respective mainstreaming guidelines were developed following a review of the policies and plans in which priorities, opportunities and gaps for improvement in the context of SCP were identified. These provided platform for charting out the guidelines with a view to enhance policy effectiveness towards achieving sustainable socio-economic development within and across sectors.

3.1 National Development Plans and Strategies

a) Macro-economic Framework

Tanzania Development Vision 2025: The Vision seeks to transform Tanzania into a middle-income country by the year 2025, with a per capita income of USD 3,000 (in nominal terms) by 2025. It is envisioned that the following specific achievements would be attainable by the year 2025: high quality livelihood; good governance and the rule of law; and a strong and competitive economy.

Second National Strategy for Growth and Reduction of Poverty (NSGRP II) (2010-2015): The Strategy emphasizes on: prioritization of interventions in key priority growth and poverty reduction sectors; strengthening evidence based planning and resource allocation in the priority interventions; aligning strategic plans of Ministries, Departments and Agencies (MDAs) and Local Government Authorities (LGAs) to this strategy; scaling up the role and participation of the private sector in priority areas of growth and poverty reduction; mainstreaming cross cutting issues in MDAs and LGAs processes; strengthening the monitoring and reporting systems; and better implementation of core reforms, including further improvement of public financial management systems .

Tanzania Five Year Development Plan (TFYDP-I) (2011/12-2015/16): The Plan targets five core priorities to unleash Tanzania's latent growth potentials. They include: (i) Infrastructure, and in particular large investments in energy, transport infrastructure (ports, railways, roads, air transport), water and sanitation and ICT; (ii) agriculture, focusing on the transformation of agriculture for food self-sufficiency and export, development of irrigation particularly in selected agricultural corridors, and high value crops including horticulture, floriculture, spices, vineyards etc.;
(iii) industrial development specifically targeting industries that use locally produced raw materials such as textiles, fertilizer, cement, coal, iron and steel, as well as development of special economic zones, using public-private partnerships; (iv) human capital and skills development, with an emphasis on science, technology and innovation; and (v) tourism, trade and financial services.

b) SCP Mainstreaming Guidelines

i) Facilitate transformation of the economy from a predominantly agricultural one with low productivity to a diversified and semi-industrialized economy with a modern rural sector and high productivity in agricultural production;
ii) Integrate environmental dimension in economic planning by taking into consideration the impact and the cost of environment in macro-economic planning;
iii) Provide enabling environment such as infrastructure (especially energy, transport and communications), human resources and legal frameworks geared towards stimulating economic activity and private investment;
iv) Support accelerated development and deployment of new technologies that ensure adaptation and mitigation actions to climate change impacts; and
v) Promote science and technology education.

3.2 Sectoral Policies, Plans and Strategies

3.2.1 Agriculture

a) Policy and Plans

Agriculture and Livestock Policy (1997): The Policy 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. Some of the relevant policy interventions of relevance to SCP are to: promote intensification and diversification of agriculture production; soil erosion control and soil fertility improvement; minimize encroachment in public lands including forests, woodlands, wetlands and pasture; strengthen agrochemical monitoring and registration; promote agro-forestry and organic farming; minimize pollution of both surface and ground water; improve water use efficiency in irrigation; and intensify plant genetic conservation programmes.

Agricultural Sector Development Strategy (ASDS) (2001): The primary objective of the ASDS is to create an enabling and conducive environment for improving profitability of the agricultural sector as the basis for improved farm incomes and rural poverty reduction in the medium and long-term. The ASDS address the following critical issues: institutional framework for managing agricultural development; private sector participation; improving net farm returns and commercializing agriculture; and mainstreaming planning for agricultural development in other sectors

"Kilimo Kwanza" Declaration (2009): is a national resolve to accelerate agricultural transformation. It comprises a holistic set of policy instruments and strategic interventions towards addressing various sectoral challenges and taking advantage of the numerous opportunities to modernize and commercialize agriculture in Tanzania. The implementation of *KILIMO KWANZA* revolves around ten pillars, namely

i) Political will to push our agricultural transformation;
ii) Enhanced financing for agriculture;
iii) Institutional reorganization and management of agriculture;
iv) Paradigm shift to strategic agricultural production;
v) Land availability for agriculture;
vi) Incentives to stimulate investments in agriculture;
vii) Industrialization for agricultural transformation;
viii) Science, technology and human resources to support agricultural transformation;
ix) Infrastructure development to support agricultural transformation; and
x) Mobilization of Tanzanians to support and participate in the implementation of *KILIMO KWANZA*.

b) SCP Mainstreaming Guidelines

i) Integrate implementation of 'KILIMO KWANZA' in relevant national plans and strategies and carry out Strategic Environmental Assessment (SEA) to ensure environmental issues are adequately integrated;
ii) Promote value addition to agricultural products and strengthen linkage between agriculture and industry and increase access to local and foreign markets for value added products;
iii) Strengthen the production of non-traditional export commodities to enhance the diversification of agriculture;
iv) Expand organic farming and other environmentally friendly agricultural production systems;
v) Promote development and application agricultural genetic modification to contribute in improving in productivity while ensuring that the introduction of GMO crops (laboratory research, confined field trial and commercial release) adhere to national biosafety regulatory framework;
vi) Expand and improve irrigation infrastructure;
vii) Use of appropriate low cost technologies blended with modern affordable technologies like drip and sprinkler irrigation systems and the use of wind and solar power for pumping water;
viii) Ease availability and enhance utilization of modern agricultural inputs and mechanization;
ix) Support and facilitate implementation of adaptation measures to climate change impacts;
x) Strengthen early warning system;
xi) Integrate SCP and environmental issues in educational curricula of agricultural training institutes; and
xii) Strengthen the linkage between research and agricultural extension.

