



National Resilience Development Strategy

Dominica 2030



“ Building the World’s First Climate Resilient Country - Our Collective Responsibility ”

Table of Contents

List of Figures.....	ii
List of Tables	ii
List of Boxes.....	iii
Annexes.....	iii
List of Acronyms and Abbreviations.....	iii
Preface.....	vii
Dominica at a Glance	viii
INTRODUCTION.....	1
NRDS and the Vision to Build the First Climate Resilient Country in the World	7
NRDS and the Sustainable Development Goals.....	11
NRDS and Climate Change	21
Institutional Set-up for Action	24
FEATURES OF THE RESILIENT DOMINICA	32
ECONOMIC DEVELOPMENT AND TRANSFORMATION.....	37
Sound Macro-economic and Fiscal Policies	37
Sustainable and Inclusive Growth.....	41
RENEWABLE ENERGY	44
PRODUCTIVE ENTERPRISES	47
CREATIVE INDUSTRIES	71
INFRASTRUCTURE	73
HUMAN SERVICES.....	76
ENVIRONMENTAL MANAGEMENT	85
Water Resource Management.....	85
Forest Resource Management.....	86
Land Management.....	92
Disaster Management.....	92
Waste Management	96
Leisure and Recreation	102
SOCIAL DEVELOPMENT/SOCIAL PROTECTION/POVERTY REDUCTION	105
POPULATION DEVELOPMENT	106
POVERTY REDUCTION	110

SOCIAL PROTECTION	113
CHILD PROTECTION.....	118
SOCIAL CAPITAL.....	119
INTEGRATION OF IMMIGRANTS	122
CORPORATE SOCIAL RESPONSIBILITY AS AN ENGINE FOR SOCIAL PROGRESS	122
Cross Cutting Areas.....	123
<i>Regional and International Relations.....</i>	123
<i>Good Governance.....</i>	124
<i>Gender Equality.....</i>	126
<i>Kalinago Rights and Perspectives</i>	128
<i>Law and Order.....</i>	130
<i>Labour Market</i>	131
<i>Data Capture and Dissemination</i>	133
Legislative Framework	134
Annex 1: Dominica’s Resilient Development Results Monitoring Matrix	135
REFERENCES.....	145

List of Figures

Figure 1: Sustainable Development Goals.....	11
Figure 2: Our Integrated Thematic Framework.....	31
Figure 3: The Community of Now and the Future to Live in and Enhance our Happiness- An Ecological Model.....	36
Figure 4: Population Development Challenges	107

List of Tables

Table 1: Key Economic Indicators 2006-2016	37
Table 2: GDP Agriculture 2006-2016.....	47
Table 3: GDP Manufacturing 2006-2016	52
Table 4: Tourism Indicators 2006-2016.....	55
Table 5: Health Indicators	78
Table 6: Education Indicators	82

List of Boxes

Box 1: Sustainable Development Goals 1 to 1712

Box 2: Towards a More Inclusive, Sustainable and Resilient Growth Agenda for Dominica....
.....43

Box 3: Areas for Nation Policy Consideration.....81

Box 4: The Social Development/Social Protection Poverty Reduction Pathway.....105

Annexes

Annex 1: Dominica’s Resilient Development Results Matrix.....135

List of Acronyms and Abbreviations

AID Bank	Agricultural, Industrial and Development Bank
AML/CFT	Anti-Money Laundering/Countering the Financing of Terrorism
BDF	Barbados Defense Force
CARICOF	Caribbean Climate Outlook Forum
CARICOM	Caribbean Community
CDEMA	Caribbean Disaster Emergency Management Agency
CDPF	Commonwealth of Dominica Police Force
CEDAW	Convention on the Elimination of all Forms of Discrimination Against Women
CEDD	Community Economic Diversification and Development
CERTS	Community Emergency Response Team
CIM	Inter-American Commission on Women
CIMH	Caribbean Institute of Meteorology and Hydrology
CREAD	Climate Resilient Execution Agency for Dominica
CSO	Central Statistics Office
CSR	Corporate Social Responsibility
CTF	Clean Technology Fund
DAIC	Dominica Association of Industry and Commerce
DAPD	Dominica Association of Persons with Disabilities
DBF	Dominica Business Forum
DDA	Discover Dominica Authority
DGDC	Dominica Geothermal Development Company
DHBA	Dominica Herbal Business Association
DHTA	Dominica Hotel and Tourism Association
DOMLEC	Dominica Electricity Services Ltd
DOWASCO	Dominica Water And Sewerage Company Ltd
DSCI	Dominica Coalition of Service Industries
DSWMC	Dominica Solid Waste Management Corporation
DVRP	Disaster Vulnerability Reduction Project
ECCB	Eastern Caribbean Central Bank
ECROP	Eastern Caribbean Regional Ocean Policy
EGRIP	Electronic Government for Regional Integration Project
EPC	Engineering, Procurement and Construction

EWS	Early-Warning Systems
FADS	Fish-Aggregating Devices
FAO	Food and Agriculture Organization
FRAs	Forest Resource Assessments
FRP	Fiberglass Reinforced Plastic
GBV	Gender-Based Violence
GCF	Green Climate Fund
GDO	Grant Development Objective
GDP	Gross Domestic Product
GFCS	Global Framework for Climate Services
GHG	Green House Gas
GIP	Green Industrial Park
GIS	Geographic Information System
GSPS	Growth and Social Protection Strategy
HIV/AIDS	Human immunodeficiency virus/Acquired immunodeficiency Syndrome
ICT	Information Communication and Technology
IDA	Invest Dominica Authority
IDP	Industrial Development Policy
IMF	International Monetary Fund
IRC	Independent Regulatory Commission
IT	Information Technology
JDF	Jamaica Defense Force
KABP	Knowledge, Attitudes, Beliefs and Practices
KAIs	Key Areas for Intervention
LCCRDS	Low-Carbon Climate Resilient Development Strategy
LGPP	Large Geothermal Power Plant
MDG	Millennium Development Goal
MIS	Management Information System
MSDF	Multi-Country Sustainable Development Framework
MSMEs	Micro, Small and Medium Enterprises
NCDs	Non-Communicable Diseases
NDC	Nationally Determined Contribution
NDF	National Development Framework

NDMF	National Development Management Framework
NEP	National Employment Programme
NRDS	National Resilient Development Strategy
OAS	Organization of American States
ODM	Office of Disaster Management
OECS	Organization of Eastern Caribbean States
PAHO	Pan-American Health Organization
PDNA	Post Disaster Needs Assessment
PFM	Public Finance Management
PPAP	Population Policy and Action Plan
PPD	Physical Planning Division
PPP	Public-Private Partnerships
PSA	Population Situation Analysis
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RSS	Regional Security Services
SBDC	Small Business Development Centre
SDG(s)	Sustainable Development Goal(s)
SIDS	Small Island Developing States
SMEs	Small and Medium Enterprises
SPL	Social Protection and Labour
TTDF	Trinidad and Tobago Defense Force
TVET	Technical and Vocational Education and Training
UAE-CREF	United Arab Emirates Caribbean Renewable Energy Fund
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax
WHO	World Health Organization
WMO	World Meteorological Organization
WtE	Waste-to-Energy

Preface

On Monday, 18 September 2017 we were ravaged by Hurricane Maria, a strong Category 5



Hon. Roosevelt Skerrit
Prime Minister

Hurricane which wrought devastation on our beautiful country. This event resulted in significant damage and losses impacting 100% of our population and every sector of the economy. You have been made aware that Hurricane Maria resulted in EC \$3.54 billion (US \$1.313 billion) in damages and losses; equivalent of 226% of GDP. The recovery and reconstruction needs are valued at EC \$3.69 billion (US \$1.37 billion).

In my address to the United Nations four days after the passage of Hurricane Maria, I made a bold declaration that we were on the frontline of climate change and that we had no options but to build the first climate resilient country of the world. That declaration is as real today as the day it was made. Much has been done since, but you would agree that there is much more to be done to make this a reality.

It became imperative for this Government to clearly define an action plan which would put into perspective the framework for rebuilding a climate resilient and sustainable Dominica. Much of the national vision is encapsulated in Agenda 2030. My Government is fully committed to the realization of that vision, but it is also a call to all our people at home and abroad to be engaged in this new resilience development frame.

May this document become our resilience textbook utilized in the public and private sector, civil society and academia and referenced by development partners, friendly governments and other stakeholders upon whom we rely for a collective response to this mandate.

Hon. Roosevelt Skerrit
Prime Minister

Dominica at a Glance

Dominica is part of the Windward Islands located in the Lesser Antilles archipelago in the Caribbean Sea. It is an upper-middle-income Small Island Developing State (SIDS), with an estimated population of 73,543 (CSO 2016) and a gross development product of US\$548.41 million. The country measures 289 square miles with a rugged and mountainous terrain and a number of natural landscapes features encompassing waterfalls, rivers and springs. Approximately ninety percent of the country's inhabitants reside along the coastal areas. The population is mostly of African and mixed African/ European descent, with European, Syrian and Indigenous minorities.

It is a multi-party democracy based on the Westminster System of government. Elections are held every five (5) years. The country has a ceremonial head of state, the President and the Prime Minister is the head of Government.

Dominica is highly vulnerable to the effects of climate change, the impacts of which have already been experienced for example the impacts of hurricane Maria in 2017, Tropical storm Erika in 2015 and many other variations to the usual weather partners. There have been significant changes to Dominica's climate system overtime marked particularly by increases in temperatures, and the frequency and intensity of rainfall events that lead to flooding. It is expected that these temperatures will continue to rise along with higher sea levels and intensified storm surges.

The Government of Dominica has commenced its attempts to transform the island into the world's first climate resilient country and steps have already been taken to enhance public knowledge on resilience as well as formulating this strategy which will govern the islands future attempts at building resilience. The Government of Dominica has hosted a National Rebuilding and Economic Partnership consultation which involved discussions with private and public stakeholders on issues relating to climate resilience.

The negative impacts of these phenomena have caused major damage to Dominica's pristine environment, primarily the country's lush 60% forest cover. In addition, the economic and human consequences are huge, resulting in loss of livelihoods, displacement and hardship. This combination of forces has challenged the country's status of the Nature Island of the Caribbean. Our forest, volcanic rich soils, river and streams, and marine environment are core elements that help define the Dominican identity. The use of the land for food production and livelihood represents the economic base and help establish the representation of an organic and Green Dominica. Consuming sixty (60) percent of all what is produced locally ensures longevity and produce the most centenarians per capita in the Caribbean. Longevity and a good quality of life represent fundamentally why people come and most remain in the Nature Isle.

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Figure 1. Map of Dominica



INTRODUCTION

Historical Context

Dominica has traversed a long way since the formulation of its first Growth and Social Protection Strategy (GSPS), a single, overarching document containing Government's goals and strategies to achieve socio-economic development objectives,¹ for the benefit of all Dominicans. It set out five-year medium term goals for the period 2006 to 2010. This document and the three iterations which followed² were crafted in an environment of economic turbulence and uncertainty locally, regionally and internationally. Locally, the country grappled with its own economic crisis which necessitated a structural adjustment programme of the International Monetary Fund-(IMF) between 2002 and 2006. More poignantly, on an international level, all countries faced the effects of the most turbulent global economic and financial crisis in 2008 with many states being on the brink of bankruptcy. In addition, there was a period of rising world prices predominantly driven by rising oil prices. Amidst this difficult environment in which Dominica and its people have had to navigate, Government made hard policy decisions to ensure that every citizen was safe, secure and assured that basic human needs were satisfied.

Undoubtedly progress has been made on all fronts over the past decade. Major highlights are:

- Better and steady improvements in fiscal discipline and management
- Noteworthy reduction in poverty
- Measurable improvements in various social indicators such as: expansion of housing and education; reduction in infant mortality rates; improved access to safe water, rural access to sanitation and a reduction in gender disparity in many fields
- Advances in the rule of law and improvements in the maintenance of law and social order
- Vast enhancement in foreign policies
- Public administration modernization

Yet this progress masks important facets which need to be addressed over the long-term:

¹ Emphasis was placed in part on the attainment of the millennium development goals

² Version : 2008-2012, 2012-2014 and 2014 to 2018

- A higher prevalence of poverty in rural areas. Greater, targeted attention to the rural areas would have an immediate and significant impact in reducing poverty levels.
- Higher economic growth across sectors.
- Economic growth has been sectorally uneven, therefore leaving the economy very vulnerable to external shocks. Growth has to be broadened and deepened to be sustainable over time.

This current development strategy is set against the backdrop of the most unusual and challenging time this country has faced as a result of the passage of category 5 Hurricane Maria. In addition, since the last revision of the GSPS in 2014, the Dominican economy has faced a number of economic and environmental shocks which undoubtedly have had negative impacts with short-term and long-term implications. These shocks include international developments such as Brexit, and in respect of local developments, the passage of Tropical Storm Erika in August 2015.

These shocks have imposed further challenges to the already daunting quest for sustainable growth given that every shock often necessitates a diversion of resources from planned productive investments which could foster growth to restoration and rehabilitation activities and providing social protection to people who were adversely affected.

In confronting the task of developing the Dominican economy and people from the visible destabilizing and horrendous effects of climate change and economic driven shocks, it is not business as usual. Instead, there is a dire need for a collective response in which each citizen is willing to contribute to the rehabilitation and reconstruction of this country with a focus to build back better and more resilient, thereby providing an opportunity for each citizen to be an active participant in and reaping the benefits of a more modern, peaceful and prosperous Dominica.

As a Government and as a country that has navigated successfully through turbulent economic times, there is an elemental and deep desire to rise above the economic and even social flood waters brought about by Hurricane Maria that threaten our very survival in terms of economic prosperity and social development and advancement. The NRDS builds on Dominica's National Climate Change Adaptation Policy and the Low Carbon Climate Resilience Development Strategy by integrating climate resilience and disaster risk management into the national growth and development planning framework. This is critical if the state is to reduce the costs of variations in the current climate conditions, while preparing for the future effects of climate change. Government is aware that climate change will affect many different economic sectors both directly and indirectly, and the

characteristics of our social and economic systems will play an important role in determining their resilience, amidst other development challenges. Therefore, addressing climate impacts in isolation is unlikely to achieve the desired equitable, efficient or effective outcomes of small island developing states such as Dominica. This is the energy which drives the now captioned National Resilient Development Strategy (NRDS).

This NRDS is therefore designed to bring hope to the people of Dominica by factoring more firmly climate and non-climate considerations in the development process, thereby increasing the probability of attaining key development objectives of economic growth, employment generation, poverty reduction, social protection and the overall improvement in the quality of life of all citizens.

It presents the priorities that Government must pursue in the pursuit of sustainable economic growth while maintaining a prudent fiscal stance in the face of global realities, in particular climate change. Of highest priority is poverty reduction and progress towards achieving the sustainable development goal targets by 2030. Achievement of these critically depends on the attainment of significant and steady progress in several socio-economic spheres such as: robust and equitable macro-economic growth; low inflation; significant increases in the output of productive enterprises and productivity; growth in the services sector; protection and enhancement of the environment; strengthening and improvement of infrastructure; robust industrial development; creation of employment and incomes; reforms in public administration ; fast growth in private sector investments; unhindered growth in trade; and social protection.

Government is fully committed to some basic principles for orderly national progress towards realizing the SDG targets and uplifting the poor and vulnerable over the next twelve years such as:

- Political stability
- Rule of law
- Equity and social order
- Responsiveness, effectiveness, transparency and accountability
- Macro-economic stability
- Creation and maintenance of key infrastructure
- Creation of a conducive climate for the private sector to flourish
- Provision of essential services for human capital formation and enhancement
- Strengthening partnerships with all stakeholders (civil society; private sector business and investor community; and external development partners) to improve effective and coordinated use of resources

Certain overarching aspects will govern all actions to be pursued during 2018-2030 on a resilience platform, viz.:

- Foster and facilitate equitable, and spatially and sectorally well-spread in depth, robust and sustained, macro-economic growth that readily provides opportunities and benefits to all.
- Significantly increase “real investments” for growth in productive sectors (such as agriculture, tourism and manufacturing), infrastructure and in human development (health and education)
- Perform reforms in all sectors which will yield long-term benefits
- Optimize productivity – capital, labour and natural resources
- Factor poverty reduction and gender concerns in all activities
- Target the vulnerable including the poor, persons with disabilities and the Kalinago community
- Foster institutional and human capacity building in all sectors and at all levels to create and sustain a critical mass of expertise and human capital
- Promote adaptation and use of science and technology
- Further broaden and deepen integration of Dominica into the region and the world
- Attract investments to achieve pro-poor economic progress
- Continue to deepen and strengthen partnership with civil society , private sector and external development partners

This NRDS is a broad framework which provides the road map and guidelines for taking the country to where it ought to be by 2030. Detailed targets and plans to achieve them are articulated in greater precision in sector strategies. It is a live document which will be adjusted and updated every four years based on annual monitoring and evaluation exercises and data emerging from new studies and surveys.

Successful and timely implementation of the NRDS strategic action points would need substantial and well-directed investments and their focused and effective use. The resources to be available for the NRDS will come from: (a) surpluses on the primary account in the annual national budget; (b) grant aid from external development partners; (c) concessional loans from multilateral and bi-lateral financial institutions; and (d) funds made available from possible past debt relief.

There are some imponderable factors or risks that may hinder NRDS progress, such as: expected resources not being available; spikes in global oil prices which will push inflation up; regional and international political instability; trade barriers not being brought down at the required time frame; outbreak of diseases and natural disasters, both climatic and non-climatic. Government is confident that it could withstand such challenges. After all, the

strategy is grounded in addressing resilience, albeit the NRDS will be adjusted to accommodate “new” realities as they emerge.

Government is optimistic that with its strong commitment and cooperation from all citizens (local and foreign), the NRDS could be successfully implemented to attain the intended goals to enhance the overall well-being of all Dominicans!

Below proposes one approach to building regional and community-level resilience.

RESILIENT COMMUNITIES AND REGIONS (RECAR) - A Concept

Regions/districts are used as administrative spatial parameters to administer services by the state through many of its extension agencies. Each region/district is defined spatially comprising of a group of settlements and population. Some services are further decentralized to the community level taking them much closer to the population. For example local government bodies represent sub-regions and sometimes single communities.

This decentralized frame has served Dominica well administering health, education, community development, adult education, youth empowerment and agriculture services, among many others. The topographic and infrastructural characteristics of Dominica dictate decentralization that empowers people and their communities. Isolated communities cannot rely on the Centre for access to all services. These communities need many services at their door steps in quick time. The current system of decentralized management seeks to meet such a demand.

In recent times, however, the disastrous effects of Climate Change highlighted the need to strengthen regional mechanism for disaster management and service delivery. It is impossible for the Centre to adequately manage disasters of the magnitude seen in 2015 and 2017 from its seat of administration in Roseau without support at the district or community level. Disaster management has always been decentralized but with limited scope and attention. In 2015, Tropical Storm Erika, displacing many, demanded the resettlement of two communities. In 2017, Hurricane Maria devastated Dominica destroying 226% of our GDP and destroying large percentage of houses, private and public assets. Many persons were displaced and many lives were lost.

To better manage these large scale disasters, Disaster Management at the regional level must be better structured and developed. In this revamped configuration, responsibilities must be distributed at four levels:

- Household level
- Community level
- District level
- National level

At the household level the following must be done:

- + Build knowledgeable families and family resilience networks, where members look out for the other, and the outcome of one family is influenced by the other in the context of adversity;
- + Knowledge based families require information and guidelines. Simple brochures and flyers augmented by household and community level education programmes;
- + Knowledge based and networked families also require information on hazards through hazard mapping;
- + Knowledge based and networked families require information on escape routes and evacuation shelters;
- + Knowledge based and networked families also need information on basic household kits necessary in the event of disasters;
- + Knowledge based and networked families also need to know that there are basic non-perishable food, medical, sanitary and other supplies that can be kept in preparation for disasters especially during the hurricane season;
- + Knowledge based and networked families need to keep identification documents on each member of the family to be taken at the time of evacuation.

At the community level the following should be undertaken:

- + Mass education of every member of the community
- + Mapping of every member of the community and their respective vulnerabilities
- + Hazard mapping of the community and evacuation routes
- + Identification of suitable/safe/resilient shelters with the following characteristics:
 - ✓ Built to resilient standards
 - ✓ Safe location
 - ✓ Safe for multiple hazards
 - ✓ Independent/standby water system
 - ✓ Independent/standby energy system
 - ✓ Equipped kitchenette
 - ✓ Equipped first aid Centre
 - ✓ Sufficient sanitary facilities
 - ✓ Storage facilities for basic supplies
 - ✓ Independent/reliable communication system

- + Establishment of a well-trained and managed Disaster Management Committee
- + Well trained and committed shelter managers
- + Mapping of community assets
- + Mapping of community livelihoods
- + Mapping of community food security
- + Mapping of community electricity supply both on grid and off grid
- + Mapping of community water supply
- + Maintenance of an active database of the local population
- + Maintain an up-to-date and dynamic disaster plan
- + Well-staffed and adequately supplied health facility with off grid power source, water supply and telecommunication services

- ✚ Resilient educational facility built to revised building guidelines able to serve as a hurricane shelter in the absence of a dedicated shelter
- ✚ Road infrastructure safely routed with concrete surface and drainage with safe outflow systems.

At the region/district level the following can be done:

- ✚ Maintain a comprehensive up-to-date population database
- ✚ Maintain a regional/district hazard map
- ✚ Maintain a capacity needs/requirement for each community
- ✚ Maintain bulk storage of non-perishable supplies
- ✚ Regular convening of district service providers
- ✚ Establish a regional Centre for Disaster Management with the following characteristics:
 - ✓ Safe from all hazards with easy access
 - ✓ Independent/ standby electricity
 - ✓ Independent water supply
 - ✓ Offices for regional extension leads
 - ✓ Well-equipped meeting rooms
 - ✓ Independent/ reliable communication system
 - ✓ Well-equipped kitchenette

The regional/district centres will provide support to the community centres since they will possess enhanced capacity. They will be managed by staff of government extension services. National level services will complement that of the region/ district and provide national coordination and mobilization of services and resources.

Conclusion

This regional disaster risk management concept can be piloted in the two (2) of the most vulnerable regions/districts in Dominica: the East and South East. These regions/districts suffer the most damage from natural disasters especially hurricanes and some of these communities are often cut off for days. The resilience of these regions must be built to promote peoples safety, security and general well- being.

Moreover, the concept can be adapted and applied across several sectors and sub-sectors.

NRDS and the Vision to Build the First Climate Resilient Country in the World

The climate resilience vision is a developmental paradigm which seeks to climate proof (to be resilient against the destructive impacts of extreme weather events) the key pillars of national policy which are economic diversification, sustained sustainable and inclusive growth, employment creation and revenue generation, social development, social

protection and poverty reduction, environmental management, and cultural preservation. Therefore, resilience for Dominica can be summed up as comprising of seven (7) multiple development objectives:

1. The promotion of food security and self-sufficiency through Climate Resilience Agriculture and Fisheries Development;
2. Enhancing the resilience of Ecosystems and sustainable use of natural resources (Forestry, Marine, Water resources);
3. Enhancing Infrastructure Resilience;
4. Promotion of Sustainable Human Settlements/Communities;
5. Provision of adequate and sustainable social protection systems with the ability to respond rapidly to the impact of shocks at the individual and household levels;
6. Implementing a Comprehensive Risk Management Framework (including National Vulnerability Risk Resilience Fund) and pursuing the Low Carbon Development Pathway (the greening of the economy);
7. Economic empowerment and innovations through sustainable Climate Financing.

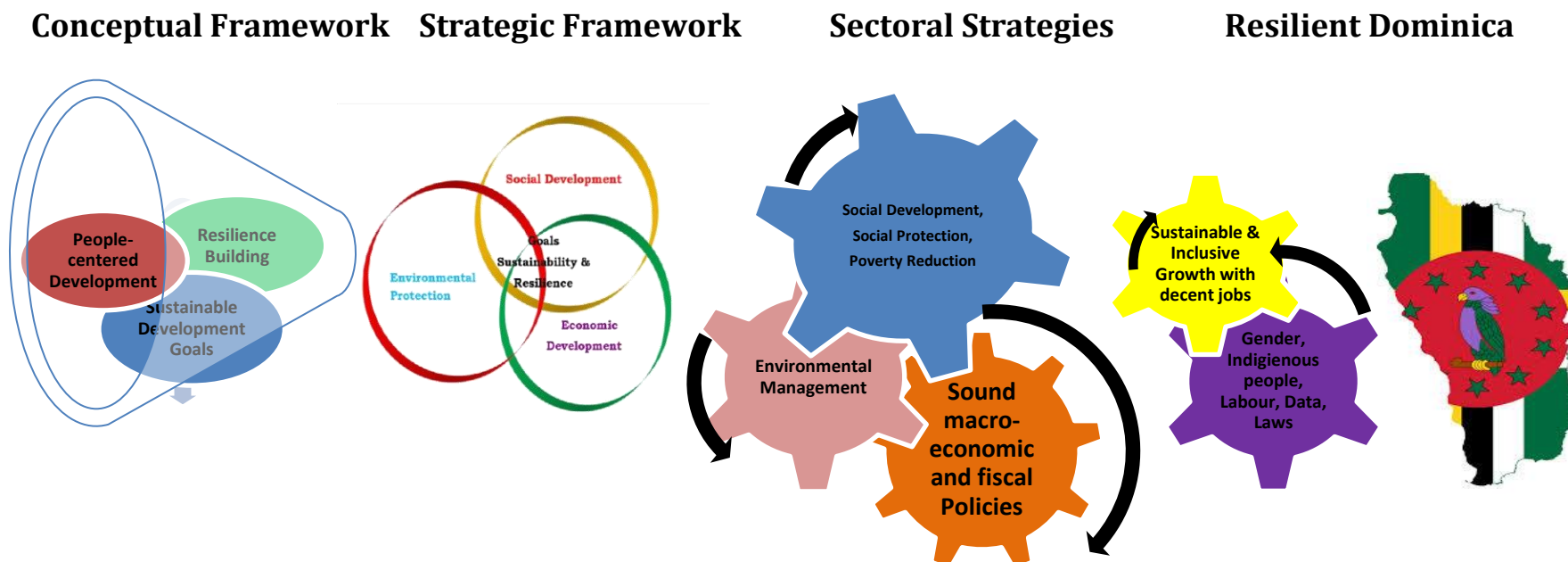
On a societal level it is a call to all citizens to recommit themselves to the content and spirit of the constitution of the Commonwealth of Dominica, to honor the Coat of Arms and its affirmation “**After God the Land**”. It is to covenant to create an “**Isle of Beauty, Isle of splendor- an Isle so sweet and fair**” – a *Nature Island of the World*. It is creating an environment that is green and clean ensuring eco-systems diversity and sustainability.

It is realizing a modern and prosperous Dominica through the creation of a dynamic and stable economy based on equity and social justice demonstrated through pro-poor growth, decent employment and social protection driven by Renewable Energy (geothermal, Hydro, Solar and Wind) with Infrastructure (roads, air and sea ports); Human Services (housing, health, education, transport and communication, real estate and financial services electricity and water and sanitation); Productive Enterprises (agriculture, manufacturing, agro-processing, distributive trade and tourism) and dynamic institutions (state agencies, private sector, civil society organizations) and collaborative capacity in public services delivery that preserve the best of the environment and is resilient to the worst of human and natural elements.

Fear of God, respect for the rule of law, love of country, respect for local culture, appreciation of nature, a sense of community and social cohesion are the determinative factors, and democratic values and practices within which the climate resilient strategies are entrenched and sustained by design which finds expression in the National Resilient Development Strategy (NRDS) and the Low-Carbon Climate Resilient Development Strategy (LCCRDS) and are actualized in sector strategies and action plans.

Figure 1 sets the road map along which the actions to implement the NRDS will navigate. It integrates the three concepts that frame the strategies and actions to achieve a climate-resilient and sustainable path for the country.

Figure 1: Dominica's Integrated Strategic Road Map



The NRDS is characterised by three (3) major forces – Sustainable Development Goals, Building the First Climate Resilient Country in the World vision and People-centred Development. These forces are shaped by three (3) strategic elements (i) Environmental Protection, (ii) Social Development and (iii) Economic Development and Transformation. At the core of this strategic framework are the national goals of Sustainability and Resilience. Sectoral strategies which focuses on people, sound macro-economic and fiscal policies, environmental management, sustainable and inclusive growth with jobs, and synergistic and cross-cutting areas are the engines that drive the NRDS, and once succesfully implemented will lead to a resilient Dominica.

NRDS and the Sustainable Development Goals

The 2030 Agenda for Sustainable Development was universally adopted in September 2015 by Member States of the United Nations. The agreement officially came into effect on January 01, 2016 and all of the prescribed goals must be achieved by 2030. Addressing the limitations of the Millennium Development Goals, new priority development challenges were given prominence such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, so as to ensure a universal call to action through 17 Sustainable Development Goals (SDGs) that seek to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. These Global Goals translate into 169 targets and measured through 232 unique indicators built on the pillars of economic, social, and environmental development, and underpinned by the principles of citizen participation, human rights, gender equality, social networking and climate action to bring positive change to people and the planet.

Figure 1: Sustainable Development Goals



Within the global framework, the Caribbean Community (CARICOM) has distinguished a set of core targets and indicators that are ambitious but achievable to support the monitoring of the 17 Goals. The Government of Dominica reaffirms its commitment to achieving the SDGs, and will contribute to the regional plan to address some of the pressing challenges facing the Caribbean to attain a sustainable development pathway. This National Resilience Development Strategy (NRDS) 2019-2030 provides an opportune time to mainstream these SDG indicators in national and sub-national development frameworks.

The specific CARICOM core targets under each Global Goal are provided in the subsequent boxes.

Box 1: Sustainable Development Goals 1 to 17

Goal 1: End poverty in all its forms everywhere

- By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day.
- Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and vulnerable.
- By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.
- Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions.

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.
- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.
- Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.

Goal 3: Ensure healthy lives and promote well-being for all at all ages

- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

- By 2030, end preventable deaths of newborns and children under 5 years of age.
- By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
- By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
- By 2020, halve the number of global deaths and injuries from road traffic accidents.
- By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.
- By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
- Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and Small Island Developing States.

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

- By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.
- By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.
- By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.
- By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.
- By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.
- By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, Small Island Developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical,

engineering and scientific programmes, in developed countries and other developing countries.

- By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

Goal 5: Achieve gender equality and empower all women and girls

- Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.
- Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
- Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences.

Goal 6: Ensure availability and sustainable management of water and sanitation for all

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

- By 2030, ensure universal access to affordable, reliable and modern energy services.

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries.
- Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour intensive sectors.
- Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.
- By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
- By 2020, substantially reduce the proportion of youth not in employment, education or training.
- Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
- By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.
- Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

- Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

- Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.
- By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.
- Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.
- Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States.
- Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.

Goal 10: Reduce inequality within and among countries

- By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.
- Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality.
- Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, Small Island Developing States (SIDS) and landlocked developing countries, in accordance with their national plans and programmes.

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

- By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.
- By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with

special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

- By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.
- By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
- By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels.

Goal 12: Ensure sustainable consumption and production patterns

- By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

Goal 13: Take urgent action to combat climate change and its impacts

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

- By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

- By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss

- By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and dry lands, in line with obligations under international agreements.
- Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.
- Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.
- Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation.

