Module 1
Introduction to the Green Economy Approach

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Overview of Module 1

Module 1 presents an introduction to the green economy. It describes some of the international discussions that have given rise to the term and discusses varying definitions. This module presents a rationale for moving toward a green economy by describing current prevailing conditions which are not meeting the environmental, economic and social goals of sustainable development. The module examines the drivers and opportunities for change in the Caribbean that have led towards embracing a green economy approach and identifies some challenges to do so. This module also describes linkages between the natural environment and major economic sectors to provide a basis for understanding some of the necessary changes that must be made.

Objectives of Module 1

The objectives of Module 1 are to:

- Generate discussion about concepts, definitions and principles related to a green economy within the Caribbean context
- Make the case for moving toward a green economy
- Identify drivers within the Caribbean which are facilitating the move toward a green economy
- Discuss barriers that must be overcome to transition to a green economy
- Examine ways of strengthening and supporting intra-Caribbean and intra-SIDS cooperation on the green economy

Green Economy Definitions and Concepts

One of the most commonly accepted definitions of a green economy (GE) is the one put forward by the United Nations Environment Programme (UNEP) and promoted through its Green Economy Initiative[2]. **UNEP defines a green economy as one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities".**

The concept of a green economy has its origins in discussions around environment and development that led to the discussion and promotion of the term "sustainable development" at the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro (known also as the Rio Summit or Earth Summit).

The term was revived and entered the international development discourse following the global financial crisis of 2008, as national governments and international organizations grappled with ways to reboot the economy in a more sustainable way. Several countries launched "green stimulus" programmes, which were essentially public sector incentive packages for private investment in "green" energy sources and technologies. UNEP was an early champion, launching its GE Initiative in October 2008.

The GE concept has also resonated in climate change mitigation discussions and it has become an important theme in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations.

The concept of a green economy is related to the ideas of green growth and low-carbon development as shown in the table below.

Green Economy	Green Growth	Low-carbon Development
A transition towards an economic model based on the sustainable generation of equitable social, environmental and economic benefits	The potential of green sectors and industries as engines of growth	Development emphasizing reduction in use of fossil fuels as the engine for development (also referred to as climate-resilient development)

[2] UNEP Green Economy Initiative – www.unep.org/greeneconomy/AboutGEI/WhatisGEI/tabid/29784/Default.aspx

Definitions of a Green Economy

There are a number of different definitions of a green economy that emphasize different aspects. Some definitions (including the UNEP definition above) are:

- A GE is one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP)
- a GE is "an economy in which economic growth and environmental sustainability work together in a mutually reinforcing fashion while supporting progress on social development" (International Chamber of Commerce Green Economy Task Force)
- "Green growth means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. It focuses on the synergies and tradeoffs between the environmental and economic pillars of sustainable development" (Green Growth Knowledge Platform)
- Low carbon development strategies are "forward-looking national economic development plans or strategies that encompass low-emission and/or climate-resilient economic growth" (OECD)[3]

The concept of a green economy supports – and does not replace – sustainable development. But this new focus responds to two recent developments:

- There is a deeper appreciation today by many governments, companies, civil society and the public that we are reaching planetary limits, not just in terms of greenhouse gas emissions but also in our use of water, land, forests and other natural resources. The environmental and social costs of our current economic model are becoming more and more apparent.
- The global recession has led to a reconsideration of key tenets of the current economic model and adoption by a number of countries of programmes to promote "green" energy sources and to develop new markets and industries that can create good, long-term jobs

The promotion of a green economy was a key theme at the Rio+20 Conference held in June 2012 to mark the 20th anniversary of the Rio Summit. Governments agreed at Rio+20 to frame the green economy as an important tool for sustainable development – one that is inclusive and can drive economic growth, employment, and poverty eradication, whilst maintaining the healthy functioning of the Earth's ecosystems.

Principles of a Green Economy

While definitions are useful for interpretation of the green economy concept, there has been an attempt to move beyond simple definitions of the green economy to define a set of guiding principles. These principles help to guide practitioners in the application of the green economy concept.

