National Environment and Climate Change Policy

Ministry of Environment, Rwanda

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Foreword

Rwanda has taken a strategic decision to pursue a green growth approach to development. It is now sixteen years since the adoption and implementation of the 2003 Environment Policy. This calls for stocktaking of the achievements, setbacks, future opportunities and alignment with global, regional and national development agenda.

Vision 2050 aspires to take Rwanda beyond high income to high living standards by the middle of the 21st century. To realise our full potential and drive towards this goal, Rwanda is committed to being a nation that has a clean and healthy environment that is resilient to climate variability and change and that supports a high quality of life for its citizens.

This Environment and Climate Change Policy reaffirms our commitment to address climate change and our resolve to lessen the potential hardships that climate change may pose to the sustainable development of our country. The policy, therefore, seeks to provide strategic direction on environment and climate change in Rwanda, bearing in mind its linkages with our socio-economic development.

Rwanda will continue to mainstream the environment and climate-proofing agenda into national development. This brings to the fore the reality of mutually reinforcing and integrating the environment and climate change issues into the national, local planning and budgeting processes.

To achieve the policy objectives and goals, coordination and partnership will be essential. The success of the implementation of the policy will also not be the sole responsibility of the Ministry of Environment and other government institutions, but will also depend on working with key stakeholders, including development partners, the private sector, civil society organisations (CSOs), media, academia and research institutions and fostering the participation of local communities.

We take this opportunity to acknowledge the technical insights provided by all stakeholders in the elaboration of this policy. It is my hope and expectation that this policy will serve as the springboard for strengthening a climate-resilient economy that will accelerate our development and enhance the well-being of our people while ensuring that development gains can be sustained for generations to come.

Vincent Biruta

Minister of Environment

Executive Summary

The National Environment and Climate Change Policy provides strategic direction and responses to the emerging issues and critical challenges in environmental management and climate change adaptation and mitigation. The key issues and challenges identified include high population density, water, air and soil pollution, land degradation, fossil-fuel dependency, high-carbon transport systems, irrational exploitation of natural ecosystems, lack of low-carbon materials for housing and green infrastructure development, inadequate waste treatment for both solid and liquid waste, increase of electronic, hazardous chemicals and materials waste, among others.

The policy is designed within the context of national, regional and global development commitments (e.g. Vision 2050 aspirations, National Strategy for Transformation (NST1), Green Growth and Climate Resilience Strategy (GGCRS), Nationally Determined Contributions (NDCs), Sustainable Development Goals (SDGs), Agenda 2063, East African Community - EAC Vision 2050, etc.). It also provides a policy framework to tap into opportunities of a green growth led and climate resilient economy. The Environment and Climate Change Policy was developed through a consultative process involving all stakeholders. Consultations with actors at national and district levels, development partners, the private sector and CSOs informed the development of policy objectives and proposed policy actions.

The policy goal is for "Rwanda to have a clean and healthy environment resilient to climate variability and change that supports a high quality of life for its society." The seven objectives of the policy are (1) Greening economic transformation (2) Enhancing functional natural ecosystems and managing biosafety, (3) Strengthening meteorological and early warning services (4) Promoting climate change adaptation, mitigation and response (5) Improving environmental well-being for Rwandans (6) Strengthening environment and climate change governance (7) Promoting green foreign and domestic direct investment and other capital inflows. To implement these policies, 22 policy statements and 127 policy actions have been identified.

The above policy goal, objectives and associated actions can only be achieved with clear institutional arrangements. This includes defined roles and responsibilities of all institutions in coordination, monitoring and evaluation. The policy will be implemented through ministerial and Districts Development Strategies (DDS), Sector Strategic Plans (SSPs), annual *Imihigo* targets and action plans. The policy will also be implemented through action plans of development partners, CSOs and the private sector. The existing coordination mechanisms (e.g. inter-ministerial steering committee for the GGCRS, economic cluster forum, environment and natural resources (ENR) sector working groups, Joint Sector Reviews, ENR thematic working groups, governance cluster meetings at both central and local levels) will also support the implementation of the policy.

Abbreviations and Acronyms

CBD: Convention on Biological Diversity

CITES: Convention on International Trade in Endangered Species of Wild Flora and Fauna

CSO: Civil Society Organisations

EAC: East African Community

EIA: Environmental Impact Assessment

ENR: Environment and Natural Resources

ESIA: Environmental and Social Impact Assessment

ELS: Entry Level Stewardship

FDI: Foreign Direct Investments

FONERWA: Rwanda Green Fund(Fond National de l'Environnement au Rwanda)

GDP: Gross Domestic Product

GFCS: Global Framework for Climate Services

GGCRS: Green Growth and Climate Resilience Strategy

GHG: Greenhouse Gas Emissions

HLS: Higher Level Stewardship

LPG: Liquefied Petroleum Gas

MEAs: Multilateral Environmental Agreements

Meteo Rwanda: Rwanda Meteorology Agency

MIDIMAR: Ministry of Disaster Management and Refugee Affairs

MINAGRI: Ministry of Agriculture and Animal Resources

MINALOC: Ministry of Local Government

MINECOFIN: Ministry of Finance and Economic Planning

MINEDUC: Ministry of Education

MINICOM: Ministry of Trade and Industry

MININFRA: Ministry of Infrastructure

MoE: Ministry of Environment

MoH: Ministry of Health

NCA: Natural Capital Accounting

NDCs: Nationally Determined Contributions

NIRDA: National Industrial Research and Development Agency

NST: National Strategy for Transformation

ODS: Ozone Depleting Substances

PES: Payment of Ecosystem Services

RECs: Regional Economic Communities

REG: Rwanda Energy Group

REMA: Rwanda Environment Management Authority

RURA: Rwanda Utilities Regulatory Authority

RWFA: Rwanda Water and Forestry Authority

SAICM: Strategic Approach to International Chemicals Management

SDGs: Sustainable Development Goals

UNCCD: United Nations Convention to Combat Desertification

UNCED: United Nations Conference on Environment and Development

UNFCCC: United Nations Framework Convention on Climate Change

VPS: Visitor Payback Scheme

WASAC: Water and Sanitation Corporation Limited

Glossary

Adaptation: Additional activities needed to prepare for climate change. This typically involves specific interventions (larger storm drains or new crop varieties) but can also involve broader social or economic strategies (e.g. migration to urban centres could be an adaptation strategy in some contexts) (GoR, 2011).

Adaptive Capacity: The ability or potential of a system to respond successfully to climate variability and change and includes adjustments in both behaviour resources and technologies (IPCC, 2007).

Biodiversity: The variability among living organisms from terrestrial, marine and other ecosystems. Biodiversity includes variability at the genetic, species and ecosystem levels (IPCC, 2014).

Circular economy: An industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems and business models (WEF 2016).

Climate: It is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organisation. The relevant quantities are most often surface variables such as temperature, precipitation and wind (IPCC, 2014).

Climate Change: A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods (UNFCCC, 1992).

Climate Finance: There is no agreed definition of climate finance. The term climate finance is applied both to the financial resources devoted to addressing climate change globally and to financial flows to developing countries to assist them in addressing climate change (IPCC, 2014).

Climate Resilience: This can be used to describe a broader agenda than adaptation as defined above. It captures activities which build the ability to deal with climate variability – both today and in the future. Climate resilience building activities include many existing development investments including those in the agriculture, food security, health, land management and infrastructure sectors (GoR, 2011).

Climate Services: Also called *meteorological services*, provide climate information in a way that assists decision making by individuals and organisations. Such services require appropriate engagement along with an effective access mechanism and must respond to user needs (GFCS, 2018). They also involve high-quality data from national and international databases on temperature, rainfall, wind, soil moisture and ocean conditions, as well as maps, risk and vulnerability analyses, assessments, and long-term projections and scenarios (GFCS, 2018).

Early warning system: The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organisations threatened by a hazard to prepare to act promptly and appropriately to reduce the possibility of harm or loss (IPCC, 2014).

Ecosystem: This is a functional unit consisting of living organisms, their non-living environment and the interactions within and between them (IPCC, 2014).

Ecosystem services: Ecological processes or functions having monetary or non-monetary value to individuals or society at large. These are frequently classified as (i) supporting services such as productivity or biodiversity maintenance, (ii) provisioning services such as food, fibre or fish, (iii) regulating services such as climate regulation or carbon sequestration and (iv) cultural services such as tourism or spiritual and aesthetic appreciation (IPCC, 2014).

Emissions: The release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time (UNFCCC, 1992).

Environmental Impact Assessment: A systematic examination conducted to determine whether or not a programme, activity or project will have any adverse impacts on the environment.

Green growth: Recognises that environmental protection is a driver of global and national economic development. It refocuses society on achieving qualitative growth rather than simply increasing GDP (GoR, 2011).

Greenhouse gases: Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation (UNFCCC, 1992).

Low-Carbon Development Pathway: A national development plan or strategy that encompasses low-emission economic growth (Pachauri, Allen et al. 2014). Transitioning to this pathway means taking actions, where possible, to encourage GHG emissions that are lower than business-as-usual practice; and reducing the human causes of emissions by moving toward a resource-efficient economy that is as low-carbon as possible and enhancing carbon sinks.

Mitigation: This refers to efforts to limit or absorb gas emissions which contribute to climate change. Emissions can be limited by moving away from dirty fossil fuels (i.e. wind power) or by being more efficient when using energy (reducing consumption). Greenhouse gases can also be removed from the atmosphere by plants (called carbon sequestration). One way of managing the deployment of mitigatory activities is through an international carbon market (GoR, 2011).

Multilateral Environmental Agreements (MEAs): The international legal instruments for the regulation of activities affecting the environment particularly agreements to which Rwanda is a Party.

Payment for Environmental Services (PES): A market-based approach to conservation based on the twin principles that those who benefit from environmental services (such as users of clean water) should pay for them and those who generate these services should be compensated for providing them.

Reducing Emissions from Deforestation and Forest Degradation (REDD+): An effort to create financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development (SD). REDD+ goes beyond reforestation and forest degradation and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks (IPCC, 2014).

Resilience: The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation (IPCC, 2014).

Smart and green cities: The green city concept prioritises policies and investments in public, non-motorised and low-emission transport, building efficiency, renewable energy and efficient waste management (ENR Draft SSP, 2018-2024) while Smart City encompasses optimal space utilisation, connectivity with broadband systems and the internet of things, with efficient planning, services and utilities, and localised innovation for social and economic development (ICT Draft SSP, 2018-2024).

Strategic Environmental Assessment: The term refers to a range of analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programmes and evaluate the inter-linkages with economic and social considerations.

Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2014).

1. Introduction

1.1. Background

Rwanda has made significant achievements in its recovery since the 1994 Genocide against the Tutsi. In the past two decades, there has been important socioeconomic progress with a rapid economic growth rate (among the fastest in the world) coupled with substantial gains in poverty reduction. Growth across all sectors has been positive and resilient in the face of a slowing global economy.

Poverty has reduced considerably from 60.4% in 2000 to 39% in 2014 and extreme poverty reduced from 40% to 16.3% over the same period (NISR, 2014). Over the last decade, significant growth in agricultural productivity has been one of the main drivers of growth and poverty reduction. The sector continues to remain the backbone of the Rwandan economy in terms of employment and income generation for the vast majority of the population.

Performance of the food crops subsector has been particularly impressive, with a growth rate of 6.2% per year compared with overall agricultural GDP growth of 5.5% (2005-2015) (NISR, 2016). This sub-sector is the dominant contributor of agriculture sector in GDP (58%), followed by forestry (21%), livestock (12%), traditional export crops (7%), and fishery (1%) (NISR, 2016).

The service sector is a growing sector and constituted 50% of GDP and 46% of exports in 2016 (BNR, 2016). Tourism grew rapidly and tourism revenues of USD 390m constituted the largest foreign exchange earner in 2016 (BNR, February 2017).

Rwanda's development progress is inclusive and reflects pro-poor dimensions that impact livelihoods across the country. Life expectancy has increased from 49 years in 2000 to 66.6 years in 2017 (NISR, 2017). Maternal and child health has improved significantly over the last two decades and exceeded Millennium Development Goals (MDGs) ambitions. Maternal mortality reduced by 80% between 2000 and 2014 while infant and child-mortality decreased by over 70% in the same period (NISR, 2015). Free universal basic education was initiated and scaled up to 12 years. This resulted in a net enrolment of nearly 100% in primary school for both boys and girls. Gender parity was achieved with more girls than boys in primary school (NISR, 2017). A more desirable future is aspired through Vision 2020 and long-term Vision 2050 aspirations.

Along the journey of development, Rwanda has recognised the importance of environment and climate change in sustainable development. In 2003, the Government of Rwanda adopted the first-ever environment policy to guide the management of environment and natural resources.