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

- Significantly reduce all forms of violence and related death rates everywhere.
- End abuse, exploitation, trafficking and all forms of violence against and torture of children.
- Promote the rule of law at the national and international levels and ensure equal access to justice for all.
- By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime.
- Substantially reduce corruption and bribery in all their forms.
- Develop effective, accountable and transparent institutions at all levels.
- By 2030, provide legal identity for all, including birth registration.

Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

- Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.
- Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries.
- Mobilize additional financial resources for developing countries from multiple sources.
- Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress.
- Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.
- Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology.
- Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation.
- Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020.
- Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access.

- Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development.
- Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.
- By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.
- By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries.

Government reiterates the following commitments outlined in the Partnership Framework developed at the Caribbean Action 2030 conference held in Kingston, Jamaica 28-30 June 2017 to implement the 2030 Agenda for Sustainable Development with the aim of advancing and accelerating results in achieving the Sustainable Development Goals (SDGs), and several other conventions and agreement such as the "Global Action Plan for Sustainable Development Data":

- I. Accelerate the formalization of the implementation arrangement that will allow the state to effectively carry out its responsibilities under the 2030 Agenda ;
- II. Strengthen and synergize national policies in support of the preservation of the common good, expressed at the global and regional levels on the basis of national priorities;
- III. Foster intergovernmental partnerships for scaled-up solutions and in developing specific resource mobilization strategies for achieving defined results;
- IV. Promote cooperation and coordination at the local level in its pursuit;
- V. Integrate the SDGs into education, training, and research to support the Sustainable Development process;
- VI. Maximize the engagement of all stakeholders in society in order to enhance social and economic development, citizen participation and climate security;
- VII. Create an enabling environment, including appropriate financing, policies, awareness raising, institutional arrangements and incentives, within which private actors and civil society can effectively operate

Government acknowledges the supportive role of the UN System through the Multi-Country Sustainable Development Framework (MSDF) that has been agreed between Caribbean governments and UN partners in achieving (a) an inclusive, equitable and prosperous Caribbean; (b) a safe, cohesive and just Caribbean; (c) a healthy and stable Caribbean; and most importantly (d) a sustainable and resilient Caribbean.

Government is conscious that efforts to achieve the SDGs necessitate major mobilization and management of resources including additional spending and increase in government revenues; integrated planning and joint implementation of policies supported by synergistic and interactive policies that have positive impacts on several sector goals; improved enabling conditions and reinforced mechanisms emerging from policies across all sectors; rapid implementation process; strengthened distribution and gender policies; comprehensive data collection, extensive capacity building, and effective action on the part of all stakeholders. Government is committed to that endeavor.

These requirements will not only facilitate the efficient allocation of resources towards achieving the SDGs, but will also assist with the implementation of interventions directed to achieve a climate resilient nation. As will be illustrated, throughout this document, the Government has identified the need to assess and improve further policy options to achieve these two main objectives. Interventions are directed to improve governance, sustainable productive sectors, training opportunities, income distribution, health, education, family planning, gender equality, and climate change adaptation which have substantial impacts across both goals. This comprehensive approach is to ensure that the total Dominican population benefits from economic growth hinged on the 'no one left behind' core principle of Agenda 2030.

NRDS and Climate Change

Dominica has been classified among the world's most vulnerable countries. Vulnerabilities include not only economic shocks but also the impacts of climate change and climate variability, creating the need to build in resilience in the management of the country.

Changes to climatic conditions are affecting every facet of life including the conditions under which all countries must operate. It is well documented that climate change is one of many challenges small island developing states (SIDS) like Dominica must recognize and respond to in planning for economic and social development. The impacts of climate change poses increasing risk to human life, health, welfare, and ecosystems, and in so doing can threaten the achievement of major sustainable development goals such as reducing

poverty, increasing life expectancy, improving health care, combating disease, increasing access to education or managing natural resources in a sustainable manner.

In a Dominican context, climate change is not an entirely novel idea in respect of the formulation of appropriate policies and strategies to engender economic growth and social advancement. Dominica prepared and presented its Low-Carbon and Climate Resilience Development Strategy to the Climate Investment Fund in 2012, the implementation of which will facilitate Dominica's transformation to a climate-resilient and low-carbon development economy, as well as address climate change impacts on agricultural activities, food security, and the vulnerability of communities and infrastructure.

Further, there have been initiatives by the Government to create a sustainable environment where renewable energy resources are effectively utilized. These initiatives include the granting of concessions on the importation of solar related equipment and accessories, a solar street lighting project and most importantly the geothermal project. Moreover, the Government in partnership with the World Bank embarked on a pilot project to reduce the impacts of climate change on Dominica and build resilience to adapt to such impacts. This project termed the "Disaster Vulnerability Reduction Project"- DVRP makes linkages to Dominica's National Climate Change Adaptation Policy, as well as Dominica's Low Carbon Climate Resilient Development Strategy.

Consequently, this National Resilient Development Strategy (NRDS) more explicitly and concretely incorporates climate considerations hence ensuring that Dominica's new development pathway is more than likely to lead to improved development outcomes. This new approach to growth which we call a "climate-resilient and sustainable" development approach seeks to respond to climate change in a comprehensive manner, cutting across all sectors and addressing issues of mitigation, rehabilitation, reconstruction and sustainable development particularly after the passage of Hurricane Maria on September 18, 2017.

This approach is grounded in the identification, selection, implementation and evaluation of strategies, programmes, projects and actions to reduce climate-related vulnerabilities in the pursuit of Dominica's development goals.

The strategy incorporates an understanding of the risks and opportunities that climate change may pose and addresses them in ways that enable development initiatives to continue despite a changing climate for development.

In crafting this national climate resilient and sustainable development strategy a number of assumptions were made:

- Climate change already impacts the economic sectors of the country;
- Climate change can impede progress towards the country's development goals hence;
- Addressing climate change is important for successful long-term development;
- Priority adaptation and mitigation measures are imperative;
- Stakeholder involvement is essential. The premise is that knowledge of climate change among the citizenry over time can help identify mitigation and adaptation options and build stakeholder ownership of Government projects and programmes which would seek to engender climate resilience among other development priorities.

This National Resilient Development Strategy (NRDS) is anchored on a five staged framework³.

The first stage entails,

- setting and understanding development goals including setting practical time frames,
- identifying key inputs and enabling conditions for achieving those goals
- identifying climate and non-climate factors that are likely to put the attainment of these goals at risk or comprise the environment which enables the achievement of these goals

In the second stage, a very detailed assessment is conducted of the susceptibility of the key inputs and enabling environment identified at stage one to climate and non-climate factors. This stage also involves an evaluation of the capacity of stakeholders, in particular, implementing ministries and agencies to mitigate the risk of or take advantage of the opportunities stemming from climate change. The results of the assessment and evaluation influences the third stage of the framework - design of appropriate strategies, programmes and projects.

At the design stage climate impacts are considered with the aim of crafting actions strategies, programmes and projects that reduce vulnerabilities to the impacts of climate change and foster climate-resilient development. For example the construction of a river defense wall can minimize flooding of communities and damage to road infrastructure.

³ Adapted from the United States Agency for International Development project cycle management framework

The fourth stage entails implementation and management of the strategies, programmes, projects and actions devised in the design stage. This could be by mainstreaming- building on existing practices.

The fifth stage is the evaluation stage which encompasses monitoring the performance of programmes, projects and actions with a view to adjust either the development initiative or the programmes, projects and actions designed to mitigate and strengthen resilience.

Institutional Set-up for Action

Our National Development Management Framework (NDMF) which sets the context and the parameters that guide our development has to be robust and implementable. The National Resilient Development Strategy (NRDS) stands at the pivot of that framework providing direction and content to guide sector strategies and action plans. The NDMF anticipates that national strategies and action plans would be supported by the rule of law through appropriate legislation. The Medium-Term Strategic Plans derived from the medium to long term sector plans forms the basis for the annual budget. The annual budget is implemented over a twelve (12) months period. Strict monitoring of the fiscal and the capital segment of the budget is also undertaken.

Building resilience into the national development planning and management process requires better and more careful preparation of project proposals, closer monitoring of key indicators, systemic reporting and frequent evaluation of programmes and projects. Tasked with a collective responsibility for the fulfillment of this resiliency building vision, governmental ministries and agencies are expected to follow through.

Sectionalized by ministry this vision translates into the following:

Office of the Prime Minister

Champion the vision to build the first Climate Resilient Country in the world.

Office of the Secretary to the Cabinet

Provide leadership for making and sustaining Dominica as the first Climate Resilient Country in the world and for facilitating accurate and adequate reporting on achievements.

Ministry of Planning and Economic Development

Provide a well-developed, implementable and measurable National Development Management Framework (NDMF) that accommodates the environmental, social and

economic development requirements of the country, and regulate the built environment in line with the National Land Use Policy and Plan.

Ministry of Finance

Operate a world-class, accountable financial system through prudent macro-economic and fiscal policies built on proper resource allocation, prudent expenditure management, primary surplus and savings and investments, and a stable financial sector.

Ministry of Trade, Energy and Employment

Increase the volume and value of high quality goods and services that result in an innovative, diversified and competitive trade sector through reduction in the cost of doing business and embracing alternative energy sources, and to achieve sustained improvements in employment creation and the standards of living for all.

Ministry of Public Works, Water Resource Management, and Ports

Design and execute a programme of national infrastructure investments informed by environmental characteristics and circumstances that are responsive, to develop a water system that is environmentally sensitive, resistant and responsive, and to develop and manage port facilities resistant to natural disasters with rapid recovery attributes that foster trade and people travel.

Ministry of Health and Social Services

Operate a responsive, well-furnished health system that is technically current, staffed with the best trained medical personnel, with physical plants that are safe and built to environmentally informed standards and to develop and manage a social service delivery system that is internally robust and externally transparent, gender sensitive, that is well targeted, with a response mechanism informed by an up to date data management system, sound policies and a well aligned programme framework to meet the needs of individuals, families and communities.

Ministry of Education and Human Resource Development

Build and manage an education system that is socially and environmentally sensitive and responsive, nationally relevant, and globally competitive.

Ministry of Ecclesiastic, Family and Gender Affairs

Function as a catalyst for the improved spiritual, social and economic well-being of the populace, advocate for stable family structures, local governance and progressive communities in a society that upholds gender equality and respect, and to facilitate livelihood skills development.

Ministry of Information, Science, Telecommunications and Technology

Create an information highway that is accessible and fun to navigate, driven by modern science, and telecommunications technologies that are world class and resilient to the forces of nature.

Ministry of Justice, Immigration and National Security

Operate a justice system that is impartial and accountable and makes Dominica a secure and more peaceful country, and manages immigration to the benefit of the country.

Ministry of Housing and Lands

Equip the nation with a resilient housing stock, built to the Post-Hurricane Maria approved building guidelines and in compliance with the National Land Use Policy and Plan.

Ministry of Agriculture, Food and Fisheries

Develop and manage a modern agricultural sector that is smart, productive, competitive eco-friendly, environmentally sensitive with weather resistant species and infrastructure for national growth and development and addresses employment, income and food security requirements.

Ministry of Tourism and Culture

Create and manage a diversified growing tourism industry offering the best visitor experience in nature, wellness, culture, sports and recreation segments in a sustainable synergetic manner and to advance human settlements and communities for enhanced quality of living and visiting, and to pursue and develop the country's cultural heritage.

Ministry of Kalinago Affairs

Develop a prosperous community of Kalinagos that is culturally defined and socially coherent with modern amenities and facilities that are environmentally sensitive and responsive.

Ministry of Environment, Climate Resilience, Disaster Management and Urban Renewal

Manage the environment in a sustainable manner reflecting the country's Nature Island brand and advance the resilience and build back better vision through disaster risk reduction, advocacy, education and resource mobilization and advance the urbanization of the country for the benefits of the current and future generations.

Ministry of Youth, Sports and Constituency Empowerment

Cultivate the nation's youth with a sense of self-worth, community and country and to input the appropriate knowledge and skills through education, sports and cultural forms and to empower them and their constituents for nation building.

Ministry of Commerce, Enterprise and Small Business Development

Facilitate and enable the development of commerce based on innovation fueled by an enterprise culture that fosters micro and small business development, driven by modern science and technologies that are globally competitive.

Ministry of Foreign Affairs and CARICOM Affairs

Manages in partnership with line Ministries, a progressive and responsive foreign policy which reflects respect for mutual sovereignty, and contributes to resilience, national prosperity, the advancement of regional integration and the development of CARICOM Member States and their peoples.

Establishment, Personnel and Training

Develop and manage a productive, efficient, dedicated Public Service outfitted with the best trained staff, operating systems, protocols, policies and procedures that are highly responsive in every circumstance.

Climate Resilience Execution Agency of Dominica (CREAD)

Following the devastation wrought by Hurricane Maria, the Government committed to establish an executive agency, the Climate Resilience Execution Agency of Dominica (CREAD) that will facilitate the implementation of projects as part of rebuilding Dominica as the first climate resilient nation in the world. According to the Post Disaster Needs Assessment (PDNA) undertaken by Government in collaboration with the international development agencies, Hurricane Maria caused damage and loss of 226% of GDP. The warming of the Atlantic Ocean and Caribbean Sea means that this size of disaster could be of increasing frequency and is hence uninsurable. Consequently, Dominica has no choice but to rebuild Dominica as a climate resilient nation and 'Build Back Better' the damage wrought by Maria. The scale of the recovery and rebuilding task is immense, estimated by the PDNA at 230% of GDP. Full and national climate resiliency will cost even more. We have concluded, like other countries in a similar situation that we need a dedicated agency to lead the recovery. This specialized agency will focus not just on the physical reconstruction but also on establishing climate resilient systems, for example, in the energy, food production and transport sectors.

In his address at the CARICOM-UNDP Conference in New York on 21st November, 2017, the Prime minister set out the main parameters of CREAD: "The unprecedented challenge we face has led us to take the unprecedented decision to build an execution agency outside of our standard public service systems. We are calling it CREAD- Climate Resilience Execution Agency of Dominica. The mission of the agency will be to coordinate all reconstruction work to avoid duplication, maximize economies of scale, spot and fill critical gaps, avoid

bureaucratic infighting and ensure all reconstruction activities are focused on a single Climate Resilient Recovery Plan developed by Dominica and its partners.

“My Government sees transparency and proper financial management as extremely important”. CREAD will be required to operate to the highest standards of transparency and financial management as well as accountability and community engagement...There will also be a role for external audit as it is the intention that the executing agency operates within the highest level of transparency and accountability. The agency will own the reconstruction targets and through new powers given to it by parliament, prescribed in scope and time, would have the ability to step into improve where those targets are slipping. CREAD will be on a continuous emergency footing. New projects will come first to CREAD’s coordination war room. CREAD will ensure they fit into the Climate Resiliency Recovery Plan, and there is coordination with and a leveraging of other projects. CREAD and donors will decide where the project is best delivered, whether from line Ministries, a partnership between CREAD and the donor or by CREAD itself. CREAD will centralize scarce procurement skills and would be on a one-stop shop for licensing and permitting.

It is our hope that a parliamentary oversight committee will be established to provide real-time oversight to functioning of the CREAD. It is also important that the Chief Executive Officer will be required to report to Parliament on a regular basis... CREAD will need strong, proven leadership with the confidence of donors, government and beneficiaries. It will have a balance of broad international expertise and deep local knowledge, problem-solving mind-set...”

The Climate Resilient National Plan

The Climate Resilient National Plan (CRNP) will be based on three main pillars:

- Climate-Resilient Systems
- Prudent Disaster Risk Management
- Effective Disaster Response and Recovery

Pillar 1: Climate-Resilient Systems

This will cover a wide range of systems and processes that must be capable of adjusting to and absorbing the impacts of climate change, including a robust and responsive financial system that will be able to support the other elements of climate resilience.

The Climate Resilient National Plan will the focus on climate-proofing our economic assets such as roads, bridges, housing, schools, ports, health facilities and other economic infrastructure. These are the assets that usually suffer the greatest damage during storms and hurricanes and place the largest financial burden on Government during the period of post-disaster

reconstruction. The resilience programme must be extended to our food security systems, water and sanitation systems, energy systems, communications systems, health service delivery systems, education systems, and all other social delivery systems. The plan is to inculcate resilience at the household, community and national levels.

This pillar is in line with the promotion of Dominica as ‘The Nature Isle.’ Our natural resources are the foundation of who we are and what we do. They provide the substrate on which all social and economic development is built. It is imperative therefore, that all measures to protect our natural environment and ecosystems and to properly manage our forests, watersheds, and marine spaces are considered.

Pillar 2: Prudent Disaster Risk Management

The second pillar focuses on minimizing and managing, as best we can, the risks associated with climate-related disasters. This will require the development of a strong evidence base for decision-making. To allow us to better plan for and manage the damage caused by extreme weather events, we will improve the structure of our disaster management systems and strengthen the planning process through relevant protocols and enactment of appropriate legislation.

Prudent disaster risk management will entail the construction of more resilient emergency shelters. Such shelters are by definition, powered by independent and renewable energy sources, with adequate storage, that can operate independently of the grid. They will have sufficient water storage capacity to supply potable water during the period when national water services are temporarily disrupted and they will be suitably equipped and resourced.

This component of our Climate Resilient National Plan will also include establishing or strengthening established procedures to evacuate people from disaster-prone areas when it is clear that lives will be at risk from a pending weather event. This is in an effort to minimize the loss of life and disruption of livelihoods from the event.

Pillar 3: Effective Disaster Response and Recovery

The final pillar of our climate resilient national plan speaks to the post-disaster phase, minimising disaster impacts and reducing the pain and the period of recovery. Adopting knowledge gained from our past, we are using the lessons of Erika and Maria to develop a best-practice model for post-disaster response and recovery.

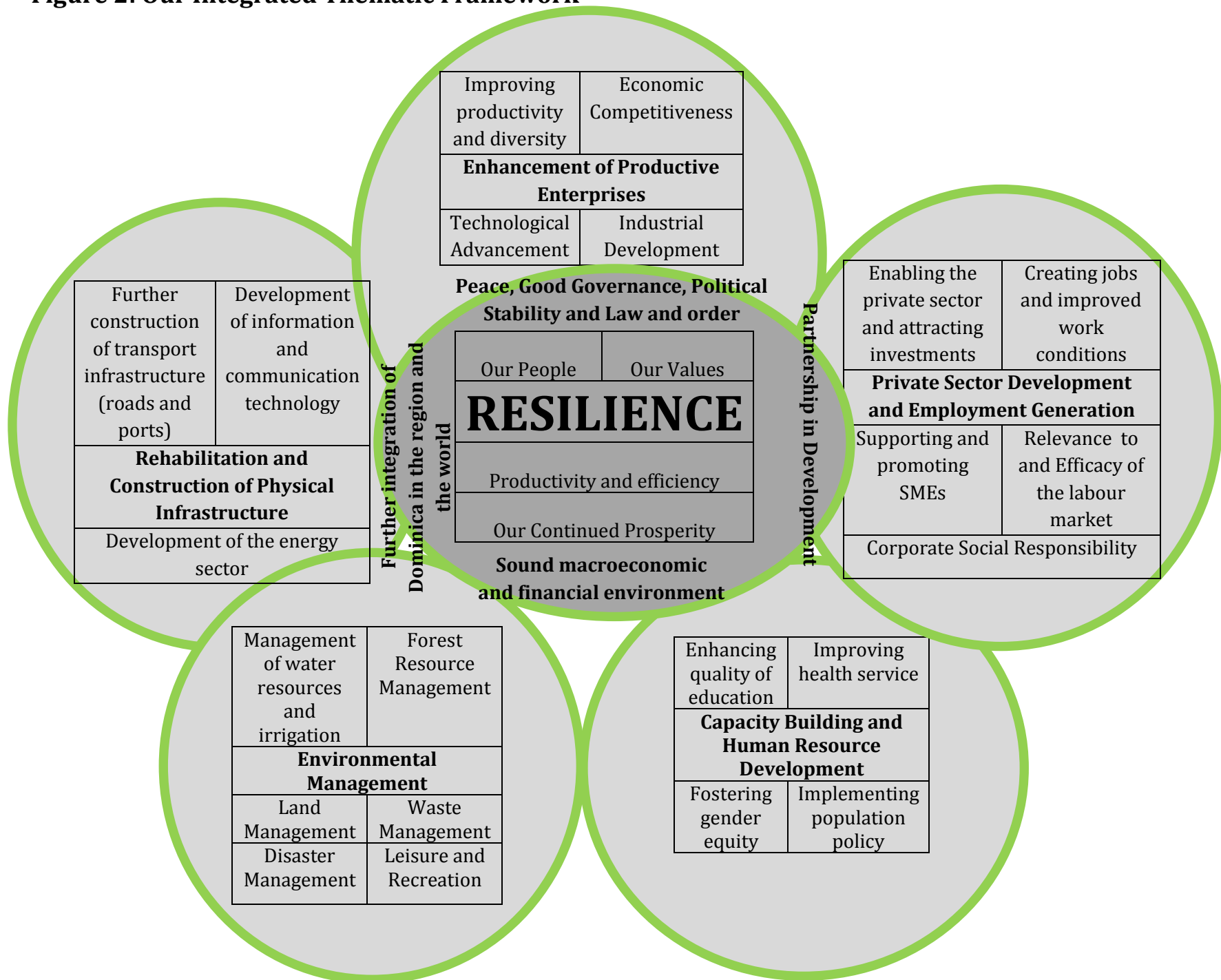
This entails putting in place better, more efficient systems for search and rescue, relief coordination, restoration of road networks and port services, clean up and sanitation, and the preservation of law and order. It will require efficient networks for ensuring there is a reliable supply of food, water and medical services where those are needed. It will require cooperation between telecommunications service providers to allow sharing of their network to facilitate communication and the dissemination of vital and life-saving information.

It will involve the development of robust business continuity measures for both the public and

the private sectors, so that essential operations may be resumed as quickly as possible. It will mean leading the way in the establishment of systems that facilitate the speedy restoration of livelihoods, particularly in the agriculture, fisheries and tourism sectors.

This necessitates having more effective and efficient procedures to accurately assess damage and loss and to identify the support and the resources that must be mobilized. To this end we will establish and operationalize a Disaster Management and Preparedness Fund to empower and facilitate the disaster committees at the community level. Most importantly, it will necessitate levels of community, district and national coordination and cooperation that surpass anything we have achieved in the past.

Figure 2: Our Integrated Thematic Framework



FEATURES OF THE RESILIENT DOMINICA

Our People

The people of Dominica are generally described as predominantly of African descent, mixed race, and Kalinago. There are other identities which include white, Syrian Lebanese, East Indian, Haitian, and Chinese, although the composition of some of these groups is relatively small. This diversity, influenced by a blend of cultures on the basis of a complex colonial past has resulted in (i) a group of people that are intriguing, unique in character and culture, and (ii) a national identity that underpins the development of the country. The resourcefulness and persistence of the Dominica's people have contributed greatly to the preservation of aspects of its historical culture such as the French-creole language, traditional dances, Kalinago heritage, peasant farming, the practice of Christianity, and the tradition of socializing at shops, religious ceremonies, and streets.

The lingering effects of colonialism and history of limited economic development elicited resilience and developed valuable qualities in people as means of getting by and revitalizing communities. Dominicans have been known to be a very happy and peaceful people, content with the simplest things of life, and a prevailing positive outlook contributing to high life expectancy. Dominicans find individual fulfillment through loving other people and worshipping God in everyday events. Natives, persons of Dominican descent, visitors and inhabitants are all embraced. The traditional family structure has remained stable for a very long period of time and importance is placed on the role of extensive kin networks through blood lines, marriage, or friendships. A strong culture of self-help and reciprocity emerged and has manifested through various forms such as provision of free labour to build household and community assets, sharing of financial and material resources, child fostering and development of cooperatives.

As the current National Development Framework will convey, as 'political beings,' Dominicans believe that the issues of descent work, healthy relations, enjoyment of basic services, and full participation in the political life of their communities are the issues that matter the most in their lives, and most importantly enjoyed in a peaceful, prosperous, dignified and secure manner that matches who they are as a people.

Our Values

The core values that are widely shared through the Dominica society reflect the characteristics of the people as God fearing, patriotic and resourceful, and though not explicit, exist as a subconscious level of understanding among citizens. They can be summarized as follows:

- Respect, empathy, and love for one another;
- Self-reliant but interdependent;
- Peace loving and fostering;
- Positive, resilient, and agile in face of difficulties;
- Dependence on the natural environment, including the soil, for survival;
- Strong religious orientation;
- Hospitable;
- Hardworking, creative and have a passion for service.

There is evidence accumulating however, that some materialistic values are penetrating the long-standing simplistic profile of equality, harmony, helpfulness and co-existence. The Government of Dominica recognizes that values are embedded, produced and reproduced in our actions, traditions, and engagement with each other. These must therefore form the building blocks of national Sustainable Development and the standards and lifestyles to which we must continue to aspire. Most importantly, they must guide everything that we do now and in the future, which means that programs and strategies proposed must be essential avenues for delivering those values.

Our Continued Prosperity

Needless to say our continued prosperity is at great risk. Foremost is the continued risk posed by national disasters with recurring catastrophic weather systems driven by Climate Change and weather variability. These frequent and intense weather systems steal our gains and place us in continuous replacement mode. But weather shocks are not our only challenge. Our challenges are also economic and social. Our small open undiversified economy absorbs economic shocks because our connectivity mainly through trade, financial flows, and remittances from abroad. The slowly but steady rising oil prices poses a real risk to economic and social prosperity unless we are quickly able to achieve anticipated resilience in our energy sector through our efforts and major investments in renewable energy. Economic psychology that treats financial markets and current political uncertainties as suspect threatens global growth and our common prosperity.

Most of the growth must therefore be endogenous. It must emerge from our diversity of knowledge and unmatched creativity and talents. It must rise from the crevices and dust of our physical resources and flow from our crystal clear waters of our rivers and streams. Our people must be called and awakened to this new reality. More than ever before, this call must be to one of self and country. Individual responsibility for the good and wellbeing of self, family and community must be a daily feature in the resilient menu. Self-reliance in a well meshed net of interdependence from our ocean of love for community and country. It is our *love for self, others and country* that propels us to act in ways that protects our continued prosperity.

A resilient people must be engaged not just in shaping ideas and ideals but in placing bricks and mortar in our new construct of “The first Climate Resilient Country in the World.” Our people must be productive at home, in the fields, in government and in private enterprise. ***Productivity and efficiency*** must be what wake us up in the mornings and steer us along the way. They must be the drivers that take us to work and keep us prolifically engaged. The full application of our special knowledge and skills in a shared and collective environment must journey us to a better and more prosperous tomorrow. Shall we faint or fail in our pursuit? This would only make us woeful in our ever present vulnerabilities. We must therefore continue in our fields of agriculture, tourism, manufacturing, health, education, social services, public and private sectors.

Our neighbours and friends far and near must contribute and share in our continued prosperity. They will help to enhance our capabilities in many forms through financial, technical and material resources. Our increased capacity will help to further integrate us into the global economy and contribute to our shared prosperity. However, our connectivity and shared prosperity must not come at the expense of our fundamental values. The frames and themes that shape our values must be those that are celebrated daily:

- Our fear of God;
- Love for self, community and country;
- A desire to learn, work and earn;
- The willingness to creatively and responsibly manage our environment;
- The pursuit to help shape a society based on respect, trust, honesty and sense of community;
- And to always see our country as a blessing from God which we must manage carefully to ensure our own prosperity and that of future generations.

This call is to all - our people at home and abroad. Our diaspora must be engaged in this new resilience frame. This constructive perspective will require not only remittance flow, but knowledge transmission, application of talents and skills, investments in people and economy in the process of transformation to a resilient and prosperous nation. Concerns for sustainability to ensure our resilience and contribute to our shared prosperity should be a key driver. Should we pursue a subsistent existence or leverage our assets with symbiosis? Our efforts must preserve our numerous ecosystems for productivity, competitiveness and our sustained prosperity.

Finally, on the supply side, the state must keep faith in its continued efforts to enhance the country’s capabilities for global competitiveness and sustainable development. Investments in human capital that is world class, locally relevant and globally competitive is crucial if the vision of building the first resilient country is to be achieved. Investments in every stage of the human life cycle will have to be done. This new reality and the anticipated

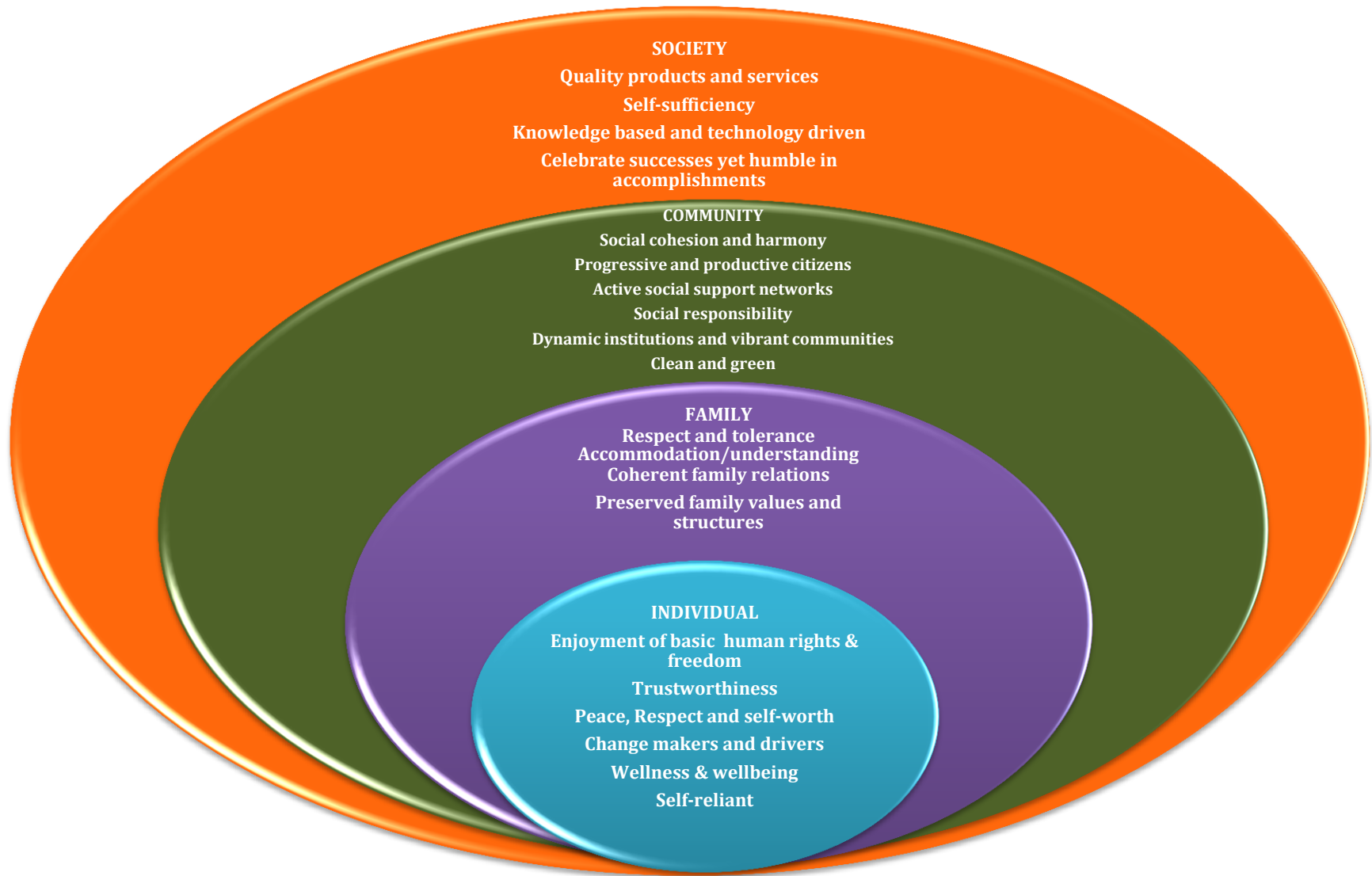
outcomes must be incorporated into the school curriculum at all levels of the education system. Out of school programmes must be addressed to those already employed in both the private and public sectors. Vocational programmes must be relevant and address the resilience needs of the country in the economic, environmental and social spheres.