3.2.2 Water

a) Policy and Plans

National Water Policy (2002): The main objective of the Policy is to develop a comprehensive framework for sustainable development and management of the water resources, in which an effective legal and institutional framework for its implementation will be put in place. The Policy embodies the principle that water basins should be the planning and management units rather than regions, and the principles of decentralization of water supply management to the lowest appropriate level.

National Water Sector Development Strategy (NWSDS) (2005-2015): The main objective of the NWSDS is to develop a coherent, holistic and integrated strategy for the water sector. The Strategy promotes inter-sectoral linkages of water resources management through public education and awareness programmes as well encouraging inclusion in the education curricula.

b) SCP Mainstreaming Guidelines

i) Identify, protect, demarcate and acquire land title deeds for water sources and infrastructure;

ii) Classify all water sources on the basis of quality and quantity, and determine and allocate minimum water requirements for ecosystem needs for all regulated and unregulated water sources;
iii) Promote use of environmentally friendly technologies including gravity, solar and wind power for water pumping;
iv) Enforce the "polluter pays" principle in conjunction with other legal and administrative actions that promote water conservation;
v) Encourage and facilitate industries to use environmentally friendly raw materials with less toxic elements and adopt cleaner production technologies and techniques;
vi) Promote safe and affordable off-site waste management services (sewerage and sludge collection, treatment and reuse/disposal) for densely populated areas;
vii) Ensure that industries pre-treat their wastewater before discharging into municipal sewerage system;
viii) Institute comprehensive water quality monitoring and assessment to identify extent and status of the quality of the water resources so that problems are detected early and remedial actions employed timely;
ix) Promote and facilitate reuse of wastewater whenever appropriate in different economic sectors;
x) Implement improved sanitation for schools, health facilities and other public institutions and locations;
xi) Enhance storm water management to mitigate impacts on properties, infrastructure, human health and the environment; and
xii) Promote adaptation measures to impacts of climate change in water sector.

3.2.3 Energy

a) Policy and Plans

National Energy Policy (2003): The Policy aims at ensuring availability of reliable and affordable energy supplies and their use in a rational and sustainable manner in order to support national development goals. The goal of the Policy is to establish an efficient energy production, procurement, transportation, distribution and end use systems in an environmentally sound and sustainable manner.

b) SCP Mainstreaming Guidelines

i) Promote biomass-to-energy conversion efficient technologies such as improved charcoal production technology, improved charcoal and wood stoves, use of biomass waste briquettes and biogas production;
ii) Provide economically justified feed-in tariffs or other mechanisms to give incentives and reduce risks for electricity production from renewable sources;
iii) Promote research and development efforts aimed at dissemination of energy technology for rural development;
iv) Harness the proven coal reserves and natural gas for domestic, industrial and commercial applications;
v) Promote power trading with neighbouring countries to allow for optimised use of electricity generated from cleaner sources of energy and cleaner technologies;
vi) Promote sustainable production and utilization of biofuels to improve energy security;
vii) Encourage and promote energy efficiency in all sectors;

viii) Institute energy pricing with due regard to social and environmental costs including the application of polluter pays principle so as to discourage wasteful behaviour in energy use;
ix) Conduct and/or encourage energy audits particularly in energy intensive industries;
x) Encourage community investment and ownership of energy systems e.g. solar farms, windmills and biomass plants;
xi) Use of the Clean Development Mechanism to facilitate the development of environmentally sound energy and reduction of emission;
xii) Exploit the utilization of nuclear energy resources for domestic and industrial use;
xiii) Promote co-generation of power by exploiting the potential of industries in the utilization of biomass; and
xiv) Promote adaptation measures to impacts of climate change in the energy sector.

3.2.4 Industry

a) Policies and Strategies

Sustainable Industrial Development Policy (SIDP) (1996): The major goal of the Policy is to promote the sustainable productive base which maximizes the growth rate and sustainability of economic growth. Emphasis is given to development of intermediate and capital goods industries as agents for enhancing sustainable productivity, technological progression as well as structural transformation and integration. Furthermore, the Policy promotes environmentally friendly and ecologically sustainable industrial development.

Integrated Industrial Development Strategy 2025 (IIDS 2025): The aim of the Strategy is to enhance industrialization under the newly emerging economic environment and contribute to the realization of targets stipulated in Tanzania Development Vision (TDV) 2025. The Strategy targets four sub-sectors, in view of comparative advantages, length of value chain and availability of resources, and these are: fertilizer and chemicals; iron and steel; textile; agro-processing; edible oil; cashew nut processing; fruit processing; milk and milk products; leather and leather products; light machinery; and hospitality industry. The Strategy targets an average growth of manufacturing sector of 15% and to increase its contribution to GDP from 9% in 2010 to 23% in 2025.