The Organic Law N° 04/2005 determining the modalities of protection, conservation and promotion of environment was promulgated in April 2005 making way for the management of environment. In April 2006, law N° 16/2006 of 03/04/2006 was promulgated to determine the organisation, functioning and responsibilities of Rwanda Environment Management Authority (REMA). In December 2011, law N°54/2011 of 14/12/2011 was gazetted to establish the Rwanda Meteorology Agency (Meteo Rwanda) and determine its mission, organisation and functioning. In addition, law Nº16/2012 of 22/05/2012 determining the organisation, functioning and mission of the National Fund for Environment (FONERWA/Rwanda Green Fund) was gazetted in May 2012 and since then, much has been achieved, especially with the establishment of the Fund.

Furthermore, several policies have been enacted to govern the various aspects of environmental management and natural resources, including land policy, forestry policy, mine and geology policy, biodiversity policy, wildlife policy, national meteorology policy, etc. There are also laws governing economic sector and other sectors to promote a sustainable and low-carbon development, including land law, forestry law, mining law, water law, biodiversity law, legislation governing Environmental Impact Assessments (EIA) and guidelines for Strategic Environmental Assessments (SEA), the law governing the preservation of air quality and prevention of air pollution in Rwanda, and the law relating to prohibition of manufacturing, importation, use and sale of polythene bags in Rwanda, among others.

The country has also ratified Multilateral Environmental Agreements (MEAs) including the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Basel Convention, the Montreal Protocol on Substances that Deplete the Ozone Layer, and the Rotterdam Convention, among others.

These laws, policies and agreements are being implemented, and tangible results have been recorded, most notably through piloting key programmes such as green villages, afforestation programmes, rehabilitation and restoration of degraded areas such as Nyungwe and Gishwati and Mukura national parks, which has increased national forest coverage to 29.8% in 2017, among others (GoR, 2017). Biodiversity conservation also resulted in the expansion of eco-tourism, and the rehabilitation of critical wetlands has greatly contributed to agriculture productivity. With a vision to maintain a clean and healthy environment, the country has also by law banned and controlled the use of non-biodegradable plastic bags since 2008.

Today, for Rwanda, '*green*' and '*growth*' are not separable. The environment and climate change are priority and cross-cutting areas as stated in national strategic documents (Constitution of 2003 revised in 2015, Vision 2020, NST1, GGCRS). In maintaining the desired rapid economic

growth, the country recognises the increasing threats of climate variability and change which frustrate the efforts of the country to develop sustainably.

Cognisant of the pressure of the main production sectors on the use of environment and natural resources, Rwanda has also made good strides in mainstreaming environment and climate change into the main production sectors and DDS in order to spur the continued economic growth and follow a sustainable development path. This was helped by the development of appropriate tools (Budget Call Circular statements, checklists, assessments) and capacities, and the establishment of the Department of Environment Education and Mainstreaming (DEEM) under REMA. A draft National Environment and Climate Change Mainstreaming Strategy has been developed, that will further guide and render the environment and climate change mainstreaming more effective during the NST1 period.

Going forward, sustaining what has been achieved and addressing environment and climate change issues remain a challenge. The key environmental and climate change issues in Rwanda include land degradation, deforestation, dependency on biomass for fuel, soil, water and air pollution, a lack of environment-friendly transport systems, vulnerability of natural ecosystems, lack of low-carbon materials for housing and green infrastructure development, inadequate waste treatment for both solid and liquid waste, increase of electronic, industrial and nuclear/radioactive wastes, limited coordination in environmental and climate change governance, among others. More efforts are also needed to develop comprehensive tools to support implementation, mainstreaming and increasing ownership in all sectors and developing key infrastructure such as waste resource management, among others, and positioning Rwanda to tap into opportunities of international climate finance.

Addressing these challenges provides the justification for this revised National Environment and Climate Change Policy. This will allow the achievement of the country's strategic development goals which reflect climate change considerations and consider sectoral and cross-sectoral strategic policy statements and actions for the management of the country's environment for sustainable development. It is also intended to lay the ground and align with global (e.g. SDGs, Agenda 2063) and regional commitments (e.g. EAC Vision 2050) endorsed by the Government of Rwanda (GoR) as well as integrate recent strategic orientations as enshrined in the NST1 (2017-2024) and Vision 2050 aspirations.

1.2. Rationale

Though the environment sector in Rwanda has made significant achievements in recent years, the current National Environment Policy (approved in 2003) has been overtaken by today's events and need revision. The ministry in charge of environment took the initiative to revise the current policy so that it can address gaps and challenges within the existing policy and propose

needed shifts in improving the management of the environment in the context of climate variability and change.

Furthermore, despite the fact that the National Environment Policy of 2003 brought about significant achievements in the establishment of the necessary institutions as well as the legal and strategic frameworks, its revision was necessary because significant development and reforms have considerably changed the sector context.

First, there are outdated policy provisions due to the change in institutional set up in the management of the environmental sector (e.g. Organic law on environment, establishment of REMA, FONERWA, Rwanda Water and Forestry Authority (RWFA), Rwanda Land Management and Use Authority (RLMUA) and Meteo Rwanda which now fall under the Ministry of Environment.

Second, climate change was not reflected in the 2003 Environment Policy. Furthermore, there are missing policy provisions for the following topics:

i. Regional Economic Communities (RECs) protocols (e.g. EAC protocol for transboundary resource management)
ii. Norms and standards on environmental and social safeguards
iii. Circular Economy
iv. Integration of Payment of Ecosystem Services (PES) and Natural Capital Accounting into the national development planning and monitoring framework
v. Mainstreaming of environment and climate change
vi. Mechanisms to guide and promoting innovations in environment and climate change impact management (new knowledge, skills and best practices)
vii. Pollution control and waste management
viii. Environmental research and innovation

Third, there is still a lack of appropriate and effective mainstreaming responses to provisions of the environment policy in some sectoral activities (e.g. unsustainable use of wetlands, unsustainable land use and farming systems, limited use of weather and climate information into development activities of agriculture, water resources, health, energy use and generation, lack of response to initiatives that promote green technologies, environmental budgeting in the sectoral plans and budgets, etc.) which need to be captured in the new policy.

Fourth, while acknowledging that the 2003 Environmental Policy was adopted at a time of limited institutional capacity and legal frameworks, it is observed that there is a need to focus on the core mission of regulation, protection, conservation, environmental awareness, education and

research. Moreover, the new policies (e.g. forest policy, biodiversity policy, etc.) developed catered for issues that were partly covered by the 2003 Environment Policy. Avoiding duplication provides another justification for this revised policy.

Fifth, the revised Environment and Climate Change Policy is framed in the context of recent international and regional developments that call for domestication of the relevant conventions, protocols, agreements, laws and treaties (e.g. AU Agenda 63, the Sendai Framework, SDGs, the 2015 Paris Agreement on Climate Change and implementation instruments including NDCs, the Kigali Amendment to the Montreal Protocol, Minamata Convention, Nagoya Protocol etc.).

Finally, considering the challenges currently facing the country, public and private financing for environment and climate action will need to be mobilised and scaled up significantly across the country. With the help of an overarching national environment and climate change policy framework, opportunities available in global environment and climate change finance will enable higher sustainable economic growth and raise living standards for Rwandans.

1.3. Updating Process

This policy document is a result of a comprehensive sector analysis combined with a discussion and stakeholders consultation process. A multidisciplinary technical team was set up to coordinate and guide the process. Local government has been engaged through consultations held at provincial and City of Kigali levels. At the national level, key stakeholders were engaged, including the private sector, civil society organisations (CSOs) and international agencies (e.g. United Nations Development Programme (UNDP) and the Global Green Growth Institute (GGGI)) to ensure ownership.

Moreover, the following central government institutions were consulted: the ministry in charge of agriculture and animal resources, the ministry in charge of lands and forestry, the ministry in charge of finance and economic planning, the ministry in charge of health, the ministry in charge of local government, the ministry in charge of disaster management, the ministry in charge of trade and industry, the ministry in charge of infrastructure, the Rwanda Utilities Regulatory Authority (RURA), REMA, FONERWA, Meteo Rwanda, WASAC, etc. The revised policy is also the result of a comprehensive desk review of key relevant documents. Furthermore, online surveys and pre-validation and validation workshops provided an opportunity for stakeholders to give inputs on the policy.

1.4. Policy Structure

The strategic policy direction designed to guide the environment and climate change actions is set out in the following sections. Section 1 and 2 present the background and rationale of the

policy as well as its linkages with national and strategic orientations. Section 3 and 4 deal with environmental management and climate change issues as well as opportunities that served as the basis of the policy. Section 5 to 7 present the goals, policy objectives, policy statements and policy actions. The last section covers the implementation arrangement.

2. Policy context: Linkages with national and global development ag

2.1. Linkages with national strategic orientations

2.1.1. Constitution of the Republic of Rwanda of 2003 (revised in 2015)

The Constitution of the Republic of Rwanda of 2003 (revised in 2015) provides the binding legal framework which guided this policy:

- Article 22 on "*Right to a clean environment*": Everyone has the right to live in a clean and healthy environment.
- Article 53 on "*Protection of the environment*": Everyone has a duty to protect, safeguard and promote the environment. It also indicates that the State ensures the protection of the environment. Lastly, it stipulates that a law determines modalities for protecting, conserving and promoting the environment.

2.1.2. Vision 2050 Aspirations

Vision 2050 aspires to take Rwanda beyond high income to high living standards. Its income targets are to attain upper middle-income country status by 2035 and high-income status by 2050 with an objective of providing high-quality livelihoods and living standards. Environmental and climate change considerations are reflected in key priority areas as follows:

High Quality and Standards of Living: Moving beyond meeting basic needs to ensure a high standard of living by focusing on:

- Sustained food security and quality nutrition
- Universal access to water and modern sanitation
- Affordable, reliable and clean energy
- Quality education and health care
- Modern housing and settlements with environment-friendly and climate resilient surroundings
- Inclusive financial services
- Adequate social security and safety nets
- National and regional peace and security

Developing Modern Infrastructure and Livelihoods: Modernisation with smart and green cities, towns and rural settlements, well-designed transport facilities and services, efficient public and private services.

Transformation for Prosperity (developing high value and competitive off-farm g and sectors): Improved productivity and competitiveness through diversified tourism, manufacturing driven by competitive local industries, business and financial services, Internet of Things and technology, logistics and aviation, agro-processing, science and technology innovation, construction and extractive industries. All these will be underpinned by high-quality services in public and private sectors.

2.1.3. Vision 2020

The revised Vision 2020 recognises the three principles of the green economy: social cohesion, economic empowerment and environmental intelligence. The three principles will contribute to the country becoming a middle-income and knowledge-based economy by 2020 and progressively to be a developed climate-resilient, low-carbon economy by 2050.

2.1.4. National Strategy for Transformation (NST1)

In the medium term, the National Strategy for Transformation, NST1/Seven Years Government Program (2017-2024) sets the priority for a green economy approach in its Economic Transformation pillar that promotes "*Sustainable Management of Natural Resources and Environment to Transition Rwanda towards a Green Economy*". Moreover, environment and climate change were highlighted in NST1 as cross-cutting areas of policy concern which can be positively impacted by a range of development activities with priority given to agriculture, urbanisation, industries and energy.

2.1.5. Green Growth and Climate Resilience Strategy (GGCRS)

The Environment and Natural Resources sector development is guided by GGCRS. The strategy has been developed with a vision in mind for Rwanda to be a developed climate-resilient and low-carbon economy by 2050.

The 14 programmes of action include diversifying energy sources with low-carbon energy grid and promoting green technology and resource-efficient industries throughout all production levels from the primary stages such as agricultural production and mining to manufacturing industries in the secondary to tertiary public and private sector industrial activities as well as transport and urban development.

These 14 programmes of action also aim to promote sustainable land and natural resources use, food security, preservation of biodiversity, social protection, improved health and disaster risk reduction.

2.1.6 Nationally Determined Contributions (NDCs)

Rwanda's NDC is built on the Green Growth and Climate Resilience Strategy (GGCRS) and focuses on adaptation and mitigation. The key sectors identified and prioritised under NDCs include agriculture, forestry, tourism, water, land use, disaster management, climate data and projections, energy, transport, industry and waste. The NDC for Rwanda reflect the national ambition by 2030 to join global efforts toward curbing global temperature rise below 2 °C by 2100, with an aspirational target of 1.5°C.

2.1.7 Sectoral Policies and Strategies

This policy is in line with other sectoral policies that are related to climate change, the environment and natural resources. These include but not limited to:

- **Forestry Policy:** recognises the need to manage forest resources to support the country's development goals for sustainable, low-carbon and climate resilient growth to improve livelihoods of present and future generations.
- **Biodiversity Policy:** considers the rehabilitation of degraded ecosystems in Rwanda as an urgent and major task that requires the commitment of significant resources from both national budgets and other sources.
- **Wildlife Policy** acknowledges that Rwanda's wildlife protected areas significantly contribute to the production of global public goods and services, such as protection of biodiversity, climate stabilisation, carbon sequestration and global waters. It also stresses that any adverse impacts on the ecosystems can dramatically and negatively alter humans' capacity to survive.
- **Energy Policy** recognises the need to shift consumption from biomass-based energies to clean energies like electricity and Liquefied Petroleum Gas (LPG) to reduce pressure on forest resources. It also focuses on renewable energy infrastructure a s one strategy to fight global warming through reductions in greenhouse gas emissions.
- **Water Supply Policy** aims to ensure sustainable, equitable, reliable and affordable access to safe drinking water for all Rwandans, as a contribution to improving public health and socio-economic development.
- **Sanitation Policy** aims to ensure sustainable, equitable and affordable access to safe sanitation and waste management services for all Rwandans as a contribution to poverty reduction, public health, economic development and environmental protection.