Investments in new knowledge creation and utilization will help to improve the knowledge, skills and talents of the Dominican people. New knowledge creation requires *investment in science, technology, and research and development*. Pest and diseases in our agriculture must be better understood from entry to exit. The current prevalence of pest and diseases especially in our major crops of economic importance will not only require knowledge creation internally but knowledge sourcing. Importation of relevant knowledge and skills to strengthen the resilience of commodities, products, industries and sectors has to be an important part of the strategy. The placement counterpart agents to facilitate knowledge transfer for sustainability has to be integral in the process of utilization. Our nation's diaspora can play a critical role in knowledge transfer and sustainability. Through the application of new knowledge, the *efficiency and resilience of key economic sectors must be built* through institutional development, product diversification and enhanced quality, branding, market diversification, improved transportation, increased productivity and reliability of supplies.

Investments in physical capital will make the greatest demand on our creative capabilities. Weather shocks have forced the nation into a physical capital replacement posture. The nation's road, sea and airports are especially vulnerable, but these are important assets on which the economic and social wheels depend. They become and remain dysfunctional over time then all systems collapse. Therefore, because of the critical role played by these assets in economic development and transformation more careful analysis must be employed in their planning that seek to reduce cost and generate returns on investments in the shortest term. Allocative efficiency is also important if the nation is to build resilience in the short term and achieve economic and social transformation. Picking winners in the industrial sector of the economy may have to be employed. Carefully targeted investment in industries across sectors with growth and transformation potential may be a concrete way to achieve economic resilience. Some of that is already being done but a more strategic and comprehensive approach will have to be employed.

Figure 3 illustrates the interrelations among the individual, families, communities and the wider society and how the different features are embedded. It also highlights the desired outcomes that would lead to a more resilient and happier Dominica.

Figure 3: The Community of Now and the Future to Live in and Enhance our Happiness- An Ecological Model



ECONOMIC DEVELOPMENT AND TRANSFORMATION

Sound Macro-economic and Fiscal Policies

A sound macro-economic framework and financial management system is key to building growth/economic resilience in any economy.

It is well documented that government's prudent approach to economic and fiscal management since 2002 was instrumental for placing the country back on a positive growth path. In a broad sense, except for a couple of years, Dominica has witnessed steady macroeconomic growth largely driven by construction, tourism and agriculture, albeit significantly below the level to transform the economy. However per capita GDP registered growth largely on account of a declining population. Inflation was kept at under 2% with the exception of 2008 due to spiking world prices. In the financial sector, reforms and measures have been instituted to regulate and foster the sector to grow in an orderly manner.

Table 1: Key Economic Indicators 2006-2016

Particulars	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
GDP At Constant Prices (2006)											
GDP (EC \$billion)	0.88	0.92	0.99	0.98	0.98	0.99	0.98	0.99	1.03	1.00	1.03
GDP per capita (EC\$ thousand)	12.49	13.03	13.93	13.81	13.92	14.19	14.17	14.17	14.58	14.07	14.45
Annual GDP growth rate (%)	3.75	4.38	6.92	-0.82	0.74	0.84	-0.84	0.27	4.03	-2.46	2.75
Total Government budget revenues - (%GDP)	30.6	34.0	34.3	35.9	35.9	36.1	35.7	38.8	36.8	40.3	101.4
Total Government budget expenditures - %GDP)	37.1	41.3	45.7	45.0	48.3	50.8	49.2	51.9	46.5	45.8	54.1
Inflation % (year to year)	2.60	3.22	6.37	0.13	3.05	1.06	1.36	-0.05	0.81	-0.85	0.14
Exchange rate US\$ = EC\$2.70											
Source: CSO Dominica, ECCB; Inflation uses 2010 = 100.											

Given that steady and robust macro-economic growth, fiscal discipline and a vibrant financial sector are vital to pursue economic and social progress within a resilience framework, Government intends to:

- Set its economic growth target in the region of five to seven percent per annum believing that growth at this level will be positively transformative, both economically and socially
- Target a primary balance of 2.0 percent of gross domestic product (GDP) over the medium term in order to achieve debt sustainability which is metricized as a debt to GDP ratio of sixty (60%) by 2030⁴
- Maintain stability in the external sector
- Contain inflation at under 2%
- Improve budget performance both by increases in current revenue and targeted pro-poor expenditure
- Pursue progressive yet strict budgetary policies both on the revenue and expenditure sides
- Enhance collection of revenues, tax and non-tax, broaden the tax base and dampen the “culture of tax waivers and exemptions”
- Mobilize more domestic revenues
- Target expenditure to priority sectors of development and transportation
- Strengthen and strictly implement laws relating to public procurement
- Ensure full transparency and accountability in all government transactions
- Continue efforts at having a competitive, integrated and efficient banking system that is well regulated and supervised to generate finances for private sector investment and growth.
- Stress the importance of having an insurance sector that protects businesses and individuals from unforeseen adverse events and a pension system that provides a secure retirement, both also providing capital for investment

Further measures will be enacted to build resilience in public financial management.

⁴ Target set by the Eastern Caribbean Central Bank and is applicable to all its member states including Dominica

Building Resilience in Public Financial Management

Building resilience defined in the context of financial management is the financial system that is sound and allows for financial resources to be used to enhance mitigation measures and encouraging savings that can be made available to respond quickly when there is an event. This includes a fund for natural disasters, investment in physical infrastructure, information technology systems and having adequate banking access in times of disaster.

The Government through the Ministry of Finance, Investment, Housing and Lands therefore encourages prudent and strong financial management that supports careful selection and planning of projects, limiting discretionary expenditure, reducing debt and contracting of debt on concessional terms, strong tax administration to ensure that taxes due are paid, procurement practices that gives Government the best value for money, a strong and well-regulated financial services sector and a good statistical base to inform policy decisions.

To achieve these, staff must be trained and committed, financial procedures must be clear and unambiguous and the IT systems should facilitate the processing of finances, preparation and generation of reports.

The Ministry of Finance will continue to execute its mandate but proposes to focus on the following:

De-Risking: In response to new financial regulations, corresponding banks have completely withdrawn corresponding banking services to respondent banks in the Caribbean. In some cases, these banks have discontinued the provision of certain specific services to some clients. This “de-risking” by correspondent banks pose a serious threat to the present and future stability of the financial sector and the proper functioning of the economy. The ability of people to do business in and out of our country without hindrances, without delay and unnecessary cost, will be severely compromised. The loss of corresponding banking services can severely impact the provision of key services on which individuals, businesses and government actually depends. This means that we will not be able to transact business with the speed at which environment, economic and other shocks demands. Climate change disaster responses require rapid leveraging and disbursement of financial resources.

The Government of Dominica will continue to provide support to regional efforts by governments, financial institutions and business leaders to help find a permanent situation to this threat.

Fund for Natural Disasters: An IMF Selected Issues paper (2016) estimates that the cost of damage by natural disasters is relatively large in Dominica compared to other Caribbean

countries. It is estimated that “the average annualized actual cost of a tropical cyclone is 7.4 percent of GDP during the period of 1970-2015, and the estimated cost is 10.8 percent of GDP. Using the estimated cost, more than half of the tropical cyclones affecting Dominica caused damages of over 50 percent of the country’s national output in the given year”. Climate change could imply higher risk of natural disasters in the future. It is estimated that damages from tropical cyclones directly related to climate change ranges from 4 to 8 percent of GDP. This reality strongly highlights the need to create a savings fund for emergency response, recovery, rehabilitation and reconstruction after natural disasters.

Strengthening Tax and Customs Administration: The Government of Dominica will continue to review existing tax legislation including, but not limited to the Income Tax Act, Value Added Tax Act, the Excise Tax Act and the Customs Act. This will be accompanied by an assessment of the organizational structure of the main revenue agencies to ensure that they are optimal for the task to be undertaken. There is need for urgent upgrade of the ITS systems for tax administration. IT for Customs administration at this time is adequate. Revenue collection will be optimized and focus will be on both tax and non-tax revenue sources.

Reducing Debt and contracting debt on concessional terms: The Government of Dominica has been successful in raising grant resources and contracting loans on highly concessional terms. This practice will continue. Debt obligations continue to be met in a timely manner. Attention will be given to securing further the debt database so that access to debt information is not compromised when there are such events like hurricane Maria.

Enhanced Procurement: The legal framework for procurement should be enhanced with the completion of a review of the existing legislation and possible replacement legislation taking into consideration the specific objectives that Government would like to pursue such as community empowerment and building local capacity.

Enhanced financial management systems: The public financial management system must be of a caliber that encourages development partners to utilize the Government financial management systems instead of the country having to adopt the processes of each development partner. Confidence in the Government financial system raises the credibility of the state in managing projects financed by the development partners.

Reducing discretionary expenditure: There is need to reduce wastage and better target the resources used to finance discretionary expenditure. Greater attention will be paid to expenditures on travel, fuel, telephone, electricity, water, stationery. This has to be done in collaboration with Ministries and Department as each accounting officer has the responsibility to administer the budget approved for his/her Ministry in keeping with the rules and regulations.

A strong and well-regulated financial services sector: The insurance and the credit union sectors are heavily impacted by hurricane Maria. On site examinations of each of the sectors are being undertaken. In the aftermath of the hurricane, it is important that Dominica remains in good standing with its AML/CFT obligations as well as tax compliance obligations. All effort will be made to ensure that all institutions in the financial services sector are in good standing. This will require amendments to some legislation. The legal review is ongoing.

A good statistical base to inform policy decision: The structure of the Central Statistics Office is being reviewed with a view to determining the optimal staffing arrangements. There are currently some vacancies which provide an opportunity for restructuring. The second phase is to ensure that the data gathering and data assessment functions of the CSO are upgraded.

In summary, Government must have the financial capacity to mitigate and to respond to disasters. For this to be possible, prudent financial management to include savings on a continuous basis is paramount. Not only does this allow Government to have access to its own funds but also give development partners the confidence that their funds, when provided to assist, will be well managed.

Sustainable and Inclusive Growth

Achieving sustained, inclusive and sustainable economic growth is essential for improving the quality of life of citizens, albeit that the quest for economic growth is neither simple nor straightforward. In fact, it has been described as “elusive”.

Nonetheless, Government’s agenda for the development and transformation of the Dominican economy involves restructuring and diversifying the production base as well as encouraging investments and trade for sustained growth and development. To attain this, Government will continue to invest in projects and programmes over the medium term that support the utilization of renewable energy and foster productive and creative enterprises facilitated by requisite public infrastructure and underpinned by industrial/business development, technological advancement, productivity enhancement and above else economic competitiveness.

The overarching action plan for transforming the economy to engender a modern and prosperous Dominica is the enhancement of five strategic growth poles which have been articulated in the section on “The National Resilient Development Strategy (NRDS) and the vision to Build the First Climate Resilient Country in the World”. It is intended that each

growth pole will stimulate activities with economic and social benefits. These are: (i) renewable energy; (ii) productive enterprises; (iii) creative industries; (iv) infrastructure and (v) human services.

Complementary to these growth poles are economic competitiveness; technological advancement; productivity enhancement and industrial development. These underpin the long-term strategies for sustainability in economic development and transformation as these are requisites to enable productive enterprises and service firms in developing innovative products, processes, systems and services. It is the anticipation that significant benefits will be realized in terms of their impact on national output, trade, business services as well on the competitiveness of the country.

Box 2: Towards a more Inclusive, Sustainable and Resilient Growth Agenda for Dominica

Inclusive, sustainable and resilient growth entails the composition, pace and soundness of growth. Inclusive growth takes a long-term perspective and focuses on decent job creation and poverty reduction by placing people at the center of economic activities. Sustainable growth is growth which can be maintained without creating significant economic problems, especially for future generations. Rapid economic growth today may deplete or exhaust resources and create environmental problems for future generations, including global warming. On this basis, the concept of sustainable growth has gained prominence in economic literature in recent years. A rate of growth which permits a country to build necessary fiscal buffers to recover from or adjust to the negative impacts of external economic shocks inclusive of climatic events is resilient in nature.

Development economics literature emphasizes the potency of economic growth strategies that are broad-based across economic sectors, people-centered and induce the poor and unemployed into employment and decent income generating opportunities. An economy which grows below full employment potentially excludes some of its citizens from the benefits of growth.

While some progress has been made, the pace and most importantly, the composition of domestic economic growth in Dominica have not made remarkable dents on incidences of income inequality, poverty and unemployment. An annual growth rate of between 5- 7 percent is aspired for to place the economy on a sustainable growth path en route to United Nations 2030 objectives inclusive of the sustainable development goal targets.

To achieve these targets, a more ambitious growth strategy needs to be pursued to address both the quantum and composition of growth. The growth results to date suggest that national aspirations to sustainable economic development would remain distant in the absence of the structural transformation and diversification of the economy so that all Dominicans can share in the opportunities that the country offers. Greater emphasis will be placed on sectors in which inclusive growth could be realized such as agriculture and tourism. A sustainable growth model which catalyzes an orderly shift from public-led growth stimuli to private sector-led inclusive growth strategy is imperative.

There must be an orderly hand-over to private sector led inclusive growth. Dynamic interventions are needed to address any skills deficit while ensuring the efficiency of the labour market. Other success factors include implantation of an effective Public-Private Partnership (PPP) policy, rural economic development and placing regional development approaches at the center of local economic development.

There is need to build a new common purpose so that citizens can use their talents, skills and resources to confront our economic and social challenges.

RENEWABLE ENERGY

Government's commitment to facilitate the use of renewable energy will continue through the medium-term, in particular the phased development of geothermal energy for local consumption and export. This commitment is in furtherance of making a significant impact in terms of reduced energy consumption at the household level through efficiency measures, and reduction in overhead costs for businesses. The outcome is a resultant improvement in competitiveness for economic growth and development, employment creation, and improved quality life for all citizens.

In the Power Sector, government has developed a vision to make its electrical grid more resilient while reducing its own contribution to global emissions. Key elements of that plan include undergrounding of main transmission lines throughout the country and distribution lines in urban centers, increasing the penetration of renewable energy with both centralized and distributed systems, and establishing mini-grids for isolated communities capable of serving customers independently from the grid. Government intends to work in cooperation with the privately owned national utility company to achieve this vision.

Geothermal

The development of Dominica's geothermal potential is one part of the country's Low-Carbon Climate Resilience Development Strategy (LCCRDS). After confirming the existence of an exploitable geothermal resource in the Roseau Valley, Government pronounced the policy of developing a carbon negative economy by 2020. Work will continue to harness this power despite the setback caused by Hurricane Maria. As this signals Government's strong resolve to move away from the use of fossil fuels (for energy production) which is major contributor to climate change.

The enactment of this policy is centered around (i) the construction and operation of a geothermal plant and other necessary infrastructure to commence the generation of geothermal energy and (ii) the supply of electricity to the neighbouring islands of Guadeloupe and Martinique.

The Government has outlined its plan to construct a geothermal plant in numerous forums and pronouncements to meet the demand for "clean" power at a lower cost to households and businesses in Dominica in order to support economic and social development.

The Dominica Geothermal Development Company (DGDC) has been established with the full complement of staff to move ahead with the construction of the power plant aided by a project manager who has been recruited by the Government of New Zealand

Funding for the project will come from local sources and development assistance. Government will contribute \$40.5 million (US\$15.0 million). Grant funding will comprise an amount of \$30.0 million from the Government of the United Kingdom, \$5.4 million (US\$2.0 million) from the Government of New Zealand and \$ 5.4 million (US\$ 2.0 million) from SIDS DOCK. Government has also applied for grant funding under the United Arab Emirates Caribbean Renewable Energy Fund (UAE-CREF). The grant is expected to be between \$8.1 million and \$13.5 million (US\$ 3.0 million and \$5.0 million) and would fund a battery storage system to be used in the national electricity grid.

Funding will also be obtained from the World Bank in the form of a loan of \$16.2 million (US\$ 6.0 million), at a highly concessionary rate of 0.75% with a 10 year grace period and 40 year repayment term. In addition to the financing required to construct the plant, Government has also been able to secure contingent financing, in the event additional production wells are required. The funds are being provided by the Clean Technology Fund (CTF) in the amount of \$24.3 million (US\$ 9.0 million). The CTF will also provide \$6.8 million (US\$ 2.5 million) in the form of technical assistance for advancing the development of a large geothermal power plant (LGPP) for export of power to Guadeloupe and Martinique.

An Environmental and Social Impact Assessment has been conducted. This took into consideration the impact of the construction and operation of the geothermal power plant on the residents of the Roseau Valley. Every effort will be made to ensure that adverse impacts on the communities and the environment will be mitigated. Compensation will be given to land owners and support will also be provided to residents who occupy lands to ensure that they are not left worse off.

Upon completion of the designs, the project will go to market for an Engineering, Procurement and Construction (EPC) contractor immediately thereafter. Once the plant has been commissioned, the DGDC will sell power to the country's sole electricity company- Dominica Electricity Services Ltd (DOMLEC) to be distributed throughout the country. Based on the regulations of the Independent Regulatory Commission (IRC), DOMLEC is not allowed to add to the cost at which the power will be sold, thereby ensuring that the lower cost of electricity from geothermal will be passed on to consumers (residential and commercial).

Hydro

Hydro energy currently satisfies approximately thirty (30) percent of Dominica's energy requirements. The exploration of the country's natural resources for energy production will continue with hydro technology remaining an important component of the country's energy mix. The strategic plans for the sub-sector includes continuing the assessment of hydropower resources by coordinating the efforts of the Ministry of Agriculture and

Forestry, Dominica Electricity Services Ltd (DOMLEC) and the Dominica Water and Sewerage Company Ltd (DOWASCO), implementing, where feasible, new hydropower projects, and developing capacity for analysing data on hydro projects by working with other countries, territories, and organizations in the region.

Solar

The policy for solar power development includes encouraging, where economically viable, the installation of solar energy technologies on all new public sector buildings, commercial buildings, and residences, particularly for buildings that could benefit from those systems in the event of electricity service outages

The project of illumination of streets with solar lights will continue and will be extended to various public spaces and facilities and this is expected to have a positive impact on communities in relation to safety, crime reduction, fostering communication, greater socialization and encouraging more healthy lifestyles. The Ministry of Public Works, Water Resource Management and Ports is predominantly expected to continue with the implementation of this project. This will include:

- street lighting- rehabilitation, upgrade and new streetlights and pole erection
- lighting of parks and recreational grounds
- illumination of grounds of Police stations
- lighting of public spaces
- illumination of the grounds of health facilities

Further, there will be continued focus on the development of green designs and technologies and build upon pilot projects utilizing solar power such as the Low Carbon Development Path promoting Energy Efficient Lighting and Solar Photo voltaic technologies Project.

Wind

The policy for wind power development includes continuing the assessment of wind resources, and implementing the appropriate arrangements for the exploitation of wind resources to provide electricity for local consumption, where this is likely to be least cost.

Wind energy has to remain an important part of the energy mix. Wind turbine installation, like solar panel installation, is mainly private sector led. However, the national regulatory policy framework addresses possible investments in wind energy as part of the National Grid. In fact, DOMLEC the only power generation and distribution company has done preliminary studies to explore the potential of wind energy. Like other sources of renewable energy, the vulnerability of wind turbines to strong winds from tropical weather systems would be a major concern. This is especially so because wind turbine installation

requires large expanse of flat land or shallow marine waters with space capacity for location which Dominica has little of. Most likely these wind turbines would be located on hill tops with possible toppling or being severely damaged during the passage of tropical weather systems. The investments therefore point to a highly localized mini system with collapsible features of so few numbers that investment cost and output remains low resulting in minimum loss.

PRODUCTIVE ENTERPRISES

Productive enterprises are one of the main drivers of growth, development and employment. Many of these enterprises though embedded within traditional structures of ownership, technology and product, they must be modernized to become regionally and internationally competitive.

Agriculture

The agricultural sector plays an important and strategic role in the process of economic development in Dominica. The priority goals in this sector are enhancement of: food security, productivity and diversification; and, market access for agricultural products. It is well recognized that, with immense but as yet unrealized potential both for boosting GDP and for uplifting the poor especially in the rural areas, quickest and high returns are possible at fairly low costs by diversification into cash and other crops. This will ensure income security while continuing production of staple food crops to ensure food security.

Table 2: GDP Agriculture 2006-2016

Particulars	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
At Constant Prices (2006)											
Agriculture (EC\$million)	106.6	96.8	111.3	113.2	104.2	111.7	121.3	127.2	125.4	121.0	132.9
% of GDP	12.1	10.5	11.3	11.6	10.6	11.2	12.3	12.9	12.2	12.1	12.9
Of which crops (EC\$million)	93.4	82.5	98.0	99.9	90.8	98.8	108.2	113.4	112.2	108.0	119.6
%GDP	10.6	8.9	9.9	10.2	9.2	9.9	11.0	11.5	10.9	10.8	11.6
Non-crops (EC\$million)	4.04	5.08	4.32	4.49	3.70	4.14	3.53	3.36	5.01	5.79	7.12
%GDP	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Livestock (EC\$million)	9.84	11.15	10.31	10.27	10.34	9.82	10.11	10.76	10.06	9.88	10.24
%GDP	1.1	1.2	1.0	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.0
Source: CSO Dominica											

However, contextual changes imposed by the devastation of the agricultural sector by Hurricane Maria demands a reassessment of exiting governance mechanisms, institutions, and agents to ensure opportunities and behavioral changes needed for agriculture development can be drivers for agriculture's more dynamic role in the economy in terms of sustained economic growth, environmental stewardship, and poverty reduction.

The current orientation of the agricultural sector contains inherent weaknesses that limit its capacity. Hence, there is a need to conceptualize a framework for reformation/reorientation of a new resilient agriculture and to develop an appropriate platform for restoration through a well-defined strategy on agriculture to guide the agricultural development agenda, post Maria or pro - climate resilience with a clear indication of needs and priority actions required to be executed in the short, medium, and long term.

Multi-disciplines and institutional inertias with greater emphasis placed on problems/constraints faced, inadequate coordination of specialized knowledge and capabilities, and the current geographical designations of agricultural regions lead to conflicting agendas, inconsistencies in approach, and higher coordination and transaction costs. To address this, greater emphasis must be placed on performance, output, impact, cost-effectiveness, and research and analysis capabilities for the realignment of agriculture considering the complexities and complementarities of agriculture.

With its historical constraints, exacerbated by Hurricane Maria and climatic variability expected in coming years, a new agricultural agenda with new mandates and strategies requires the adoption of new attributes and demands the formulation of a national agricultural development strategy - with expectations that lead to:

- i. Changes in public sector orientation to core issues of competitiveness, sustainability, resilience, and rural development, which form the basis for evaluating performance;
- ii. Wider societal participation and contribution to development policies addressing challenges facing agriculture and pursuing opportunities in agriculture;
- iii. Formulating and implementing diverse and complex programs and projects with multiple goals to access internal and external resources with clear purpose, processes and outcome;
- iv. Institutional governance mechanisms for coordination, intermediation and negotiations within and outside the public sector to guide scarce resource use and personnel behaviors towards development, sustainability, and resilience;
- v. Integrating mechanism, with political and budgetary resources, to introduce coherence in policies and in their implementation and capabilities for strategic planning and programming;

- vi. Monitoring and evaluation mechanisms to provide continuous feedback on the efficacy of programmes, resource use, and activities and monitoring policy impacts, how policy evolve and how effective they are at attaining stated objectives.

Core Strategic Agricultural Interventions

This requires a redefinition of roles, realignment of personnel, and reorganization of tasks that incorporates functions of networking, knowledge harvesting, management and sharing, and partnerships with other economic sectors, leveraging support for innovation and competitiveness through *commercial agricultural investments*, addressing concerns of *food security, livelihoods protection and rural development*, while ensuring *environmental integrity* in our agricultural, forestry and fishing systems. To this end, the Ministry of Agriculture, Food and Fisheries has identified key areas for intervention (KAIs) that would ensure the achievement of the objectives for a new agriculture through interventions listed below:

- I. Diversifying the sector
- II. Building Capacity
- III. Managing and Using Agricultural Knowledge with a greater focus on the concept of Regional Development
- IV. Enhancing Research and Development Capabilities
- V. Improved data management systems with options for developing farmer profiles and geo-referencing of farms, FADS, landing sites, etc.
- VI. Creating an Enabling Legislative and Regulatory Environment
- VII. Improving Networks and Coordination

Premised on the above in going forward, the plan for the agriculture sector will encompass clear goals, specific targets and proposals for achieving increased crop production through: cropping systems that make the best use of water resources and reduce risk to farmers from year-to-year variations caused by natural occurrences; and, best crops to be grown every season taking into account soil conditions and other factors, export potential, improvements in irrigation and other relevant factors.

By 2030, the Government aims to make the country food-secure. To achieve the thrust to provide a sustainable supply of food for the country, efforts will be undertaken to develop a highly productive agricultural sector that is modernized and regionally and internationally competitive, generates sustainable jobs and incomes for producers, and guarantees production despite weather conditions. Additionally, with support from the FAO and CARICOM Secretariat through Climate Change Risk Reduction Working Group, the Ministry is currently developing a strategy and action plan for emergency response for agriculture.

In order to build the competitiveness of the sector and to ensure its sustained contribution to economic and social development, Government will address a number of challenges that have affected the sector, specifically climatic events, appropriate and adequate infrastructure including access roads and low levels of technology

To address the challenges and to revitalize the sector over the medium term Government will increase investments in the sector and adopt strategies aimed at

- increasing agricultural production, distribution and access with a resultant reduction in the food import bill
- developing a water resources management strategy to provide and make available water for sustainable farming particularly in times of water shortage and drought.
- improving land management and the tenure of farmers
- expanding source markets for imports
- improving accessibility to farms and markets;
- encouraging the use of modern technology and innovations in farming
- encouraging higher levels of productivity of locally produced goods
- encouraging the consumption of healthy, locally produced food
- creating the linkages between agriculture and other productive sectors
- controlling food inflation
- developing fishing centers/complexes
- supporting fisheries co-operatives
- enlarging animal production and animal husbandry and veterinary services.
- encouraging youth participation in the sector
- improving and extending varieties and agricultural extension services thereby facilitating increased yields
- enhancing affordable micro-finance availability
- encouraging innovative grass-roots oriented direct interventions to reduce poverty
- strengthening the institutional and legislative framework

These strategies are expected to create sustainable, long-term productive employment in the sector and increase the sector's contribution to GDP. Selected crops have been identified as priority areas for production⁵ so as to achieve the overall goal of food security, and a greater degree of self-sufficiency in the medium term. In addition, focus will be placed on strategic crops that have significant revenue and export earning potential. The aim in the long-term is accelerate and stabilize broad-based growth of agriculture output through sustainable development of high-value products in addition to the promotion of export markets for niche products, including especially organic farm exports.

⁵ Banana, plantain, dasheen, yam, tannia, sweet potato, ginger, passion fruit, peppers, cassava, cocoa, coconut, herbs and spices.

Government will examine the feasibility and profitability of adopting a "one village-one product" concept to promote high value agricultural products, which may also attract private sector involvement through contract farming and other ways.

The construction of access roads will continue to boost agricultural settlement, farm income, food production and marketing. In the post Hurricane Maria context, rehabilitating agricultural access roads including the construction of roadways and bridges will be a major focus in the short to medium term to facilitate ease of access to and egress from agricultural plots.

Government will continue its efforts of attracting young professionals to actively participate in agricultural development which will entail, in part, programmes and projects to retain technical knowledge and skills sets through its linkages with stakeholders. Specifically, graduates from the Dominica State College Agriculture Programme will be mentored and provided with emerging opportunities in the sector. In addition further support will be given to the Dominica Youth Business Trust to increase their capacity to provide financing to young farmers and enterprises which are directly agriculture based or spin-offs of the agriculture and fisheries sector. Funds will be provided where possible for concessional financing for farmers.

Government will emphasize the use of pack houses as a means to enhance exports. Further public sensitization will be undertaken to build the mindset of producers that having a secure location to pack and store produce in a controlled environment prior to distribution and marketing to ensure that food sent to market is of high quality and meet local, regional and international markets standards.

The fishing sub-sector will continue to receive major attention. Over the period 2018 - 2030, Government will continue to provide adequate physical infrastructure to develop the fishing sector. Focus will be placed on rehabilitation and upgrade of fisheries complexes, procurement of fishers' equipment, development of mobile landing sites and development of new governance structures for fishers' organizations.

An aquaculture Programme will be implemented in which a model aquaculture farm will be established for training, field testing and demonstration purposes.

In the context of the Government's diversification thrust, greater attention will be placed on the expansion of the Apiculture sub-sector. The activities to be supported will include the rearing of bees, planting of flora, extraction and processing, hive technology, and packaging.

In respect of the livestock sub-sector attention will be given to the organization of a central livestock development center in Londonderry, bulk procurement of livestock housing

materials and supplies and the procurement and installation of livestock systems including appropriate feeding and watering systems.

Manufacturing

Government’s agenda for development and transformation of the Dominican economy includes continuation of several initiatives aimed at developing the Manufacturing Industry.

Table 3: GDP Manufacturing 2006-2016

Particulars	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<u>At Constant Prices (2006)</u>											
Manufacturing (EC\$ million)	43.62	41.86	36.75	35.78	35.26	33.19	35.05	36.20	33.74	30.53	24.12
% of GDP	4.9	4.5	3.7	3.7	3.6	3.3	3.6	3.7	3.3	3.0	2.3
Annual Growth in manufacturing%	5.36	-4.02	-12.23	-2.62	-1.46	-5.87	5.62	3.26	-6.80	-9.51	-21.00
Source: CSO Dominica											
* indicative of level of industrial growth											

These initiatives include infrastructure design and development, the continuance of financial support to the sector through the on lending of concessional funds to the AID Bank for lending to manufacturers, addressing challenges faced by the sector and the enhancement of the industrial estates and folks. The development of Eco-Industrial Parks will be pursued to attract businesses eager to reduce their carbon footprint.

The Invest Dominica Authority has partnered with the Dominica Manufacturing Association to enhance the visibility of the manufacturing and agro-processing sector, the output of which is a “National Strategy and Action Plan for the Expansion of Dominica’s Manufacturing Sector”. This Plan has proffered a number of recommendations for the stimulation and expansion of manufacturing after consideration of the needs and constraints of the sector.