Small and Medium Enterprise (SMEs) Development Policy (2003): The overall objective of the SMEs Development Policy is to foster job creation and income generation through promoting the creation of new SMEs and improving the performance and competitiveness of the existing ones.

b) SCP Mainstreaming Guidelines

i) Promote clustering of industries at every level and every feasible location to accelerate growth dynamism and to improve efficiency of industries;
ii) Evaluate infrastructure needs of new industries and how they can be integrated into existing policies on infrastructure;
iii) Encourage investment in industries that utilize local resources;
iv) Promote rural industrialization through promotion of SMEs and up-grading of rural enterprises so as to add value to agro-products;
v) Enhance supply chain linkages between SMEs and export oriented enterprises;
vi) Promote environmentally friendly or resource efficient industrial production/manufacturing;

vii) Encourage minimization of use of energy intensive process steps such as high heating differentials, heavy motors and extensive cooling in order to reduce the amount of energy needed by the production process;
viii) Support investigation of external markets for recycling by other industrial processing operations located in the neighborhood or region (e.g., waste exchange);
ix) Promote and facilitate innovation and creativity in enhancing sustainability of industries;
x) Promote industrial investments which integrate pollution prevention programmes;
xi) Ensure that environmental considerations are given due emphasis in all SME development interventions;
xii) Enhance networking between R&D Institutions and SMEs to upgrade technologies so as to raise the productivity and competitiveness of the sector;
xiii) Facilitate adoption of production/manufacturing technologies which utilize renewable energy; and
xiv) Facilitate establishment or strengthening of a development fund for technology upgrading of production processes of firms with a national and international value chain.

3.2.5 Tourism

a) Policy

National Tourism Policy, 1999: The Policy acknowledges the relationship between the environment and development of sustainable tourism. Thus, it aims 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 types of vegetation.

b) SCP Mainstreaming Guidelines

i) Institute environmental management plans for each tourist attraction;
ii) Support projects combining conservation and promotion of cultural heritage sites;
iii) Ensure negative impacts of tourism on the natural and cultural environment are avoided or minimized through the responsible use of resources, effective waste management and minimizing pollution;
iv) Recognize best practices in tourism through awards, certification and accreditation programmes;
v) Promote participatory approach in planning and decision making, development and delivery of tourism programmes and services;
vi) Support strategies that would ensure the informal sector benefits more from tourism;
vii) Promote mutual use of facilities and services by local communities and tourists; and
viii) Support visits by local school children to tourism sites that promote and display their heritage.

3.2.6 Forestry

a) Policy

National Forest Policy, 1998: The overall goal of the Policy (1998) is to enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her natural resources for the benefit of present and future generations. The Policy, among other aspects, recognizes the high value of forests due to the high potential for royalty collection, export and tourism earnings as well as the recycling and sequestering of carbon and conservation of globally important biodiversity. Furthermore, the policy emphasizes on 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 focuses on ensured ecosystem stability through conservation of forest biodiversity, water catchments, and soil fertility.

b) SCP Mainstreaming Guidelines

i) Promote integrated watershed management approaches;
ii) Promote reforestation programmes to regenerate forests which are critical for environmental protection and reducing land degradation;
iii) Support diversification in forest utilization especially through promotion of non-consumptive use of forests such as eco-tourism;
iv) Integrate carbon sequestration and the provision of carbon sinks in the planning, management, utilization and monitoring of forests;
v) Institute forest monitoring mechanisms for potential risks of insects, diseases, invasive alien species and fire;
vi) Institute certification mechanism for promoting environmental conservation;
vii) Promote development of biodiversity-related tourism, to generate income for local and national benefits;
viii) Facilitate economic and market valuation to better recognize the full range of goods (wood, fiber, bioenergy, non-wood forest products) and environmental services (storage of carbon, conservation of biological diversity, protection of soil and water and provision of ecotourism, recreation and amenity value) from forests;
ix) Promote equitable sharing of benefits from forest resources as well as in related land uses in the landscape among the stakeholders; and
x) Facilitate integration of the full value of forest goods and services in planning, management, monitoring and reporting, particularly by governments and local authorities, including in the setting of land-use priorities.
xi) Promote development of viable and efficient forest-based industries, particularly in secondary and tertiary processing, so as to fully utilize forest products, reduce excessive waste and satisfy domestic and export demand through appropriate incentives;
xii) Institute competitive bidding for forest harvesting concessions to improve transparency, to increase revenues and reflect real values of the forest resources; and
xiii) Introduce performance bonds for forest harvesting to improve best practice and to ensure responsible management.

3.2.7 Mining

a) Policy

Mineral Policy of Tanzania, 2009: One of the objectives of the Policy is to reduce or eliminate adverse environmental effects of mining by promoting health and safety conditions in mining areas and addressing social issues affecting local communities. It requires mining operations to carry out EIA and directs mining companies to set aside funds for environmental rehabilitation and mine closure obligations.

b) SCP Mainstreaming Guidelines

i) Promote mineral processing for value addition where there is comparative advantage to do so;
ii) Promote the application of environmentally friendly technologies and methods in mineral exploitation;
iii) Enhance local capacity for mineral analysis;
iv) Ensure compliance to mine closure plan contained in respective Environmental Management Plans (EMPs);
v) Establish monitoring programmes and/or early warning systems for the assessment of potential pollution and for the detection of pollution events from closed mines;
vi) Provide extension services and facilitate access to appropriate technology, funding mechanisms and partnerships for artisanal and small scale miners; and
vii) Encourage corporate social responsibility.

3.2.8 Fisheries

a) Policy

National Fisheries Sector Policy and Strategy Statement, 1997: The Policy focuses on the promotion of sustainable exploitation, utilization and marketing of fish resources to provide food, income, employment and foreign exchange, earnings and effective protection of the aquatic environment to sustain development.

b) SCP Mainstreaming Guidelines

i) Encourage value addition to fish and fishery products;
ii) Promote environmental friendly fishing gear, methods and practices;
iii) Promote small scale and/or semi intensive aquaculture technologies and develop necessary infrastructure and support services;
iv) Improve current extension services through public-private partnerships;
v) Institute specification of access rights and controlled access to fisheries resources;
vi) Encourage sustainable exploitation of under-utilized fisheries;
vii) Promote fisheries co-management approach;
viii) Promote use of appropriate fishery post-harvest handling and processing technologies;
ix) Discourage land-based activities that have negative impact on biodiversity in the catchment areas;
x) Ensure protection and rehabilitation of fragile aquatic ecosystems including wetlands and mangroves which act as fish breeding grounds and buffer zones;
xi) Protect endangered and threatened aquatic species; and
xii) Institute preventive and control measures for the spread of noxious-water weeds such as water hyacinth.