[3] http://sustainabledevelopment.un.org/index.php?menu=1448

A number of sets of green economy principles were published by a variety of organizations in the lead up to Rio+20. An analysis of eight sets of principles was conducted by the United Nations Division for Sustainable Development that year (UNDESA, 2014). It found that there is a considerable diversity of principles that have been proposed to enhance interpretation and application of the green economy. However, there is also considerable synergy amongst the different sets of principles. The list of the most common green economy principles identified in the review are shown below.

Common Green Economy Principles

1. The green economy is a means for achieving sustainable development.
2. The green economy should create decent work and green jobs.
3. The green economy is resource and energy efficient.
4. The green economy respects planetary boundaries or ecological limits or scarcity.
5. The green economy uses integrated decision making.
6. The green economy measures progress beyond GDP using appropriate indicators/metrics.
7. The green economy is equitable, fair and just – between and within countries and between generations.
8. The green economy protects biodiversity and ecosystems.
9. The green economy delivers poverty reduction, well-being, livelihoods, social protection and access to essential services.
10. The green economy improves governance and the rule of law. It is inclusive; democratic; participatory; accountable; transparent; and stable.
11. The green economy internalizes externalities.

The Green Economy in the Caribbean Context

Green Economy Discussions in the Caribbean

The Caribbean has embraced elements of a green economy for some time through regional initiatives focusing on issues such as climate change, renewable energy and sustainable tourism. More recently, national policies have been developed in several Caribbean countries as leaders and decision makers seek to support sustainable development, sustainable energy and climate resilience.

In 2009 the late Prime Minister of Barbados David Thompson stated his aim to make Barbados the "most environmentally advanced "green" country in Latin America and the Caribbean"

- Barbados Advocate 31 March 2009

Examples of regional and national initiatives that promote a green economy

Regional Initiatives
CARICOM renewable energy programmes including the 1998 Caribbean Renewable Energy Development Programme (CREDP) that seek to reduce carbon emissions and promote the development of renewable energy
Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) Framework within which initial targets for the contribution of renewable energy to total electricity generation have been established
Caribbean Alliance for Sustainable Tourism (CAST) established by members of the Caribbean Hotel Association in 1997 to promote responsible environmental and social management of natural and heritage resources respectively, within the hotel and tourism sector
CARICOM's regional framework for climate resilient development – implemented by the Caribbean Community Centre for Climate Change (CCCCC)
Caribbean Natural Resources Institute (CANARI) Sustainable Rural Livelihoods Programme established in 2011 to support rural communities with the development of sustainable natural resource-based livelihoods through building capacity, catalysing partnerships and influencing policy to create an enabling institutional environment.
UNEP's GE Initiative (GEI) - launched in late 2008 - with an overall objective to provide the analysis and policy support for investing in green sectors and in greening environmental unfriendly sectors.
Regional dialogue in 2009-2012 facilitated by CANARI to elicit ideas from a wide cross-section of Caribbean stakeholders on what Green Economy means in the Caribbean context (CANARI, 2012). The aim of this initiative was to facilitate the emergence of the Caribbean's own unique development pathway and to inform international understanding and action.

Regional Initiatives	
Caribbean GE Action Learning Group (GE ALG), established in 2010, which was charged with identifying and promoting ways in which a "a Caribbean green economy" can advance sustainable development in the Caribbean.	
Green Economy Caribbean Political Advisory Group (GEPAG) formed in 2014 and charged with undertaking research, outreach and capacity building in the public and private sectors in key areas that are needed to support different steps of a green economy transition.	
National Initiatives	
Jamaica	Vision 2030, National Development Plan
Guyana	Low-Carbon Development Strategy
Dominica	Organic Development Policy – a low carbon climate resilient development strategy
Trinidad & Tobago	Valuation of ecosystem services into national accounting
Grenada	Alternative Growth and Poverty Reduction Strategy
Barbados	National GE Scoping Study with the support of the University of the West Indies and UNEP's GE Initiative (GEI).

Group Exercise and Discussion

- Describe any plans or programmes in your country related to moving toward a green economy, highlighting the aspects that promote a green economy.

Rationale for Transitioning to a Green Economy in the Caribbean – Major Issues in the Caribbean

A green economy approach is expected to address the major problems affecting Caribbean countries and lead toward sustainable development – with its triple goals of economic, social and environmental welfare – in the region.