General recommendations include:

- Zero rating for VAT purposes the importation of raw and packaging materials to be utilized in the manufacture of goods

- Support for annual increases in the production of manufactured goods via tax rebates
- Support for expenditure plant, machinery and equipment.
- Support to enhance profitability for investors investing in the manufacturing sector in order to increase capital flow (specifically the removal of taxes on dividends issued to shareholders)
- Support for research and development
- Support for Market research
- Support for the implementation of green technology and processes
- Extension of tax holiday
- Support for the development of industrial estates

Recommendations specific to market targeting include the development of a strategy to:

- facilitate industrial expansion by targeting specific markets, for example by maximizing the existing Caribbean Basin initiative learning from the experience of St. Kitts and Nevis
- access other markets through the development of Partial Scope Agreements or special arrangements to accede onto such agreements
- penetrate the markets of the French Antilles for finished goods and as a source for foreign direct investment into manufacturing.

Recommendations relating to specific support from bilateral partners via special arrangements:

- seek soft financing for the manufacturing sector.
- obtain technical support from bilateral partners further to the development of industrial estates and the transfer of technology.
- negotiate market access.

The Government through partnership with the Agricultural, Industrial and Development Bank will seek to enhance the industrial estate at Canefield. The vision would be to restore and upgrade the existing space to be a more commercially viable industrial and technological facility with academic research and development capabilities. The plan is to sectionalize the Estate to comprise four (4) zones when completed:

- A High Value Manufacturing Zone with technology-based specialized manufacturing;
- A Services Zone to provide technical support and maintenance;
- A Knowledge Based Zone comprising institutions engaged in research and development activities;

- A Warehousing Zone that provides storage capacity for export facilitation

The number of industrial sheds will be augmented, thereby removing all the inhibitors to the growth of the manufacturing and other light industry.

One particular Government project which will provide an added boost to the manufacturing sector is the installation of the coffee plant.

Agro-processing

One challenge faced by the agro-processing sub-sector is the difficulty of sourcing raw local materials on a consistent basis at reasonable prices. Government is aware that disasters can exacerbate the situation even further. Access to resources for bulk purchasing and storage, and exposure to innovative practices to mitigate risks of shortages posed by disasters is needed. Additionally, strengthened capacity through training and modernization of the sector (facilities and equipment) will enhance efficiency and competitiveness. To this end the Government will encourage initiative of manufacturers in partnering with producers or producer organizations. Another challenge facing the sector is the marketing and export of manufactured products. Arrangements to resolve this challenge through institutional and regulatory measures will include enhanced quality control, branding, marketing intelligence, and securing stable markets.

Tourism

Tourism has progressively become a key engine of growth and earner of foreign exchange for Dominica in addition to being an effective means of economic diversification from the traditional reliance on agriculture. In 2016, tourism arrivals were estimated at 366,000 visitors which contributed EC\$ 383M towards the Dominican economy. According to the World Bank PDNA report post hurricane Maria, "Since the economic slow-down of 2009, other sectors of the economy have remained stagnant, but tourism's growth jumped the sector from 15% of total GDP to 23.9% in 2016. In fact, the annual growth of the economy would have been 0.02%, but because of the 5.5% growth in tourism, the overall economy still managed to grind out a 1.1 percent growth rate."

The contribution of the tourism sector is spread throughout the various sectors of the economy and the sector's impact on employment is evidenced over the many services which are provided to visitors.

Table 4: Tourism Indicators 2006-2016

Particulars	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
GDP At Constant Prices (2006)											
Tourism (EC \$million)	18.28	18.29	18.58	17.82	17.92	18.91	19.50	20.24	22.71	21.18	18.47
% of GDP	2.1	2.0	1.9	1.8	1.8	1.9	2.0	2.0	2.2	2.1	1.8
Annual Tourist Arrivals (in thousands)	472.7	438.7	467.7	597.0	599.1	424.4	355.2	320.4	378.8	367.4	366.1
Annual Tourist Expenditure (in millions)	193.56	201.06	239.06	208.43	252.82	285.95	205.54	277.00	343.46	336.97	383.28
Source: Discover Dominica Authority, ECCB. Data based on contribution of hotel and restaurants.											

Given the significance of the sector, in recent years, Government has provided concessional financing through the Agricultural Industrial and Development Bank in support of hoteliers' aspiration of expanding and upgrading their hotels. There have also been Government-led investments in new hotel plants such as the Cabrits Resort and Spa and improved airlift through emphasis placed on improving the existing infrastructure and increasing the number of flights coming into Dominica. In the 2017/2018 Budget, Government began to crystallize its intention of developing the yachting sector. The goal is to create an enabling environment for yachting conducive to private sector investment and improving the efficiency and effectiveness of service providers and contractors in the yachting industry cluster.

The tourism sector will seek to further increase initiatives till 2030 to promote development and transformation of the economy through the continuance of its thrust of promoting the local tourism industry spearheaded by Ministry of Tourism and Culture in collaboration with the Discover Dominica Authority (DDA). The Ministry of Tourism & Culture also understands the significance of Climate Resiliency in developing a Sustainable Tourism product and is committed to developing a Climate Resilient Sustainable Tourism Policy. This policy will guide the programmes and projects to be implemented by the Ministry of Tourism & Culture in the future.

Existing Policy Framework

The National Tourism Policy 2020 and Tourism Master Plan 2012-2022 have served as guidelines for the Ministry of Tourism over the last few years. The Master Plan makes recommendations for all aspects of Tourism Development to include infrastructure development, site enhancement, marketing, and product development. The Tourism Policy and Tourism Master Plan were expected to both inform, and form the basis for the tourism section of future iterations of the NRDS, providing information on the policies which should guide the tourism sector over the medium term, and its development as one of the mainstays of the national economy (including its linkages to other economic sectors).

These policy documents make reference to Environment and Planning Policy in the development of the Tourism Sector. The guiding principles include the following:

- 1) maintain and enhance Dominica's pristine environment;
- 2) tourism policies, programmes and standards to conform with the principles and directions required of the tourism sector arising from 'Green Globe and/or other certification programme

The main objective of Government policy is therefore to promote sustainable tourism development through the protection, conservation and development of the natural environment within its carrying capacity. This will be achieved through:

1. Implementation of land use policies that protect Dominica's environment, important vistas, scenic corridors and the authentic feel of the destination;
2. Development and implementation of mechanisms to determine the carrying capacity and economic valuation of the natural resource base, sites and supporting infrastructure;
3. Formulation of appropriate legislation, regulatory framework and incentives to support an optimal level of development;
4. Collaboration between the PPD and other relevant agencies to promote the designation of specific areas, including conservation areas, for the development of tourism;
5. Development of scenic vista protection policies for coastline routes;
6. Enforcement of relevant legislation and regulations that are already on the statute books regarding environmental issues such as coastal erosion, pollution of rivers and beaches, agricultural practices, mining, waste disposal, sewage, habitat depletion;
7. Establishment of an Environmental Protection Agency, incorporating the existing Environmental Coordinating Unit, with powers of enforcement of environmental legislation and regulations;

8. Coordination of the maintenance, development and management of the national parks, nature sites and trails by a new National Parks Service; and
9. Encouragement of wider participation in Green Globe, Earth Check and similar certification programmes;

While these policies speak to the preservation of the natural environment, no significant mention is made of climate resilient policies which will guide tourism development, particularly as it relates to energy efficiency, resilient infrastructure, and disaster preparedness.

Climate Resiliency and Tourism Development

Tourism is increasingly impacted by climate change with the Caribbean being extremely vulnerable to climate change due to low lying coastal areas that are particularly vulnerable to variable climate and weather patterns. The tourism sector is vulnerable to climate change arising from three major impacts: increased air and sea surface temperatures; sea level rise; and increased frequency and severity of storms.

Hurricane Maria temporarily wiped out many coastal and marine and eco-tourism sites. High winds, flooding, and sea swells impacted tourism based businesses along coastal areas, along rivers, and in the forest reserves, placing this productive sector on a temporary standstill.

The short-term focus will be on addressing the damages and losses sustained by the sector as a result of the passage of Hurricane Maria. The PDNA revealed that the tourism industry was dealt a severe blow with damages amounting to EC\$ 54 million, and losses of EC\$ 191 million. The hardest hit area by Hurricane Maria being the hotel room stock. According to this report thirty four per cent (34%) i.e. 308 rooms were slightly to moderately damaged and could be restored within the year; while thirty nine percent i.e. 358 rooms were considered severely damaged, and not expected to be back within a year. In this regard, Government will provide the necessary financing and incentives to facilitate rehabilitation and reconstruction of affected hotel facilities.

In the planning horizon of this NRDS, immediate focus will be given to the restoration of tourist sites and attractions⁶ to even a higher standard than what existed pre-Hurricane

⁶ *Additionally, damage to sites and attractions include debris along trails, damage to reception facilities and access roads to sites, loss of water and electricity at main sites among other damages. The cost of the damage to sites and attractions is over EC \$4 million. These works will be grounded*

Maria so that visitors whether local or foreign feel intrigued and satisfied. Moreover, this would facilitate a speedy restoration of the industry in an effort to re-establish livelihoods to generate much needed economic activity.

Further, the Ministry of Tourism will also seek to create linkages with other sectors of the economy to stimulate avenues for employment and revenue generation opportunities. In this regard, the Ministry of Tourism and Culture will heighten awareness of the potential of tourism and promote increased tourism awareness through various initiatives that will continue to be rolled-out until 2030.

These include:

- closely monitoring the performance and integrity of natural sites
- maintenance of sites and attractions to meet international standards
- safety and security of tourists when visiting sites and attractions
- service delivery and industry development
- integrating communities through heritage and various cultural experiences
- assistance to primary and secondary stakeholders with the maintenance and development of their facilities and/or improved provision of services.

The Government will retain a leading role in the tourism sector through infrastructure development and direct promotion through direct budget support to the Discover Dominica Authority.

Key tourism related infrastructure investments are spread throughout 2018 to 2030. They include the Urban Renewal project, Yachting Development in addition to the traditional investment in tourism site enhancement and community tourism. It also includes infrastructural works at the Douglas-Charles Airport. Feasibility studies will be undertaken to ascertain the best options, port wise, for cruise shipping that is whether rehabilitation or new construction will be considered.

The level of its public financing for tourism promotion (ECD\$1 million per year) falls way below that of other countries in the region. Hence, the Government seeks to progressively increase its market promotion budget, thereby increasing its share of the region's tourist market.

in the Ministry's comprehensive site rehabilitation plan which outlines all damage to sites, actions to be taken to restore the sites.

Simpson and Ladle (2007) presented a “Selection of Indicators for Sustainable Tourism Destinations in the Caribbean Relating to Climate Change” as follows:

- Develop National standards for the construction of new buildings to be set-back from the shoreline;
- A climate change risk assessment for tourism industry should be completed;
- An assessment of destination’s adaptive capacity to climate change should be completed;
- Develop and use a system to measure and monitor carbon emissions in destination;
- Target and document the percentage of energy consumed in the destination from renewable sources;
- Monitor the percentage of beaches where erosion occurs at least annually;
- Monitor the percentage of coastline with visible signs of erosion;
- Develop and employ effective erosion protection measures in place in vulnerable areas;

The aforementioned are some initiatives which will be considered in the development of a strategy for climate resilience in the Tourism sector. These indicators will serve to inform guidelines to be developed for the sector. The following broad strategies are put forward by the Ministry:

Policy Development

- Review of Tourism Policy and Tourism Master Plan to support the Climate Resiliency vision for Dominica. The Ministry of Tourism & Culture is cognizant of the need to develop a more comprehensive Climate Resilient Sustainable Tourism Policy and Action Plan. A number of key initiatives for further consideration have already been outlined and will be developed further upon research and guidance from Climate Change experts and the Ministry of Planning and Economic Development.
- Review and update certification requirements for actors in the industry to reflect risk management and climate smart policies;

Development of Resilient Institutions and Services

- Development of new codes/standards for building of Tourism facilities and other infrastructure;
- Development of Coastal and Marine Tourism Policy to include guidelines for beach development, jetty construction, and dive operations;
- Integration of water conservation/storage, renewable energy and energy efficiency solutions at all Tourism Sites;

- Partner with Ministry of Agriculture and Fisheries and other relevant agencies to protect and restore marine and forest reserves and tackle issues such as beachfront erosion, bleaching of coral reefs, and protection of soil cover;
- Work with the Solid Waste Department and DOWASCO to effectively manage solid and liquid waste, minimizing run offs, and promoting recycling initiatives;
- Incorporate disaster risk management mechanisms in tourism related facilities based on risk assessments and assessment of destination's adaptive capacity;

Product Development

- Product Diversification - Promotion of Voluntourism, Cuisine Tourism, Heritage Tourism and other niche tourism products which are less dependent on natural resources which are vulnerable to climate change;
- Work with Stakeholders (hotels, restaurants, other tourism service providers) to integrate climate resilient solutions into development of infrastructure and general operations;
- Work with communities to implement Community Tourism Disaster Preparedness and evacuation planning;
- Efficient water usage in tourism facilities (hotels and resorts);
- Training in Disaster Risk management for stakeholders;
- Integrate Risk Management/Comprehensive Insurance coverage into certification for Accommodation/Tourism Service Providers;
- Encourage sustainable, biodegradable or recyclable material consumption at point of sales, hotels and restaurants;

Marketing

- Develop marketing strategy which promotes sustainable tourism
- Develop marketing programmes to support the diversification strategy
- Hold consultations with Public and Private Sector partners

Infrastructure

- Partner with Ports to develop strategy for resilient infrastructure for Air and Sea Ports to stabilize access to the island.
- Partner with Public Works to promote and implement resilient civil works across the island (roads, coastal and river defenses, etc.)
- Enhanced building designs and codes for Hotel plants, reception facilities and other buildings

Financing

- Integration of climate resiliency criteria in project financing and lending facilities

Institutional Strengthening

- Assignment of Climate Change/Sustainable Tourism Focal point within the Ministry of Tourism and Culture
- Capacity building on Climate Resiliency and Disaster Preparedness for Tourism staff and industry stakeholders

Air Access

Government recognizes the necessity of having an international airport but is cognizant of the cost of construction and the burden it will place on future generations if it is to be built through loans. Therefore, Government will continue to explore options for financing that limits the debt burden on the state.

Micro and Small -business

The Ministry of Commerce, Enterprise and Small Business Development is tasked with the vision of being the key driver fuelling resilient businesses and economic transformation and a mission to create an enabling environment that supports, strengthens and promotes business development activities that adapt to climatic changes and recover from adverse climatic events.

The Government of Dominica recognizes the importance of the Micro, Small and Medium Enterprise Sector as a vibrant contributor to the economic and social transformation of Dominica and in this regard has demonstrated strong leadership and commitment in supporting the development and expansion of micro and small businesses. Measures have been taken to promote orderly development of the micro, small and medium enterprises (MSMEs) which constitute a significant percentage of all enterprises and accounts for a reasonable proportion of the employment in the private sector.

The sector provides meaningful employment, skills transfer, wealth creation and diverse opportunities for the people of Dominica to participate in national development. Hence as the Government defines and constructs the Climate Resilience Development Pathway the following objectives will be given attention:

- To support and contribute to Dominica's overall socio-economic development, and its efforts at poverty reduction, employment creation and increasing competitiveness
- Strengthening the domestic enabling environment for entrepreneurship and the development of micro and small businesses that are resilient to climatic changes and adverse/negative events including natural and man-made disasters.

- To amend and enforce existing policy measures and introduce new measures for increased growth and competitiveness of MSMEs in an environment which is vulnerable to climatic changes and natural and man-made disasters.
- To strengthen and increase the effectiveness of Business Support Services for start-ups and existing MSMEs to guide, counsel and advise to build resilient MSMEs.
- Strengthening the national framework for the Implementation and Management of the MSME policies and related programmes for sustainability even through adverse climatic events.

Mindful of the above objectives, the following key areas need to be given due consideration for the resilience of the MSME sector:

Increase support to small and micro businesses by significantly increasing the quantum of resources available for on-lending

- Access to finance from lending institution need to make provision for MSME to access a targeted pool of funds for recovery and rebuilding after a major climatic event, natural or man-made disasters.
- Automatic waiver of payment of loans for an initial period of at least 3 months from the date of occurrence of the climatic event.
- Implementation of Small Business Development Centre (SBDC) as a mechanism for business support services for increasing capacity and the know-how for delivery more effective support to MSMEs. This will facilitate greater coordination and collaboration that will help counteract external effects and stimulate competition in the market place.
- Education and Training systems for building resilience of our MSMEs for supporting entrepreneurial and MSME activity.
- Give priority attention to Women and Youth since they constitute a great proportion of MSMEs. More so they are the nurturer of the family and more likely to be the stabilizers of the family in times of climatic adverse events and disasters.
- Enforcement and adherence of building codes when building premises for MSMEs safety and security of businesses. Inclusion of a safe haven for pre-and post-disaster shelter/storehouse.
- Promotion of use of renewable energy (solar heater, solar lights, geothermal) for power generation for electricity pre-and post-disaster.
- Encouraging, through incentive, purchase of insurance for property and stock for MSME's ability to recover from disaster much easier and with a sure source of finance for rebuilding.

- Promoting and supporting green enterprise, that is those involve in recycling waste, water resource management, water harvesting for storage for use in time of climatic changes and disasters.
- Greater emphasis on clustering Micro and Small Business to benefit from wider pool of resources and best practices through networking to promote environmental upkeep and natural resource management
- Research and Development to stimulate innovation for creating new technologies for business development and growth.
- Alliances and networking for sharing of information, adoption of best practices, transfer of knowledge relevant to improved technologies, innovation and entrepreneurship and increased competitiveness in a world of global warming.

All of the key areas must take into consideration the Ministry's portfolio; namely:

- Industries
- Factories
- Industrial Development
- Manufacturing - Agro processing
- Small Business Development
- Enterprise Development
- Private Sector Relations
- Rural Development

The Ministry of Commerce, Enterprise and Small Business Development is developing an MSME Policy with support from the Organization of American States (OAS) and the issue of disaster preparedness, climate change concepts and resilience of that sector to recover and rebuild following climatic events and/or natural disasters will be integrated in this policy and legislative framework.

The Ministry will focus on the provision of training, technical assistance; small business grant assistance and development/establishment of Rural Business Enterprise Centers around the island that will result in businesses that are robust to withstand any climatic changes and adverse climatic event.

Its Rural Enterprise business incubation programme will factor climate resilience elements in its skills training, business ethics and financial support to groups in rural communities preparing them to launch businesses that are ready to withstand any adverse climatic event.

As it relates to Public/Private sector development in the context of a Climate Resilience Development Pathway, the Ministry will work collaboratively with groups such as

Dominica Association of Industry and Commerce (DAIC); Dominica Coalition of Services Industries (DCSI); Dominica Herbal Business Association (DHBA); Dominica Manufacturers Association (DMA) and Dominica Business Forum (DBF) to facilitate and enable them to incorporate Government's Climate Resilience thrust in their business development and growth.

On a project basis, the following capital projects will form part of the Government's public investment portfolio in the short to medium term:

1. Small Business Enterprise development Project which has the following components:
 - Training – capacity building of Micro and Small Businesses
 - Grant – financial support
 - Sundry – direct purchase for support to urgent micro businesses
2. Rural Business Enterprise Centers which entails the provision of training and the procurement of supplies, materials and sundries
3. Support to the Manufacturing Sector
Government will continue its sustained support to the sector through its support to institutions such as the National Development Foundation of Dominica and the Dominica Youth Business Trust.
4. Entrepreneurship Programme - To further advance a spirit of entrepreneurship, Government will evaluate the current entrepreneurship programme with a view to improve its effectiveness and appeal. Government will identify individual businesses with potential for growth and expansion, employment creation, and export orientation to the local, regional and international markets. A regional development approach based on endowment and current utilisation of local resources will help inform the identification and investment process. Ownership and management structures will be modernized to reflect global supply chain models.

Technological Advancement

The Government will continue to promote research and development in the areas of Science and Technology. This initiative attempts to move the economy to the next level by promoting innovation and diversification through its projects and programmes with the Ministry of Information, Science, Telecommunications and Technology being the lead implementing entity.

During the planning horizon of this NRDS, the Government will continue with one of its milestone projects - The Information, Communication and Telecommunication (ICT) Center of Excellence - with full completion including outfitting expected by the fiscal year 2020.

The Government will also encourage technological advancement through new initiatives. This will include a Science and Technology Festival which would be an inception programme designed to create public awareness of the contributions of science and technology to the lives of the people. The aims of this Festival would be to (i) inspire innovative thinking and (ii) provide an understanding of the scientific achievement over the lifetime of mankind.

In addition, the Government will ascertain the practicality of developing Young Inventors Award programme comprising three (3) components:

- The Prime Minister's Award for Scientific Ingenuity
- Summer Camps for School Children focused on invention skills, apps building, small tools and equipment assembling, engineering education, natural science and mathematics education.
- Outreach Programmes for Schools and Communities to feature scientific clubs, workshops and portable exhibits

As a prerequisite for this programme, government in conjunction with donor support and technical assistance will conduct a survey on the level of innovation in the country.

Incentives will be provided to companies for the purpose of engaging in research and development activities. These are expected to stimulate innovative potential that would transform ideas into new commercially viable products and services or add value to existing ones, leading to job creation as the products are successfully marketed hence positioning Dominica to achieve and sustain international competitiveness.

Industrial Development

In an effort to develop the productive enterprises of Dominica, initiatives geared towards industrial development needs to be seriously addressed in the medium term. It is well accepted in economics that economic transformation is facilitated and expedited through a dynamic manufacturing and generally an industrial sector. Government will continue to create the enabling environment through the provision and enactment of appropriate legislations, policies and institutions. The feasibility study for the establishment of a Green Industrial Park (GIP) with funding from the Green Climate Fund (GCF) will be pursued. Within the policy context of the first resilient nation, government will invite and seek to attract industrial investors seeking to reduce their carbon foot print.

Productivity Enhancement

The Government is cognizant that productivity enhancement is vital for successful enterprise development. To this end, the Government will augment existing programmes

which seeks to build on the skill set of the workforce in order that its full productivity potential is realized.

These include:

- An expansion of the Apprenticeship Programme
- Further investments in skills training programmes including technical and vocational education and training (TVET)
- Reorientation of the National Employment Programme to ensure more effective utilization of the person engaged under such programmes

The Blue Economy

According to Economic Commission for Latin America and the Caribbean (ECLAC), “if effectively protected, managed and utilized, the Caribbean’s coastal and marine resources can potentially provide a sizeable resource base through which the region can realize sustained and sustainable economic growth. New and emerging blue economy growth industries (namely aquaculture, carbon sequestration, marine biotechnology, deep seabed mining, and ocean renewable energy) can profoundly transform the traditional ocean-based productive sectors found in the Caribbean (i.e. fishing, coastal tourism, offshore oil and gas exploration, and marine transport) while enhancing food security, promoting environmental conservation and mainstreaming integrated coastal/ocean management.”

Dominica’s ocean is fundamental to the livelihoods and overall wellbeing of its people. At the primary level it provides seafood, employment and health and recreation for large number of communities and people. It is a shipping root that facilitates trade and connects countries and communities throughout the Caribbean and the World. Additionally the ocean is beginning to host a number of emerging industries, such as offshore wind, tidal and wave energy, aquaculture, seabed mining and marine biotechnology. Some of these industries are quite visible providing renewable energy, fish protein and medicine. Government will explore all opportunities available within the blue economy for economic development and transformation. Dominica’s ocean already drives the country’s tourism, trading and fisheries sectors.

Overview of the Fisheries Sector

The sector is primarily made up of fishers who operate small, open vessels, such as canoes, keels or pirogues (fiberglass-reinforced plastic (FRP)) for short trips lasting a few hours. These are the primary producers. Fisheries groups and organizations, boat builders, gear manufacturers, vendors and marine engine mechanics depend on and provide support to the fishers. Imports and exports of fish products are insignificant in Dominica.

A number of marine species are landed, belonging to three distinct commercial fisheries: coastal pelagic, offshore pelagic and demersal. The coastal pelagic fishery occurs within five miles from the shore and involves smaller and sometimes less mobile vessels (traditionally, canoes propelled by small outboard engines or oars) which use nets to land fish such as ballyhoo (*Hemiramphus brasiliensis*), jacks (*Carangidae*) or mackerels (*Scombridae*). Keels and more recently FRPs dominate the offshore pelagic fishery. Boats in this fishery can venture to a reported 80 miles from shore, utilizing hook and line type gear, oftentimes in combination with Fish Aggregating Devices (FADs). This fishery lands larger pelagic, including dolphin fish (*Coryphaena hippurus*), yellowfin tuna (*Thunnus albacares*) and blue marlin (*Makaira nigricans*). The demersal fishery makes use of all the types of vessels mentioned, however, fish pots or specialized line gear is used to target snappers (*Etelis* and *Lutjanus*), groupers (*Epinephelus* and *Mycteroperca*) or other reef and benthic species (Theophille, 2012).

An estimated 1000 tons of fish is landed annually by the small fleet scattered among the coastal communities. The offshore pelagic fishery dominates the sector. Dolphin fish and yellowfin tuna continue to be the most common species recorded in the landings statistics. Annually, dolphin fish is the predominant species landed in the first half of the calendar year, while yellowfin tuna dominates the second half. This trend has remained relatively constant over many years. It is noteworthy, though, that landings for flying fish (*Exocoetidae*), a traditionally important species, have declined considerably over the last two decades (Theophille, 2016) and this may be related to changes in oceanographic conditions as well as changes in targeting strategy.

Climate Resilience in the Fisheries Sector

The Dominican fishing industry is particularly vulnerable to hydro meteorological hazards⁷, the frequency and magnitude of which are associated with climate change. The impacts of these events threaten the long-term sustainability of the sector (Government of Dominica, 2012). The Government (through the Fisheries Division) is cognizant of the potential negative consequences of climate change and seeks to address these concerns in the medium to long-term.

Climate change impacts the marine space in many ways, but more broadly, this can include:

1. increases in sea surface temperatures;
2. sea level rise; and
3. shifting ocean currents.

⁷ This includes flash flooding, hurricanes, droughts, high energy waves and storm surges.

These changes to the marine environment can, by extension, affect the fisheries sector negatively and pose a significant potential threat to livelihoods and the food security of rural fishing communities and Dominica as a whole. The coastal reef and inshore pelagic fishery are particularly vulnerable to sedimentation due to runoff generated by intense precipitation associated with storm events and sometimes instigated or worsened by human activity.

In this regard, during the planning horizon Government endeavours to enhance the adaptive capacity of the fisheries sector through the introduction of improved fishing technology, land-based operations and promoting practices that will reduce vulnerability, mitigate against and build resilience to the effects of climate change on the fisheries sector.

To make Dominica’s fisheries sector ‘climate-smart’ requires (a) supporting the local and national sources of fisheries innovation and adaptive capacity, (b) promoting long-term social-ecological sustainability of coastal ecosystems and human communities through integrated risk management; (c) identifying sustainable sources of disaster relief funding; and (d) providing resilient infrastructure for protection of fishing vessels and the safe storage of fish. The components of climate-smart fisheries are discussed in detail below.

MAIN PILLARS OF ADAPTATION FOR RESILIENCE

The main pillars are:

Pillar 1: Sustainable development and diversification strategy

For existing fisheries, the strategy will consider the value chain of main products and fisheries step-by-step, and encourage the use of improved and more efficient fishing techniques and better post-harvest handling practices; the strategy will support fishers in identifying a more diverse range of markets, and meeting the requirements of these markets. The Fisheries Division will work to identify new fishing opportunities and support fishers in developing them, as well as identifying potential vulnerabilities.

1.1	Sustainable fisheries development and diversification
1.2	Sustainable aquaculture development
1.3	Protecting food security
1.4	Monitoring, research and data

Pillar 2: Sustainable Fishing Communities and Livelihoods Strategy

The government will develop an equitable and enforceable management plan that will include protection of access to resources for existing and especially vulnerable fishers and fish farmers (which could be incorporated into the management plan(s) foreseen as part of Strategy 3 - see 3.1 and 3.2 below). The plan will consider possible future situations in relation to development of or changes in the sector, and put systems in place so that they are available to be implemented when needed. The plan will be developed via consultation with stakeholders, fishers, fish farmers and fishing communities.

2.1	Safeguarding the vulnerable in the fishing industry
2.2	Introducing social safety nets
2.3	Adaption, recovery and resilience to natural disasters
2.4	Developing skills
2.5	Training and guiding new entrants
2.6	Community outreach programmes

Pillar 3: Sustainable Resource Management Strategy

The overall strategy for these fisheries is to maintain them as a 'reserve' in the event of significant environment-driven change in the offshore fishery. This will be achieved via effort reduction as required, along with marine inshore habitat protection.

3.1	Sustainable inshore fisheries
3.2	Sustainable offshore fisheries
3.3	Integrated coastal zone management and protection of marine inshore habitats
3.4	Climate change adaptation

Pillar 4: Governance and Institutional Development Strategy

The Government of Dominica is party to the Ocean Governance framework, with the Fisheries Division of the Ministry of Agriculture being the focal point.

The overall aim of the strategy is to support the implementation of ECROP (Eastern Caribbean Regional Ocean Policy) by proposing the means to create a more integrated, better-funded, more efficient and useful framework for marine research in the OECS region.

Whilst acknowledging the importance to pursue efforts within the different marine and maritime research disciplines, the focus of the Strategy is on improving interactions between marine research actors generally rather than specifically addressing well established research sectors.

The strategy will propose concrete measures and mechanisms to improve the efficiency and excellence of marine and maritime research in order to address the challenges and opportunities presented by the oceans and seas. A purely sectoral and thematic approach to research is no longer sufficient.

Organizations such as the OECS Commission can play a role in fostering joint efforts between the marine and maritime research communities which extend beyond specific sectors and beyond national boundaries. A more effective integration and pooling of knowledge and resources, along with a partnership sustainable over the long term, will form the basis for a concerted definition of research needs and priorities.

4.1	Fisheries Division governance and capacity
4.2	Capacity building in fisherfolk organizations
4.3	Integrated and coherent regulatory framework for fisheries and aquaculture
4.4	Conflicts over EEZ resolved
4.5	Control established over EEZ, illegal activity reduced or eliminated
4.6	Foreign fishing access
4.7	Cooperation with regional and international partners within framework of relevant regional agreements and UN fisheries treaties

In the short -term the Government will address two main areas of immediate concern facing the sector:

- i. Risk management – including insurance for fishers; and
- ii. sustainable coral reef ecosystem management

CREATIVE INDUSTRIES

The development of the Creative Industries including music, film and fashion is seen as one modality of a diversification strategy towards economic development and transformation. Government has given support to the music industry through financial assistance. Further financial support is envisaged for the promotion of music industry at events, conferences, trade shows and festivals such as the World Creole Music Festivals and other existing and new festivals. Music industry development and support activities would also encompass certification, intellectual property seminars and capacity building of music sector associations and training schools.

Support will be given including financial to promote Dominica's film industry with emphasis on feature film programmes, film familiarization tours, provision of film incentives, hosting of film festivals. Investment in the film industry is expected to assist in the diversification of the local economy and society by creating new employment and investment opportunities.

During the planning horizon, activities designed to promote and nurture the fashion industry will be undertaken including research, stakeholder consultation and preparation of a strategic plan for development of the sector. It is posited that a successful fashion industry can contribute to the realization of the potential for revenue generation, employment creation and foreign exchange earnings.

Trade and Trade Competitiveness

Linking production to consumption or producers to consumers, trade is a powerful and important catalyst for socio-economic development, hence trade is among one of Government's top priorities.