3.2.9 Wildlife

a) Policy

Wildlife Policy, 2007: The Policy focuses on wildlife protection and conservation in order to ensure sustainability of wildlife ecosystems. Some of the objectives of the Policy include establishment of Protected Areas (PA); maintenance and development of a PA network in order to enhance biological diversity; conservation of wildlife and its habitats outside the core areas by establishing Wildlife Management Areas (WMAs) and conservation of wetlands.

b) SCP Mainstreaming Guidelines

i) Adopt an ecosystem-based management approach to wildlife conservation and management;
ii) Enhance the use of indigenous knowledge in the conservation and management of wildlife;
iii) Establish comprehensive wildlife resources database at all management levels for use in the policy, conservation planning and management decision-making processes;
iv) Promote the processing of wildlife products locally and their marketing;
v) Encourage diversification of the tourism product base to reduce pressure on wildlife resources and maximize economic benefits;
vi) Ensure that benefits arising from access to genetic resources such as intellectual property rights, traditional knowledge and technology are shared equitably with communities living in areas adjacent to the protected areas where the genetic material originated;
vii) Establish collaborative management arrangements and joint ventures that enhance local community and private sector involvement in the management of protected areas;
viii) Regulate the importation of exotic species and the re-introduction of species including genetically modified organisms (GMOs); and
ix) Institute control and preventive measures for invasive alien species in protected areas.

3.2.10 Transport

a) Policy framework

The National Transport Policy (2003): The Policy has five main objectives and goals namely: the need for a coherent policy, institutional arrangements, laws and regulation, sector capacity building and technological development. In addition, it emphasizes on incorporation of environment protection and management measures at the design and development stages of transport infrastructure and when providing service; strengthening of institutional framework and legislation for the provision of effective, reliable and integrated transport service; and enhancing technical and managerial capacity building in the transport sector. It further states that the low science and technology base is one of the main challenges in technological development.

b) SCP Mainstreaming Guidelines

i) Identify the modes of transport and the most economic corridors to be used for development planning;
ii) Define and integrate into the priority strategic rural road network that allow linkages between agricultural and market centres of the country;
iii) Develop railway corridors to link strategic economic areas (e.g. agriculture and mining);

iv) Assure a balance between the services offered by the public and private sector in order to ensure a minimum level of service in the interest of the public;
v) Establish an efficient urban public transportation system in major cities and towns to reduce congestion, pollution, costs, and increase mobility for both the urban and rural population;
vi) Develop and create intermediate means of transportation, especially in the rural areas;
vii) Establish a permanent inspection and maintenance programme for vehicles and other equipment related to the transport sector;
viii) Establish regulations and tariffs against pollution emissions from vehicles;
ix) Establish mitigation measures focused on the reduction of environmental impact of transport development projects; and
x) Promote diversification of the modes of transport, and improvement of the quality of the transport services on the transit corridors.

3.2.11 Public health

a) Policy framework

National Health Policy, 2007: The objective of the Policy towards environmental health is to protect community health by enhancing sustainable environmental health. To achieve this objective, some of the policy statements are to:-

i) Ensure that the community adhere to environmental health standards;
ii) Improve waste management systems including disposal of hospital wastes;
iii) Continue to educate health service providers on the importance of environmental health in their working areas;
iv) Review and enact laws and procedures for conservation and protection of the environment; and
v) Continue to involve stakeholders in protecting natural resources.

b) SCP Mainstreaming Guidelines

i) Promote preventive and regenerative healthcare which lower the need for subsequent resource-intensive interventions;
ii) Improve access and services in the general health care delivery system;
iii) Promote technologies in support of sanitation, environmental and occupational health;
iv) Strengthen application of high impact interventions on the control of diseases which are the main contributors to the burden of morbidity and mortality, and the loss of productivity in the country;
v) Strengthen epidemiological surveillance system to ensure effective detection of potential epidemics;
vi) Promote integration of indigenous herbal and traditional knowledge and practices into the healthcare sector;
vii) Promote research into plant medicine to complement allopathic medicine and commercialization of the research results; and
viii) Establish specialized health centers to promote health tourism.

3.2.12 Environment

a) Policy framework

National Environmental Policy (1997): The objectives of the Policy among others, include:-

i) 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;
ii) To prevent and control degradation of land, water, vegetation, and air which constitute our life support systems;
iii) To raise public awareness and understanding of the essential linkages between
iv) environment and development, and to promote individual and community participation in environmental action;
v) To promote international cooperation on the environmental agenda.
vi) To conserve and enhance our natural resource and man-made heritage, including the biological diversity of the unique ecosystems of Tanzania.
vii) To improve the condition of productivity of degraded areas including rural and urban settlements in order that all Tanzanians may live in safe, healthful, productive and atheistically pleasing surroundings.