- **National Industrial Policy:** stresses that waste produced by industrial processes is harmful to the environment and needs proper management and disposal strategy.
- **Agriculture Policy:** seeks to make agriculture and livestock more productive and at the same time ensure proper utilisation of natural resources and sustainability for future generations.
- **Land Policy:** stresses that agroforestry should be part of the agricultural landscape on hills, given its contribution to soil protection.
- **Water Resource Management Policy** aims to manage and develop water resources in an integrated and sustainable manner to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations.

Furthermore, during the elaboration of sectoral and districts medium-term strategies to be implemented in the period covering 2017-2024, environment and climate change issues have been integrated and considered as cross cutting areas. The focus will be on improving cross sectoral coordination to ensure smooth implementation of environment and climate change policies and regulations. In this regard, critical sectors identified for strengthening include: agriculture, urbanisation, infrastructure and land use management, energy, water and sanitation. Specific environment and climate change indicators and targets have been included in the new SSPs, and these will be used in annual mainstreaming guidelines, checklists and assessments. Additional emphasis will be put on: (i) Strengthening monitoring and evaluation, (ii) Environment and Social Impact Assessments (ESIA), (iii) Biodiversity and ecosystem management, (iv) Pollution and waste management, (v) Climate resilience and adaptation.

2.2. Linkages with key global policy considerations

- **The Sustainable Development Goals (SDGs)**, adopted in September 2015, consist of 17 goals with associated targets and indicators, across a range of economic, social and environmental aspects (especially goals 2, 3, 6, 7, 9, 11, 12, 13, 14, 15, 17).
- **The African Union Agenda 2063 and its First 10-Year Implementation Plan (20** adopted in September 2015, is dedicated to the building of an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the international arena (especially aspiration 1 and goals 1, 3 and 7).
- **The East African Community (EAC) Vision 2050** adopted in February 2016, focuses on environment protection by prioritising development enablers which are integral to long-term transformation, value addition and acceleration of sustained growth (directly links with pillar 4 and indirectly links with pillars 1, 2, 3 and 5).
- **The EAC Climate Change Policy (2010)** guides Partner States on the preparation and implementation of collective measures to address climate change in the EAC region while ensuring sustainable social and economic development. The policy prescribes statements to guide adaptation and mitigation actions to address climate change.
- **The EAC Climate Change Master Plan (2011-2031)** ensures that "*The People, the Economies and the Ecosystems of the EAC Partner States are climate resilient and adapt*

accordingly to Climate Change". The key sectors identified and prioritised by the EAC Partner States, as being vulnerable to Climate Change are: (1) Agriculture (crops, livestock and fisheries) and (Food Security); (2) Water Security; (3) Energy Security; (4) Ecosystems Services and Biodiversity; (5) Tourism; (6) Infrastructure (buildings, roads, railways, waterways and airways); (7) Human Health, Sanitation and Settlements; (8) Trade and Industry; (9) Education, Science and Technology.

- **Multilateral Environmental Agreements (MEAs):** This policy is in line with all MEAs ratified by Rwanda including:

  Chemical-related multilateral environmental agreements: Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade; Stockholm Convention on Persistent Organic Pollutants, Cartagena Protocol on Biosafety.

  Environment-related MEAs: Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Wetlands of International Importance (Ramsar Convention), the Convention on Biological Diversity (CBD), Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation (ABS) to the CBD, Convention on the Conservation of Migratory Species of Wild Animals (CMS Convention).

  Climate change-related MEAs: These include:

  - The **United Nations Framework Convention on Climate Change (UNFCCC)**: An international treaty with the aim to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The treaty provides for updates, also called "*protocols*" that set mandatory emission limits. The principal update is the *Kyoto Protocol*, which has become much better known than the UNFCCC itself.
  - The **Kyoto Protocol**, which is linked to the UNFCCC and which sets internationally binding emission reduction targets.
  - The UN Convention to Combat Desertification and Land Degradation (**UNCCD**).
  - The **Montreal Protocol** on Substances that Deplete the Ozone Layer, which is associated with the Vienna Convention for the Protection of the Ozone Layer (Vienna Convention).
  - The **Kigali Amendment to the Montreal Protocol (adopted in October 2016)** which added the phase down of the production and consumption of hydrofluorocarbons (HFCs).
  - The **Paris Agreement on Climate Change**: This agreement sets overarching global goals to limit temperature increase to well below 2 degrees Celsius and pursue efforts to limit increase to 1.5 degrees Celsius above pre-industrial levels and peak emissions.

3. Key Underlying Issues and Emerging Challenges

Climate change, climate variability and extreme weather events: Although Rwanda has one of the world's lowest per capita emissions of greenhouse gases, it is highly vulnerable to the impacts of temperature and rainfall variability. The country's average temperature has increased by 1.4°C since 1970, higher than the global average, and by the 2050s, it is likely to rise by up to 2.5°C from the 1970 average (GoR, 2011).

Over the last decade, the frequency and severity of natural disasters, particularly floods, droughts and landslides have significantly increased, resulting in loss of lives, crop and livestock losses, health risks, and damage to infrastructure and reduced land availability that impacts food security and export earnings. Moreover, over the past two decades, floods and droughts have affected over two million people (MIDIMAR, 2015). Research estimated total economic loss due to flooding in Rwanda to be about 1.4% of the overall Gross Domestic Product (GDP) of 2011/2012 fiscal year (REMA, 2013).

High population density: Rwanda has one of the highest population densities in Africa. Approximately 12 million people live in an area of 26,338 square kilometres, resulting in a population density of 456 inhabitants per square kilometre that largely depend on natural resources (NISR, 2017). In addition, the population is projected to double by 2050 and 70% of people will live in urban areas. Compared to 2012 levels, by 2032 the total number of households is expected to increase from 2.4 million to 5.3 million - a more than 100% increase (NISR, 2017). Population growth, along with other interrelated drivers of increased standards of living and economic development, will add pressure to the already strained environmental capital resources such as agricultural land, forests with high dependence on biomass for fuel, wetlands, rivers and lakes, among others. If not properly planned and managed, this will likely lead to further encroachment of economic activities to protected and critical ecosystems, land fragmentation and productivity constraints, especially in rural areas.

Sustainability of urbanisation and rural settlements: Rwanda's urban areas are growing rapidly, and the NST1 target is to accelerate urbanisation from 17.3% (2013/14) to 35% by 2024 (GoR, 2017). However, meeting the needs of this growing concentration of people living in urban areas poses a critical environmental challenge. This includes lack of low-carbon materials for housing and green infrastructure development, inadequate waste treatment for both solid and liquid waste as well as insufficient treatment plants for industrial effluents and storm-water drainage systems. Furthermore, there are still many people living in unplanned settlements and high-risk zones with poor environmental conditions in both rural and urban areas.

Limited environmentally friendly transport systems: Existing transportation systems contribute significantly to air pollution as demonstrated in the inventory of sources of air pollution conducted in 2018 (REMA, 2018). Key issues include high densities of vehicles in Kigali (especially old vehicles), inadequate maintenance facilities, poor traffic management systems and road conditions and lack of mass and low-carbon transport systems such as trains and metro. In addition, there is still a lack of efficient infrastructure for non-motorised transport modes, especially in urban areas.

Pollution: This remains a critical and growing challenge that needs policy considerations. Major drivers of pollution include:

- **Air Pollution:** Poor air quality is considered the world's 'largest single environmental health risk. In Rwanda, 2,227 deaths were attributed to ambient air pollution in 2012 (REMA, 2018). This has also affected long-term health conditions in the same period where acute respiratory infections were registered as the top cause of morbidity in health centers and the largest cause of death of children under the age of five in Rwanda (REMA, 2018).

- **Water Pollution:** Rwanda's water resources are generally still of relatively good quality, with pH values between 6 and 7.5 (REMA, 2015). However, increasing pollution from agro-inputs, including ammonia, nitrate, phosphate and pesticide residues (through leaching and erosion) is affecting groundwater locally, and the ability of ecosystems to naturally purify water is a concern. There are also localised problems from high sediment loads, toxic and acidifying materials, including heavy metals, from mining, and untreated domestic sources that cause microbiological pollution and threaten human and ecosystem health.

- **Soil Degradation:** Inadequate resilient soil conservation practices, the use of chemical fertilisers and associated agriculture low yields are resulting into over-cultivation and subsequent soil degradation and pollution. The impact has been a vicious cycle of erosion and reduced soil fertility and productive capacity. It is also estimated that half the country's farmland suffers moderate to severe erosion. Increasing intensity of agricultural land use and ongoing gradual agricultural transformation further increase the threat of soil degradation (GoR, 2015).

Vulnerability of Natural Ecosystems: Rwanda's natural resources are being subjected to overwhelming pressure from competing land uses activities such as agriculture, industry, human settlement and infrastructure development that deplete natural wealth and ecosystems.

Management of electronic, industrial and nuclear/radioactive waste: This waste is increasingly complex due to high-end technological development and increased economic activities (MiTEC, 2015). With new additions of radioactive waste (from medical centres such as

hospitals, mining and milling, industries, construction etc.) , the poor disposal of electronic, industrial and hospital wastes, among others, increases risks to the health and livelihoods of Rwandans (REMA 2011, RURA 2018).

Limited data and information management: There is still a gap in generating timely, reliable and accurate environment and climate change data to inform decision-making process and citizens (MoE, 2017). Key areas that remain critical are weather data forecasting and packaging for end users, integrating natural capital accounting and valuation of ecosystem services into national accounts, green investment monitoring, and putting in place tools to monitor implementation of environment and climate change related regional, continental and global commitments (Montreal Protocol, Paris Agreement, SDGs, and MEAs, among others).

Limited enforcement of Environmental Impact Assessment (EIA) and Environmental Audit (EA) related laws: Insufficient enforcement of EIA and EA related laws still remain a major issue of concern in Rwanda's environment and natural resources sector (MoE, 2017).

Increased, predictable and sustained environment and climate change investments: Achieving the Environment and Climate Change Policy objectives calls for substantial and additional financial resources to implement the proposed policy actions. This requires strong strategies to mobilise sufficient resources to ensure adequate financing. However, the government cannot do this alone; the private sector, civil society, faith-based organisations, and citizens all have a role to play. The key challenges include raising the level of domestic resource mobilisation for environment and climate change actions, and devising innovative ways to increase green financing for the private sector. Developing capacities and a robust mechanism to tap into global environment and climate finances, including from the private sector and foreign direct investments is also critical for the successful implementation of green initiatives.

4. Environment and Climate Change Opportunities

Despite the many and varied negative impacts, environment and climate change also present opportunities to government, businesses and the public at large, which this policy aims to fully exploit.

First, the country has an enabling environment in the form of its visionary national leadership, its results-based culture (*Imihigo*), decentralisation, and improved public awareness on environment and climate change, which represents an opportunity for effective monitoring of the implementation of the policy.

Second, with Rwanda being a party to several multilateral and regional environmental and climate change agreements, significant benefits can be realised through regional and international cooperation.

Third, the country's demographics, with population growth slowing and 40% of the population below working age, provide a potential "*demographic dividend*" which constitute a source of new and innovative thinking and action.

Fourth, the environment and climate change are linked to other sectors such as forestry, agriculture, water resources management, mining, energy, and disaster risk reduction which represents an opportunity for effective implementation of the policy.

Fifth, the environment and climate change represent an opportunity to catalyse realignment of Rwanda's development model to one that is climate resilient, based on lower GHG emissions, and takes full advantage of the green and circular economy. Climate finance flows and carbon asset mechanisms present an opportunity to access additional funding. This means accessing international financing for ambitious climate resilient and low-emission development programmes. For the private sector, this can entail developing financial and insurance services, engaging in projects to generate carbon credits for sale in international markets, exploiting new green economy opportunities and creating green jobs.