Trade promotion activities will continue over the medium term to conduct market surveys for identifying potential export markets, supporting local enterprises in mounting trade missions/fairs and trade shows and strengthening the trade institutional infrastructure by removing technical barriers to trade.

Export Dominica will be the main vehicle for the export of Dominican products. This entity will focus on export facilitation and will be required to plan and execute its work in close collaboration with the Ministry of Agriculture, manufacturers, producers and other enterprises with the potential to export making effective use of the national export strategy.

Opportunities for trade with neighbouring countries and others have improved but are not being adequately availed of to create demand for, and to export, goods and services using the competitive advantages of the country.

The need to be competitive has been inevitable as a result of the gradual removal of barriers to trade regionally and internationally. Yet, Government is cognizant of the growing need for competitiveness for the survival of its economy and citizenry. The Division of Trade will continue the drafting and formal approval of an enabling trade policy which articulates Dominica's commitment to open trade particularly in the areas of clean energy and energy efficient technologies. It also endeavours to collaborate, if necessary, with OECS and CARICOM to engage bi-lateral trade arrangements with countries which manufacture clean energy goods.

In the short to medium term, it must be a prevailing reality that the productive economic sectors as well as services are oriented to compete in a global economic space. To this end, the Dominica Bureau of Standards and the Customs and Excise Division will work collaboratively to ensure trade facilitation in high quality products including building materials, in an effort secure lives, livelihoods and infrastructure.

Through the three previous versions of the GSPS, Government undertook a number of structural reforms to substantially improve the quality and efficiency of public service delivery, as well as to create an enabling investment climate. These include among others:

- Improvement to trade facilitation by a number of reform measures at the Customs and Excise Division including the introduction on the software ASYCUDA World;
- Addressing Land Tenure and Administration;
- Improvement to public finances including the passage of Procurement Legislation;
- Participation in the Regional Electronic Government for Regional Integration Project (EGRIP).

Government will solicit financial and technical assistance from regional and international partners and donors to undertake projects which enable businesses to become more competitive in Dominica. This support is expected to lead to the transition towards a modern and sustainable economy.

Additionally, over the long term, Government will earnestly set up special mechanisms on the legal front to assist the private sector to improve competitiveness. Steps will be taken to reduce the "transaction costs" of doing business and would include the following: Reduction in the processing time for company registration, application for work permits and import/export permits & licenses.

INFRASTRUCTURE

Prior to the passage of Hurricane Maria, Dominica was on track to (i) establishing a relatively well developed road network and (ii) rehabilitation of its ports despite budgetary constraints and implementation capacity issues. Access to electricity and potable water was relatively high. Telecommunications and internet use expanded, though the costs of the former have to come down quite drastically to promote competitiveness in business and affordable access to the citizenry at large.

In respect of road transport particularly, Government was making headway towards the attainment of the goals set for this sector as embodied in its *10-year Road Sector Plan*.

According to this plan by 2020, the following goals are articulated:

- Increase to 100% the number of main roads in good condition; and
- Increase to 100% the number of secondary roads in good condition

Within the historical context prior to the Hurricane Maria, the PDNA report (page 92) states that “primary and secondary roads are 99 percent paved...” while “feeder roads and urban/community roads are 64 percent paved”. The Assessment also mentioned that climate resilience components were being implemented in respect of the design and implementation of projects with 22 percent of primary and secondary roads being improved in recent times to resilient standards while feeder roads and urban/community roads constituted 13 percent (PDNA, p. 92)

Given the extensive damage sustained as a result of the passage of Hurricane Maria, in the new planning horizon Government will place heavy emphasis on rehabilitation and reconstruction of its physical infrastructure network (roads, bridges, telecommunications and water and sanitation facilities) to support economic growth. Within the context of climate resilience, the Ministry of Public Works, Water Resource Management and Ports is expected to design and execute a programme of national infrastructure investments informed by environmental characteristics and circumstances that are responsive; and to develop and manage port facilities that are resistant to natural disasters in order that trade and people travel will not be severely impeded after a climatic event.

Government will also continue its relatively new thrust of placing greater emphasis on regional diversification of its infrastructure investments, both social and economic, to limit urban migration; revitalize agricultural production; stimulate business investments and to create better economic and social opportunities. This is shown in the encapsulation of rural-specific interventions in the public sector investment programme such as the smart

rural centers, rural business enterprise centers and rural-based water and sanitation systems, housing and more.

Transport

Dominica's terrain makes road construction challenging. Hurricane Maria caused unprecedented flooding in several areas caused by swollen rivers and very high sea swells. The high volume of rainfall associated with this storm and others previously impacting Dominica continues to negatively affect the country's road infrastructure. Additionally, the vulnerability to flooding has been exacerbated owing to the high levels of siltation and debris which still remain especially in the higher regions of the country's water courses and, with every rainfall event, are carried by the high water flow and deposited in the lower regions blocking bridges, culverts and other drainage structures. Side slopes along the roads have been left bare and vulnerable and continue to slip when saturated. All these compound the challenges of road construction.

Developing the road infrastructure to be more climate change resilient adds to that challenge. Therefore, special strategies will be employed and *Road Standards* will be revised and adapted to incorporate the possible negative impacts of climate change. For these two approaches, careful attention will be placed on the following:

- Planning and Design;
- Location of infrastructure and re-alignment of roads;
- Slope stability
- Drainage; and
- Road maintenance

Planning and design of the road network as well as general infrastructure must consider the realities of climate change and the possible future negative impact on these structures. This necessitates vulnerability assessments and mapping. Guided by this assessment and revised road standards, existing roads will be upgraded.

The upgrading of existing roads will include *realignment* to safer more stable ground. Roads will be located where their exposure to risks such as flooding and land slippage is minimized. However, the rugged terrain limits the extent to which this can be done. Therefore other mitigation measures will be necessary, for example, construction of additional retaining structures.

Improvement of slope stability by adjusting side slopes, benching of embankments, introduction of retaining structures and other suitable technologies is critical for climate change adaptation. The use of green engineering (planting of trees) and other vegetation along the slope will be encouraged.

Also of great importance and absolutely necessary is *Adequate Drainage* along and through the roadways. This will be achieved through construction of drainage structures which will facilitate increased hydraulic capacity and be scour resistant. The use of cut off ditches, debris traps and deflectors will have to be introduced. Consideration will be given to the building of permeable roads.

These new approaches must be complemented by regular road maintenance. This has proven to be the most effective way of reducing the impact of the changing climate on the road system. Therefore, greater attention should be given to the regular clearing of drainage structures and timely repair of broken pavements to reduce the possibility of damage to the road infrastructure during extreme weather events.

In the short-term, Government's agenda for the road sector is two-pronged as articulated in the Post-Disaster Needs Assessment Report (p.94). The first prong is the restoration of key road routes and assets affected by the passage of Hurricane Maria "to safe operation and sufficient capacity to withstand normal weather events". The second prong being the preparation of recovery programs for the medium and long-term framed around disaster risk reduction and building resilience in the sector.

Air and Sea Ports

The air and sea ports of Dominica serve as the main point for travel and cargo trade in and out of the country. In the short term, Government's priorities in respect of its air and sea ports will be driven by the urgent need to repair the infrastructure which was severely compromised after the passage of Hurricane Maria. This includes (i) repair to the cruise-ship berth and ferry terminal in Roseau; the deep-water cargo port at Woodbridge Bay inclusive of cargo sheds and the Canefield Airport terminal and the (ii) acquisition of equipment for the Douglas Charles Airport.

In the medium to long-term Government will commission a study of the adequacy of the existing port infrastructure in respect of traffic flow and international standards, the outcome of which will be proposals for the enhancement and strengthening or new construction.

Communications

In recent years in particular, significant strides have been made in the telecommunication sector by private telecommunication providers and the Government's own ICT infrastructure. Reliable telecommunications are deemed to be an essential service for many sectors of the Dominican economy. A case in point is the operation of call centers such as

the Clear Harbor telephone call center which provides employment to a very reasonable number of persons⁸.

The PDNA (pg.112) notes that “Hurricane Maria resulted in extensive and widespread damages to the private telecommunications network and public ICT resources” which hampered communication – both within and outside Dominica.

Efforts over the short to long-term will focus on the restoration of telecommunication capabilities.

In a private sector sense, this involves the redesign of the network of the two telecommunications providers and replacement of old technologies where feasible. In a public sector sense, this entails Government rebuilding and upgrading its server and network infrastructure. Government will also seek to replace hardware and strengthen its ICT institutions. However, on a long term basis, Government will devise a plan for the operation and maintenance of its network, inclusive of the replacement of equipment, training of trainers and activation procedures for its telecommunication network in case of emergency where feasible.

HUMAN SERVICES

Government will continue to promote and strengthen the Services industry using the ground work undertaken by and the expertise of the Dominica Coalition of Services Industries.

The Coalition will continue to undertake educational/promotional activities related to the services sector, build capacity among its membership, host trade missions, encourage the adoption of international operating standards within the services industry, and develop business for the sector with the goal of increased exports generated by the industry.

Another necessary aspect of the development thrust is having the requisite investments in housing, health, education, real estate and financial services.

Housing

Over the past two decades, the government has steadfastly pursued one of its obligations under its social contract with the citizenry in terms of increasing and improving the housing stock as evidenced by the construction of housing schemes and the housing renovation and sanitation programme.

⁸ Clear Harbour telephone call center had 850 employees as at April 2017

The passage of Hurricane Maria has decimated the substantial gains which were realized in the housing sector. According to the PDNA (page 79.), the housing sector was the most affected with total damage estimated at EC\$955 million, fully affecting the private sector and losses are estimated at EC\$77 million, and predominantly affect the private sector.

Over the planning horizon of the NRDS, Government's plan for the recovery and rebuilding of the housing sector will be rolled out and includes (i) the construction of disaster-resistant homes, (ii) repair and rebuilding of schools, clinics, hospitals and homes in a climate-resilient way in compliance with disaster-resistant construction guidelines.

The Government will choose the most appropriate option for its housing reconstruction efforts which include; (i) a cash approach, (ii) owner-driven reconstruction, (iii) community-driven reconstruction, and (iv) agency-driven reconstruction.

Given the increased risks of several households to hazards and social vulnerability, Government commits to the policy on the resettlement of communities to minimize risk to disasters and improve the living conditions of some of our households.

Endeavours will be made to garner the necessary financial support and technical assistance (inclusive of specialized engineering).

The Government has already undertaken essential steps in respect of disaster risk reduction and building resilience in the housing sector with the revision of its building code with requisite training provided to raise awareness of the techniques for making houses disaster resilient. The Government will firmly enforce the building code for the overall protection of homeowners and the citizenry by extension.

In the medium term, the development of the housing sector will integrate planning for natural disasters. This would be contingent on the development of a risk-based approach and modification of the national land use policy. Modification of the latter to incorporate zone plans for high-risk areas for housing development. It may also require the compulsory relocation of communities most at risk in the event of extremely adverse weather conditions because of their extreme vulnerabilities to floods and land slippages.

In addition to its social sector initiative, in the long-term there is need for the Government to undertake a major review of its housing programs and craft a new National Shelter Sector Strategy Report. The proposed strategy will focus on improving the housing finance system; initiating reforms to facilitate the flow of financial resources to the low and middle income segment of the population; leaving Government to play a catalytic, service oriented role rather than to be a main actor in the provision of housing services.

Health

The health sector has witnessed significant progress particularly in respect of primary health care but some health indices need improvement.

Table 5: Health Indicators

Particulars	2006	2016	2017
Infant Mortality Rate, per 1,000 live births	11.6	17.6	
Under 5 Mortality Rate, per 1,000 live births	21.3	21.4	
Maternal Mortality Ratio, per 1,000 live births	0	2.5	
Malaria cases; fatality rate (%)	Not Applicable	Not Applicable	
Tuberculosis death rate (per 1,000 population)	0.13	0.07	
Mortality rate from non-communicable diseases	0.67	Unable at the time of reporting	
Number of operational Health centers	47	47	47
Number of operational hospitals	3	2	2

Source: Health information Unit Dominica

In the 2012 Second National Communication on Climate Change of Dominica, a number of factors were identified as being the principal indicators of the country's vulnerabilities. Dominica's strategy for climate resilience identified health as a priority area, bearing in mind the impact which climate variability and change is expected to have on the public's health.

The potential impact of climate change on health prompted the Pan American Health Organization 51st Directing Council, 63rd Session of the Regional Committee, in September 2011, to adopt a Regional Strategy and Plan of Action which proposes the elements and framework for protecting health from the impact of climate change.

This strategy and plan of action required countries of the region to:

- (a) strengthen their capacity to measure the impacts of climate change on health at the national and local levels, focusing on socioeconomic, ethnic, and gender inequities;
- (b) strengthen the capacity of health systems for monitoring and analyzing climate and health information to implement timely and effective prevention measures;
- (c) build capacity and awareness among public health leaders to provide technical guidance in developing and implementing strategies to address the health effects of climate change;
- (d) support the development of training materials, methods, and tools to build capacity within and outside the health sector to address adaptation and mitigation measures to cope with climate change;

- (e) promote the engagement of the health sector with all related sectors, agencies, and key national and international partners to implement interventions that reduce current and projected health risks from climate change;
- (f) Gradually implement the activities proposed in the Plan of Action, in order to empower and strengthen national and local health systems so they can effectively protect human health from risks related to climate change.

The Ministry of Health and Social Services began implementation of climate and health programs in 2014 when a national consultation on the Global Framework for Climate Services (GFCS) was convened to address climate services for Health. Previously no structured programs to mainstream climate change adaptation into the health ministry existed; however, the Ministry collaborated with other agencies including the Environmental Coordinating Unit to address the climate change phenomenon.

The following activities have since been conducted:

1. A National Consultation on the Global Framework for Climate Services to identify climate services for health under the work program of the World Meteorological Organization in August 2014. This consultation brought together the national development sectors and regional and international agencies to discuss climate and health, and to develop a plan for Dominica to mainstream climate change adaptation among these sectors.
2. In 2015, the Ministry also conducted a Vulnerability and Adaptation Assessment for health and climate change. The assessment was conducted by the World Meteorological Organization with funds from Environment Canada, Canada's Health and Climate Office and the Pan American Health Organization. An expert team including experts from Health Canada, WMO/WHO Climate and Health Office, PAHO, Caribbean Institute of Meteorology and Hydrology (CIMH) and the Ministry of Health, provided support for the assessment. A consultant was contacted to undertake the assessment with supervision from the national focal point.
3. Convening of the Caribbean Climate Outlook Forum (CAROCOF) in Dominica in May 2016, to discuss health and climate change. This CARICOF brought together Caribbean Meteorologists, experts in health and climate, researchers and other members of the Caribbean Climate Scientific Community to discuss the climate outlook and to identify areas for building climate services for health. Dominica's Minister for Health and Chief Medical Officer addressed the CARICOF and presented findings of the Vulnerability and Adaptation Assessment.

4. The Ministry of Health also conducted training for all district health care workers on the health impact of climate change. This is in keeping with the PAHO Directing Council strategy and plan of action to build capacity among public health workers and leaders to address climate related conditions.
5. A national media campaign was conducted to highlight the health impact of climate change. Previously climate change was mostly regarded as an environmental phenomenon.
6. Dominica has been identified as the pilot country or the Health Exemplar under the GFCS.

The Ministry continues to propose and implement activities to mainstream climate change adaptation into health. Proposals have been submitted to support adaptation programs for climate and health including support and improvement for data collection and management, develop and implement climate services for health, and continue research into the health impact of climate change. Proposals have been submitted to WMO and PAHO as part of Dominica's adaptation plan for health.

In April – July 2017, The Ministry in collaboration with the Caribbean Institute of Meteorology and Hydrology (CIMH) and the SUNY University in New York developed a modelling framework to provide spatio-temporal probabilistic forecasts for *Aedes aegypti* proliferation. This statistical model will describe, simulate and predict special patterns of *A. aegypti* populations associated with climate variability patterns for up to three months with a zero month lead time. The probabilistic maps generated as a result will be used for vector surveillance and guide vector reduction activities.

Health Risks

Hurricane Maria has greatly increased health related risks including, acute respiratory conditions, gastroenteritis due to poor sanitation and food safety, vector borne disease outbreaks including mosquito borne diseases such as dengue, Zika and Chikungunya as well as leptospirosis.

Poor nutrition is a concern and will exacerbate chronic diseases. Increase in substance abuse including alcohol, and increase in mental health problems are also anticipated. The elderly population are also at increased risk.

Strategic Lines of Action

These will focus on the seven (7) pillars of WHO/PAHO building blocks for health systems strengthening namely:

1. Service delivery
2. Health workforce
3. Health Information System
4. Access to essential medicine
5. Financing
6. Leadership/Governance
7. Community Participation

Box 3: Areas for National Policy Consideration

- Review of health policies, strategies and legislation; reassessment of Primary Care services; and a re-evaluation of the human resource strategy
- Encourage self-sustainable health facilities, particularly in remote areas (possibility of a floating hospital)
- Building upon the Smart Hospital Initiative epitomized in the New National Hospital to ensure that health care facilities are climate smart and promote the use of affordable technology and equipment
- Establish an entity to drive the climate resilience and health agenda
- Pursue the digitization of health data and encourage data sharing to inform plans of other development sectors
- Continue assessments on the impact of climate change on vector ecology and biology, water and water related conditions and include climate sensitive diseases and conditions in the national disease surveillance system to gauge the impact of climate variability on disease incidence and distribution
- Increase capacity of laboratory facilities to examine for and detect disease-causing pathogens
- Develop an early warning system for climate sensitive diseases
- Increase outreach and health campaigns and provide opportunities to building capacity of health service personnel surveillance, environmental monitoring, vector control, psychosocial support
- Complete review of solid waste management systems and technologies, including a focus on plasma incineration and promotion of waste to energy
- Encourage greater involvement of the private sector in the provision of affordable health care

Education

Education is a priority area in human development and capacity building. Government through the Ministry of Education and Human Resource Development made significant gains seen in recent years such as providing universal secondary education. These gains have been undone by the passage of Hurricane Maria. However the experience provides an opportunity to build back better and more resilient.

Table 6: Education Indicators

Particulars	2006	2016
Number of Primary Schools	62	60
Net enrollment, primary school	8602	7385
Total		
Boys (%)	51%	52%
Girls (%)	49%	48%
Survival rate, grade 1-6 (%)		
Number of Secondary Schools	14	15
Net enrollment, secondary school	7213	5553
Boys (%)	51%	50%
Girls (%)	49%	50%

Source: Central Statistical Office Dominica

In the medium to long-term, efforts will continue to improve the quality, efficiency and effectiveness of the education system at all levels- primary, secondary and tertiary. Attention will be paid to vocational training and tertiary education to start building a “critical mass” of educated, skilled, talented and capable people to serve the development needs of the country in various fields.

Priorities for the next twelve years include:

- Enhancing the quality and efficiency of education services;
- Ensuring easy and equitable access to basic education especially to the poor, persons living with disabilities, or children with special needs;
- Enhancing opportunities for ‘bright spark’ students;
- Reducing the financial burden on poor students by improved targeting of scholarships and social assistance;
- Ensuring better linkages of education, training and professional development programmes to the short, medium and long- term needs of the labour market and society as a whole;

- Integrating climate change considerations into the formal and non-formal education system, including the recruitment of relevant staff trained in Disaster Management and project coordination;
- Strengthening the policy framework, in particular the Disaster Risk Management for offices and school plants;
- Adapting the curriculum with greater emphasis on disaster risk management and teacher training;
- Establishing standards and practices for school construction in alignment with national resilience building guidelines;
- Extending opportunities for creating safe, protective and adaptive learning spaces;

To align the sector priorities with the new vision of building climate resilience, the following strategic interventions are imperative:

❖ *Improve the quality and accountability of leadership and management*

- Training for school leadership to incorporate Risk Reduction and Resilience
- Assisting schools in the development of their disaster planning and these to be incorporated in the School Improvement Plan.
- Continuous training in psychosocial support for all school leaders
- Building the capacity of the Education Planning Unit
- Training and Recruiting staff/ persons for assessment, evaluation, architectural briefs, school planning, monitoring and evaluation of projects

❖ *Improve Quality of Teaching and Learning*

- Teacher training to incorporate risk reduction resilience education , through the Dominica state college programs
- Training in safety, hurricane preparedness at school level, response to disasters
- Finalizing, adopting and implementing school safety and disaster risk reduction policy in schools
- Developing Disaster Risk Management Plan for the Ministry of Education and Human Resource Development
- Incorporating smart school technology

❖ *Improve Curriculum and Assessment*

- Psychosocial support training;

- Review schools' curriculum to include or incorporate Risk Reduction and Resilience education in emerging industries and national development imperatives;
- ❖ *Strengthen Learners' Pastoral Care*
 - Psychosocial support to be provided to all students in a timely manner after a disaster
 - The use of knowledge, innovation and education to build a culture of safety and resilience
 - Raise awareness in order to strengthen a culture of safety
 - Increase resilience and a sense of ownership
- ❖ *Create and Maintain Enabling School Environments*
 - Resilience and risk reduction applied to the rebuilding and rehabilitation of school structures- in planning , design and construction
 - A review of the standards, designs, norms and regulation for designs of school buildings. Investing in school infrastructure to make buildings and surroundings safe applying the revised building code
 - Schools to have safe storage spaces for preparation phrase of disaster mitigation
 - Water storage facilities for all schools that includes water harvesting, well-anchored and well-strapped
 - Construction of retaining walls, including fencing
 - Avoid hazardous materials in the construction of schools
 - Seal concrete reinforced roof with insulated sealant
 - Review location of schools for rebuilding e.g. those in vulnerable areas
 - Incorporate smart school technology in construction
 - Wash facilities – resilient use of industrial type toilets
 - Policy on solar photovoltaic systems to provide alternative electrical power for schools
 - The development of or incorporation of smart schools technology once rebuilding efforts take firm hold
- ❖ *Continuation, expansion of school safety net programmes to students*
 - To provide for the nutrition and food security needs of students at least three months after a disaster. Review of the school feeding policy, storage of school feeding items
 - To improve application logistics and supply chain technics for distribution.

- ❖ *Develop plans and policies based on robust research and analysis*

This would apply especially in the physical planning and design of schools inclusive of setting building codes/standards for schools. Additionally, Disaster Management procedures will be developed for the sector.

- ❖ *Monitoring and Evaluation*

- Monitor educational outcomes, bearing in mind relevance and cost effectiveness, etc.

Government will work with the donor community and other partners to modernize and to make safer and smarter all educational facilities in Dominica. The strategies outlined above do not only focus not only on infrastructural improvement but on enhanced capacity and knowledge transfer.

ENVIRONMENTAL MANAGEMENT

Water Resource Management

Dominica has an abundance of surface water resources in the form of rivers, streams and springs which are used to supply potable water to the population. The Dominica Water and Sewage Company Limited (DOWASCO) is responsible for the management of water and sanitation on the island. DOWASCO's water supply system network is divided into 43 water areas, fed by 38 intakes and produces approximately 7.1 million imperial gallons of water daily. Ninety-six percent of the population, approximately 25,000 households is supplied with potable water 24/7. Weirs or dams are constructed across water sources for water abstraction and storage. The rugged terrain offers the benefit of water being gravity fed throughout the network with little need for the use of pumps. Given the geology of the island, Dominica's water quality has been known to be of a high good standard thus requiring minimal treatment. The only form of treatment used within the network is chlorination and water quality test results have fallen within the limits of the World Health Organization (WHO).

Over the horizon of this NRDS, Government will undertake various initiatives to support the management of the water sector to fulfill its role in the economic and social development of the country. Critical deliverables will include projects that address water loss and storage in addition to increasing the number of persons with a pipe borne water supply and addressing the damaged infrastructure as a result of Hurricane Maria.

The passage of Hurricane Maria damaged forty-one (41) water supply areas due to strong winds, flooding, landslides, fallen trees and power outage. According to the World Bank sixteen (16) were heavily damaged with twenty-one (21) moderately damaged.

Resilience building in the water sector goes beyond the sector itself to land-use and forest management. The demarcating and protecting of water catchment areas to avoiding encroachment through farming and forest harvesting must be maximized. Since the bulk of pipe borne water is drawn from rivers and streams, enforcement of buffer zones must also be instituted. In so doing, those buffer zones must be cultivated with the right resilient species to avoid easy breakage and toppling as a result of tropical weather systems. The current family of vulnerable species caused most of the blockage and flooding during the passage of Tropical Storm Erika and Hurricane Maria.

Post-Maria heavy turbidity continues to pose challenges to the supply of quality pipe borne water to the populace. Going forward, DOWASCO will have to explore possibilities to supplement surface water supplies with underground water sources. Main piping and distribution of water in difficult terrains as found in Dominica can be very challenging. The practice of attaching water lines to existing infrastructure such as bridges means when these infrastructure are carried away, the water lines also go. The long practice of undergrounding water lines seems to be the safest option although there are some challenges from land slippage.

Managing water quantity and quality 24/7 is a challenge especially due to the frequency of weather systems and occasional droughts. Efforts at improving supply management through intake relocation and reinforcement, water storage tank construction and consolidation of supplies will have to continue. Storage tanks capacity capable of maintaining supplies during the period of intake and water line restoration should continue to increase.

On the demand side water capture and storage for industry and domestic use must be inculcated into the minds of all. Responsible use of water must also be encouraged. Much discussion has ensued on using Dominica's resource to leverage economic development. Bulk sale of water and water bottling have been tried with minimal market penetration. The island is known to possess the most and best water quality in the region. If that legacy can be properly packaged, branded and marketed possibly to niche markets, the island stands a chance of commercializing its water resource. Nonetheless, keeping the cost at competitive levels remains a major challenge.

Forest Resource Management

The forests of Dominica are one of the best remaining tropical rainforests in the Eastern Caribbean. It has been so acclaimed by various researchers of the natural environment.

The island possesses impressive forest resources. More than half of the land area (60%) is designated as forest (45000 Ha), of which 20% is protected by the Forest Act of 1958 and the National Parks and Protected Areas Act, 1975. Protected areas include one marine park, two large forest reserves (Central and Northern), and three national parks, including the Morne Trois Piton National Park which is the largest in the Eastern Caribbean with major positive implications for carbon sequestration, eco-tourism, and development of a thriving green economy. The forest comprises five types of ecosystems, namely dry scrub woodland, seasonal forest, rain forest, montane and elfin.

Dominican forests support the only population of the endemic parrot *Amazonal imperialis* (Imperial Parrot) which is recognized as critically endangered with an estimated population of 250-350. The national park, Morne Trois Pitons, has been declared a UNESCO world heritage site. These forest resources are an important component of the Dominican tourism economy. Hurricane Maria and reoccurring weather systems presents a challenge to the proper management of that resource. Specifically, Hurricane Maria winds and intense rainfall produced widespread damage to the forest system. Much of the forest was stripped of leaves and damaged and downed trees were widespread throughout the island.

Selected tree removal has been done to reopen trails and protect property and water resources. Slope stabilization may be required to protect downstream assets and infrastructure. Reforestation of priority areas in the forests which were impacted by storms, particularly Hurricane Maria using “Forest Enrichment Planting” of Natural Forests (National Parks, Forest Reserves and vulnerable Forested areas, Watershed/Riparian Forests), and with Agro-forestry/Silvopastoral systems mainly on degraded lands and adjacent agricultural farms, will not only aid in maintaining soil stability and fertility and enhancing other aspects of the forest ecosystem and biodiversity; but also opens the opportunity for increased community-tourism interaction in the form of farm-tours, increase in agriculture produce for the local, regional and international markets, large number and variety of fruits for agro-processing, and provision of work for community members through jobs created from the reforestation initiatives.

The conservation and restoration of the forest and landscapes is an impending step to the socio-economic growth of the country. The forests can play a key role in the socio-economic development of Dominica in three ways:

- as a source of recreation in particular for the nation's urban population but also for visiting tourists. The importance of forests to support nature tourism is being increasingly recognized. Forest resources and, in particular, the National Parks and eco-sites are key components of Dominica's Nature Island brand –a brand which is celebrated in agriculture, eco-tourism, water resources and people.

- as a source of wood raw material for small-scale industrial use, construction and energy(the use of wood for energy is in decline and currently approximately six (6) percent of the population depends on wood for energy)
- as an ecological entity primarily for the protection of watersheds, as a provision of wildlife habitats and the preservation of genetic resources and biodiversity

The fallen tree species must also be replaced. Replacement must be informed by a variety of factors: economic, environmental and social. High value resilient species for local and export furniture can be targeted. Species that supply the value chain of the local art and craft industry particularly those for boat construction and craft production by the Kalinagos could be pursued. Hurricane Maria also presents an opportunity to introduce quick growing exotic species targeting the eco-tourism industry. Environmental considerations are those that ensure that resilient species are placed in water sheds and catchment areas, along rivers and streams and slopes. These species must also grow quickly, provide adequate cover, achieve sufficient rooting, wind resistant, and prevent slopes from slipping. Socially many artisans, hunters and visitors use the forest as a place of livelihood and recreation. Choosing appropriate varieties that respond to these interests need to be considered carefully.

To achieve all of these outcomes requires human intervention in planning, organizing and implementing a systematic resilient reforestation programme in the medium to long-term.

Dominica as a small island state has understood that its best opportunities are in the conservation of its forests, as it has actually done so far, and it is where it has its best opportunities to enhance socio-economic development, while making significant contributions in the field of climate change mitigation.

i. Productive/Sustainable Utilization

The island forest is not subjected to commercial lumbering but the downing of high value, tree species requires harvesting for productive use but also to preserve the integrity of the forest. It has been posited that the current volume of fallen lumber in Dominica's forest could return millions of dollars to the country through harvesting. The Sustainable harvesting of forest timber products and avoiding wastage of other valuable portions from lumber production not only create livelihood opportunities for use in small scale furniture making, art and craft, housing, accumulation and storage of saw-dust for use in poultry production holdings which aids in the added value to the National Abattoir, use of the branches, limbs, etc. in composting (organic input); but the sustainable thinning of forest timber also adds to the building resilience of the forests by managing the Carbon stocks and aiding in Carbon sequestration. The resources of the forest can also be used for bio fuel including bio-methane gas. The production of biomass from high calorific wood pellets

for export to the global north as a source of renewable energy for warming homes during winter holds very high prospects.

Export earnings from the forest industry are insignificant, but there is opportunity for increased revenue from the export of value-added secondary manufactured products. The round wood equivalent annual per capita consumption of forest products is well below other comparable forest producing less developed countries. Domestic production has collapsed with the closure of the sawmilling industry many years ago. However, with a large quantity of felled trees and logs following the passage of recent storms such as Tropical Storm Erika and Hurricane Maria, domestic lumber production could see a significant increase.

Independent sawyers using Alaskan type chainsaw mills and the like, while engaging in practices that minimize environmental damage should continue to be promoted over larger scale industrial sawmill operations, which have failed in the past.

ii. Carbon Footprint/Carbon Credit

Dominica's latest Green House Gas (GHG) inventory is contained in the 2nd National Communication submitted to the UNFCCC in 2012, according to which, in 2000, the country is a net sink of CO₂, although estimates are based on default data only. According to the recently developed *Reducing Emissions from Deforestation and Forest Degradation (REDD+) Strategy* document, benefiting from sound management practices, Dominica forests will continue to sequester 100 Ggs of national GHG emissions on an annual basis during the period 2018 to 2030. This contribution is conditional upon receiving timely access to international climate change financing, technology development and transfer, and capacity building support for priority adaptation and mitigation measures.