National Environmental Action Plan (NEAP) (2012): The objective of the NEAP is to set out priority actions to address national environmental challenges and sets targets and indicators for tracking implementation progress. It is the basis for integrating environmental concerns in formulation and implementation of development plans and programmes at all levels. The NEAP addresses a total of 11 key environmental issues and these are: (i) land degradation; (ii) water resources degradation and pollution; (iii) degradation of aquatic resources; (iv) loss of wildlife habitats and biodiversity; (v) deforestation; (vi) urban pollution; (vii) climate change; (viii) modern biotechnology; (ix) electrical and electronic equipment (EEE) waste; (x) invasive alien species (IAS); and (xi) biofuels.

b) SCP Mainstreaming Guidelines

i) Review the National Environmental Policy (1997) and National Biodiversity Strategy and Action Plan (NBSAP) (2001) to integrate emerging issues including climate change, biofuels, invasive alien species, management of electronic waste and Genetically Modified Organisms (GMOs);
ii) Promote SCP as a policy instrument across all sectors;
iii) Institute extended producer responsibility (ERP) to facilitate waste management particularly of hazardous waste;
iv) Encourage sound waste and chemicals management;
v) Promote and facilitate adoption of cleaner and renewable energy sources;
vi) Promote preventive and control measures against invasive alien species; and
vii) Promote environmental education, information and sensitization actions including incorporation of environment in primary, secondary and tertiary education.

CHAPTER FOUR:

INSTITUTIONAL ARRANGEMENT AND ROLES OF STAKEHOLDERS

4.1 Institutional Arrangement for Promoting SCP

The Environmental Management Act (Cap 191) sets up the Institutional Framework for environmental management in the country. It confers the task of overall coordination and policy articulation 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 (VPO). Therefore, coordinating the promotion and implementation of SCP falls within the existing mandate of VPO (Figure 1).

The Act establishes the National Environmental Advisory Committee (NEAC) with the role of advising the Minister responsible for environment, among others. It confers the role of enforcement to the National Environment Management Council (NEMC). The Act directs establishment of Sector Environment Sections with the role of overseeing environmental management to such respective sectors. It also gives power to the Regional Secretariats to designate Regional Environmental Management Expert (REME) charged with responsibility to advice and oversee implementation and enforcement of EMA.

Furthermore, it empowers LGAs (City, Municipal, District, Township) to designate or appoint Environmental Management Officers to oversee implementation of EMA at respective levels. In addition, the Act establishes Environmental Committees at different LGAs levels to advise and oversee the implementation of EMA within their jurisdiction.

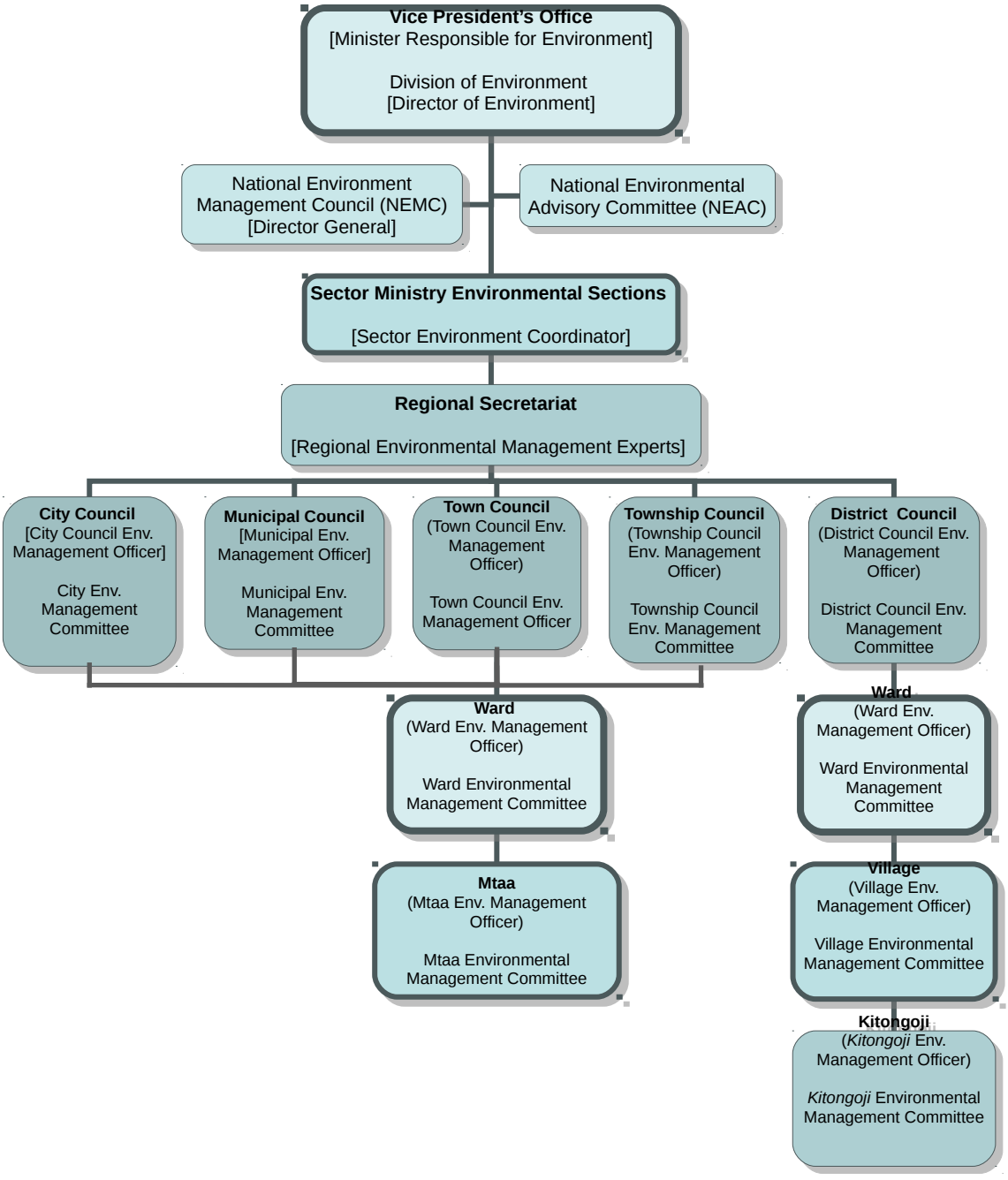

Figure 1: Organisation structure for promoting SCP and environmental management in general