5. Policy Goal

The proposed goal of *Environment and Climate Change Policy* is: **"Rwanda to be a nation that has a clean and healthy environment, resilient to climate variability and change that supports a high quality of life for its society."**

6. Guiding Principles of the Policy

The formulation of this Environment and Climate Change Policy is guided by the following considerations:

i. ***Inclusiveness:*** Effective involvement of women and youth in environmental management and climate change intervention decision-making is essential and should be encouraged.

ii. ***Economic Value:*** Integration of Natural Capital Accounting (NCA) and Payment of Ecosystem Services (PES) in national economic planning and finance.

iii. ***Ecosystem Approach*** to conserving environmental resources will be adopted and enhanced to ensure that all ecosystems are managed in an integrated manner while also providing a range of benefits to the citizenry.

iv. Assessment of environmental risks and impacts for development projects and strategic environmental and social assessment for national policies, plans, programmes and strategies.

v. ***Precautionary Principle*** seeks to minimise activities that have the potential to negatively affect the integrity of the natural environment.

vi. ***The principle of sustainability of environment and equal opportunities across generations:*** Human beings are central to sustainable development. They are also entitled to the right of a healthy and productive life in harmony with nature.

vii. ***Mitigation and Adaptation*** The country is committed to addressing global warming and taking steps to cope with the effects of global warming.

viii. ***Polluter Pays Principle*** Those responsible for environmental damage must be held liable for the repair caused to both the physical and human environments. They must also be held responsible for the costs of preventive measures to reduce or prevent further pollution and environmental damage.

ix. ***The Pollution Prevention Principle*** anticipates problems and prevents negative impacts on the environment and people's environmental rights.

x. ***Extended Producer Responsibility (EPR)*** is a policy approach under which producers are given a significant responsibility - financial and/or physical - for the treatment or disposal of wastes. Assigning such responsibility provides incentives to prevent and reduce waste at the source, promote waste reuse and recycling.

xi. ***The principle of information dissemination and community awareness raising on conservation and protection of the environment:*** Every person has the right to be informed of the state of the weather, climate, and environment and to take part in the decisions to protect the environment.

xii. ***Principle of Cooperation:*** Public institutions, international institutions, associations and private individuals are required to protect the environment at all possible levels. Multilateral Environmental Agreements (MEAs) and regional instruments will be

domesticated and implemented cooperatively for better environmental and climate change management.

xiii. ***Endeavour to promote Circular Economy and industrial symbiosis:*** Industries are brought together in innovative collaborations, finding new ways to efficiently use resources and thus increase revenues while reducing waste and associated costs.

7. Policy Objectives and Statements

7.1. Policy objective 1: Greening economic transformation

The government acknowledges that environmental degradation and climate change poses a major challenge to economic growth and sustainable development. To ensure environmental sustainability, there is a need to harmonise economic growth with the sustainable use of natural capital. Furthermore, mainstreaming environment, weather and climate information as well as climate change considerations into the behaviour of industries and consumers would change consumption and production patterns. This will be achieved through five policy statements and related actions as follows:

Policy statement 1: Promote a green economy that is resource efficient, low-ca climate resilient

To address climate change, the country is committed to building a low-carbon, climate-resilient and resource-efficient growth trajectory that creates a maximum number of jobs and stimulates economic activity while ensuring sustainable development . This will be achieved through the following policy actions:

1. *Create favourable conditions to attract investments in green job creation through the manage the environment and climate mitigation actions.*
2. *Promote and support local industries and small and medium sized enterprises (SMEs) to adopt environmentally sound technologies through provisions of appropriate incentives and disincen*
3. *Strengthen the use of Strategic Environment Assessment (SEA), Environment Impact Assessment (EIA, periodic Environmental Audits (EAs) in productive investments, and enforce their implementation (Environmental Management Plans).*
4. *Mainstream green economy and climate change concerns into sectoral and local plans, processes, budgets and actions.*

Policy statement 2: Promote the circular economy to advance sustainable consumpt production patterns

Changing patterns of consumption and production through the mainstreaming of climate change and environmental considerations in all sectors is a prerequisite for sustainable development. Unsustainable consumption and production practices are increasing, resulting in many of today's environmental challenges. This will be achieved through four policy actions:

1. *Put in place institutional and legal framework for the circular economy.*
2. *Reinforce strategies to implement circular economy concepts for sustainable development to c climate resilience and adaptive capacity to protect natural capital.*
3. *Incentivise the private sector to optimise the use of circular economy principles across various sectors of the economy.*
4. *Promote resource efficiency and cleaner production (RECP) technologies, development and tra*

Policy statement 3: Promote green technologies and procurement

Green procurement gives a higher priority to materials with lower environmental impact in order to expand the market of green products, promotes the development of environmentally-friendly technologies, and raises environmental awareness among suppliers and others involved in the supply chain. The Government of Rwanda has shown interest in promoting eco-products in all sectors of the economy. Its commitment is reflected in the Green Growth and Climate Resilience Strategy. The following are the policy actions:

1. *Put in place mechanisms to develop and promote green technologies in all sectors of economic development and facilitate appropriate climate change mitigation and adaptation technological development, including strategies to increase human capacity, especially among the youth and women.*
2. *Revise legal instruments (including public procurement guidelines) to promote green technologies and reflect green components in national and district procurement processes.*
3. *Mainstream low-carbon growth options into the planning and budgeting processes of the national and local governments.*
4. *Identify and implement incentives for the private sector and research institutions to undertake research and development and create affordable and appropriate adaptation and mitigation technologies.*
5. *Identify and implement fiscal, taxation and other policy options to reduce up-front cost of green technologies in priority areas with high greenhouse gas emissions.*
6. *Raise awareness on the use of green technologies and practices.*
7. *Enhance the capacity of the public and private sectors, civil society and research institutions to develop and utilise green technological innovations.*

Policy statement 4: Promote green urbanisation and green rural settlements

Urbanisation and green rural settlements are priority areas for the Government of Rwanda. Aspirations of Vision 2050, Vision 2020, NST1 and GGCRS aim to implement Land Use and Development Master Plans and district plans to create low-carbon, high density and walkable cities. Sustainable human settlement involves creating the conditions under which people in both rural and urban settings can enjoy healthy, productive and well-integrated lifestyles. This should ensure that people live in safe, healthy and dignified conditions with relatively easy access to amenities. The policy actions are:

1. *Promote and incentivise the use of low-carbon materials in construction.*
2. *Enforce Rwanda's building code implementation including green construction practices for bui and other structures for resource efficiency, sustainability and affordability.*
3. *Support the construction of green villages that comply with the Smart Green Village concept and toolkit.*
4. *Promote "green spaces" in urban centres to moderate temperatures and provide fresh air for living.*
5. *Promote waste management system to reduce greenhouse gas emissions.*
6. *Promote private sector investment, especially the development of appropriate water and sanitation technologies and infrastructure for waste management.*
7. *Promote technologies for efficient and safe water use, especially in respect to safe wastewater use and recycling.*

Policy statement 5: Promote green mobility

To ease traffic congestion, improve air quality and optimise transport networks, the country is committed to promoting green mobility in urban and rural areas. Green and emission-free transportation will have a long-term impact on the ecology of the country. This will be achieved through the following policy actions:

1. *Promote the development of the necessary infrastructure to increase the use of public transport and non-motorised transport (e.g. walking and biking).*
2. *Strengthen low-carbon transport systems (including a review of the tax regime to promote low-emission vehicles).*
3. *Establish national standards for emissions and implement strict air quality standards.*
4. *Raise awareness on green mobility through eco-driving courses and public campaigns (e.g. conversion of main streets to pedestrian zones, car free days, children painting streets, speed*

measurements near schools, car-pooling, etc.) and TV, radio as well as newspaper articles pro sustainable transport.

7.2. Policy objective 2: Enhancing functional natural ecosystems and mar biosafety

Well-functioning ecosystems provide reliable and clean water, productive soil, relatively predictable weather, carbon sequestration and many other services essential for human well-being. This also presupposes to have access to timely and accurate information on the environment and climate for integrated planning and management of the environment. However, there are pressures on environmental resources including conservation and utilisation of genetic resources which require attention in this policy. A key pillar in biosafety considerations is the Precautionary Principle of the Cartagena Protocol, and this should be a vital guide in making decisions regarding biosafety and genetically modified organisms (GMOs). This will be achieved through the following three policy statements and related actions.

Policy statement 1: Conserve, preserve, and restore ecosystems and enhance t functioning

Ecosystems provide a wide range of goods and services. These include provisioning, regulating and maintaining ecological systems and functions. Despite the services they provide, ecosystems are under pressure from human activities. The most critical ecosystems include forests, water, wetland ecosystems, among others. Some of these have been converted into agricultural use and settlements. Therefore, the policy actions are:

1. *Develop a national wildlife adaptation strategy that includes well-assessed climate change adaptation strategies.*
2. *Promote park management practices that enable wildlife to adapt to the changing climate.*
3. *Promote weather-resilient tourism infrastructure and develop tourism products which have a low-carbon footprint.*
4. *Strengthen implementation of integrated water resource management strategies including operationalisation of water fees payment scheme to support water catchments protection and conservation.*
5. *Institutionalise, pilot and upscale Payment for Ecosystem Services (PES).*
6. *Provide incentives for investment in sustainable tourism and wildlife conservation initiatives.*
7. *Promote biodiversity conservation including revitalisation of national parks (NP).*
8. *Promote programmes for the conservation of natural heritage.*

9. *Take all appropriate measures to protect and restore rare or fragile ecosystems.*

10. *Integrate Natural Capital Accounting and valuation of ecosystem services into national develop planning frameworks.*

11. *Strengthen the involvement and empowerment of local communities in the prevention, eradication and control of invasive species that have major environmental and economic impacts.*

12. *Regularly conduct an inventory of degraded ecosystem and prepare restoration development*

Policy statement 2: Promote sustainable management of wetlands

Rwanda is endowed with wetlands that contribute significantly to environmental sustainability, community livelihoods and carbon sequestration. The Government of Rwanda has put in place legislation to manage all its natural resources, including wetlands. However, there are signs of wetland degradation due to factors including the draining of wetlands for agriculture, urban and industrial expansion and poor use of wetland catchments leading to siltation and pollution of wetlands and rivers. Therefore, the following policy actions are required:

1. *Develop a master plan and implementation strategies for wetland management in Rwanda.*

2. *Develop guidelines for the use of wetlands.*

3. *Identify all polluted wetlands and develop a decontamination plan including the use of environmentally-sound technologies (Phytoremediation) for pollution prevention, control and remediation.*

4. *Promote and intensify wetland protection, and restoration and rehabilitation of degraded wetla*
5. *Strengthen collaborative and participatory management of wetland resources.*

6. *Strengthen existing wetland research and encourage conservation and restoration of ecosystems critically threatened by climate change.*

7. *Ensure the protection of wetlands, riverbanks, hilltops and slopes from unsustainable practices to prevent soil erosion and environmental degradation.*

8. *Ensure that developmental activities within wetlands or in the buffer of wetlands conform with EIA process and procedures.*

Policy statement 3: Ensuring biosafety and precautious adoption and use of bio

Modern biotechnology that involves the use of genetic engineering techniques to transfer useful characteristics creates enormous opportunities for agriculture development, industrialisation and environment protection. However, there is a need for the cautious adoption and use of

biotechnology to contain negative impacts associated with its use. Rwanda, being a signatory to the Convention on Biological Diversity and the Cartagena Protocol on Biosafety, will need to put in place concrete measures through the following policy actions:

1. *Establish and implement biosafety regulations.*
2. *Ensure teaching of ecological agriculture at all educational levels and in relevant research inst*
3. *Strictly regulate transboundary movement of genetically modified organisms and products and encourage the development of improved crop varieties and animal breeds under ethical research environment.*
4. *Promote public awareness on biosafety through initiatives involving the community, policy ma legislators, administrators and the private sector.*
5. *Promote sustainable farming practices that suit the holistic nature of local agricultural practice not disruptive and are inclusive of economic, social, cultural and gender considerations.*

7.3. Policy objective 3: Strengthening meteorological and early warning s

The meteorological sector in Rwanda provides weather and climate data and information, forecasts and warnings of severe weather events on a day-to-day basis. The weather information and advisories are provided to various sectors of the national economy. However, Meteo Rwanda is faced with challenges of satisfying the ever-increasing demand from the society for high quality, high quantity meteorological data, information and advisories. These challenges will be addressed through the following two policy statements and related actions.

Policy statement 1: Develop and maintain environment, climate services and cli information systems and promote their use by all sectors of Rwandan society

The conservation and management of our environment and climate change directly depend upon access to climate information, however data and information regarding the environment (including natural resources) and climate remain scattered within several institutions, making it difficult to easily and efficiently access adequate and accurate data for proper decision-making. This challenge will be addressed through the following policy actions.