Forests dominate the island's landscape and they have been a key geographic determinant in shaping the island's history and development. Approximately 60% of the land area (51.752 ha) was estimated to be covered by vegetative cover of various types. According to estimates from the Food and Agriculture Organization (FAO) Forests Resource Assessments (FRAs), between 1990 and 2010 Dominica lost an average of 250 ha or 0.50% per year; as a result, between 1990 and 2010 Dominica lost 10.0% of its forest cover, approx. 5.000 ha, losing approx. 1.000 ha of its primary forest cover during that time. In Dominica, changes that impact biomass stocks are mainly due to harvesting of wood for construction and fuel, removal of forest cover for road construction, and converting forested areas to other use such as agriculture or residential development. In addition to

forest and land-use changes, the change in the carbon content of soils are considered based on changes in cultivation and soil management practices.

A new updated national forest inventory to include a GHG inventory is needed for the country to be able to obtain relevant data, particularly as it relates to changes in the island's forest cover and carbon sequestration, especially following recent passage of severe storms such as Hurricane Maria and its devastating effect on the island's forestry sector.

The national REDD + strategy for Dominica (June 2017) establishes the necessary steps that the country must take in the coming years mainly for the Low Carbon Climate Resilient Development Strategy 2012-2020 to be successful from the perspective of mitigating and adapting to climate change. It was designed and prepared fully in line with national priorities and current vision towards a low carbon development as indicated in the Nationally Determined Contribution (NDC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) as per the Paris Agreement. A good plan to manage the forest resources in Dominica, including improved carbon measurement, has the potential to lead the country to obtain payments for results for their actions. Those economic benefits would serve to scale up the efforts of the Low Carbon Climate Resilient Development Strategy 2012-2020 and the National Land Use Policy Draft 2014 whose political action is extremely important for the success of REDD+.

iii. Biodiversity

Dominica's rich biodiversity has been considered as the basis for its sustainable national development. In recognition of the need to conserve and protect these vulnerable resources the country has established from 1975 a system of national parks and protected areas that presently cover in excess of 20% of the land area.

According to Dominica's biodiversity Strategy and Action Plan (2000) the country's biodiversity is under threat largely from the impact of human activity and natural disasters. Major threats are presented by:

- Deforestation;
- Over-exploitation of wildlife;
- Encroachment;
- Unregulated development;
- Introduction of foreign species;
- Loss of agro-biodiversity;
- Impacts from climate change;

- Uncontrolled use of biotechnology;
- Pollution;
- Natural disasters;
- Loss of traditional knowledge;
- Inappropriate legal/institutional frameworks.

Biodiversity loss will continue to threaten the stability of the ecosystem services on which humans depend. Effects of these natural disasters are magnified when they occur in ecosystems that are already vulnerable due to human factors such as pollution, land clearing, and over-harvesting.

Addressing these vulnerabilities and building resilience will ultimately entail improving land management practices, including reducing threats such as unsustainable tourism development, mining, agriculture and climate change. Undertaking timely updates of the Biodiversity Strategy and Action Plan is also essential in ensuring the implementation of the country's obligations under the Convention for Biological Diversity, as well as serving as a strategic framework to guide the continued conservation and protection of Dominica's vulnerable natural resources.

iv. Ecosystems

As a small island developing state, Dominica is threatened by the impacts of climate change, including an increase in the frequency of tropical storms; increased sea and air temperatures, and sea level rise. Climate change is contributing to compromising the structure and functions of the forest that are currently under threat from various deforestation and degradation activities. Consequently, forest-based livelihoods are being increasingly diminished through the loss of ecosystem services from degraded forests; the loss of subsistence materials (food, wood- fuel, medicines, construction material) from forest fires, storms, disease or drought; and the loss of revenues from tourism and the sale of forest products and recreational services.

Ecosystem-based approaches to adaptation, or the conservation, sustainable management and restoration of ecosystems to help communities adapt to the impacts of climate change will be promoted in the context of tailor-made national cost-effective measures that are accessible to local communities and indigenous peoples in the areas of intervention. Such approaches include, for example, integrated water and coastal resources management, including restoration of riparian forests and mangroves sites located in protected areas and/or key ecosystems that use nature as a solution to reduce vulnerability to climate change.

Land Management

Land is one of the fundamental natural resources that serve as a basis for socio-economic development, especially poverty reduction in rural areas. Dominica's National Land Use Policy, approved in 2014, provides direction on all land use decisions. This policy will be used in tandem with legislation and other policies to address land tenure and land market development and pro-poor land access.

Its implementation is meant to ensure an equitable, proper and efficient system of land management, distribution, land tenure security, eradication of illegal settlements, and the control of ownership concentration.

One of the overriding objectives of Government under this Policy in particular is to issue clear, incontestable, legal land ownership titles to provide security of tenure to those in actual use of the land they occupy. Over the next twelve years, Government endeavours to examine the registration of indigenous people's land rights to engender further socio-economic development of the indigenous people.

Over the medium to long-term Government will consider the

- development and implementation of a scheme for social land concessions to provide small land parcels with titles for settlement and agricultural production; on a pilot basis, to a minimum of 1,000 landless households.
- Update the legislation pertaining to surveying and mapping standards
- Create Strategic Development Zone Plans for small areas and districts ,

One of the challenges to be addressed in respect of land management is unproductive land.

The passage of Hurricane Maria has also imposed the need to revisit the Land Use Policy.

Disaster Management

Dominica is vulnerable to a wide range of natural hazards with tropical storms and hurricanes being the most common and historically most significant. Prior to the passage of Hurricane Maria in 2017, Hurricane David in 1979 had the most catastrophic effects on the Dominican environment, economy and society. There were also severe storms in 1989 (Hurricane Hugo), 1995 (Hurricane Luis), 1999 (Hurricane Lenny), Hurricane Dean (2007), Tropical Storm Ophelia (2005), Tropical Storm Erika (2015). There were also some severe trough systems which impacted the country, most notably in December 2013. The occurrence of these events highlights a dire need for proper disaster management, an important precondition for a country to face and rebound from the effects of natural or manmade disasters. Overall, the Government will continue to develop its disaster preparedness capacity through

- Strengthening the existing institutional arrangements
- procurement and installation of backup systems
- conducting vulnerability assessment
- procurement of Standby generator
- acquisition of spares and emergency supplies

On a more detailed level, during the time span of the NRDS, Government will implement a “National Action Plan for Disaster Risk Reduction” to apply to the period 2018-2022. This will be done through participation from all concerned parties in Government, development partners, private sector, and civil society organizations and will be spearheaded by the Office of Disaster Management (ODM).

To achieve the strategic goals of disaster management, the ODM will carry out the following programs:

- Continuing to mainstream disaster risk reduction into policies, plans, and sustainable development programs at all levels. The main focus will be on disaster prevention, risk reduction, preparedness, and mitigation of the vulnerability, with specific attention on women and children.
- Strengthening the legal framework, legal instruments, standard operating procedures, and policy guidelines, and establishing a mechanism in accordance with the actual requirement, by connecting local levels and the national level.
- Strengthening capacity of national and local officials, particularly at the community levels, on disaster-risk reduction, climate change adaptation, and hazard resilience.
- Integrating disaster-risk reduction into the preparation and implementation of disaster preparedness, emergency response and recovery programs to minimize disaster losses, and encourage full participation of Government institutions, civil society organizations, and the private sector.

The Government through the Ministry of Justice, Immigration and National Security will strengthen the role of the ODM in coordinating and implementing the “National Action Plan and Strategy on Disaster Risk Reduction 2018-2022”, which will include five major components:

Strengthen Disaster Management Institutions at the National, Sub-national, and Local Community Levels, to ensure the effectiveness of disaster-risk reduction by:

- Implementing law on disaster management.
- Strengthening disaster management mechanisms by defining the organization and functioning of the national and local levels;
- Developing policy guidelines, legal instruments and the legal framework to support disaster risk reduction activities;

- Mainstreaming disaster risk reduction into policy guidelines and development plans at all levels.

Enhancing Disaster Risk Assessment and Monitoring and Improving Early Warning System by:

- Conducting risk-assessment at the national and local levels;
- Developing vulnerability and hazard maps;
- Developing the disaster database management system;
- Recording, analyzing, and disseminating the disaster losses information;
- Setting up an Early-Warning System (EWS) on hazards, particularly communities exposed to hazards.
- Establishing Emergency Operation Centers (EOC) at the local level with overall coordination by the national EOC;
- Developing capacities in technological research for forecasting natural hazards and other hazards;
- Improving existing data for further assessment, monitoring and early warnings;
- Strengthening capacity of recording, analyzing, disseminating, and exchanging information for hazard assessment and monitoring.

Developing new knowledge and innovation, providing training and building the culture of safety and disaster resilience by

- Collecting, compiling, and disseminating knowledge and information on hazards, vulnerabilities, and capacities to the people for building the culture of prevention and disaster resiliency;
- Providing simple and understandable information on disaster risk to people on the risk of getting exposed to hazards;
- Provide support in the development of disaster risk reduction plans on a national, local, business and personal levels;
- Strengthening cooperation and promoting partnership among relevant stakeholders, including professionals involved in socio-economic activities for disaster risk reduction;
- Accessing new information and other services, including the interpretation of satellite maps, and putting them to use;
- Making the standard international terminologies on disaster-risk available for utilization in training materials;
- Integrating disaster risk-reduction concepts and disaster prevention programs into school and higher education institution curricula;

- Developing training modules and curricula on disaster risk reduction for the different levels (planners, emergency managers, shelter managers and administrative officials);
- Strengthening technological and scientific capacities to assess vulnerabilities and hazard-prone areas in relation to the climate change;
- Establishing national and local forums for disaster risk reduction and;
- Promoting participation of communities in sustainable education campaigns and public debates at all levels.

Reducing the Risk Factor by:

- Mainstreaming disaster risk reduction related to climate change into the disaster risk reduction and climate change adaptation strategy;
- Mainstreaming the disaster risk reduction plan into all sectors of the economy with emphasis on agriculture, forestry and fishery, health and education.
- Enhancing hazard resilience of communities in the drought, flood, storm, and other hazard prone areas;
- Strengthening disaster recovery plans, to include socio-psychology training programs, in minimizing the adverse impact on the victims, particularly women and children, in post-disaster times.

Strengthening preparedness for Effective Emergency Response at the National and Local Community Levels by:

- Developing preparedness plan for emergency response and updating the contingency plan to be effective at all levels;
- Forming the emergency response coordinating team;
- Forming search and emergency rescue teams;
- Forming disaster assessment coordinating teams;
- Developing coordinating procedures in accordance with CDEMA
- Undertaking a disaster preparedness simulation exercise, including the real exercise, to ensure rapid and timely response and providing relief to the affected localities;
- Allocating funds for emergency response;
- Constructing resilient regional shelters in safe areas, equipped with appropriate and gender-sensitive amenities, and a food reserve system in order to respond to disaster effects in a timely and effectively manner;

Waste Management

While waste management falls under the purview of the Ministry of Health and Social Services on a governmental level, all citizens bear collective responsibility for ensuring proper disposal of waste.

Solid waste is classified into three categories: (i) domestic, (ii) industrial, and (iii) hospital waste. The Solid Waste Management Act of 2002 regulates solid waste management which should be executed in a proper technical manner and safe way in order to ensure the protection of human health and the conservation of bio-diversity.

The Dominica Solid Waste Management Corporation (DSWMC) is the statutory body which handles all activities related to the collection, transport, storage, recycling and dumping of garbage and hazardous waste.

The Ministry of Health needs to implement measures to strengthen waste management at source and at the landfill to control environmental pollution. This includes strengthening the waste recycling initiatives of the DSWMC. There is also a need to develop a proper strategy on the management of electronic appliances and medical waste within waste management. These will be examined under the proposed Solid Waste Management Plan.

DSWMC is in synch with technology. In 2005, the Corporation built a modern landfill to deal with many of its concerns and challenges in regards to garbage disposal and waste management. This new landfill addressed correct disposal practices and modern waste management techniques to enhance the services of Corporation offers. This new investment by the DSWMC caused the Corporation to launch new management policies and operation techniques where waste disposal and storage is concern.

To compliment recycling, proper landfill strategies have been implemented. The compostable waste that enters into the landfill can be placed in a secluded pit and be covered and later be used as organic input. In addition, the material can be used as waste to energy to produce biogas and biodiesel.

Waste Sorting

Separating the different elements found in waste is essential for enabling the recovery of useful materials, minimizing the amount of material sent to landfill and allowing recyclable materials to be used proficiently and in an environmentally saving manner. Hence, effective recycling relies on effective sorting.

One of the functions of the DSWMC according to the Solid Waste Management Act is to *“introduce measures to encourage recovery of recyclable items from solid waste”*. To this end

the Corporation has introduced and implemented a 3R (reuse, reduce, recycle) recycle collection system that captures the following sub sectors;

- Urban Communities
- Rural Communities
- Selective Schools

The 3R initiative geared at getting the above publics to participate in waste sorting from a point of origin is critical in achieving this mandate. Sorting at source in the waste management field is known as “waste separation at source”. This activity from the household stand point can be most effective if the public is equipped with the necessary receptacles that help with the storage of the specified material that the waste management entity is targeting.

Waste sorting or separation is crucial in the waste diversion strategy, which would realize the following;

- Revenue from sale of recycle material
- Lengthen life span of landfill
- Reduction in open dumps
- Reduction in litter

The DSWMC in pursuing its mandate has adopted the 3R (Reuse, Reduce, Recycle) initiative that specifically deals with waste separation from a house hold level. It has become necessary to expand waste sorting to the entire waste stream before final disposal as each waste stream require different system for sorting. Those streams are as follows:

- Bulky Waste (mattress, furniture)
- Residential waste
- Industrial waste
- Construction and Demolition (C&D)
- Organic waste

While some manual sorting is inevitable, the DSWMC will gradually lessen the degree of manual sorting and consider the wide range of sorting technologies available. These technologies facilitate efficient separation of as much useful waste as possible to be dealt with in the most appropriate manner. New sorting technologies will not obviate the need for the DSWMC to emphasis proper waste sorting on a household level.

The need for Material Recovery Facilities (MRF), in achieving a comprehensive waste sorting system is crucial in achieving this thrust. These are controlled systems which can be fully automated and would achieve greater level of waste sorting from co-mingled waste.

Waste to Energy (WTE)

For Dominica, like other small island developing states landfilling of municipal solid waste has been the traditional method of final disposal for residential solid waste. In the Dominica context, a vast expanse of flat land suitable for landfill operations is a luxury that doesn't exist.

At a glance the term, WTE to the common person may mean burning of refuse as a means of waste reduction. However, WTE can take various forms using technologies such as plasma gasification which is simply burning in the absence of oxygen. The need to visit and adopt a WTE policy is critical in addressing the growing need of waste disposal in the state.

Given that methane is a potent greenhouse gas and the landfill is known to produce this gas, the need to review our traditional method of final disposal is of paramount importance in keeping with the Paris Accord and the Dominica Intended Nationally Determined Contribution under the United Nations Framework Convention on Climate Change (UNFCCC).

According to a World Bank knowledge paper which critically assesses the cost for landfill operation and WTE, both capital and operational costs for WTE facilities outweigh that of landfill operation. WTE facilities in general convert residential waste into energy

Dominica's annual waste stream averages about 20,000 – 25, 000 tonnes annual. With an ideal WTE energy system, this should be at least 20 – 25 ton per day facility (maximum 9,125 tonnes per year), and should not be solely geared at generating electricity as its main output. Given the present waste stream, the following should be considered as by products:

- Refuse Derived Fuel (RDF) – converting of plastic waste into fuel which could be sold commercially
- Organic fertilizer – given the high organic content of the Waste Composition in Dominica
- Production of Electricity – This would require Power Purchase Agreement(PPA)

Three other critical components in the WTE thrust are:

- Legislation
- Resultant Waste Stream – that is whatever by products through the generation process can be utilized – in construction or other means and poses no threat to human health
- Constant air monitoring

There are also 'waste to energy' systems that are mobile and would require significantly less revenue to develop and maintain and would help a great deal in the reduction of the collection cost of residential waste.

The Government will consider the feasibility of a waste-to-energy plant. This is a waste management facility that combusts wastes to produce electricity. Equally, consideration will be given to a number of new and emerging technologies that are able to produce energy from waste and other fuels without direct combustion with a view to implement the most efficient and cost-effective modality.

Waste to Organic Agricultural Input

Dominica is known as the Nature Isle of the Caribbean. It has embraced organic farming both at a domestic and commercial level. The traditional agriculture organic practice used by many of our grandparents has translated into economic benefits. There has been the practice of transforming agricultural waste into a valuable organic resource such as compost, which is free from manmade chemicals and prevents pollution to the environment.

Organic product is possible because of the overwhelming volume of waste received at the landfill. Over 40% of the material coming to the landfill is compostable waste. The Corporation in its waste diversion strategy has partnered with other entities such farmers groups to create the waste into compostable material.

Utilization of waste farm product from cows, chickens, rabbits, horse dung and agro waste (cutting, leaves, grass, and peeling) have been use as organic fertilizer which produce similar results as the chemical-based fertilizer. Therefore, this concept has been embraced since waste is no longer seen as an embarrassment, but a resource.

Waste to agricultural input is safer for the environment and users. Therefore, attention and awareness should be given to waste input products. The end result is as effective as any manmade chemical product with no health hazard. Therefore, it should be embraced as a primary agricultural input.

Government will continue to emphasis to the general populace the advantages and practicalities of using certain forms of waste as organic agricultural input, thereby reducing the cost of farming activities.

Waste infrastructure

The DSWMC over the years has done everything within its powers to enhance the waste infrastructure on island. From the distribution of bins in the capital and suburban communities, the DSWMC has ensured that environmental integrity is not compromised. However, it is the public's responsibilities to maintain the waste infrastructure and avoid vandalism. The level of waste generated is of concern to the DSWMC. Having proper infrastructure will result in a reduction of waste and deal with the ever growing complexity of waste management in the state.

- Waste generated

In recent years, there has been a mass migration to the suburban communities. As a result there has been an increase in waste in these areas and a change in the composition of waste with a greater volume of tin cans. Also, after the passage of tropical storm Erika and hurricane Maria, there was a vast increase in plastics and cans. This has caused the DSWMC to broaden its recycling activities on island. Furthermore, the Corporation has implemented programmes for the collection of metal and wood to address the overwhelming volume of waste.

- Landfill

Due to the tremendous increase in household waste landfill space has become a major challenge. Therefore, the Corporation has reviewed its collection schedule and programme to reduce the volume of waste coming to the landfill. For this reason, DSWMC extended the landfill to address the problem of space and categorized waste that enters the landfill. The Corporation has a programme to collect and ship batteries. These efforts will continue and be expanded appropriately.

- Waste diversion

In respect of waste diversion, the Dominica Solid Waste Management Corporation has adopted the 3R (Reuse, Reduce, Recycle). Separation at source is necessary to see a difference in the waste stream. To complement this there must be proper machinery and monitoring of waste. The DSWMC anticipates the acquisition of landfill equipment and truck over the next twelve months.

- Recycling

The Corporation has partnered with various organizations such as Josephine Gabriel to enhance its recycling program. The procurement of a pet plastic bottle plant will assist in a reduction of plastic going to the tipper face.

- Type of waste

The Corporation has implemented different measures to collect various kinds of wastes such as hazardous, biomedical waste, household waste, white goods, and condemned goods. Also, the Corporation has partnered with village councils to pick up white goods across the island. There is a designated area at the landfill to store white goods until it is properly processed. These efforts will be enhanced in the coming years.

Waste regulation

Effective waste management is contingent on having an appropriate legal framework (laws and legal instruments) complemented by standard operation procedures and policy guidelines. Waste regulation is key to providing guidance for both the operations of the waste management authority and also that of the many publics that generate waste.

Regulations give the legislative framework for collection, transport, disposal of waste. Part VIII of the Solid Waste Management Act outlines key pertinent areas.

There are several legislative instruments geared at protecting public health and preserving the image of Dominica, from a public health stand point. These are and not limited too;

- Dominica Solid Waste Management Act
- Environmental Health Services Act
- Litter Act

The need to review existing laws and introduce new legislation is crucial in preserving the environment and achieving a greater level of compliance in achieving zero waste. These laws should include:

- Packaging Act
- Recycle Act
- Returnable Bottle Act

These would play a great role in litter reduction and prolonging the life of the sanitary landfill. In the Dominican context, regulation that governs residential waste collection should be adopted to include:

- Set collection days and frequency
- Type of waste put out
- Type of receptacle

The Ministry of Trade will give active consideration to the amendment of the Supplies Control Act, Chapter 20:01 of the 1990 Revised Laws of the Commonwealth of Dominica, in an effort to restrict the importation of goods known to negatively affect the environment or add to carbon emissions. This move would also be perfectly in line with the country 'Nature Isle' brand.

Public Education

However, all efforts at effective waste management will prove to be futile without proper public education.

In the thrust of continuing to keep Dominica green and clean, the DSWMC has partnered with many entities on island such as schools, village councils, environmental groups and other private sector agencies. It is important for the public to be aware of correct means of waste disposal and storage of garbage.

The DSWMC has explored various means to educate the public such as newsletter, social media, community meetings and radio and television programs. Also, the public relations department of the DSWMC continues to conduct school visits and do distribution of flyers. With the assistance of village councils, the Corporation has implemented its 3Rs initiative. The councils have been charged with the responsibility of spreading flyers.

To reduce the volume of waste coming to the landfill the Corporation encourages printing on both sides of paper, reusing shopping bags and sending emails rather than writing letters, among others. Residents are asked to place recyclable waste in clear or white plastic bags, and regular waste in black or yellow bags. It is important too that communities compost their biodegradable waste, such as food, peelings, vegetable remains and tree cuttings. This will reduce the amount the quantum of waste at the landfill hence lengthening the landfill life. It will also create more space in the containers put out for collection.

It is the Corporation's aim to reduce the amount of waste that is disposed at the landfill. This can only be done with effective waste diversion and the support of the residents. The separation of waste at source is critical to the whole success of this process.

Public awareness is necessary if there is going to be proper waste management. The public must be sensitized and understand the Corporation goals.

Leisure and Recreation

The work play nexus in the era of the 21st Century may not be left to individual choice given emerging health issues related to modern day sedentary lifestyles. Leisure and recreation must be combined to yield potential economic, environmental and social benefits. The social benefits are particularly important given current challenges with Non-Communicable Diseases (NCDs). Activities which are less home based and more communal offers a multiplicity of benefits to individuals, households and communities who through ongoing interaction create networks and other forms of social capital. The era of cable

television enticed many to remain indoors and practice very slothful lifestyles with implications for dietary choices and subsequent health issues.

Public policy and provision should respond to the current negatives of a sedentary lifestyle at all levels. Local level development management organization such as local authorities can enforce regulations on noise and emission control which may be obstacles to outdoorings. The new normal of very loud music being integral to most leisure events must be reexamined. The portfolio of choices must be broadened to provide opportunities for multiple interests. Traditional communal events such as fairs, concerts, exhibitions, open days etc. that utilizes modern telecommunications technologies can attract a multitude of interest. Green spaces that provide opportunities for fun and relaxation should be encouraged at the community level as part of an integrated programme that incorporates proper management systems. Green spaces are important components of a wider plan to manage carbon emission with a wider core of positive benefits. Green spaces can also serve as demonstration sites for exotic plant species with an educational twist. Local level management organizations should create trails and tracks that encourage safe walking and biking. These activities can be scheduled and incentivized for great social and economic value. Many of these events can form part of an integrated approach to Community Economic Diversification and Development (CEDD). Greater utilization of marine and fresh water resources at the community level can contribute to leisure, recreation and development. Swimming, boating and fishing can be encouraged to make greater use of often idle near shore marine water resources. Fresh water pooling and water parks are also key attractions. Pooling of streams and rivers often encourages communal picnicking and other activities. Water parks are great attractions globally which requires larger private sector investments. Those can be located in larger hub communities or urban population Centers.

Recreational sports have always played an important role in drawing people together. Cricket, Football, Basketball and Rounders Leagues should be further encouraged with support from both public and private sectors. This requires investments to maintain playing grounds with some sitting accommodation and lighting. A national programme driven by the State with local support should be encouraged. A resilient people requires to be gainfully employed in their respective field of specialization but also in leisurely activities and events that yield environmental, social and economic benefits at the individual, family and community level.

There is need to craft a Strategic Plan to chart the direction for sports and recreation namely to promote sport for all and sport as an industry. Investments will be made in the development and upgrade of infrastructure to increase the level of participation in sports and to provide avenues for hosting international competitions with a thrust towards making Dominica a sport tourism destination.

The construction of the multi-sports complex will make a significant contribution to the stock of sporting infrastructure and provide facilities for the growth and development of sports throughout Dominica. The development of a Master Plan for Windsor Park Sports Stadium will deliver a new approach to the development and maintenance of the facility.

To stimulate an enthusiastic culture for sports, the Government will establish a National Excellence in Sports project which will nurture potential athletes from the initial development of their motor skills through various coaching levels of their chosen sport.

SOCIAL DEVELOPMENT/SOCIAL PROTECTION/POVERTY REDUCTION

Box 4: The Social Development/Social Protection/Poverty Reduction Pathway

There is a growing national commitment to social protection programming with observable impacts on gender equality, poverty, livelihood promotion and restoration, food security, education and health. However, clearly, improved access to services and widespread economic growth are not adequate to move people out of poverty or transform their livelihoods, there is a need to make explicit the nexus of economic and social development.

In the next section, the need for a development focus on enhanced social function, self-reliance, increased income, improved access to support services, and gaining of skills, relationships and appropriate attitudes that will enable the Dominican society to better realize its goals and objectives is brought to bear. The growth and development plans outlined in previous sections provide opportunities to strategically link population and development issues to social protection and poverty reduction through financial inclusion interventions, capacity building, budgetary provisions, and other strategies that mutually reinforce development outcomes. The section advises for the translation of economic growth into social development that promotes suitable human qualities, strengthens social movements and fosters social harmony while tailoring strategies to fit the needs of families and communities. What stands out most is the trade-offs among economic growth, social protection provision and poverty reduction to elevate the status and capacities of individuals, households and communities to acceptable and adaptive levels that are attuned to the social development vision of Agenda 2030.

From an introspective perspective, it is critical to examine what other features Dominica needs to realize these national development outcomes in order to effect responsibilities for the empowerment of people as a key means to achieve sustainable development in an environment that is growing more complex. The strategies proposed lay the foundation for prioritizing human needs, basic rights, and dignity in the growth and progression of a sustainable society through actions that are youth-led, gender-sensitive, and promotes healthy ageing, effective partnerships, and active participation of all. This enabling environment that empowers everyone in society will ensure that every individual, family and community, particularly but not only the poor and vulnerable, reach their full potential, is socially organized to undertake their own development, and is able to improve their social and economic position in order to contribute to national growth and development.

POPULATION DEVELOPMENT

Healthy, educated, skilled, and vibrant people are the assets, and creators of assets of any country. Therefore, people are at the center of all development efforts as both contributors and consumers. The goal of Government is to induce changes in the population so as to bring the size, composition and distribution of the population in line with the needs of sustainable development for economic growth, enhanced innovations and investment, better utilization of resources and increased advantage of economies of scale. This necessitates addressing key population challenges and enacting solutions to these challenges.

Population Challenges

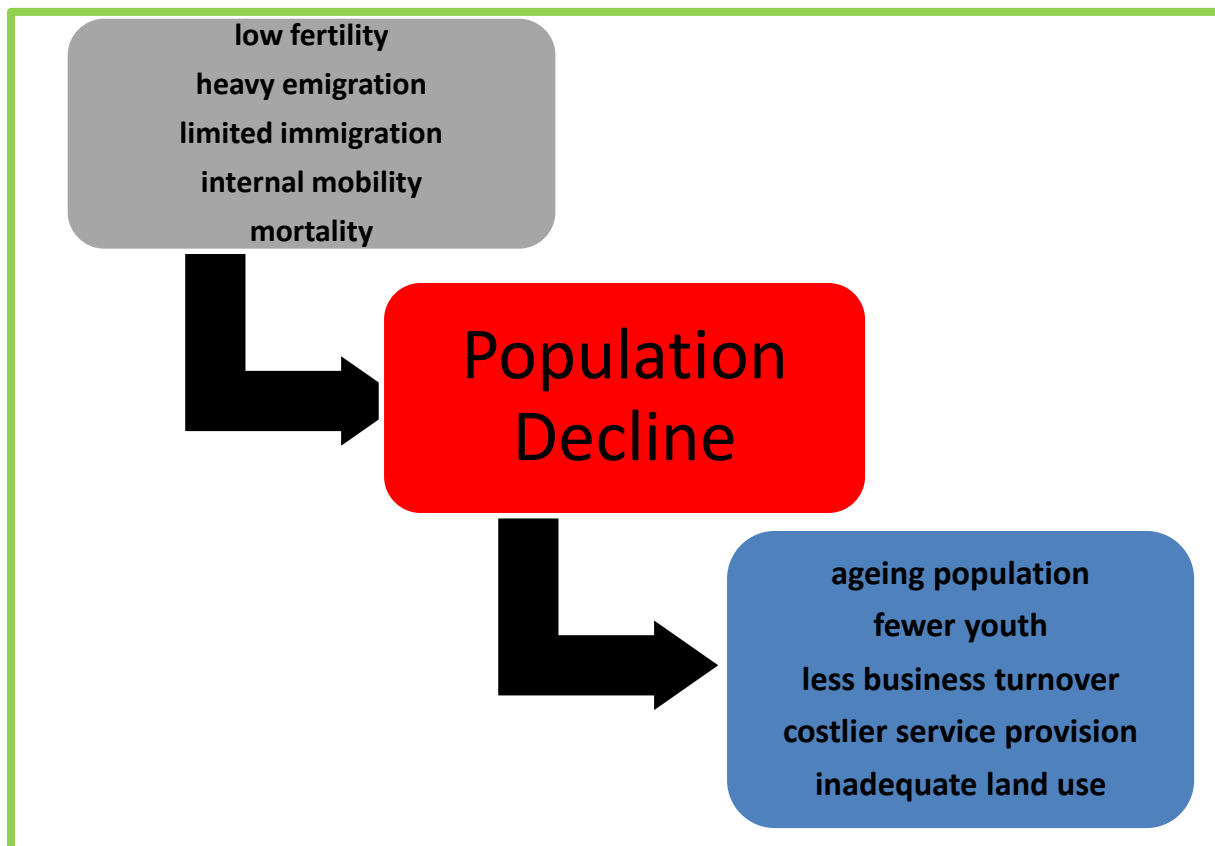
Data from the Commonwealth of Dominica for the last four Censuses reveal that there has been a declining trend in the country's population (73, 795 in 1981 to 71, 293 in 2011). This decline in population and subsequent change in population distribution has implications for economic growth and sustainable national development. Examining the population age structure helps in understanding several social and economic phenomena in any community, as it indicates the distribution of age groups, manpower productivity, and demographic dependency ratios. The preliminary report of the 2011 Census indicates that almost a quarter of the country's population (23.1%) comprise children ages 0-14 years, while the 15 – 24 age group makes up an additional 17%. Cumulatively, this indicates that more than 40% of Dominica's population comprises of children and youth.