4.2 Roles and Responsibilities of Key Stakeholders

One of the underlying reasons that changing unsustainable patterns of consumption and production is so challenging is that no single actor has the capacity to achieve the scale of change required without the support of others. Indeed, a diversity of actors have a role to play in shaping the production and consumption system through their decisions and actions, including governments, businesses, industry, investors, retailers,

civil society and non-governmental organizations as well as consumers. As a group, they can develop a holistic view that allows them to identify the strategic leverage points for change, and work together to develop and apply the right mix of policies that transform structures and mindsets while avoiding a number of paradoxes, constraints and unintended consequences of particular interventions.

Diverse actors have specific roles, tools and approaches that they bring to bear on addressing the consumption and production a system.

4.2.1 Sector Ministries and Regulatory Authorities

i) Formulate, review and mainstream SCP into relevant national policies, legislation and Regulations
ii) Coordinate and encourage implementation of relevant International agreements
iii) Institute fiscal structures and incentives to support and encourage shift to SCP
iv) Develop guidelines and standards for businesses and consumers
v) Promote awareness of the health-related benefits of SCP patterns, bearing in mind both direct effects on individual health and collective effects through environmental protection.
vi) Monitoring implementation of SCP in the country
vii) Enforcement of relevant Legislation, Regulations and International Agreements to which Tanzania is a Party

4.2.2 Technical Services Institutions/Organizations

i) Promote and build national capacity for the adaptation and adoption of SCP
ii) assessment and advice on issues related to environmental management, resource management;
iii) Conduct research and development, dissemination of technology and networking;
iv) Technology Development Services (technology and product development, including the support and development of design skills, application of new technologies); and
v) Business Development Services (entrepreneurship and business management training, Technical training courses etc.).

4.2.3 Businesses and Industrialists (Private Sector)

i) Promote SCP through the sourcing of raw materials, design, production, distribution and storage of goods and services;
ii) Compliance to existing legal requirements
iii) Serve as role model by promoting sustainability through demonstrating SCP; practices including recycling, eco-efficiency and waste reduction;
iv) Consumer choice influencing; and
v) Invest and demonstrate creativity and innovation towards SCP practices.

4.2.4 Research and Academic Institutions

i) Conducting applied research and innovation on SCP;
ii) Disseminating research findings of relevance to SCP;
iii) Providing SCP policy advice; and
iv) Complementing Government efforts in advocating SCP.

4.2.5 Civil Society Organizations (CSOs)

i) Promote public participation and debate on SCP, for informing consumers, and for working with Government and business towards achieving SCP.
ii) Independent assessment and advising the Government on SCP issues
iii) High profile public campaigns
iv) Complementing Government efforts in advocating SCP and influencing consumers in making environmentally friendly decisions and lifestyle choices

4.2.6 Consumers

i) Promote consumption that is environmentally, economically and socially sustainable, including through the effects/influence of their choices on producers/manufacturers;
ii) Making environmentally friendly purchasing decisions and lifestyle choices
iii) Supporting and publicizing SCP
iv) Influencing directly or indirectly producers/manufacturers to adhere to SCP through their consumption choices

4.2.7 Media

i) Advocacy on SCP practices at all levels
ii) Inform and influence the public to change attitudes and behavior towards SCP practices

CHAPTER FIVE:

MONITORING FRAMEWORK FOR SCP IMPLEMENTATION

5.1 Introduction

The recognized need for “fundamental changes in the way societies produce and consume” is of critical role in achieving sustainable development. The concept of sustainable consumption and production (SCP) encompasses this need. Responding to this challenge, a number national policies, plans, strategies, programmes and projects relating to sustainable consumption and production are being implemented in the broader context of sustainable development. The impact of these policies plans and programmes can only be measured if appropriate performance indicators are available. Effective indicators are critical in assessing current production and consumption patterns and informing the design of effective SCP programmes.

Indicators are a valuable tool for tracking progress against policy targets and objectives, for promoting greater accountability and public engagement in the implementation of programmes, and for analyzing and understanding social conditions, trends and change. They assist decision-makers and the public to monitor whether and in what form change is happening, and – if the indicators were established in relation to a clear goal and target – to evaluate whether that change is good or bad. Indicators also facilitate comparison with the performance of others.

The primary focus of SCP-related indicators is on measuring progress towards more sustainable patterns of production and consumption. Properly applied, performance indicators are commonly the first, most basic, tool for analyzing change in society. Recognizing that what goes unmeasured is often ignored, indicators are an important tool both for indicating progress – of the lack of it – towards the specific objectives of a particular programme, and for prompting appropriate response strategies. In the context of SCP, indicators can also indicate whether a society’s consumption and production patterns are bringing about more socially equitable and environmentally sustainable development. In that regard, indicators of SCP are inextricably linked to broader sets of indicators on environment and sustainable development, including poverty reduction.