1. *Strengthen and support environmental, natural resources, climate services, climate change research and monitoring to generate accurate data and information to inform decision making.*
2. *Develop a national data and information management framework on environmental, climate c and biological resources.*
3. *Strengthen capacities, outreach and open access initiatives on knowledge management.*

4. *Put in place standards and tools for data management in environment and climate change.*

5. *Generate policy statements from collected data as a strategy to inform policy.*

Policy statement 2: Promote generation and access to accurate and adequate meteo weather and climate information for better planning in all sectors of the econon

The ability of the country to respond appropriately and effectively to climate change depends on the ability to understand and assess impacts and vulnerability. Policy makers, researchers, and the public and private sectors can then use that knowledge to make informed decisions on appropriate steps for adaptation and mitigation in all sectors of the economy. Generation of climate change knowledge and information, combined with effective communication strategies can enhance public participation and awareness. Key policy actions are:

1. *Develop a national strategy to promote generation of accurate meteorological weather and clima information for better decision-making across all sectors of the economy.*

2. *Strengthen and enhance reliable and timely weather forecasts, and early warning systems for and disaster risk reduction.*

3. *Enhance and develop early warning systems for better planning in all sectors (e.g. agriculture, environment and natural resources, energy, health, transport, urbanisation, water and sanitation, etc.)*

4. *Incorporate systematic feedback from users of early warning information, and adapt to the ne stakeholders and new technology.*

5. *Involve and empower local communities in disaster risk reduction.*

6. *Promote generation of data to support scientific research, creating awareness and enhancing weather and climate information dissemination.*

7.4. Policy objective 4: Promote climate change adaptation, mitigation ar response

Climate variability and climate change pose significant environmental challenges for Rwanda as evidenced by the frequent droughts, floods and other extreme weather events that lead to severe natural disasters, including landslides. Increased frequency and intensity of extreme climatic conditions continue to undermine the country's sustainable development. Overcoming the development challenge of climate change requires extensive adaptation and mitigation measures to reduce vulnerability to future climate change. This will be achieved through two policy statements and related actions as outlined below.

Policy statement 1: Strengthen adaptation mechanism in planning and impleme

Climate-resilient, low-carbon development is a national priority for Rwanda because it will support the country to absorb shocks and build capacity to adapt to additional stress and change. Measures to address existing climate variability and achieve national development goals should not be at the expense of preparing for future climate change. Adaptive capacity is key to improving socio-economic outcomes for communities, households and industry. The policy actions are:

1. *Mainstream green, ecological and climate resilient practices and interventions in development sectors and districts, including their plans, budgets, functions and actions.*
2. *Promote resource recovery and reuse in all sectors, including agriculture, water and sanitation industrial sectors.*
3. *Integrate weather and climate information into infrastructure planning and development.*
4. *Promote and encourage water storage at different levels (institutional, households, etc.) and in stormwater management, such as capturing and using stormwater for localised irrigation to support agriculture and green space vegetation.*
5. *Promote ecosystem-based approaches to climate change adaptation in local development age*
6. *Promote afforestation and reforestation of critically- degraded and residential areas.*

Policy statement 2: Strengthen mitigation mechanism in planning and impleme

Rwanda has continued to face a rising degree of vulnerability to disaster risk. The public is increasingly concerned about the intensity and frequency of natural and man-made disasters. Like adaptation to climate change, mitigation of greenhouse gas (GHG) emissions in Rwanda also requires a series of coordinated policy responses that are either sector-specific or cross-cutting in nature, in line with the Nationally Determined Contributions to the Paris Agreement. The following are the policy actions:

1. *Enforce air pollution emission standards and regulation.*
2. *Promote the use of alternative forms to biomass fuel (e.g. gas and electricity) in urban and rura*
3. *Promote resource efficiency technologies to reduce energy consumption in processing industrie*
4. *Promote renewable energy to achieve universal access to electricity.*
5. *Promote waste recovery options as a high value resource stream especially in urban areas.*
6. *Increase energy efficiency through demand side measures and grid loss reduction.*

7.5. Policy objective 5: Improve environmental well-being for Rwandans

Quality of life and the wellbeing of Rwandans largely depend on a clean and healthy environment. Air pollution, waste and noise require special attention. The Government of Rwanda will emphasise standardisation, effective monitoring and enforcement of laws against all types of pollution. This will be achieved through three policy statements and related actions as highlighted below.

Policy statement 1: Improve the health and quality of life for every citizen and promote sustainable socio-economic development

Life depends on a clean and healthy environment. Rwanda's environmental health policy is geared towards improving the health and wellbeing of citizens as well as combating environmental health diseases. However, changing climate and weather patterns affect the health of human populations. These effects occur due to changes in temperature and precipitation and occurrence of floods, droughts, and fires. Indirectly, health may be affected by ecological disruptions brought on by climate change (crop failures, shifting patterns of disease vectors), or social responses to climate change (such as displacement of populations following prolonged drought). To address the above issues, the following policy actions are required:

1. *Strengthen the health system's adaptive capacity to tackle projected impacts due to extreme events on health (e.g. disease surveillance, disaster preparedness, vector control)*
2. *Develop a national health vulnerability impact and adaptation to climate change assessment.*
3. *Incorporate climate change messages into existing health education and media outreach effor rising temperature contributed to the increase in communicable and non-communicable disea (NCDs)).*

Policy statement 2: Prevent and promote integrated pollution control and waste

The most pressing problems of pollution in Rwanda are those associated with air, water and land degradation. Often, industrial, household or hazardous waste is disposed of near recreational, agricultural land, residential locations or water sources where they become a source of air, water and soil pollution. One of the rapidly growing sources of pollution is e-waste in the form of old computers and other electronic gadgets which contain toxins. Chemical and medical waste is also increasing. These issues will be addressed through the following policy actions:

1. *Develop an integrated national waste management strategy.*
2. *Promote infrastructure and human capacity development for medical waste and hazardous wa management systems.*
3. *Ensure compliance with air quality standards in urban and rural areas and strengthen enforcer capacity.*

4. *Strengthen and implement existing environmental guidelines, standards and develop new one necessary, to control emissions from motor vehicles, power plants and industries.*

5. *Strengthen capacity and infrastructure to monitor, enforce and regulate noise pollution.*

6. *Promote the use of economic incentives to manage waste.*

7. *Promote establishment of facilities and incentives for cleaner production, waste recovery, recycling and reuse (Reduce-Reuse-Recycle) countrywide.*

8. *Develop and enforce effective water pollution prevention and control programmes including cr for monitoring the biological, physical, and chemical quality of water bodies while instituting mechanisms to address deviation from standards.*

9. *Develop a profile of all categories of waste in Rwanda.*

10. *Promote the sound management of chemicals and hazardous wastes in accordance with agreed international frameworks (such as the Stockholm Convention, Basel Convention, Rotterdam, e*
11. *Set up waste management information systems*

12. *Domesticate chemical and chemical waste Multilateral Environmental Agreements.*

13. *Support technology development and innovation in the area of e-waste management.*

Policy statement 3: Strengthen capacity in the management of nuclear and radi substances

In Rwanda, radioactive materials and radiation sources are found in medical centres such as hospitals, security agencies, agriculture sector, mining and milling, industries and construction. This radioactive waste, nuclear energy, mining and use of equipment with ionising agents release harmful radiation into the environment which require careful attention through the following policy actions:

1. *Develop and maintain an inventory of sources, types and quantities of radioactive materials; periodically monitoring status and trends and enhancing protection measures.*

2. *Strengthen capacities for handling and management of radioactive waste and ionising agents.*

3. *Ensure that telecommunication equipment and structures conform to international radiation standards.*

4. *Support the development of appropriate institutional arrangements and thereby ensure the development of human resources competent to discharge the responsibility of managing nuclear infrastructure.*

5. *Support research, development and innovation in the use of green nuclear technology.*

6. *Advocate for a policy on nuclear and radioactive substances.*

7.6. Policy objective 6: Strengthen environment and climate change gove

Functioning governance structures, legal and policy instruments as well as institutional capacity for judicious implementation and enforcement are prerequisite for effective environmental and climate change governance. Furthermore, there is a need to develop an environment and climate change literate Rwandan. Formal and informal environmental education are effective means to raise awareness of critical environmental issues. This will be achieved through five policy statements and related actions as follows.

Policy statement 1: Ensure that sectoral policies define and adopt sector-specif and climate change quality standards for their respective core activities

Many sectoral policies and laws need to be harmonised to deal with environmental degradation and climate change. These include policies and laws concerning agriculture, land, meteorological service activities, forests, mining, water, sanitation, tourism, and trade and industry which have significant implications on the environment and climate change issues. The policy actions are:

1. *Regularly review, and amend where necessary, relevant sectoral laws and policies to integrate environment and climate change policy considerations and implement priority actions in respecti sectors.*

2. *Establish and operationalise a framework for verification and enforcement of regulations for all productive sectors that alter the environment.*

3. *Develop and maintain NCAs for Rwanda's natural resources and ensure appropriate integratio national economic planning.*

4. *Develop a measurement, reporting and verification (MRV) system for effective implementation policy.*

Policystatement 2: Establish a statutory national coordination framework for the management of critical ecosystems

Rwanda is endowed with rich biological diversity comprised of a great diversity of plants, animals and habitats which make our country unique. These highly unique biological resources

and ecosystems, however, are currently under serious threats of encroachment by economic activities. This calls for the following policy actions:

1. *Set up a national coordination framework for the management of critical ecosystems.*
2. *Strengthen institutional coordination mechanism with high level oversight of the ministry in ch environmental management to enhance management of critical ecosystems and strengthen intersectoral adaptation, response and mitigation to climate change.*
3. *Strengthen the implementation of community-based integrated ecosystem management plans for critical ecosystems with the support of the private sector and civil society.*
4. *Develop and operationalise a Biodiversity Information System (BIS), linked to other environmental information and management systems to monitor key indicators of the status of selected critical ecosystems.*
5. *Mainstream the sustainable use and conservation of critical ecosystems in the daily operations of productive sectors (e.g. agriculture, mining, energy).*

Policy statement 3: Promote inclusivity for participation in environment and climate change intervention decision-making

The participation of all categories of population (women, men, youth and people with disabilities, the private sector, civil society) in environment and climate change is an essential component of sustainable development. To ensure that the population is fully involved in environmental planning and management, there is a need to implement policy actions as follows:

1. *Establish the Environmental Public Complaints Committee at national and local levels.*
2. *Explore unconventional mechanisms to ensure and enhance the participation of youth, women, an people with disabilities in environment and climate change governance and position them to take advantage of opportunities in the sector.*
3. *Develop projects and partnerships to build human capacity in the environment and climate se raise a critical mass of young professionals who can tackle challenges at a national and global through active involved in international negotiations around all MEAs.*

Policy statement 4: Enhance environment, weather and climate information use change awareness and education among the Rwandan society

Public participation is a core value and principle of national governance in Rwanda. Increasing public awareness on environment, weather and climate information and climate change impacts and interventions can help to facilitate the role of the public as a positive agent to reinforce climate change interventions. Rwanda has various mechanisms for public awareness, especially through formal education (primary, secondary and tertiary levels) and civic education (*Itorero*). The following are the key policy actions:

1. *Implement awareness raising strategies and capacity development on the opportunities for ad and mitigation measures as per the Green Growth and Climate Resilience Strategy.*

2. *Mainstream environment, weather and climate information and climate change in primary, sec and tertiary level education curricula.*

3. *Include environment dimensions in Imihigo as a strategy for effective mainstreaming of enviro weather and climate information and climate change.*

4. *Incorporate climate change knowledge into government-implemented public awareness frame including civic education (Itorero) and extension programmes.*

5. *Strengthen the Rwanda Environment Information Network.*

6. *Raise public awareness on environment, weather and climate information use and climate cha*

Policy statement 5: Strengthen existing roles and coordination mechanisms

Governance and coordination lie at the heart of this policy, which aims to create a forum that goes beyond government to include the private sector, CSOs, development partners, academia and research institutes, media, communities and other key stakeholders. Rwanda has a relatively comprehensive and clear institutional arrangements. The country has established agencies to work cross-sectorally to support environment, climate change, climate and weather, water, notably REMA, FONERWA, Meteo Rwanda and the department of natural water resources of RWFA and RLMUA - all within the Ministry of Environment.

To strengthen the existing institutional roles and coordination mechanisms, the policy actions will be implemented as follows:

1. *Strengthen the functioning of the High Level Policy Dialogue on the GGCRS whose technical ar the multi sectoral national steering committee in charge of monitoring the strategy.*

2. *Develop relevant tools for efficient monitoring of progress towards climate compatible develop*

3. *Involve development partners, the private sector, CSOs, academia and research institutes, me communities to play a leading role in its implementation.*

4. *Engage local administration to ensure the safety and security of meteorological infrastructure throughout the country.*

7.7. Policy objective 7: Promote green foreign and domestic direct investment other capital inflows

Sound environmental, climate services and climate change actions require sizeable and sustained investments through sustainable financing mechanisms. As such, there is an urgent need to

complement public resources by harnessing additional funding from Foreign Direct Investments (FDI) and funding from carbon markets, multilateral funding mechanisms, development partners and domestic public and private finances. This should also entail new and innovative financing mechanisms like green bonds. Nonetheless, measures should be put in place to ensure that investments do not cause environmental harm in the short or long term.