Youth unemployment, according to the preliminary 2011 Census report, stood at 39.9% for those aged 15-19 years, and there was 22.2% unemployment among those aged 20 -24 years. Given this data, a weak start in the labour market by youth has implications for the economy and social mobility since youth unemployment tends to be concentrated among more disadvantaged populations, resulting in the "scarring" effects of early-career unemployment. In addition to unemployment, the youth population is reported to face other challenges including access to tertiary education; access to appropriate financing for those who would like, for example, to become entrepreneurs or build a home.

Issues related to sexual and reproductive health and reproductive rights are also a concern. In the World Health Organization's Global School-Based Health Surveys (2007-9), the percentage of students ages 13 to 15 who indicated they had sexual intercourse was almost half (47 percent) in Dominica. More recently, in 2010-11, HIV Knowledge, Attitudes, Beliefs and Practices (KABP) surveys were conducted in Dominica on behalf of the OECs HIV/ AIDS Programme Unit, where results showed that among those aged 15 to 24 years,

15.4 per cent of Dominicans reported that they had sex below the age of 15. Also to be considered is the growing rate of the ageing population which stands at 15.2% for those aged 60 years and above.

Figure 4: Population Development Challenges



Population and Development Future Directions

The framework model presented places the core issue of a decline in population at the center of social planning and economic development, and where the determinants are linked to the effects. Given the attributing factors to population decline, and the knock-on social and economic impacts, growing Dominica's population is a top priority for Government due to its potential to create both economic and social benefits, and in particular to guarantee national sustainable development. Government strongly opines that population challenges can be addressed through two strategic outcomes. A greater focus on the implementation of specific state actions to increase the population size for sustainable development gains is the most important and deliberate outcome. Coherent policies before assertive efforts to increase the island's population as a means of improving the landscape to proactively plan and align efforts across service domains is a second option.

The two strategies proposed are well-suited to several of the SDGs, but most importantly to *Goal 3 - Ensure healthy lives and promote well-being for all at all ages* and *Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable*. This NRDS framework therefore proposes that the success of these dimensions to bring the desired results to communities and the nation is determined by engagement, inclusion, and age-specific and place-based needs.

The following initiatives will guide the achievement of the **population growth** vision:

- I. Produce a Population Situation Analysis (PSA) Report. As the first stage towards the preparation of a comprehensive population policy, the Population Situation Analysis will provide an overview of the state of population issues (fertility, births, deaths, geographical distribution, immigration, population composition such as population youthfulness or rising rate of the elderly, as well as general issues relating to health and education) informed by a public consultation process and research. The analysis will also be useful in understanding how climate change induced disasters affect vulnerability and population elements, and in informing the resettlement of displaced persons.
- II. Build capacity in the conduct of PSA's. The methodology that will be used to develop the Population Situation Analysis is a capacity building workshop that will strengthen national capacity for data generation, analysis and utilization for evidence-based policy creation and program designs linked to Sustainable Development, including emergencies. Additionally, this participatory and inclusive approach will foster a consensus on the status of the country's population by engaging all stakeholders and providing a platform for input into the policy development process.
- III. Develop a Population Policy and Action Plan that promotes long-term sustainable growth patterns. The overall vision of the population policy is to achieve population growth through sensitive strategies and interventions, particularly those requiring priority action to achieve results utilizing a Sustainable Development framework, while considering inherent cultural norms, gender-sensitivity and human rights as it relates to reproductive health. The necessity for the country in pursuing this goal is further influenced by (i) the notable trend in the country's low population that is impacted partially by fertility, mortality and migration; (ii) projected unexpected demographic change and (iii) associated socioeconomic variables that have implications on the life chances of the citizens if population issues are not addressed swiftly. Also of importance, given the likelihood of disasters impacting on the country, is the necessity for gender-sensitive and age-inclusive disaster-risk

reduction policies and processes to be implemented to prevent the emergence of new and increased risk, and to ensure resilience for older people, persons with disabilities, migrants, and other vulnerable groups.

- IV. Given that the existing law pertaining to the protection of older people in the Commonwealth of Dominica was approved in 1999, in the next planning horizon the Government endeavors to update this law to ensure that the framework adequately considers the needs of the aged in the country, especially in the context of increased demand for public expenditure on pensions and health care;
- V. Furthermore, the implementation of other strategic options (discussed elsewhere) will involve supporting families and communities to enhance their capacities to meet emerging social and economic needs, and workforce development to support traditional, new and emerging skills, knowledge and business ideas;
- VI. Create population forecasting models, set a target to grow the population, and determine the necessary state-planning capacity that is adaptive to accommodate and to support service delivery (birthing, health care, psychosocial support, education services, related infrastructure, etc.) for a higher density of population. This is most important in the context of informing and shaping overarching plans and locality plans (urban, suburban and resettlement areas) that support near-term actions and long-term vision.
- VII. Establish a secretariat to champion strategies and monitor progress in growing our population towards the achievement of the Sustainable Development Goals. This includes leading the preparation of reports for major regional conferences on population and Sustainable Development including the Report on the Montevideo Consensus on Population and Development.

Further priority areas identified for social planning and action will focus on:

- Formalization of mechanisms for all government departments, private sector partners and communities to fully participate and fulfill commitments made in the land use policy;
- Institution of Local Government Reform as a key governance structure to deliver services to an increased population;
- Introduction of Early Childhood reforms including information systems on participants to facilitate service delivery that would ensure children are provided with prospects and resources to transform them into healthy, morally sound and

productive adults who become full members of society, share responsibilities and contribute their share to the quality of life available for everyone.

- Advancement of resilience through the development of a National Shelter and Welfare Policy and Plan with clearly defined roles and detailed information on the systems in place to access aid during and after emergencies/ disasters;
- Development of management protocols and referral pathways and continue to provide capacity building opportunities to social transformational and family support workers to improve their ability to provide tailored services to meet the practical and emerging needs of various demographics within the population;
- Assessment of the resilience capacities of care facilities with the aim of developing protocols for disaster risk reduction;
- Development of database with high quality and timely data on children and their families, sufficiently and securely stored and maintained to facilitate quick response to shocks;
- Continued provision of youth with the knowledge and opportunities to acquire the education and skills needed to access the local and regional job markets and to contribute in a productive economy;
- Increased employment opportunities for older people by encouraging the return of the Dominican diaspora or older expatriates through strategies that allow them to contribute to the country's workforce at a later age;
- Pursued support towards the development of age-friendly and disabled-friendly spaces;

POVERTY REDUCTION

Lacklustre economic growth in Dominica is having a delayed impact on poverty alleviation, although the country registered a significant reduction in poverty of approximately 10 percent in 2008/2009 from 39% in 2003, and indigence also fell from 10% in 2002 to 1.6%. Nonetheless, this improvement was in an environment where the Gini Coefficient was estimated at 0.35 in 2003, but increased to 0.44 in 2009.

Poverty in Dominica is primarily defined in terms of income sense caused by unemployment and underemployment. However, other relatable factors such as crime and violence, inadequate socio-economic infrastructures, chronic lifestyle diseases, and access to credit contribute to further impoverishment. The multi-dimensional nature of poverty is well acknowledged in that the 2008/2009 Country Poverty Assessment also noted the gendered, geographical, situational, cultural and generational nature of poverty. Both rounds of CPA flagged the parishes of St. Joseph, St. Patrick and St. David as having consistent poverty and accounting for almost half of the total poor persons on the island.

The incidence and severity of poverty in 2003 were felt more by females (51%) than by males, and this structure of poverty remained up until 2009. Apart from the economically disadvantaged and single-women headed households, other vulnerable groups include children and youth (especially those from low-income families and those living in abusive families), women, elderly, persons with disabilities, and indigenous people. Some of the contributing factors to these gender-based vulnerabilities include migration of adults, prevalence of single-parent headed households, unemployment and job scarcity, high medical costs, land ownership issues, and unpaid family care responsibilities.

Based on the PDNA, the national poverty head count is expected to rise from 28.8 percent to 42.8 percent due to a 25 percent reduction in consumption caused by lost income directly resulting from Hurricane Maria. The number of indigent individuals could likely double from 2,253 to 4,731; and, almost 2,800 individuals considered vulnerable prior to Maria will fall below the poverty line. A total of EC\$94.9 million in income and 3.1 million work days was estimated to be lost as a result of the disaster.

Moreover, the PDNA (pp. 40) posited that, "Poor Dominicans spend large portion of their income on food. Poor households with high food expenditure are more vulnerable to market price rises as they have a narrower gap in their income to absorb an increase in food prices. Many are forced to resort to negative coping strategies to meet household needs. The 2009 CPA revealed that members of poor households borrow money and engage in high-risk activities in response to poverty and food insecurity. Other negative coping mechanisms include reducing the number of meals and food portions."

Given the large share of poor, who bear the brunt of disaster impacts, the effects of disasters on poverty is a major development challenge for the state. Sectors that are relied on for employment in the island, such as agriculture, fisheries, and tourism, are highly vulnerable to the impacts of disaster events. As a result, natural disasters in Dominica have immediate and debilitating effects on labour markets, livelihoods, and income. This is particularly troubling, given unemployment levels of 13.9% in Dominica (2008), weak and precarious housing infrastructure; reliance on subsistence livelihoods; and a tendency to adopt negative coping strategies, factors that contribute to adverse effects on the poor and their limited ability to effectively recover from the impacts of disasters when they strike.

In this new vision, the Government of Dominica will continue to demonstrate its deep care for the vulnerable, weak, and marginalized, and given the harmful effect of poverty on the well-being of individuals and households, and the adverse impact of Hurricane Maria on Dominica's ability to adequately and timely contribute to SDG 1 (PDNA pp. 48) and *Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture*, it is obligatory that poverty is high on the Government's agenda.

Apart from reducing opportunities for disasters to stimulate or exacerbate impoverishment, innovative strategies to reduce the duration and severity of poverty and to enhance the poor's coping capacity will be addressed through the following specific strategies:

Strategy 1: Create opportunities to raise the incomes of those with no or low incomes and close economic disparities among subgroups in the society;

- Increase employability of the poor and facilitate their participation in education programs or labour market programs, particularly linked to climate resilient livelihoods, and provide opportunities to sustain employment that supplements inadequate household income;
- Encourage transition into the formal market to reduce negative implications for access to employment benefits, and financial and technical assistance;

Strategy 2: Reduce the multidimensional effects of poverty on housing, education and care, and foster long-term self-reliance;

- Continue to improve health of women, men and children of low income families through research efforts on development, implementation and dissemination of multi-level and community-based interventions that combat chronic non-communicable diseases often associated with poverty;
- Further develop service delivery to victims of gender-based violence, child abuse, mental health and substance abuse;
- Keep alive the housing program to improve living conditions of the poor and displaced;

Strategy 3: Build assets for low income families and economically disadvantaged communities;

- Support low income families to make the most of available public services and their personal resources regardless of personal misfortune through the empowerment of women and create opportunities to build knowledge and skills to manage the household economy;
- Make migration work better for poor people or communities by reversing the negative effects on social participation, available skills and leadership pools, as well as on village-level development or the establishment/maintenance of essential services;
- This NRDS presents the opportunity to identify development priorities for specific communities and to revisit the current existing Interim Poverty Reduction Strategy

Paper prepared in 2003 by the state and submitted as part of the IMF and World Bank-assisted structural adjustment program. A call for the introduction of a specific plan of action to tackle hard to reach 'Pockets of Poverty' using a community-based and regional development programming approach is therefore necessary;

- Promote the importance of community and societal harmony that can advance social and economic development;
- Encourage partnerships with the private sector and civil society to champion poverty reduction and allocate resources to adequately demonstrate love and respect to people in need;
- Alleviate constraints on high cost of doing business as an incentive for small and micro-entrepreneurs, and for knock-on effects to the poor and vulnerable;
- Where applicable, introduce community-based credit facilities or specific insurance schemes that are culturally sensitive and meet community circumstances and capacities; and
- Support ongoing work by local Credit Unions to promote savings and financial capability

SOCIAL PROTECTION

The recent disaster effects have revealed the devastating impact of shocks on the lives and the livelihoods of Dominicans. Often the poor and the vulnerable are the ones who bear the brunt of disasters and are least able to cope with these events. According to the most recent poverty statistics, poverty levels stood at 28.8% for Dominica in 2009, and the poorest are often vulnerable sub-groups such as women and children. Given the large share of poor, and the unique needs that arise as a result of shocks (economic, natural disasters, forced displacement), Government is cognizant that approaches and responses to social protection must be innovative, flexible and adaptable.

Social Protection is endorsed as a national strategy to achieve the eradication of poverty and to reduce inequality, but increasingly recognized as an initiative to enable households to better manage risks and to build their resilience for the future. This goal is embedded in the past and current national development framework strategy documents and aims to accomplish the globally agreed Sustainable Development Goals, particularly *Goal 1 - End extreme poverty in all its forms everywhere* and *Goal 10 - Reduce inequality within and among countries*. Some general principles upon which the NRDS as a strategic instrument is founded are as follows:

- To promote human capital formation and utilize the capabilities of individuals, households and communities;
- To protect the welfare needs of people and increase their resilience in the face of worsening climate;
- To provide universal coverage and adequate support while being responsive to the needs and realities of the vulnerable;
- To meet the changing needs of individuals within the life-cycle;
- To promote an equitable and a rights-based approach that recognizes individual's right to access services and to a certain standard of living;
- To be sustainable by design and execution;
- To be participatory and inclusive involving several actors;
- To be flexible, capable of responding to the emergence of new challenges and shocks;

Cognizant that Social Protection plays a critical role in poverty alleviation as well as enhancing the resilience of the poor and vulnerable, the Government endorsed a series of assessments which were conducted in 2017 with the view to identifying essential building blocks towards strengthening the Social Protection system for disaster response in Dominica. Funding was provided by the Grant Development Objective (GDO) of the World Bank-executed Trust Fund.

The assessment revealed that Dominica has a record of accomplishment of providing an array of social protection and labour (SPL) programs and services to help poor and vulnerable households address a number of risks, and several were introduced under the planning horizon of the previous three editions of the GSPS. In addition to high safety net spending and the extensive number of programs offered, other achievements such as wide program coverage, reliable service delivery, a doubling of programs after the 2003 Social Protection Assessment were highlighted. These cash transfers, in-kind transfers, labour market programs, social pensions, and social insurance programs work together to deliver resilience, equity, and opportunities for the diverse population. There are nevertheless challenges with program fragmentation; weak operational, monitoring and evaluation, and data management tools; and limited linkages to human capital and resilience objectives which require progress towards reforming the social protection system.

The Government, consequently, commits to maintaining the current portfolio of social protection programs to ensure that support is provided to people to build their economic capabilities, reduce vulnerabilities, and prevent them from falling below the poverty line.

Five main strategies will direct the state's social protection programs and ensure their adaptability:

1. Increased focus on preparedness based on pre-existing policies, plan of actions and protocols in order to respond to risks and impacts in a timely and appropriate manner. This involves proactively advancing towards reforming the social protection system to address the system challenges that have been identified and link the sector more closely to disaster response;
2. Lead specific arrangements to strengthen households resilience (existing program beneficiaries and the newly vulnerable) and reduce the economic and social vulnerabilities of population subgroups;
3. Enhance data and data management standards, protocols, capacities and systems;
4. Modernize and strengthen delivery and coordination of social services and systems. This involves a flexible approach to service delivery and the ability to scale-up, introduce new programs, or scale-down programs while ensuring considerations of eligibility, frequency, duration, benefit levels and types of services required are taken into account;
5. Introduction of flexible financing that allows for the reallocation or reservation of funds specifically to meet disaster-related social protection costs;

Development of Relevant Policies and Plans

- As a pioneer of universal social protection in the region, develop a consolidated Social Protection Policy and Strategy to provide a national framework for sector policy mainstreaming and coordination and to guide the responsiveness of social protection programs to shocks;
- Develop a National Post Disaster Shelter and Welfare Policy (referenced in the Population and Development section) and to map out the way forward for climate resilient social protection.
- Develop and implement an effective referral system that links existing services and agencies and ensures the needs of individuals and families are met through an integrated social service approach.

Strengthening Households Resilience and Addressing Vulnerabilities

This NRDS is underpinned by the need for attention to disaster preparedness and strengthening of resilience at all levels of our society. Government is of the view that disaster preparedness and resilience building should not only involve sectors, but should be extended to communities, households and individuals. In this new vision, preparedness and response should allow families and communities to survive without outside assistance for many days, and that adaptive social protection programs must play a key role in enabling the most vulnerable to address the impact of shocks and to recover from an emergency event quickly when they occur.

Government will strengthen the resilience of households through two main approaches:

a. Promotion of Productive Inclusion

According to the PDNA report (pp. 37), “Ensuring that households are more resilient to the impacts of disasters is essential in post-Maria Dominica. With an expanded safety net, it would be important to introduce mechanisms to lift households further above the poverty line than pre-Maria levels and ensure their improved resilience through participation in more productive activities; higher income earning opportunities; climate resilience livelihoods and to mitigate against negative coping when disasters strike.”

As part of the wider poverty reduction strategy, the productivity, income, and resilience of the poor can be boosted through productive inclusion which fits well within *Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*.

Given that the majority of the poor are either unemployed or under-employed, the Government’s proposal to build the first climate resilient nation presents a unique opportunity to retool its labour force and make it competitive regionally in climate resilient sectors, with a focus on the most vulnerable. Furthermore, linking employment opportunities to resilient livelihoods will help mitigate the likelihoods for severe adverse livelihood impacts on the vulnerable in the future.

Government will therefore pursue the following strategies:

- Improve the design of public employability programs by establishing a professional skills certification framework; labour market assessment design and roll out; and curriculum design and training;
- Link social protection beneficiaries to training and skills upgrade. With a focus on single mothers, women and at-risk youth, persist with investments in trainings in fields of high demand in order to match skills and labour market needs, and facilitate a shift among poor and vulnerable households to productive livelihoods and improved economic inclusion;
- Complement trainings with education on climate change adaptation and risk mitigation principles, and with incentives to facilitate participation;
- Tailor household support for improved resilience by introducing a case management approach in an effort to assess and support household needs through tailored interventions;
- Develop specific community productive inclusion packages that are adaptive to local culture and resource endowment of communities;

b. Addressing the economic and social vulnerabilities of children and youth, single women, persons with disabilities, elderly and vagrants will encompass the proposed strategies:

- Implementation of human capital initiatives to break the cycle of poverty at the family level;
- Increased support to civil society organisations (DAPD) that provide developmental support to persons with disabilities;
- Improved data collection, data management, and mapping of the most vulnerable by location, sex, type of disability and functional capacities with a view to improve structured support systems and services for them, including during disasters or emergencies. The Country Poverty Assessment instruments can be useful in that regard;
- Specialized capacity building and empowerment programs;
- Implementation of national public education programs to create awareness on the human rights and needs of the vulnerable, and the resource rights of indigenous people;

Building Resilient Data Information Systems

The iterative processes involved in the roll-out of several cash transfer programs immediately after Hurricane Maria, pointed to several gaps in services, capacities and resources that an effective information system would have addressed. These gaps created data errors at the beneficiary, programmatic and systemic levels. In the new planning horizon, the Government will seek to improve the data information systems of safety net programs including data management standards, protocols, and capacities.

Modernizing Social Service Delivery

The promotion of efficient delivery systems is of utmost importance to the Government, particularly to facilitate streamlined coordination as well as fast and tailored responses to poor and vulnerable households. The following activities will be pursued:

- Establish a social and beneficiary registry and MIS for social programs to move towards electronic data management systems;
- Design an Electronic Post-disaster Household Assessment System with tablet support for electronic field updates and offline capability;
- Modernizing payment delivery for social safety net programs, particularly for the Public Assistance program, to eliminate rudimentary cash delivery and to promote financial inclusion of the poor;
- Introduce a Multi-Purpose Unique Identification System which will help to facilitate better data management, improved ability to identify households in post-shock situations and help facilitate further financial and economic inclusion of poor and vulnerable, many of whom have minimal connectedness to formal systems.

- Explore opportunities to upgrade the skills of family support workers in case management and social work practices;
- Improve referral systems among various social service providers;

Sustainable Financing of Safety Net Programs

Of utmost importance to the Government of Dominica, is the delivery of social protection program from a human rights perspective. Government commits to its obligations to use available resources to realize the social needs of the population with an emphasis on the changing needs of the population. Policymakers welcome the notion of risk financing through special instruments or provisions which can play a critical role in meeting the economic and social cost of disasters. Government will also seek to strengthen public financial management and support the development of pre-planned strategies that clearly details a rules-based system of pay-out, and the roles of various departments in their response to provide rapid assistance to protect the welfare of poor and vulnerable households during a crisis.

CHILD PROTECTION

Dominican children, up to 14 years, make up more than twenty percent (23.1%) of our population. The Government of Dominica strongly opines that children are effective channels of information and agents of change, and must therefore be central to building climate resilience. Their efforts in resilience-building programs are more likely to have sustainable and long-lasting impacts when they are empowered with appropriate knowledge and skills to develop their understanding of risk and ways to manage it. Thus, the inclusion of discussions on disaster risk management and climate change as part of basic education is paramount, and these discussions should be centered in their experiences and specific to the risks that can hinder their involvement in building climate resilience activities.

However, children's involvement is not only restricted to active participation in the process, but more so, proactively addressing the issues that confront them at home, school and in the wider communities, including violence and exploitation. The GoCD will strive to create an enabling environment that can facilitate children's participation in building climate resilience and national development by striving for socially cohesive communities; existence of updated laws on child protection and well-being; and an inclusive, gender-sensitive and human rights approach to national development.

SOCIAL CAPITAL

Status of Social Capital in Dominica

The historical roots of social capital in Dominica can be traced back to the post-colonization period when villagers within communities and between communities engaged in mutual help as a survival strategy in order to respond to the conditions of poverty. As explained elsewhere, the traditional economy of Dominica was built on solidarity and reciprocal labour (Koudmain) through which investments were made (construction of homes, roads, churches and schools). The long-standing historical practice of collective actions suggests an inherent capacity to adapt and was facilitated through the country's undisputed smallness which has generated close integration among the people. Consequently, the social structure of Dominica emphasizes the role of the extended family and other social institutions that provide a framework within which individuals give and receive support; values, attitudes and social norms are shaped; and knowledge and creativity are used for the good of communities and country.

However, there is evidence of accumulating social decay which can adversely deteriorate the value of social capital as a resource investment, and can lead to several self-protecting strategies that counter local and national development. As a small developing state, vulnerable to many shocks, citizens are still grappling with migration and the decline in banana production as the traditional economic mainstay and the implications for social cohesiveness are clear. Government is of the view that social relationships of different kinds are critical elements to develop the robust social aspects of our nature as individuals and citizens, and to live in peace with others. This includes strong family relationships and reciprocal relationships between neighbours.

Reinforcing Resilience Capacity through Social Capital

Although among the 169 SDG targets, there are no explicit provisions to measure, report, or evaluate social capital, Government acknowledges the importance of social cohesion in enabling the Dominican society to cooperate and function effectively to drive sustainable development, and that resilience capacity can be built through social capital. There is supporting evidence that self-organizing communities that effectively use social capital to facilitate collective actions become more sustainable and resilient.

The use of social capital as an engine of social well-being and local and national economic development is grounded in the historic value of local cultural elements such as reciprocity, trust, kinship and friendship, and community self-organization, and the growing body of research on the link between social capital, particularly the dimension of collective action, and several development outcomes including economic prosperity and low levels of crime.

However, Government is aware that the potential of social capital as a social renewal strategy needs to be activated and strategized to create island-wide benefits through initiatives which will ultimately mitigate the determinants of youth problematic behaviors, crime and violence, and the adverse effects of technology on social relations. There is awareness that the efficacy of the concept needs to be addressed holistically, recognizing that social capital can operate on the private, public, institutional and political levels and that these levels are interconnected.

The Government will draw on the networks of relationships, the local knowledge and experience of communities, and other features of social organization that exists within the Dominican society to shape the adaptive skills of families and communities to climate change. There is envisioning that there are opportunities within home-grown community development practice that provide a foundation for healthy social relations, but there may be a need to augment the production of social capital as a building block to enhance resilience through the four dimensions outlined below.

Strengthening inter-community ties and networks

At the beginning of a new democratic term in political office in December 2014, the Government of Dominica amended the nomenclature of the Ministry of Social Services to create a Government focused on delivering policies to strengthen families for individual, household, community and national-level prosperity. The centered focus on supporting families therefore was indicative of the need to tailor program delivery to specifically fit the needs of individuals, families and communities.

Strategies to strengthen familial and neighbourly relationships will focus on:

- Encourage the resumption of volunteerism in communities in ways that support family values;
- Promote the importance of active fatherhood in a child's life and integrate parenting in childcare funding;
- Promote healthy family relationships and identify families with signs of relation distress and in need of care through maternity services, mental health and domestic violence interventions, and through prisoner rehabilitative programs to help with mother's readiness for the early stages of parenthood, improve the mental recovery process and reduce re-offending;
- Foster family-school-community partnerships in ways that transform communities;
- Promote the use of online platforms to enable young people to develop good relationships and to bridge generational gaps towards the cultivation of stronger families;

- Bring into force the Child Care, Adoption, and Maintenance Bills in order to develop mechanisms to measure progress made in strengthening families.

Improving intra-community ties

Government acknowledges that communities form the base of the social, economic and political landscape in Dominica and provide a sense of identity and common purpose which are necessary elements for peace and harmony in society. Efforts to buttress the links between communities in ways that yield mutual benefits will include:

- Continue to improve capacity of and support community-based organizations for social action and to ensure sustainable use of community resources;
 - Prolong investments in safe and cohesive community programs through the National Resettlement Program and through new initiatives such as the recognition of ‘low-crime-high-social capital model communities’ to motivate the transference of best practices to other areas in need of improvement;
 - Sustain the alignment of new initiatives with existing community-based structures and projects;
 - Establish region-level coalitions that span communities that do not normally work together to address matters of concern to them. Through a regional development approach, the community relations portfolio will encourage communities that perceive they have very little in common to identify common interests, make connections, build trust, and motivate them to identify ways to collaborate that will break-down barriers, facilitate taking advantage of resources, and improve social, economic and political conditions. Additionally, the approach will facilitate the transference of skills and knowledge, bring forth natural leaders, and engender long-term positive attitudinal changes for the benefit of stronger communities.
1. Government will continue to ***maintain and fortify state-society relations*** by consulting with the public, implementing community-driven projects, transforming social protection programs and systems, and promoting social accountability as interventions to promote social cohesion, inclusion and resilience.
 2. The Government will carry on with initiatives to ***advance the competence and capacity of public institutions*** to support social capital enhancement initiatives recognizing that the manner in which individual, families and communities interface with the institutions that serve them is critical for gaining public support and engendering synergy among partners.

The strategies outlined are relevant for building all forms of social capital and climate resilience but will also help to address other development concerns.

INTEGRATION OF IMMIGRANTS

The 2011 Population and Housing Census reported that Haitians are the main migrant population in Dominica, accounting for 1.5 percent of the population⁹. Most of these migrants have already immersed themselves in the agriculture and retail sectors, though informally. The migrant labour force is dominated by Haitian nationals.

Even though the Government is aware that the outflow is greater than those who seek permanent status, at least for the medium-term, Government is aware that these people need to be integrated into the society and the formal labour market. Government intends to facilitate the further integration of migrants through initiatives such as language training and integration courses with an orientation focus on the standards of the state, particularly around business and labour, and to communicate the social values and traditional customs of the country.

Additionally, Government will seek to improve how migrants navigate processes around human resource development initiatives, including assessing informal skills and qualifications.

CORPORATE SOCIAL RESPONSIBILITY AS AN ENGINE FOR SOCIAL PROGRESS

The concept of Corporate Social Responsibility (CSR) was introduced in the 1950's and 60's to bring to bear a greater focus on the responsibilities of businesses as good citizens beyond what is required by national laws and regulations, but which are also compatible with the values of society. For years, the social landscape in Dominica has been one where businesses have contributed greatly to sports and preservation of culture (Carnival, Independence celebrations), of which many of the activities are initiated by the government, but there are also those that have been organized by civil society.

While the Government is aware of the profit maximization goal of businesses, Government recognizes that CSR is integral to the discussion of Sustainable Development and climate resilience. Corporate social responsibility presents the opportunity to augment the responsibility borne by the political sector, administrative office and civil society in development matters.

In the Budget Address of 2017 - 2018, the Prime Minister of Dominica articulated, *“we have set out to begin a further transformation of our economy to the next level of growth and prosperity. We set out how we plan to play a part in a caring and inclusive government that*

⁹ Other immigrants include nationals of Dominican Republic and China.

seeks to build, protect and preserve our country for future generations through entrepreneurship, citizen-centered development and social responsibility”(pp.38)

In light of the foregoing, the Dominican government has set itself the following strategic aims:

- i. Continue to encourage the development of public-private partnerships (ppp) with large companies that will facilitate the building of appropriate infrastructure to mitigate climate change impacts;
- ii. Integrate CSR into education and training programs at secondary schools and through the Small Business Program training and mentorship programs to ensure SMEs and budding entrepreneurs integrate CSR and resilience building into their business strategies so as to demonstrate their contribution to sustainable economic development in their respective fields, and to foster improvement to quality of life for their employees and communities;
- iii. Exploit the existence of CSR forerunners to develop a coaching, advocacy, and information sharing program that increases the visibility and credibility of CSR as a means of inspiring more companies to practice CSR within and outside normal CSR scheduled or envisioned activities;
- iv. Explore other opportunities to disseminate messages on the importance of corporate social responsibility, e.g. introduce or support existing prizes and awards with a connection to CSR;
- v. Persist in inspiring companies to protect the environment and reduce their ecological footprint so as to minimize the vulnerability of social groups;

Cross Cutting Areas

Regional and International Relations

The vision of building the First Climate Resilient Country in the World cannot be achieved unilaterally. In fact, the subject of climate change has taken center stage on the global agenda. The Ministry of Foreign Affairs and CARICOM Affairs therefore recognizes the promotion of climate diplomacy as a major tool in the conduct of modern day foreign policy and it must therefore position itself to be an integral part of the discussion on climate resilience at the national level as well as regional and international fora.

The Ministry of Foreign Affairs will advocate for greater adherence to international agreements and protocols on climate change, as well as place greater emphasis on the monitoring of the implementation of these international agreements.

The MOFA will seek to facilitate access to expertise, knowledge and skills development necessary for resilience-building. Importantly, through bi-lateral relationships, the MOFA will seek to obtain next best practices and resources that could be of value to the line ministries in the execution of their respective mandates.

Good Governance

The Government of Dominica continues to boast of an enabling national political and administrative framework that has delivered on most of its promises within a satisfactory local social and economic context, and with extensive support from an exceptionally wide range of domestic, regional and international institutions. Within the context of the new climate resilient nation horizon, the effective delivery of sustainable and climate resilient policies necessitates the empowerment of urban and rural local governments and other traditional governing groups in order to facilitate the engagement of local stakeholders, encourage buy in and cross-scale social learning, engender a sense of community, and foster local actions and resources to respond to policies. These benefits are especially within the context that local government systems also operate as networks for advocacy and local early warning points of contact.