5.2 Indicator Selection Criteria

The identification of an indicator set should be informed by the use of a set of selection criteria. The indicators selected from each country were chosen with consideration to the Bellagio Principles as adapted by the UN Commission on Sustainable Development:

i) national in scale
ii) relevant for measuring progress
iii) simple, clear and unambiguous
iv) realizable within capacities of national governments
v) conceptually well founded
vi) limited in number, but broad in coverage
vii) represent international consensus
viii) based on readily available data or could be made available at reasonable cost of known quality and updated at regular intervals

5.3 Indicator Themes

For the purposes of these Guidelines, the indicator sets were divided into three broad themes covering the three main pillars of sustainability, with the environmental pillar being divided into a further four themes. The key themes are:

- **Environmental:**
  - Material consumption and resource use
  - Energy use
  - Land use and biodiversity
  - Waste and pollution
- **Socio-economic:** These include indicators relating to economic baseline issues, housing, basic services, and health, all issues that are of particular importance to developing countries
- **Institutional:** These indicators monitor structures and mechanisms of social order governing the behavior of individuals.
  Others indicators relating, for example, to transport and communication

5.4 Classification of Direct and Indirect Indicators

The indicators were further classified according to whether they serve as direct or indirect indicators. Direct indicators are defined as those that show either a direct change in consumption or production patterns or a direct effect of changes in consumption and production. Indirect indicators are those whose change do not in and of itself indicate a change in production or consumption patterns, but which may be used either to provide context for change or to provide a 'clue' that change is occurring (but not necessarily an answer as to the cause of that change).

5.5 Proposed Indicators

The proposed list of SCP-related indicators is presented in Table 1 and is intended to assist decision-makers to identify SCP-related indicators specifically tailored to the information needs and sustainability priorities that could be integrated into national frameworks and strategies. The proposed set of indicators is regarded as draft that will be further refined in terms of their ambiguity/clarity, measurability, acceptability as input into policy decisions relating to the national priorities.

Table 1: proposed list of SCP related indicators

SCP related indicators		Indicator set
Material consumption and resource use		
	Amount of savings in terms of resources (e.g. water and energy) realized through improvement programmes	NSCPP
	Number of marine/aquatic reserves created and properly managed to sustain production	MKUKUTA II
	% change in food crop production	MKUKUTA II
	% smallholders using modern methods of farming (irrigation, fertilizers and improved seed)	MKUKUTA II
	Agricultural productivity (tones of product/ha of land)	MDG
Energy use		
	Energy consumption per capita/GDP	MKUKUTA II

	% of Tanzania's electricity being generated by renewable sources (solar, wind, biomass and mini-hydro sources)	MKUKUTA II
	Total electricity generating capacity and utilization	MKUKUTA II
	% increase in number of customers connected to the national grid and off-grid electricity	MKUKUTA II
	Total kWh of electricity saved through implementing measures	
	Rate of adoption of efficient energy saving technologies for different categories of energy users	MKUKUTA II
Land use and biodiversity		
	Increased area of forest biodiversity under effective management	MKUKUTA II
	Forest area percentage of total area	NEP
	Annual deforestation of land (ha)	MDG
	Number of threatened and extinct species	MDG
Waste and Pollution		
	Waste recycling and reuse (%)	JPOI
	General waste produced per capita per year (tones)	JPOI
	Hazardous waste produced by sector per year (tones)	JPOI
	Levels of employment generated in recycling/ reuse sector	NSCPP
	Number of industrial units that have installed technologies that reduce levels of pollutants reaching the environment (cleaner production technologies)	MKUKUTA II
	CO_2 emission per capita	NEP
	Water quality of freshwater and drinking water sources	JPOI
Socio-economic		
	GDP growth per annum (%)	MKUKUTA II
	Imports/Exports by product group (tones and USD)	JPOI
	Unemployment rate (%)	MKUKUTA II
	Gini co-efficient	MKUKUTA II
	Population at poverty level (%)	MDG
	Population with access to sanitation (%)	MDG
	Population with access to healthcare system (%)	JPOI
	Literacy rate of population aged 15+	MKUKUTA II
Institutional		
	Number of companies that adhere to ISO 14000 standards	MKUKUTA II
	Number of SCP clubs established	NSCPP
	Education curricula containing SCP concept	JPOI
	Number of SCP-related initiatives undertaken	NSCPP
	Proportion of the agriculture budget spent on educating farmers and livestock keepers in best practices for conserving the environment	MKUKUTA II
Others		
	Change in access to public transport (%)	JPOI
	Number of internet subscribers per 1000 inhabitants	MDG
	Number of mobile phone subscribers per 1000 inhabitants	JPOI

Direct indicator Indirect indicator

Source: Modified from UNEP, 2008

CHAPTER SIX:

CASE STUDIES ON SUSTAINABLE CONSUMPTION AND PRODUCTION

6.1 Woodlot Management in Makete District

Overview

Widespread unsustainable land use (combined with other factors such as climate change) has produced serious ecological losses and limited farm productivity in Makete District. These problems have also been aggravated by a lack of institutional, legislative and fiscal capacity for the effective management of natural resources and consequently for the stability of the Makete ecosystem.

In the Makete District of Tanzania, forest, woodland and grassland resources are essential to the local economies, and are crucial for the protection of vital watersheds for the conservation of the environment for agriculture and livestock production.

In an effort to mitigate the risks that climate change poses to development efforts, local communities have improved smallholder livelihoods through woodlots management. Following an assessment of smallholder woodlot management practices and the marketing of timber, user groups were assisted in developing their own woodlot operational plans and harvesting rules, in setting rates and prices for products, and in determining how surplus income would be distributed or spent. This produced significant improvements in the conservation of woodlots in terms of area and density, and also helped enhance soil and water management. This also provided disadvantaged women and girls who work in woodland management and the marketing of wood products with empowering knowledge relating to species selection, land preparation, field planting and spacing, woodlot management, and marketing channels for wood products.