Policy statement 1: Strengthen the capacity to mobilise environment and climate change finance mechanisms for greater efficiency, effectiveness and impact

Adequate and predictable financial resources are a crucial component for achieving Rwanda's ambitious climate change response objectives. Given the extent of projected climate change adaptation and mitigation needs in Rwanda, it is important to ensure that all sources of finances can be mobilised – international, domestic, public and private – including through Public-Private Partnerships (PPPs) to help build national capacities to promote climate-resilient development. Therefore, the following policy actions will be implemented:

1. *Explore all possible avenues to attract internal and external environment and climate finance, including through FDIs and other multilateral and bilateral funding (e.g. GCF, AfDb, WB, etc.).*
2. *Explore innovative green financing, e.g. green bonds and other international, national and locally based financing mechanisms.*
3. *Promote private sector involvement in environment and climate finance opportunities.*
4. *Encourage the private sector to increase investment in environment and climate change adap and mitigation.*
5. *Ensure accountability and transparency in the management of climate finance.*
6. *Strengthen the capacity of the national institution in charge of green finance to mobilise and u resources for environment and climate change actions*

Policy statement 2: Strengthen climate proofing capital inflow in national econo

Rwanda will require substantial additional resources for the National Economic Transformation agenda. It is very clear, however, that scaled-up resources need to have climate proofing capital inflows if development is to proceed in the context of climate change. The ministry in charge of finance is well placed to make good use of environment and climate finance, given its credible Public Financial Management System and experience in how best to blend support from donors with national resources to address national priorities. The following are policy actions:

1. *Develop and integrate the environment, climate services and climate change budget statemen of the National Planning and Budgeting Call Circular.*

2. *Put in place mechanisms and criteria for balance in the allocation of mobilised climate finance increase access to climate information, adaptation, and mitigation and response actions to climate change.*

3. *Put in place a framework for the coordination and monitoring the effective climate finance in national development.*

8. Implementation Plan

In order to fully implement the above policy actions, clear roles and responsibilities of all institutions in coordination, monitoring and evaluation is of paramount importance. To coordinate and monitor the implementation of the policy, the ministry in charge of the environment has the most direct authority over environment, climate services and climate change; it carries out its mandate in collaboration with other ministries or central agencies in charge of finance and economic planning, investment, forestry, agriculture, energy, sanitation, mining, industry, tourism and wildlife, education, research and other professional training, gender and youth, local government, etc.

The key responsibility of local government will be to ensure that orientations and guidance from the central level are well internalised and that proposed activities are well implemented at local levels.

The private sector, civil society organisations and communities will have responsibilities to support the government in implementing, monitoring and evaluating the policy. The policy will be implemented through ministerial and DDS, SSPs, annual *Imihigo* targets and action plans. The policy will also be implemented through the action plans of development partners, CSOs and the private sector who will translate the policy into action.

However, effective implementation of the policy is conditional on the support of international stakeholders. The implementation of the policy actions assume the continued use of existing and planned national and international financial sources from development partners.

The key existing coordination mechanisms will support the implementation of the policy. These include: (1) Inter-ministerial steering committee for the GGCRS; (2) Economic cluster forum; (3) ENR Sector Working Groups; (4) Joint Sector Reviews; (5) ENR Thematic Working Groups; (6) Governance cluster meetings at central and local levels. These platforms will serve both as a means to ensure participatory, joint-planning and accountability and ensure the inclusion of environment, climate services and climate change targets into sectors and districts priorities to foster ownership and accountability. The details of the implementation plan are provided in Annex 1.

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Annexes

Annex 1: Implementation Plan

Policy actions	Responsibility	Timeline
Disseminating the policy to the general public with the focus on key stakeholders.	**REMA**, MOE, Meteo Rwanda, FONERWA	2019
Mainstream low-carbon growth options into the planning and budgeting processes of the national and local governments.	**MINECOFIN, MoE,** MINALOC, REMA	2019 - 2020
Develop legal instruments required to promote the use of green technologies and promotion of green growth.	MOE, MINICOM, MINECOFIN, NIRDA, PSF, REMA	2019 – Continuous
Develop and enforce public procurement guidelines to promote the use of environmentally friendly, resource efficient goods and services.	**MOE**, MINECOFIN, REMA, NIRDA, PSF, RSB	2019 - 2020
Put in place institutional and legal framework for the circular economy.	**MINICOM**, MOE, MINECOFIN, PSF, REMA	2019 - 2020
Establish national air quality standards.	**RSB**, MoE, REMA, RNP	2018- 2019
Develop a National Conservation Strategy.	**RDB**, MoE, REMA, DPs	2019 – 2020
Develop master plan and implementation strategies and sector specific detailed guidelines for wetland management in Rwanda.	**MOE,**MINAGRI, REMA	2018 - 2024
Identify all polluted wetlands, develop and implement their decontamination plan.	**REMA,**MoE, MINAGRI, UR, CSO, DP	2019 – 2024 Continuous
Put in place information systems for regular updates of climate-change related data as well as a biodiversity information system.	**REMA, MoE,**Meteo Rwanda, UR, RDB, CSO	2019 – 2024 Continuous
Develop a national strategy to promote generation of accurate meteorological weather and climate information for better decision-making across all sectors of the economy.	**Meteo Rwanda,** MoE, MINAGRI, MININFRA, MoH	2019 - 2020

Establish and implement biosafety regulations.	**MoE,** MINAGRI, MINEDUC, RSB, MoH, REMA, NIRDA	2019 - 2022
Set up a profile of all categories of waste used in Rwanda, and develop an integrated waste management strategy.	**REMA, MoE,** MINAGRI, MINICOM, RSB, MINEDUC,	2019 - 2022
Promote an enabling environment and required infrastructure to promote green mobility.	**MININFRA, MoE,** RTDA, REMA, RURA, MINALOC, RNP, PSF	2019 – 2024 Continuous
Strengthen the national capacity and infrastructure to regulate, enforce and monitor all kinds of pollution.	**REMA , MoE,** MINALOC, MINISANTE, RURA, RWFA, Local Authorities, RNP	2019 – Continuous
Develop a critical mass of young professionals who have the capacity to effectively engage in international negotiations in MEAs to maximise the opportunities that the agreements can contribute to Rwanda's green growth pathway.	**MOE,** MINAFFET, REMA	2019 - 2024 Continuous
Build capacity across PSF and national institutions to mobilise and utilise climate finance.	**FONERWA,** MOE, MINECOFIN, REMA	2019 - 2024
Identify and implement incentives for the private sector and research institutions to undertake R&D and develop affordable and appropriate adaptation and mitigation technologies.	MoE, PSF, UR, Universities/Research institutes	2018 – Continuous
Promote and incentivise the use of resource efficient technologies in all sectors.	**MOE, MINICOM,** MININFRA, NIRDA, RHA, MoE, REMA	2018 – Continuous
Strengthen implementation of integrated water resource management strategies and institutionalise innovative ways of resource management like Payment for Ecosystem Services (PES).	**MOE, RWFA,** MINECOFIN, NISR, REMA, RDB, DP, CSOs	2018 – Continuous
Promote programmes that support conservation of natural heritage.	**RDB, REMA,** RWFA, MoE	2019 – Continuous
Take all appropriate measures to protect and preserve rare or fragile ecosystems.	**REMA, RDB,** MoE, CSOs, private sector	2018 - 2024

Integrate natural capital accounting and valuation of ecosystem services into the national development planning framework.	**MINECOFIN, NISR,** RWFA, RLMUA, REMA, MoE	2019 - 2024
Enhance and develop early warning systems for better planning in all sectors (e.g. agriculture, environment and natural resources, energy, health, transport, urbanisation, water and sanitation, etc.)	**Meteo Rwanda,** MoE, MINAGRI, MININFRA, MoH, RHA, WASAC, REG, MoE	2018 – Continuous
Promote the generation of data to support scientific research, creating awareness and providing timely weather and climate information.	**Meteo Rwanda,** universities/research institutes, MoE,	2019- Continuous
Mainstream green and ecological and climate resilient practices and interventions in all development sectors and districts, including their plans, budgets, functions and actions.	**MINECOFIN,** MINALOC, REMA, MOE	2019 - 2024
Promote ecosystems based adaptation (EBA) approaches in local development and climate change actions.	**MOE,** REMA, MINALOC, MINECOFIN, MoE, RWFA	2018 – Continuous
Increase energy efficiency through demand side measures and grid loss reduction, as well as production of renewable energy.	**MININFRA,** REG, MoE, REMA	2018 – Continuous
Strengthen the adaptive capacity of health systems to tackle projected impacts due to extreme weather events on health (e.g. disease surveillance, disaster preparedness, vector control, etc.)	**MoH,** REMA, MoE	2019 – Continuous
Promote infrastructure and human capacity development for medical waste and hazardous waste management systems.	**MININFRA,** MoH, MoE, REMA	2019 – Continuous
Promote the sound management of chemicals and hazardous waste in accordance with agreed international frameworks (such as the Stockholm Convention, Basel Convention, Rotterdam, etc.).	**REMA,** MININFRA, MiTEC, MoH, MOE	2018 – Continuous
Domesticate and implement all chemicals and chemical waste Multilateral Environmental Agreements.	**REMA,** MoE, MINIJUST	2018 – Continuous
Develop and maintain an inventory of sources, types and quantities of radioactive materials,	**RURA,** MoE, REMA	2019 - 2021 Continuous

periodically monitor status and trends and enhance protection measures.		
Advocate for a policy on nuclear and radioactive substances.	**MoE**, REMA	2019 - 2021
Strengthen capacities for handling and management of radioactive waste and ionising agents.	**RURA**, MoE, REMA	2018 – Continuous
Strengthen the functioning of the High Level Policy Dialogue of the GGCRS whose technical arm is the multi sectoral national steering committee in charge of monitoring the strategy.	**MoE**, MINAGRI, RDB, RWFA, RHA, REMA, MoE, MINALOC	2018 – Continuous
Develop relevant tools for efficient monitoring of progress towards the climate compatible development.		
Identify issues and gaps with respect to the management of critical ecosystems through the State of the Environment report.	**REMA**, MoE, MINALOC, CSOs	2019 – Continuous
Mainstream the sustainable use and conservation of critical ecosystems in the daily operations of production sectors (e.g. agriculture, mining, energy, etc.).	**REMA**, MoE, MINAGRI/RAB, MININFRA/REG, RMB	
Establish the Environmental Public Complaints Committee at national and local levels.	**REMA**, MoE, MINALOC	2019 - 2020
Mainstream environment, weather and climate information and climate change in primary, secondary, tertiary level education curricula.	**MINEDUC**, MoE, REMA	2019 – Continuous
Include environment dimension in the *Imihigo* as a strategy for effective mainstreaming of environment, weather and climate information and climate change.	**MINALOC**, MoE, REMA	
Incorporate climate change knowledge into government implemented public awareness framework including civic education (*Itorero*) and extension programmes.	**Itorero ry'Igihugu** REMA, MoE	2019 – Continuous
Explore innovative green financing, e.g. green bonds and other international, national and locally based financing mechanisms.	**MINECOFIN,** FONERWA, REMA	2018 – Continuous

Develop a national health vulnerability impact and adaptation to climate change assessment.	**MoH**, REMA, MoE	2020 - 2012
Develop a Measurement, Reporting and Verification (MRV) system for effective implementation of the policy.	**MoE**, REMA, DPs, CSOs	2019 - 2020
Set up a national coordination framework for the management of critical ecosystems.	**MoE**, REMA, MINAGRI, RDB, MININFRA	2019 - 2020

Annex 2: Case studies from the international best practices on key concepts

#1 Promotion of Green Public Procurement and online purchasing in South Kore

Background: In 2002, the Public Procurement Service (PPS) of Korea launched an online service for procurement, named (KONEPS). The online e-procurement (www.pps.go.kr/english/), service is an electronic contract system that enables quick and easy acquisition of products. This e-procurement service has been awarded as best practice, mainly due to the high volume of trade and the savings achieved in the cost of public procurement. In addition, the platform has been promoting the acquisition of green goods and services through different initiatives:

- Integrated webpage for public green purchasing information (http://green.pps.go.kr): this website wants to encourage public officers the adoption of greener products in their daily purchasing decisions. In the past, contracting officials of public organisations struggled with purchasing green products as related certifications and legal structure were too complicated. However, the launch of webpage made easier for the officials to access to the information and make a purchase of green products.
- Green products mall: to encourage green purchasing through KONEPS, PPS launched green products mall composed of products awarded with Environment Mark, Good Recycled (GR) Mark, High Efficiency Equipment Certification, and Energy Saving Certification at KONEPS. The green products are organised by product names to make the shopping mall more user-friendly and support green products' market access.

Objectives: Through the development of the online procurement and the support of websites on environmental products (green products mall) and the green purchasing website, the Korean government aims to:

- Increase the efficiency and transparency of the procurement and reduce the paperwork and meetings.
- Provide clear information on green products to officers.
- Encourage green purchasing, through the green products mall which is organised by product names.

Training activities as requirements for effective implementation of the initiative The Korean PPS delivers training to public officers that are in charge of purchasing with the aim to provide them the knowledge and needed tools to them and, therefore, increase green public purchasing. PPS launched the green purchasing educational course in the Public Procurement Human Resources Development Center's curriculum in 2010 and has invited professional lecturers and field trips. Green purchasing education program is available at PPS-Human Resources Development Center from August 2010: Program period: 3days (21hrs), the programme to be held twice a year. Participants: procurement officers of public organisations. Lecturers: professional lecturers from different specialties of green procurement.