The vision of building a climate resilient Dominica articulates the Government's foundation of direction, transparency and accountability and provides a purpose for good governance as mirrored in *Goal 16 - Promote peaceful and inclusive societies for Sustainable Development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels and Goal 17 - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.*

In fact, the PDNA (pp. 10) identified as a priority action for recovery that “The proposed needs also take into consideration the issues of governance, particularly those measures required to strengthen the capacity of national and local authorities across all sectors to implement and manage the recovery program, through additional expertise and human resources, equipment and information management systems to facilitate monitoring and inter-institutional coordination.”

Even in foresight, the Prime Minister during the National Budget Address stated that “A National Fiscal Policy Panel can make for enhanced national governance through its consultations with and openness to various groups and individuals in the society who may have ideas and proposals for moving the country forward and dealing with the pressing issues of growth, social integration and employment generation” (pp.35) which demonstrates several principles of good governance.

The Government of Dominica, therefore, commits to perpetuate a sound institutional foundation to support decision-making and improve service delivery at the national level by:

- I. Updating the profile of public service departments to provide for better services;
- II. Implementing policies that are nationally envisioned and led, and most importantly adequately responds to citizens demands and realities;
- III. Exploring means to improve the flexibility, innovativeness and solution-focused nature of national government processes that go beyond a narrow focus on basic service delivery to address the population's real needs;
- IV. Remaining open to dialogue and negotiations with partners and local counterparts;
- V. Establish the Climate Resilient Execution Agency for Dominica (CREAD) responsible, to a large extent, for the execution of large-scale infrastructure and services based on the National Climate Resilience and Recovery Plan and in line with national building codes and land use regulations;

Government also reassures its pledge to good governance at the local level through the following:

- I. Implementing reforms to strengthen local authorities and improve coordination across various sectors;
- II. Implementing community-driven development projects that are participatory in nature, strengthens citizenship, builds capacity for self-reliance, and facilitates collective actions;
- III. Developing strong regional networks and working with community leaders to increase participation in policy development and preparation;
- IV. Providing training in leadership, good governance, and social inclusion to local governments, other traditional governing groups and community-based disaster management structures;
- V. Providing opportunities to highlight the strengths of certain local government structures with a view to developing a coherent and standardized mechanism for community disaster response, and to identify areas for capacity building among the less advanced organizations – social learning;
- VI. Continuing community engagement to allow communities and households to advance their resilience priorities;

The country has made considerable progress to improve citizens' access to services in their communities through a decentralization approach. Nonetheless, Government is also aware that the evolving good governance agenda also demands good tools. Government will employ the following strategies:

- I. Develop harmonized boundary districts for local government and national departments involved in encouraging effective coordination and implementation of development plans;
- II. Review pre-existing policies and legislation which may have been in place for decades, long before climate change emerged as a significant issue, to guarantee the existence of robust, coherent and synergistic policies that can respond effectively and make certain national and local level partners have the capacity to respond meritoriously;
- III. Strengthen national policies to facilitate improved interface between local government and communities;
- IV. Encourage the mapping of Community resources and services using Geographic Information Systems (GIS) to graphically represent social, economic and quality of life indicators as a guide to the allocation of resources;
- V. Carry on to decentralize help desks for the public to gain access to government documents and policies;
- VI. Retain the use of the traditional media, including call-in radio programs combined with web-based media to make information widely accessible to all and promote active citizen engagement;
- VII. Expand the e-Government platform to provide opportunities for national ministries and departments to use e-services (websites, emails) to provide policy and programming updates as a means of promoting active citizen engagement and reinvigorating interest in democratic affairs of the state, particularly among the youth;

Gender Equality

A gender situational analysis conducted in 2013 to inform a review of the National Gender Policy of 2006 revealed that there are specific issues as it relates to the male population. This includes high prevalence of prostate cancer, higher rate of repetition at primary school level, higher rate of high school drop-out, and low participation in skills training programs and tertiary level educational programs, truncated performance at secondary level exit examinations. While there has been significant efforts have to provide universal secondary education, several of these issues have implications for how boys navigate the job market or access higher education.

With respect to females, the 2013 Labour Force Survey showed that women have lower rates of labour market participation (59.5%) than men (70.6%), as well as among the youth (41.3%). This high rate of unemployment and underemployment is compounded by the high level of female headed households (38%). Although, participation in skills training programs continue to be subscribed by significantly larger proportions of women than

men, female participation continues to be aligned to stereotypical female fields. Of noteworthy, women are increasingly becoming involved in the electoral and leadership process of the society, but the representation of Dominica's women in political positions of power and decision making, particularly at the national level, has remained persistently minimal.

According to the PDNA (pp. 125), "Although Dominica has made significant strides towards gender equality the impact of Tropical Storm Erika and Hurricane Maria have exacerbated the challenges the country faces in this context. These challenges include, but are not limited to, access to resources for women farmers, access to health care for women and men, increasing levels of gender based violence (GBV) and economic empowerment for women, especially those in lower socio-economic sectors."

Government identifies that these gender considerations are cross-cutting and non-negotiable, and that women and men have different needs and experiences. The state is of the view that the success of its effected programs is more inspiring when society remains steadfast in its pursuit of greater gender equity and equality on all fronts, and when there is the active participation and inclusion of all income and social groups in national plans and programs.

Government commits to build on previous resolutions and advance the commitments made within national, regional, and international frameworks including the 2006 National Policy and Action Plan for Gender Equity and Equality, the Beijing Platform for Action, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), Commonwealth Plan of Action for Gender and Development, OAS/CIM Inter American Commission on Women, CARICOM Plan of Action and the Sustainable Development Goals (SDGs).

Goal 5 of the SDGs is to "*Achieve gender equality and empower all women and girls*" and target 5.1 underscores the breadth of the mandate: "End all forms of discrimination against all women and girls everywhere." Moreover, fourteen out of the seventeen SDG Goals include specific targets directed at addressing the economic, social, political and cultural conditions that intensify gender inequality.

Several strategies throughout the NRDS account and reinforce the improvement of women's social status, protection of their rights and promotion of opportunities to improve their health and eliminate the feminization of poverty. Government will therefore advance gender equality through the following strategies:

- I. Accelerate the approval of the National Policy and Action Plan for Gender Equity and Equality which makes special consideration for emerging and relevant gendered issues specific to the national context;

- II. Strengthen capacity building opportunities for women, girls, and vulnerable groups to scale up their participation in decision making and in the labour market;
- III. Design gender-specific programs for men while ensuring these do not put women at a disadvantage;
- IV. Ensure sustainability of efforts by promoting gender sensitivity education and training to build a society that champions gender issues;
- V. Reinforce priorities around poverty reduction, promotion of justice, and economic and social empowerment of women and girls informal sector work and contraceptive use to ensure Sustainable Development;
- VI. Strengthen mechanisms to improve the management of gender issues;
- VII. Support gender sensitive research, analysis and development of a highly disaggregated statistical base and information for implementation strategies;
- VIII. Enhance capacity to monitor and assess progress in meeting gender equality commitments specified in international and regional treaties and conventions, as well as in the implementation of the recovery program;

Kalinago Rights and Perspectives

Government recognizes that the Kalinago people have persistently remained the most significantly disadvantaged group in Dominica after the establishment of a 'Carib Reserve' in 1903 and the reaffirmation of the boundaries in 1978. This material condition has been attributed to the historical effects of colonization and the unavailability of access to commercial financing against communal possession of lands. This has resulted in a number of disproportionate factors like low educational attainment, unemployment and poverty. However, there is evidence of several poverty reduction initiatives undertaken in the areas of education, livelihood, child protection, social protection, and housing. The Territory accounts for roughly 5% of the nation's population but approximately 50% of the Kalinago population was still considered poor after the poverty assessment in 2009.

Nonetheless, Dominica continues to boast and celebrate the longest living connection to history and culture in the Caribbean which the Kalinago people symbolize and epitomize. Even so, the Territory continues to be challenged with high levels of female headed households, above national average, poor housing conditions and underemployment which have serious implications for the well-being of the Kalinago Territory as a site for the preservation of culture, and protection of its people.

The PDNA (pp. 43) advises that "Special attention should be paid to the Kalinago territory, given that the population there are primarily subsistence farmers that live off their own production and the sale of crafts to tourists. Both livelihoods have been severely impacted."

Government, therefore, acknowledges its responsibilities to the Kalinago peoples and is committed to working and supporting them in the realization of self-determination and other human rights as outlined in the UN Declaration on the Rights of Indigenous Peoples. Government promises to pursue the integration of indigenous people's perspectives, cultures and language into mainstream policies, plans and programs in order to reverse the factors that marginalize them in many contexts and systematically change their lives for the better. Government takes notes of the successes and innovations of the Kalinago people, particularly their remarkable ability to preserve a culture which has been threatened in several contexts, demonstrating their history of resilience.

The following specific strategies proposed by Government fall under the umbrellas of capacity building, promotion of social justice, and preservation of culture:

- a) Support the successful implementation of the Kalinago Development Plan, by mainstreaming it into the NRDS as a means of allowing indigenous people to participate in national planning and make their interests visible in development planning;
- b) Adopt a human rights-based and culturally sensitive approach to programming when addressing the specific situation of indigenous peoples;
- c) Encourage the participation of persons who identify as Kalinago on existing development planning bodies as a means of building their capacity to represent their interest;
- d) Where possible, bring into focus successful community initiatives and achievements that demonstrate strength and resilience, and use them as case studies for changing policy and practice;
- e) Encourage improved data collection, disaggregation, and analysis to ensure the availability of adequate and useful data to address the issues confronting the Kalinago people;

Many of the sustainable and climate resilience strategies outlined throughout this document are relevant for the empowerment of our indigenous peoples, fit well within the 2030 Agenda, and are consistent with our vision of building a Climate Resilient Dominica. Through this strategic plan, the Government re-states and strengthens its commitment to achieving Goals one, two, four and 5 of the SDGs with indicators that are directly applicable to our indigenous peoples.

Law and Order

Over the medium term, Government will utilize a multi-dimensional approach to contain and reduce crime, including more effective law enforcement and policing and social interventions designed to discourage a lifestyle of crime and violence, and promote Dominica as a peaceful country.

The Government will continue to focus on providing citizen security and safety in the ensuing short term through the improvement of physical infrastructure and purchase of equipment for the agencies involved in combatting crime.

Law Enforcement Strategy/Tactics

The aftermath of Hurricane Maria certainly brought about the need for a close examination of the operational plans, inner-functioning, command bases, communication and the very structure of the Commonwealth of Dominica Police Force (CDPF) and Prison Service. A climate resilient country must be a country that can be kept secure from criminal activity (theft, looting etc.) that is likely to happen after a major disaster while ensuring the safety of its offenders within a human rights framework.

It is clear that some changes need to take place but before this can be done, a functional review should be undertaken, the results of which will influence the design of future strategies /tactics. However, the State has already made commitments in the following areas:

1. Training

It is also clear that in order to make the country climate resilient, the CDPF must be equipped with the skills to respond before, during and after a crisis. Tactical and operational plans to target the most vulnerable areas before, during and after a disaster should be developed. Assistance from regional partners such as the RSS, JDF, and BDF, TTDF etc. re training and simulation exercises will be sought where necessary.

Skills such as the basics of disaster response, CERTS training and HAM radio operation as well as artisan skills will become part of the tactical response of the CDPF. Regular dialogue, planning and security discussions with the private sector are a must moving forward.

Liaising with the Ministry of Tourism, DAIC, DHTA and Discover Dominica on a regular basis and just before a crisis to discuss security tactics should become part of the mandate of the CDPF. This is in accordance with the Draft Strategic Plan of the Ministry of Justice, Immigration and National Security to create an enabling environment that promotes a culture of discipline, law abiding (obedience to law) and care in society.

There is also a need for more regular and robust training of Prison officers in the use of firearms, prison riot tactics and disaster response inclusive regular drills.

Government will examine the possibility of a functional review to look at prison systems, the security of the prisons and the structural functionality.

2. Physical Infrastructure

Police Stations and the Prison should be resilient and built to withstand natural disasters to ensure the safety of officers and offenders during and after a disaster.

Government will consider the practicality of relocating the immigration office to mitigate the risks to hazards or strengthening the resilience of the existing structure with adequate measures and mechanisms for ensuring the safety of pertinent documents.

Of paramount importance is the need for enhanced security measures via the installation of security cameras at the prison.

One of the more worrisome lessons learned from the passage of hurricane Maria was how difficult it became to successfully manage our borders in the immediate aftermath. Processing visitors to the island became almost nonexistent and communication could not be established among the ports in the early days. The best solution to this is the purchase of *Portable Immigration systems* (border management security systems). The system can be equipped to record and store the data and for this data to be downloaded to the main system once it becomes functional again.

In respect of the vehicle fleet, an assessment of the transportation needs of the CDPF is a necessity to ensure that the transportation requirements are met. This assumes critical priority after a crisis where the mobility of the CDPF is vital to respond to public needs.

Labour Market

Employment activities are predominantly found in the agricultural and services sectors with labour participation rates of 17 and 67 percent respectively. The increasing growth in the service sector, nonetheless, was still inadequate to diminish the level of underemployment and unemployment, and strong education rates for women do not yield strong labour force participation rates in comparison to males¹⁰.

Unemployment in Dominica was estimated at 25.4% of the total population in 2002. Approximately 66% of the population was employed, and that 45% percent of those unemployed were between 15 and 24 years of age and 24% were between 25 and 34 years

¹⁰ The participation rate for women is 59.5 % versus 70.6% for men according to the 2015 Gender Equality Indicators

of age (2002 – SLC; 1999 Labour Force Survey). By 2009, the rate was reduced significantly to 14% based on a Survey of Living Conditions.

Based on the 2011 Population and Housing Census, the employment situation in Dominica was characterized by an estimated unemployment rate of 11.1% per cent (with almost equal concentrations in both urban and rural settings (23% and 27%, respectively). This increased to 17% in 2013 on account of the loss of livelihoods predominantly in agriculture sector stemming from the passage of the trough system in April 2012 and December 2013. As a result of the introduction of the NEP in December 2013, it is estimated that the employment would have dropped significantly from 2014. The declining trend in the unemployment would have reversed as a result of the passage of Hurricane Maria especially in the agriculture and service sectors.

Addressing the challenges of unemployment is a top priority for the Government of Dominica. Government is of the view that the high unemployment rate in the country does not necessarily imply that people are unskilled or uneducated. Given the impacts of Hurricane Maria on employment, it is also recognizable that even highly skilled people can become unemployed during times of disasters. There is also concern that some forms of employment often do not provide the security of being permanent, as workers might be employed on a seasonal or temporary basis, while some of the lower paying jobs have no prospects of increased salaries or status attached to them.

Government will sustain significant investments to facilitate job creation and workplace development appropriate to mitigate unemployment-induced migration. The Population Growth Action Plan, discussed elsewhere will also identify specific employment opportunities to inform education, training and migration strategies. Furthermore, the various growth-enhancing initiatives on a sectoral basis are expected to provide numerous job opportunities with an anticipated decline in the unemployment rate.

Government will endeavor to build on existing Technical Vocational Education and training networks to serve both men and women equitably, especially those who are poor, disabled and vulnerable, to respond to labour market needs, in the short-term, medium term and long-term.

Addressing employment issues creditably and comprehensively hinges on the development of a labour database and statistical system with disaggregated data by gender, disabilities and other relevant social factors.

Tropical Storm Erika and Hurricane Maria experiences have demonstrated that disasters interrupt/disrupt the labour market by displacing people from their normal lives and jobs, or causing mass evacuation as a result of the damage to infrastructure and properties. These shock impacts have forced the Government to strategize the incorporation of

building of resilience in the labour market sector. Building the capacity of the Dominica labour market to resist, quickly recover from negative shocks and to adjust involves:

1. Tailored employment strategies that are well-targeted and flexible to address the needs of the sectors affected;
2. Fostering of institutional innovation that promotes a responsive labour market. This will include pre-designed labour market response plans which can be quickly activated to ensure timeliness and efficiency of employment assistance; introduction of regional development centers with one-stop designs to improve access to employment services; engagement of people with local and industry knowledge; and deployment of skilled specialist officers where necessary;
3. Promoting a greater focus on sustainable employment outcomes through livelihood support that overcome workers' barriers to participate in the labour market;
4. Improved capacity-based preparedness and response through improved technical and technological capacity; and
5. Enhance labour market intelligence

Data Capture and Dissemination

While data availability and provision can be a very sensitive issue, particularly with reference to data safety, security and privacy, data and information are key ingredients for sustainable development planning and monitoring. Government recognizes and understands the value and importance of data, data management and data sharing to guide policy formulation in respect of promoting growth and well-being. Collecting data is not enough; it must be analyzed and converted into meaningful information and knowledge, then shared widely within and external to Government particularly to key stakeholders charged with the responsibility for driving the development process. Further sharing of data and information promotes more coherent and integrated policy formulation and governance.

With information, Government can reduce economic, social and environmental risks and prepare for future uncertainties thus realizing sustainable development. Making informed decisions is made possible by accurate, consistent and sufficient data. Information and tools for decision-making will help to avoid making decisions for the short term that may have irreversible adverse effects over the long term on prospects for growth and social advancement.

Building resilience in respect of data management requires that attention be given to all aspects of data information systems inclusive of the design and development of

appropriate technologies, staffing, capacity and process/standardization. Furthermore, technical documentation should be strengthened and should entail data system technical specifications and process guidelines. Data backup and storage systems including additional servers in safe locations and the use of cloud technology will be undertaken.

Legislative Framework

The legal framework consists of the laws and legally-binding regulations that govern the country and within which Government must operate in carrying out its mandate of sustainable and resilient development. A well-established legal framework is the foundation for effective and well-functioning strategic actions of the various sectors of the economy. In order to achieve the vision for a new, prosperous, peaceful and resilient Dominica there must be a credible and stable legal and judicial system that promotes human rights and dignity strengthens the rule-of-law, ensure social justice and create a reliable environment for attracting investment to engender economic and social development. In the thrust to achieving its targets for 2030, there is need to revise the existing legislative framework with a view to adequately cater for the climate resilience vision and to achieve harmonization across sectors.

Annex 1: Dominica's Resilient Development Results Monitoring Matrix

Objective	Outcome	Indicator
1. The attainment of sustained, sustainable and inclusive growth	Sustained, sustainable and inclusive growth of minimum 5% achieved	Annual growth rate
		% of manufacturing done by renewable energy
	100% of GDP per capita growth rate achieved	% growth in non-agricultural sectors
	Broader economic diversification and transformation achieved	Inflation rate (2% max. annually)
	Unemployment reduced below 5% Underemployment reduced by 60%	% of unemployed and underemployed poor
2. A stable Macroeconomic and Fiscal environment	Macro and fiscal stability achieved	Minimum 2% primary balance for 10 years
		Debt to GDP ratio < (60%)
		Debt service ratio as % of revenue <10%
		% of government savings to GDP
3. A stable and vibrant financial sector	Stable financial sector maintained/apparent	Capitalization level of financial institutions
		Level of NPL
		Level of liquidity
4. Operate a robust electricity supply system drive by renewable energy	100% renewable energy sector achieved	% of renewable energy achieved
	50% reduction in losses from natural disasters achieved	% of loss
	100% electricity restored within 3 months after a disaster	% restored
5. Undertake energy efficiency projects	Energy efficiency achieved	No. of government building relighted/ retrofitted
	50% in unscheduled black-outs achieved	No. of unscheduled black-outs
	75% of distribution lines underground	% of lines underground
6. Pursue smart	Greater use of organic input	% of farmers involved in

agricultural growth through modernization and diversification	achieved	organic agriculture
		No. of organic manure plants/facilities established
	Increase no. of greenhouses operated	No. of greenhouses in active operation
	Increase no. of farmers involved in hydroponics and other non-soil agricultural technologies	No. of non-soil agricultural farms
	Technology transfer from regional organizations and bilateral partners doubled	% of technology transfer achieved. Number of industries driven by technology transfer
	Increase no. of GAP farmers achieved	No. of farmers certified
	Higher no. of irrigated farms operated	No. of farms irrigated
	Export crops increase in numbers and types (100% increase in number / 50% increase in variety)	Agricultural export data
	Stable number of farm employment achieved	% of persons employed in agriculture
	Agriculture contribution to GDP increase by 50% for 7 years	Agriculture contribution to GDP
	Agricultural loss to weather events below 50%	% of agricultural loss from weather systems
	Reduction of root crop farms on sloped lands achieved	% of farms on sloped lands of more than 20°
	50% of agricultural sloped lands cultivated with tree crops	% of agricultural lands cultivated with tree crops
	Value chain of 3 root crops fully developed with sustained marketing arrangements	No. of value chains developed
	5 agricultural stations fully operational	No. of agricultural stations operating
Higher level of budget for research and development on climate resilient crops and livestock breeds achieved	% of budget for R&D	
7. Increase manufacturing sectors contribution	Manufacturing contribution to GDP increased to 20%	GDP data
	50% achieved in export	% of export from

to GDP	sophistication	manufacturing and service sectors
	Higher level of employment within manufacturing sector	No. of employed in manufacturing sector
	Higher level of energy self-sufficiency achieved	No. of businesses with own renewable supply of energy
8. Increase the number of export driven agro-processing establishments	100% increase in export driven agro-processing achieved	No. of agro-processing firms engaged in exports
9. Operate/ manage a sustainable vibrant well diversified tourism sector	Tourism contribution to GDP at 15%	% contribution to GDP (GDP data)
	No. of cruise tourists doubled	No. of cruise visitors (Tourism data)
	No. of stay-over visitors doubled	No. of stay-over visitors (Tourism data)
	Natural visitor sites increased by 25%	No. of new visitors attractions
	Loss in sector to natural disasters reduced by 20%	% of loss to natural disasters
	Higher level of employment in sector achieved	% of persons employed in the sector
10. Better organization of small and micro business sector	All small and micro businesses registered	No. registered
	A registration process established with comprehensive data base maintained	Evidence of registration process
	100% of registered businesses keep business accounts	Existence of up to date data base
11. Manage a well-established creative industry sector	No. of films made in Dominica doubled	No. of films made
	100% increase in recording artists achieved	No. of recording artists
	100% increase in festivals achieved	No. of festivals being held
12. Manage a world-class resilient infrastructure sector	One modern container port built	No. of modern container ports built
	Damage to ports from natural disasters reduced by 50%	% of damage to ports from natural disasters
	100% of all primary roads surface concreted	% of primary roads with concrete surface
	50% of primary roads have concrete drains	% of roads with concrete drains
	75% of all secondary roads	% of secondary roads with

	have concrete surfaces	concrete surfaces
	100% of feeder roads surfaced	% of feeder roads surfaced
	% loss to road sector by natural disasters reduced by 50%	% loss to road sector from natural disasters
	Construction of international airport achieved	Construction of international airport
13. Operate a dynamic trade sector	Significant reduction in trade imbalance achieved (50% reduction)	Export/import balance
	Higher level of export mix achieved (at least 50%)	Export data
	Higher level of exports achieved (at least 100% achieved)	Export data
14. Operate a robust communication system with high level of connectivity at all times	Above 100% cell phone penetration rate maintained	Telecommunications data
	Loss of telecommunication services from natural disasters reduced by 75%	Post disaster data
	90% internet service achieved	Internet service data
	100% telephone connectivity achieved within 2 months of disasters	Telecommunications data
15. Achieve a resilient housing stock	90% of all houses built or retrofitted according to new housing guidelines	Data derived from national surveys and census Data derived from administrative sources
16. Manage a robust modern health system accessible and affordable	Full employment of well-trained doctors, nurses and other health professionals maintained	Data derived from administrative sources
	Streamline health system operated with Type 1, Type 2, Type 3 state-of-the-art health facilities	Data derived from administrative sources
	A healthier more productive population achieved	Prevalence of NCDs derived from administrative data Prevalence of sick leave in the public service
17. Manage a modern and relevant education system	Higher level of trained teachers at the primary and secondary school level achieved	Data derived from administrative data sets
	Universal secondary education	Data derived from

	achieved	administrative data sets
	A streamlined more efficient and effective primary school system achieved	Data derived from administrative data sources
	Higher level of male students to successfully complete secondary school	Data derived from administrative data sets
	Universal college education achieved	Data derived from administrative data sets
18. Manage a competitive trade sector	Higher level of trade complexities/sophistication achieved	Export trade data
	Higher quality of goods and services achieved	Export trade data
	Greater level of export market diversification attained	Export trade data
19. Operate a modern dynamic science and technology sector	A world class telecommunication system achieved	Telecommunications data
	One Science and technology Park/Centre established	Presence of Park/Centre and functionality
	Separate budget line for research and development outlined in the budget	Budget address data
20. Manage an industrial development portfolio with budget	Policy framework for industrial development achieved and fully operational	Policy framework documents
	Green Industrial Parks established/ fully operational	Presence of Green Industrial Park
21. Realize a higher level of productivity in the labour force	Higher level of critical task driven by modern technology	Data from administrative sources
	Greater rate of GDP growth achieved	GDP data
	Higher number of employees with Masters and PhDs, relevant to national development	Public service data sources
22. Blue Economy plays a bigger role in economic development and diversification	Higher volume of trade achieved	Trade data sets
	A larger more modern fisheries sector achieved	GDP data and administrative data sets
	One modern fish processing facility established	Presence of facility
	Fisheries operations driven by	Data from fisheries division

	modern technology	
	New fisheries legislation/ regulation approved	Data from fisheries division
23. Manage a safe, affordable and reliable water system	Sustainable and resilient alternative to existing water intake method adopted	Number of stream based intakes
	Maximum 50% of intakes disrupted with restoration within 2 weeks	Number disrupted and restored within time
	Greater than 60% of population receive water within a week	Number receiving water within one (1) week
24. ALL communities in Dominica classified as resilient communities	100% resilient shelters achieved	Number of resilient shelters
	Guidelines on household resilience issued	Copies of guidelines at homes
	100% of all resilient shelters equip with basic supplies	Inventory of basic supplies
	50% of basic supplies derived from resilient crop programs	Inventory of supplies
	100% resilient health centres achieved	Number of resilient health centres
	Schools are 100% resilient	Number of resilient schools
	Resilient community communication system exist	Presence of resilient community communication systems
	Fully functioning vibrant community, disaster committees established	Presence and records of the community disaster committees
	First response state functionality integrated into community disaster management system	Presence and functions of functionaries state
	Fully functional stand-by power system established for essential services	Number of generators, solar panels and alternative sources of energy
25. Operate a core of resilient network	Power supply is 90% resilient	% of undergrounding % survived disaster Speed of restoration
	Water supply is at least 75% resilient	% damaged from disaster Speed of restoration
	Telecommunications services is 100% resilient for 60% of population	% of undergrounding % of network damaged during disaster % of population with

		service after disaster Speed of restoration
	Basic banking services available during and 2 hours after a disaster	Speed of restoration
	Marketing systems activated 3 days after disaster	Time taken for restoration
	ALL major road networks fully functional three (3)days after a disaster	Time taken for restoration
26. Operate a core of resilient livelihoods	At least three (3) resilient sectors established	Number of resilient sectors established
	Green industrial Park established	Presence of Green Industrial Park
	Geothermal energy exported	% of geothermal exported
	Value addition to agriculture and fisheries contributing at least 25% of manufacturing	Volume of value addition
	Climate resilient institute established	Presence of resilient institute
	Climate Resilience becomes a Dominican brand and export service	Number of agencies and countries seeking advice, attachments etc. Number of national experts providing resilient service
27. Operate a fully functional Resilient Framework	Legislature framework achieved	Number of pieces of legislation enacted
	Resilience institutions established	Number of institutions dedicated to the resilience vision
	Resilience concept and practice fully integrated in school system	Level of integration in school system
	Public Education Program dedicated to public awareness and education fully established	Number of public education programs ongoing
28. A viable, sustainable and Resilient Forest	Greater than 60% of forest cover maintained	
	Forest mapping and action plan developed	Availability of Forest map and Action Plan
	Specific forest established with viable and sustainable species	Number of special forest plots established
	Biodiversity mapped preserved and monitored	Availability of maps and reports

29. Available and active land use regime in place	Implementation of land use policy	Availability of reports
	Implementation of land use plan	Availability of area plans
30. Legislated Disaster Management Framework exist	Modern disaster management legislation passed	Availability of legislation
	Organizational structure strengthened and fully functional at all levels National regional and local (community level)	Availability of reports
31. Manage a modern effective and efficient Waste Management System	Waste management legislation strengthened	Presence of waste management legislation
	A system of waste sorting and recycling operated	Existence of system
	Well informed and responsible Waste Management system at the household level achieved	Presence of waste on roadside at the neighborhood level
	Waste input into food production and energy well established	Existence of systems/ facilities
32. Manage an increasing population	Decline in population reversed	Population data
33. Poverty reduction remains a major national objective	Head count poverty below 15%	Poverty data
	Household poverty below 10%	Poverty data
	Indigence below 1%	Poverty data
34. Manage a modern, well-structured, and adaptive Social Protection System	Institutional Framework for Social Protection Management exist (legislation, policy, strategy and action plan)	Availability of these documents
	Individual Social Protection programmes well established with developed, operating procedures/guidelines and protocols	The presence of these instruments and systems
	Operationalized synergies/MOUs exist within the national social protection system with options for referral triggers	The presence of these instruments and systems
	Improved management information on applicants and beneficiaries of programmes to inform the design of social	The presence of social and beneficiary information systems/impact evaluation reports

	protection programmes and to use this data to trigger support during a crisis;	
35. Implement a regime of child protection measures and activities	Reduced cases of child abuse and neglect	Data on reported cases
36. Manage a vibrant social capital regime	Greater number of community and neighborhood groups exist	Evidence of presence of these groups
	Higher level of inter and intra community activities achieved	Availability of information on these events
	A higher level of koudmain achieved	Evidence of koudmain
	A reduction in neighborhood and criminal behavior achieved	Availability of crime statistics
	Specific orientation for migrant population established	Reports on programs
37. Operate a dynamic public-private partnership regime	A well-established PPP framework achieved	Evidence of functioning network
	PPP large projects exceeds ten (10)	Number of PPP projects
38. Manage a transparent, accountable and inclusive governance framework	A social compact exists at the national level	Presence of social compact
	Modern local government legislation enacted	Presence of legislation
	National reports published and distributed eg. Economic and Social Review	Copies of relevant reports
	Harmonized for boundaries extension services achieved	Report on harmonization of boundaries
	A regime of district and community base reporting system exist	Reports on meetings held
39. Gender equality remains a major national development objective	Institutional framework for gender equality well established, legislation, policy, strategy and action plan	Availability of these documents
	Action plan actively implemented	Activities undertaken
40. Kalinago people development	An updated Kalinago Development Plan being	Availability of plan and evidence of implementation

remains a clear focus of national development	implemented	
	Poverty among Kalinago people well below the national average	Poverty data
41. Dominica becomes a safer place to live and do business	Declining trend in crime rate achieved year on year	Crime data
42. Manage a well-established Labor Market Management Information System	A regime of Labor Market data capture established	Availability of data, reports and schedule
	A well-established Labor Market Information System exist	Evidence of the system
	A regime of skills training and retooling well established	Reports and presence of activities
43. Manage a data sharing regime	Data capture and management culture established in the public service	Number of administrative data systems
	Integrated data management system operational	Level of interface and sharing among agencies
	Institutional framework exist for data management	Existence of inter-agency coordination mechanism

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The National Resilience Development Strategy (NRDS) is the result of the collaborative efforts of the various Ministries, Departments and Agencies (MDAs) of the Government of the Commonwealth of Dominica, led by the Ministry of Planning and Economic Development.