This improved knowledge has allowed for producers to increase their incomes, and for the Makete District Council to achieve a 64%t increase in council revenue for 2009/2010 following the collection of royalties from timber sales. The creation of new sources of income triggered the setting-up of community savings and credit societies that provide financial credits to low-income people using their woodlots as collaterals. This has promoted inclusive growth and promoted savings and credit operations among members and loans to finance income-generating activities.

Impact

Using smallholder woodlot management practices as a strategy for climate change adaptation has created a new stream of income for local communities and revenues for the Local Government Authority, while enhancing resilience to climate vulnerability.

Sustainability
The concrete evidence of these benefits has increased the Government's interest in expanding climate change adaptation measures that improve rural livelihoods and the economy as a whole.

6.2 Education for SCP Pilot Project, Dar es Salaam

SCP clubs in primary schools have been formed as part of the Education for SCP Pilot Project. In partnership with the NGO Nature for Kids and building on its children's environmental awareness and education programmes in Tanzania, the project ran as a Pilot in three municipalities of Dar es Salaam (Ilala, Kinondoni and Temeke) from July to October 2009 under the high-level coordination of the Tanzania Vice President's Office and the Ministry of Education and Vocational Training.

In collaboration with Nature for Kids, the Cleaner Production Centre of Tanzania implemented a project promoting the 3R principles: Reduce, Reuse and Recycle. The project aimed to sensitize parents and the community at large with the help of the school age children. Forty-one schools and more than 2,000 pupils in rural and urban locations of Dar es Salaam were involved. The pupils came up with play stories on waste management and recycled waste material into household objects and artwork. They also campaigned to clean up a nearby market place.

Impact
- Environmental education has to reach down to the community level, for it is there where changes in behavior towards the environment will result in meaningful improvement. By involving and addressing children, the least empowered group within communities, the goal is not behavioral change in the immediate term but hopefully future attitudes and behavior of these children will differ from todays'.
- To value and care for something they must first know it, understand it, love it and want to protect it and then they shall seek to conserve it.

Sustainability
The project created more awareness among policymakers and school teachers about the potential and possibilities of integrating environmental education in the school curriculum.

The teaching materials and knowledge transfer enabled teachers to continue incorporating environmental education in their lessons. Suggestions for practical work such as field activities, environmental clean-up activities and school nurseries can be carried out without substantial or recurring costs.

Lessons Learned
- Involving and educating children helps to develop their mindsets on sustainable consumption
- To ensure the success of the programme, it is crucial to communicate to stakeholders and involve them in the implementation process

- Entertaining films and songs performed in the national language are effective for educating children on SCP

6.3 Adopting Subsurface Drip Irrigation Changing from Overhead Sprinkler Irrigation, Kibena Tea Limited

Overview

In Tanzania tea *(Camellia sinensis L.)* is the fifth largest export crop, providing annual foreign exchange revenue of over US$30 m. The total area cultivated with tea is estimated at 23,300 ha, more than half of which is owned by large estates in the Southern Highlands (Mufindi, Njombe and Tukuyu districts). Sprinkler irrigation – by which the water is distributed in the air as droplets over a circular area – is the traditional method on irrigated tea estates in Tanzania. About 19% of Tanzania's total tea area is irrigated by overhead sprinklers, while production in the remainder depends entirely on rainfall.

Most systems consist of a permanent pumping unit and main pipeline and portable sub mains, laterals, risers and sprinklers. Poor design, excessively wide sprinkler spacing and irrigation at high wind speed were reported to contribute to unnecessary loss of water and low tea yield. Other constraints included leaching of nutrients, low fertilizer use efficiency resulting in low tea yields and quality

Since the early 1990s, increased pressure on water resources and limited supplies of irrigation water has restricted the expansion of commercial tea estates. Hence, a potentially more efficient irrigation method like sub-surface drip irrigation became of high interest to the large estate tea growers. Drip irrigation, one form of localized or micro-irrigation enables applications of water and fertilizers directly to the plant root zone at frequent intervals, low flow rates, small operating pressures achieving high application and distribution efficiencies. The first commercial drip irrigation system was established in 2000 at Kibena Tea Limited in the Southern Highlands of Tanzania.

Impact

The adoption of sub-surface drip irrigation from overhead sprinkler irrigation helped to conserve water; increase water and fertilizer use; efficiency and optimize tea yields as follows:

i) Surface drip increased yield by 13.7% to 25.4% in comparison to Conventional overhead sprinkler irrigation average yield over a period of 3 years.
ii) Water requirement for conventional overhead sprinkler irrigation was 4,985 m^3/ha as compared to subsurface drip – 3569 m3/ha. Water saving by drip over overhead sprinkler was 1416 m^3/year/ha (28.4%). Additional area irrigated by saved water: 0.397 ha.
iii) Saving in power: Sub-surface drip irrigation enabled 15.7% saving in power (4.45 kWh/ha-mm) in comparison to overhead sprinkler (5.28 kWh/ha-mm)
iv) Saving in labour: Surface drip enabled 47.7% saving in labour (34 US$/ha) in comparison to overhead sprinkler (65 US$/ha)

v) Economic indices: Higher net returns (2,882.3 US$/ha in 3rd year and 3,601 US$/ha in 4th year) by sub-surface drip irrigation.
vi) Other benefits: Management flexibility – Drip irrigation allows other field operations like harvesting, tipping, infilling, and weeding while irrigating the crop; improvement in fertilizer use efficiency, less weed growth, uniform irrigation of tea on undulated terrains etc.

Lesson Learned

- Sub-surface drip irrigation of tea in Tanzania is a feasible eco-technological and economically viable technology
- Use of scarce water resources sustainably in tea cultivation enables expansion of tea plantations over a larger area
- Grow more (50% tea yield) with less (water saving by 28%)