Main barriers and strategies and detailed actions to expand green public procu market: The main barriers to the development of GPP policies in the Republic of Korea have been identified as: Lack of products in the market that meet environmental criteria defined. Lack of information/knowledge about financial benefits of GPP. Lack of information /knowledge of environmental benefits of GPP. Strategies and proposed actions to expand the Green Public Procurement Market for Low Carbon, Green Growth are summarised in the following table.

Main strategies (3)	Detailed plan (16)
Lowering public procurement market barrier for green products	● Give advantage in bid assessment process. ● Reflect economic benefits from energy saving and other factors in public tendering. ● Certify as excellent products. ● Ease financial burden of carrying out contract terms. ● Eliminate non environmental friendly products.
Building infrastructure to expand public demand for green products	● Enact accounting rules on green specifications. ● Set up procurement rules to promote green products purchase. ● Provide education/training sessions on the comprehensive information network on green procurement. ● Adopt and disseminate public procurement carbon cash-back. ● Organise statistics on public green purchasing.
Promoting green design and construction in the public sector	● Promote green design in public buildings. ● Give advantage to green construction companies in public tenders. ● Assist with eco-friendly and energy saving remodeling of public buildings. ● Increase the use of eco-friendly and energy saving construction materials.

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#2. Information Technology Procurement in Canada

Background: The Canadian federal government's Policy on Green Procurement requires environmental performance to be considered in the planning, acquisition, use, maintenance and disposal of all goods and services. In this sense, the government has specified these requirements, in terms of performance or functional specifications,

including environmental aspects. The products within the category of Information Technology (IT) hardware of public procurement in Canada must meet several environmental criteria during the procurement process. The environmental standards are related to the products and to the manufacturer. The products included in the IT Hardware category are: Desktop microcomputers, servers and mobile. Storage Area Networks (SAN) and Network Attached Storage (NAS). Archive/Back-up (Tier 3 Storage: Tape drives, tape autoloaders, tape libraries, tape media and low-cost disk-based backup and archiving).

Objectives: Environmental standards to buy IT hardware within the Government of Canada were first introduced in 1994. Increasingly stringent environmental criteria have been introduced ever since using a phased, iterative approach. The standards cover a wide range of fields in terms of energy consumption, reduction of hazardous materials, design for reuse and recycle, environmental stewardship in the manufacturing process, packaging, supplier engagement and report and billing. Environmental considerations for IT hardware aim to include the whole life cycle approach and the commitment of the supplier to good environmental practices.

Training activities as requirements for effective implementation of the initiative:

Public Works and Government Services Canada (PWGSC) in collaboration with the Acquisitions Branch and the Office of Greening Government Operations hosted a series of webinars on green procurement on seven key goods and services. IT Hardware is one of these goods. The purpose of this webinar is to help federal government departments access the "greenest" goods and services through PWGSC's procurement instruments and meet their targets related to the Policy on Green Procurement and the Federal Sustainable Development Strategy. These sessions are intended for functional procurement, and material management staff as well as sustainable development coordinators. These webinars provide an understanding of: Environmental Impacts of the good/service; Determination of Green goods/ services and Buyandsell.gc.ca/green; Environmental considerations addressed through PWGSC's procurement instruments; what you can do to get the "greenest" goods and services; Purchasing Demos using PWGSC E-tools and Resources.

Regarding training on IT procurement, an online course has jointly been developed by Public Works and Government Services Canada (PWGSC), Treasury Board Secretariat, Environment Canada, Natural Resources Canada and the Canadian School of Public Service (CSPS). It has been designed for functional specialists in procurement and material management in the federal Government of Canada.

Main barriers and strategies used:

The barriers encountered were associated with the early adoption of the emerging stewardship criteria. Industry was reluctant to manufacture green products due to users who would prioritise price, feature sets or aesthetics well before any consideration for environmental responsibility. Nowadays, these barriers have been overcome due to environmental awareness' raise. Implementation of green procurement has focused largely on integrating environmental considerations into centralised procurement instruments and developing tools and guidance for purchasing within the federal government.

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#3. Green policy in vehicles procurement in New Zealand

Background: The Sustainable Government Procurement Project, launched in 2006 by the government of New Zealand aimed to provide targets and minimum environmental standards, tools, templates and training to public procurers creating a common understanding about green procurement. As a result of its implementation, standards, guidelines and targets have been set. In particular, a number of priority categories have been designated and the minimum sustainability criteria have been defined. Standards have been developed for four priority categories: paper (recycled content, duplexing etc.), timber and wood products (legally sourced and sustainably produced), travel (motor vehicles, air travel/video conferencing) and light fittings. The green procurement policy for motor vehicles is a good example as it is based on the 3 pillars of sustainability: Environmental (reducing emissions); Economic (vehicle maintenance); Social (vehicle safety and driver behavior).

Objectives: Through the implementation of the Sustainable Government Procurement Project public administration aims to accelerate the adoption of sustainable practices in public procurement in areas of greatest impact in New Zealand. The project support to: Government leadership in sustainability; Raise awareness and increase knowledge of sustainability issues in the government market; develop a common guidelines and standards to sustainable procurement across public agencies.

Training activities: The New Zealand Procurement Academy assists public and private sector procurement practitioners and generalists in accessing procurement training courses and undertake study towards internationally recognized procurement qualifications. Training options include study for an Advanced Diploma in Procurement from the Chartered Institute of Purchasing & Supply Australasia that includes sustainable procurement studies. In June 2009 about 200 government employees had been on sustainable procurement training.

Main barriers and way forward: According to the Green Sustainable Project, new challenges would be identified over the progress of the adoption of sustainable purchasing of vehicles. The project should support the analysis about the needs of the government agencies such as: Ensuring that sustainable public procurement is compatible with legal and regulatory frameworks and trade policies Long-term political commitment to sustainable public procurement. Application needs to be consistent and well thought through. Local and central government not aligned.

Sources:

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#4. Green Council and Hong Kong Green Purchasing Charter

Background: Green Council, constituted in May 2000, is a non-profit organisation committed to promoting and assisting Hong Kong's (China) business sector in incorporating good environmental practices into business strategies. Green Council has contributed to the increase of awareness on the purchasing of environmentally preferable goods with the following initiatives: Green Label Scheme: certification of environmentally preferable products. Hong Kong Green Purchasing Charter (HKGPC): green procurement task force constituted by companies and organisations, international and local advisors and technical vetting committee aimed to guide GPP in Hong Kong, China. Cyber Green Center: online platform on environmental products and technologies. Hong Kong Green Awards: recognition for companies that have pursued and achieved outstanding performance and results in the areas of green purchasing, green management and green governance. Events and trainings.

Objectives: Green Council has three principal objectives: Raise public awareness for the need of a better environment. Encourage and improve environmental management and performance of local industries, through the establishment and promotion of the Green Label Scheme. Promote the image of Hong Kong as a city that gives high importance to environmental protection. These objectives will be achieved through the promotion of: education and training for environmental preservation, green consumerism, green management concepts and practices, easing environmental burden, waste recycling and waste reduction, energy conservation and sustainable development. In relation to green purchasing (green consumerism), the green council launched in 2007, the Hong Kong Green Purchasing Charter (HKGPC) scheme with the ultimate goal of raising awareness and promote the use of green purchasing as a means to reduce and avoid adverse environmental impacts.

HKGPC and other local green purchasing networks help organisations to strengthen their green purchasing schemes and accelerate the expansion of the scope of product categories addressed.

Training activities: Green Council officials provide its members with training and education on: green procurement; sustainable management concepts and practices; re-use, reduction and recycling; as well as renewable energy alternatives. Since 2008, the HKGPC launches regular seminars and workshop on experience sharing regarding green purchasing.

Main barriers and way forward: Green Council is currently preparing the Green Purchasing Network with the aim to create a close connection between organisations which practice green procurement and environmentally preferable products suppliers. Moreover, a monitoring system should be created in order to track the progress made by their members to analyze the benefits of members from participating in the green council activities and from the Hong Kong Green Label Scheme products awarded.

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Eco-Innovation Policies in New Zealand.

Access link:

https://www.oecd.org/newzealand/42876990.pdf

http://www.greencouncil.org/eng/hkgpc/overview.asp

https://www.greens.org.nz/page/sustainable-business-policy

http://www.greencouncil.org/guidebook/guidebook.htm

http://www.epd.gov.hk/epd/english/how_help/green_procure/green_procure6.html

International Trade Center, 2011. Hong Kong Green Label Scheme at a Glance. Standards Maps, market analysis tools.

#5. ECO-Buy - Local action to support GPP in Australia

Background ECO-Buy was born in 2001 as a result of the alliance of 24 local governments to buy recycled products. Nowadays, ECO-Buy has become a non-profit organisation with a wide range of services to promote and assist public and private entities to purchase environmentally preferable goods. The associates have raised up to 180 members that includes local governments across Victoria and interstate, departments and agencies of the Victorian Government and interstate, higher education institutions and corporations.

The support of ECO-Buy enabled local organisations to increase their expenditure in green products from around AUD $5 million in 2001 to AUD $70 million in 2008. The reporting of local GPP performance and other activities, such as the ECO-Buy's awards, has encouraged institutions to increase their efforts in the adoption of green criteria when purchasing a product.

Support services include: Database of environmental products: ECO-FIND. Trainings and events. Consultancy services: research on green products alternatives, best practices, development of projects and organisation of trade fairs. The ECO-Buy Sustainable Procurement Assessment Tool: to measure the sustainable procurement performance (http://assessment.ecobuy.org.au/).

Objectives:

The main objective of ECO-Buy consists in influencing the market towards environmentally preferable choices. ECO-Buy undertakes several initiatives in order to achieve this objective providing and assisting organisations with information, tools and knowledge to uptake green purchasing policy.

Moreover, the association promotes the supply of green goods and services supporting manufacturers and suppliers with the information needed to reduce the environmental impact of their products.

Training activities: Training is one of the most significant activities developed by ECO-Buy, which offers several courses and workshops both public and in-house. The most popular trainings are provided below as an example outline:

1. Fundamentals on sustainable procurement: to provide a basic understanding of the benefits and considerations of sustainable procurement.

2. Green contracts and tenders: this module provides the information needed to procurement staff to incorporate environmental and social criteria in purchasing.

In addition, ECO-Buy hosts workshops in capital cities across Australia offering training around the following topics: Fundamentals of sustainable procurement. Writing a sustainable purchasing policy. Assess and prioritise your green spend. Greening your contracts and tenders. Supply chain engagement. Tracking and reporting green spend and marketing green products and services

Main barriers and way forward: Currently is drawing the action plan for the following periods according to the results achieved, feedback received from governments and companies and needs identified. The new challenges appointed by the association for 2011-2012 are summarised below: Paving the way towards sustainable procurement: ECO-buy has established a strategic goal of extending the concept of purely green procurement to sustainable procurement. Nowadays, clients and members of the association are more interested in the adoption of sustainable procurement measures, since they need support for implementing initiatives and tools to implement this measure. Working with ECO-Buy clients: tailored products will be developed for clients according to their needs and the state of development of their sustainable procurement policy. Communication: a review of ECO-Buy communication tools will be carried out (website, newsletter, etc.). In addition, the association aims to increase the number of articles and opinion pieces in publications

Partnerships: the agreement with the Chartered Institute of Purchasing and Supply Australasia (CIPSA) will be consolidated. Other similar partnerships will be pursued by the association.

Sources:

Eco Buy: Green Purchasing in Australia.

Access link:

https://static1.squarespace.com/static/52045752e4b0330b6437dade/t/5369b930e4b02107859ac689/Green_Purchasing_Australia_Report_2009.pdf

ECO-Buy Local Government Annual Report 2009-10

ECO-Buy Green purchasing in Australia 2009

ECO-Buy Annual report 2010/2011

ECO-Find Listing Criteria. October 2010

ECO-Buy Training brochure

#6. Circular economy, sustainable consumption and production best practices

#6a. Modular design and new business model create a more circular music expe

The Challenge Globally we throw away 15 million kgs of headphones every year either due to simple mechanical faults or because of technology advances. How can we capture the value that is being lost in this discarded material?

The Solution Gerrard Street has designed beautiful, high sound quality headphones that are modular and easily disassemblable to facilitate easy repair, refurbishment or upgrade.

What makes it especially circular? The headphones are offered on a subscription basis allowing customers to upgrade/repair for free; as well as incentivising Gerrard Street to provide the most durable product so that the revenue period is maximised.

The Result: 85% of components are reused, customers get an affordable high-quality product and high level of service; Gerrard Street requires less virgin materials to create new headphones.

Company info: Founded in 2015 in Utrecht, HQ in Amsterdam, Number of staff: 2, Turnover: €50k, Customers: 900 clients

Source:

https://www.ellenmacarthurfoundation.org/case-studies/modular-design-and-a-new-business-model-create-a-circular-music-experience

#6b: Towards a circular economy: innovation for sustainable value chain: Trans Green Economy: National Strategy and Process Slovenia

Summary: In October 2015 the Slovenian Government adopted the Framework Programme for Transition to a Green Economy. With that, the government set out the process for transition and a long-term vision of development and common orientation for policies and strategies towards a green and circular economy. The objective was to further the competitiveness of the economy, and at the same time improve the preservation of natural resources and increase the quality and safety of life. The process started with the first systematic steps in linking sectoral policies and measures that include government action in many areas, including; the sustainable management of resources (water, waste, physical space, protected natural areas, forests, wood, opportunities for greater social inclusion); the greening of the economy with a smart specialisation strategy; the promotion of green jobs along with the skills and knowledge necessary; green public procurement; sustainable urban development and sustainable transport policy; and green farming practices. The implementation continues through the preparation of the road map towards a Circular Economy in Slovenia, and the establishing of the Circular Economy Hub for support to all stakeholders (both underway).

Implementation: To support the process and to encourage everyone to get actively involved as partners, investors, responsible citizens, or innovators with green knowledge and skills, the government also established the Partnership for Green Economy of Slovenia, led by the Office of the Prime Minister. The Partnership involves Slovenian governmental representatives and stakeholders from the commercial sector, the regional and local levels, academia, non-governmental organisations, and many others. Through the Partnership we are trying to encourage the transition in several ways: with the exchange of good practices, through awareness-raising and education, through international cooperation and exchange of knowledge, connecting different partners and supporting circular investment, etc. The process involves consultations, workshops, and cyclical meetings aimed at monitoring implementation of the measures laid out, as well as the achievement of targets, exchanges of opinions, defining priorities, and will also continue to evolve in future.

Sources:

http://www.vlada.si/en/media_room/newsletter/slovenia_weekly/news/article/together_to_a_green_economy_55581/

https://www.unece.org/fileadmin/DAM/RCM_Website/Case_Study_SDG12_2_Slovenia.pdf

#6c. Mainstreaming sustainable consumption and production patterns into nati policies to develop a Green Economy in Romania

Summary: Romania has committed under the Batumi Initiative on Green Economy (BIG-E) to develop a National Action Plan on sustainable consumption and production (SCP). The first step included the development of an efficient institutional framework for sustainable development among all relevant public institutions and set up the coordination at the highest political level – Prime Minister Office; the mapping of existing policies and actions on

SCP at national level; an effective input on relevant policies and strategies on SCP and green economy issues; and the engagement of relevant stakeholders on SCP. The plan will be developed by national authorities with the engagement of relevant stakeholders in line with the objectives of the National Sustainable Development Strategy (NSDS), which is under review for the inclusion of the 2030 Agenda for Sustainable Development and its 17 SDGs and to set SDG priorities at national level. The National Action Plan on SCP will follow the revised NSDS and its implementation will be supervised by the Department for Sustainable Development at the level of the Prime Minister's Office. The objectives and actions will be targeted on specific ministries and institutions with close cooperation with the private sector and other relevant stakeholders. The commitment will result in the eco-efficient management of resource consumption, the development of an attractive business environment, and the improvement of the quality of products and services. It will stimulate technological upgrade, encourage the renewal of processes and products, develop research and innovation activities and improve the capacity of both public authorities and companies.

Website:

http://www.greengrowthknowledge.org/big-e/romania-establish-national-sustainable-consumption-and-production-scp-strategies

Results and impact:

Implementation of GPP Law: The Law on GPP provides for the development of a guide that includes minimum criteria for environmental protection for goods and services, the standard specifications and the need for a multi-annual action plan on GPP at the national level, with mandatory annual targets for green procurement for the public administration. The impact of products on the environment is considered throughout their life cycle, from design, manufacturing, assembly, marketing, distribution, sale and use down to recycling and disposal.

#6d. Sustainable consumption and production in the national policy landscape Sweden

Summary: In the context of the 2030 Agenda for Sustainable Development, Sweden's ambition is to become a leader in the implementation of the Sustainable Development Goals, including goal No. 12 to ensure sustainable consumption and production patterns and sub-goal 12.1 on the implementation of the 10-Year Framework of Programmes. SCP is a key concept for Sweden, and has been addressed through a broad range of policies in the country (e.g. waste, energy, chemicals, food, housing, transport and urban planning, etc.), and multiple coordination mechanisms which support the design and implementation of integrated SCP policies at the national level.

Potential for replication: The Nordic Council of Ministers working group on SCP have identified and reported Nordic Best Practices in the six areas focused in on-going UN 10YFP multi-stakeholder programmes; sustainable lifestyles, sustainable public procurement, sustainable tourism, consumer information, sustainable buildings and construction and sustainable food systems.

Website:

http://norden.diva-portal.org/smash/record.jsf?pid=diva2%3A1177169&dswid=5150

#6e. Delivering on sustainable consumption and production: Phosphorus recove reuse from wastewater streams and separated organic fractions Switzerland

Summary: Switzerland has committed under the Batumi Initiative on Green Economy (BIG-E) to promote phosphorus recovery and reuse from wastewater. Guided by environmental and development policy considerations during the revision of the Technical Ordinance on Waste, the Swiss Federal Council introduced environmental standards to promote phosphorus recovery and reuse. As a result, Switzerland is the world's first country with compulsory phosphorus recovery and reuse from sewage sludge and separated organic fractions. The new regulation entered into force in 2016 with a transition period of 10 years for related technological development and adaptation

of the existing infrastructure. The commitment will ensure long-term food production, increase of the lifespan of phosphorous, and minimise the environmental impacts from phosphorus extraction and processing.

Website:
http://www.greengrowthknowledge.org/big-e/switzerland-promote-phosphorous-recovery-and-reuse-wastewater

#7 PES case studies – Environmental Stewardship, Location: Across England

SUMMARY- What makes this case study distinctive? Environmental Stewardship is an agri-environment scheme funded by the UK Government and administered by Natural England. Launched in 2005, the scheme pays agricultural landowners and managers across England to secure ongoing management practices that provide ecosystem services. The scheme is composed of two levels: Entry Level Stewardship (ELS) and Higher Level Stewardship (HLS). ELS provides 5 year non-competitive contracts where providers are paid a flat rate per hectare of land if they agree to adopt certain basic management options. The HLS involves more complex types of management and agreements that are tailored to local circumstances. Applications are assessed against specific local targets and competitive contracts are offered for 10 years, with payment depending on the type of service. Together, the two parts of the scheme attempt to secure broad and shallow ecosystem services across the country as well as specific targeted services in particular areas.

Type of provider / seller: The scheme is open to anyone who owns, farms, or manages agricultural land in England. Providers must be registered with the Rural Payment Agency: Rural Land Register. Tenant farmers need to have management control over the land for 5 years for ELS or 10 years for HLS.

Type of buyer / financing source: The scheme is a government-financed PES in which the UK government is the buyer acting on behalf of ecosystem service users. Funds are also contributed through the EU Common Agricultural Policy.

Type of ecosystem service: A number of ecosystem services are targeted including encouraging species diversity; protection of water and soil; prevention of erosion and water pollution; flood management; and wildlife conservation.

Type of intermediary: The scheme is administered by Natural England (a non-departmental public body of the UK government) on behalf of Defra who are responsible for overseeing the scheme. Significant changes need to be approved by the European Commission who provide funding. Independent agents also work directly with farmers and land managers.

Type of contract and payment approach: All ELS agreements are paid a flat rate of £30/ha per year and last for 5 years (land above the Moorland Line receives a lower rate). For the OELS, appropriate land management is paid at £60/ha; while £175/ha is also available for the first two years for converting to organic farming. The standard UELS rate is £62/ha. HLS agreements last for 10 years and payment is dependent on the precise options chosen, rather than a flat rate.

Challenges, successes, lessons learned

Successes: Nearly 70% of England's agricultural land is now under an agreement covering nearly six and a half million hectares of land. The scheme has had demonstrable positive impacts on bird populations with 18,000 plots supporting breeding skylark pairs and recorded increases in grey partridge, stone curlew, and bunting numbers.

Challenges: In 2008 the EU set-aside policy was abolished so new options were incorporated into the Environmental Stewardship Scheme (such as skylark plots) to maintain the ecosystem services previously provided by set-aside. Fully compensating for this through the voluntary Environmental Stewardship Scheme is a challenge.

Lessons Learned: One of the most difficult aspects is getting the balance right between keeping transaction costs low to encourage entry whilst also ensuring strong monitoring and evaluation to reduce problems with additionality.

Sources:

http://www.naturalengland.gov.uk/ourwork/farming/funding/es/default.aspx

Documents/Environment%20and%20CC%20Policy/policies/good%20case%20studies/pb13932a-pes-bestpractice-annexa-20130522%20(1).pdf

#8. PES case studies – Nurture Lakeland

SUMMARY- What makes this case study distinctive? To support the Vital Uplands ecosystem services pilot project, Nurture Lakeland developed a pilot Visitor Payback Scheme (VPS) in the Bassenthwaite Catchment within the Lake District National Park. Visitor Payback Schemes allow visitors to contribute to landscape management through a small donation and the scheme is one of the few existing PES mechanisms that allow tourists who benefit from the natural environment to directly support it. Nurture Lakeland has raised almost £2 million in donations over an 18 year period through the scheme. The use of VPS provides a long term and sustainable source of income for projects. However, the growth of such schemes tends to be slow and organic. This pilot therefore set out to understand the barriers and constraints to the expansion of VPS.

Type of habitat / land use: Mostly upland (upland farming and recreational use) with some agricultural land in the base of the valley. There are also significant amounts of woodland cover at Whinlatter Forest. Most significantly, the catchment contains two of Cumbria's largest lakes; Bassenthwaite and Derwentwater.

Type of provider / seller: The providers supported by the pilot VPS scheme are charitable organisations focused on the improvement of the Lakeland environment. They rely primarily on donations, with some statutory support. The providers already existed and were seen as undertaking activities that were readily communicated to business owners and the public.

Type of buyer/financing source: The area receives 2.5 million visitors per annum. The overriding reason for visiting the catchment is the scenery, with over 70% of visitors participating in outdoor recreation. Visitors then make voluntary contributions through the businesses participating in the scheme.

Type of ecosystem service: Participating businesses were given the opportunity to support one of three projects which support improvements to ecosystem services. 'Fix the Fells' focuses on the protection and restoration of footpaths; 'The Osprey Project' supports the re-colonisation of the area by this rare species; and 'Love your Lakes' is working to improve Lakeland water quality.

How the PES is coordinated & administered: Nurture Lakeland offered businesses in the Bassenthwaite Catchment the opportunity to participate in the pilot. Pilot businesses choose a project to support and then raise funds from their customers. It is free for businesses to join the scheme.

Challenges, successes, lessons learnt

Successes: Operating a VPS in a distinctive catchment area resulted in cost savings during the recruitment phase and created a sense of ownership amongst participating businesses. All bar one of the businesses involved in the pilot have continued to support the scheme. Compared to previous VPS, the catchment approach was successful in securing business buy-in much more quickly. In three months, participation was higher than it would have been after a year in an area where businesses were more spread out.

Challenges: Costs to businesses, such as developing their website, were cited as the primary barrier to participation. Another significant challenge relates to the difficulty in securing support for projects that provide less tangible/visual impacts, such as climate change mitigation.

Lessons Learnt: The main lesson learnt was that it is essential that Visitor Payback Schemes are free for businesses to participate in. Furthermore, funding needs to be in place to cover the costs for at least the initial six months, due to the time lag before any return on investment is realised. Another lesson was that it is easier to create empathy between businesses and local conservation projects, and between visitors and projects, when the results of the projects are visible and physical.

Source:

http://www.nurturelakeland.org/

#9. Water sharing: Optimising water allocation for energy and hydrological extremes in transboundary context, Case of Finland

Summary: Finland and Russia share hundreds of rivers crossing the border, of which about 20 major ones belong to the operative cooperation with joint monitoring and joint management plans. The largest transboundary river system is the Vuoksi River with a large upstream lake system in the Finnish territory, the river crossing the border and discharging to Lake Ladoga. In the river there are four large hydropower stations, two on the Finnish side, and two on the Russian side. Joint water management is essential for flood and drought control, navigation, endangered species, recreation (SDG6) as well as energy security (SDG7). Water allocation rules for the Vuoksi river system shared by Finland and Russia have been developed and implemented by a discharge rule and risk management plan to optimise hydropower production and minimise the damages caused by flood or drought and also taking into account other aspects dependent on water level fluctuations on both sides of the border.

Results and impacts: Water allocation through discharge regulation in case of extremes; minimise damages caused by flood/drought; maximise hydropower production, secure endangered species; secure navigation.

Challenges and lessons learned: To make the cooperation and adaptive management successful, it is important not only to achieve mutual understanding and trust in political level, but also to commit the managers, operators and stakeholders to cooperation. In the Vuoksi case this means regional water managers and hydropower companies on both sides.