Poverty and social inequality

Per capita income ranges widely, from US$24,233 in Trinidad and Tobago to only US$949 in Haiti (CANARI, 2012). Many countries are classified as "middle income", but with wide, and growing, economic disparities. For example, St. Vincent and the Grenadines, Saint Lucia and Jamaica are all estimated to have poverty rates of around 30 per cent. Levels of poverty and near-poverty have increased with the current economic crisis, with declining educational performance also contributing to rapidly increasing rates of unemployment. Poverty is often linked to issues of social inequality. The region has a large percentage of female-headed households, many below or close to the poverty line. Underproductive domestic sectors and dependence on volatile external markets have contributed to the persistence of poverty in the region.

Disaster risk

The region is highly vulnerable to natural hazards, including hurricanes, earthquakes, volcanic eruptions, floods and landslides, which have caused tremendous loss of life as well as environmental, social and economic impacts (in some cases approaching 200 per cent of GDP as in the case of Grenada and the Cayman Islands after the passage of Hurricane Ivan in 2004). Climate change is expected to increase the frequency and intensity of hurricanes, droughts and other climate-related hazards.

Public indebtedness

Levels of public debt have increased rapidly in recent years, with combined external and domestic debt ranging from over 70 per cent to nearly 200 per cent. The cost of debt servicing has been eroding state capacity, making this economic crisis feel especially acute. The burden of the adjustments that have been made to public services has been largely felt by those who need the services the most, thus contributing to further poverty and social inequity.

Diminishing sectoral benefits

Returns from key economic sectors have been decreasing. In the tourism industry, growth now brings only marginal net benefits to the region, largely because of the sector's heavy reliance on imported goods and services. The agricultural industry, vital to the rural economy, has been neglected. In the energy sector, unsustainable consumption and lack of investment are shrinking the benefit-cost ratio even in oil-producing countries such as Trinidad and Tobago. Recent emphasis on "sustainable tourism", "sustainable agriculture", and "sustainable energy" provide positive platforms for addressing problems in these sectors.

Climate change Impacts

Small island states have been identified by the UNFCCC as among the most vulnerable to climate change, particularly the impacts from sea level rise and increased frequency and intensity of hurricanes. The anticipated impact of climate change on the Caribbean is highly disproportionate to the region's small contribution to global greenhouse gas emissions.

Climate change poses a substantial threat to the Caribbean's population and infrastructure – most of which are in coastal areas which are more vulnerable. Climate change also has significant impacts on key economic sectors, particularly tourism and agriculture. These sectors already suffer periodic collapses following hurricanes and other natural disasters. Coastal erosion has been costly for the tourism industry, and sea

level rise will increase the impact. Climate change also poses a threat to scarce potable water resources on many islands. A study by the Caribbean Catastrophe Risk Insurance Facility found that annual expected losses from climate-related events already amount to 1 per cent to 6 per cent of GDP in some countries and that climate change could increase these losses by 1 to 3 percentage points of GDP by 2030 (CCRIF, 2010).

Caribbean Principles of a Green Economy

The key messages that grew out of the Caribbean GE dialogue are shown in the box below:

Key Messages from Caribbean Dialogue on the Green Economy

- There is need for a new model of economic development in the Caribbean.
- A shift to a more resilient and green economic pathway must be built upon a more secure, equitable and democratic foundation.
- A Green Economy in the Caribbean context aims for long-term prosperity through equitable distribution of economic benefits and effective management of ecological resources; it is economically viable and resilient, self-directed, self-reliant, and pro-poor.
- There are existing opportunities for moving towards a Green Economy in the Caribbean now.
- There is need for ongoing dialogue in what a Green Economy means in the Caribbean and how it can be implemented.

These key messages can lead to general characteristics or principles of a green economy that apply across sectors and institutions. A set of Caribbean principles emerged from the regional dialogue which can serve as guidelines for leaders in the public and private sectors when making decisions on how to operationalize a green economy. GE principles should be developed to meet the needs and vision of each country and each sector. The goal is not to simply arrive at a list of principles but to engage in discussion with stakeholders about the priorities and approaches to moving toward a green economy.

Caribbean Principles of a Green Economy

- Industries that optimise the relationship between demand and domestically produced supply
- Best practices which are rewarded and bad practices discouraged
- Businesses which apply “triple bottom line” principles to produce net flows of economic, social and environmental benefits

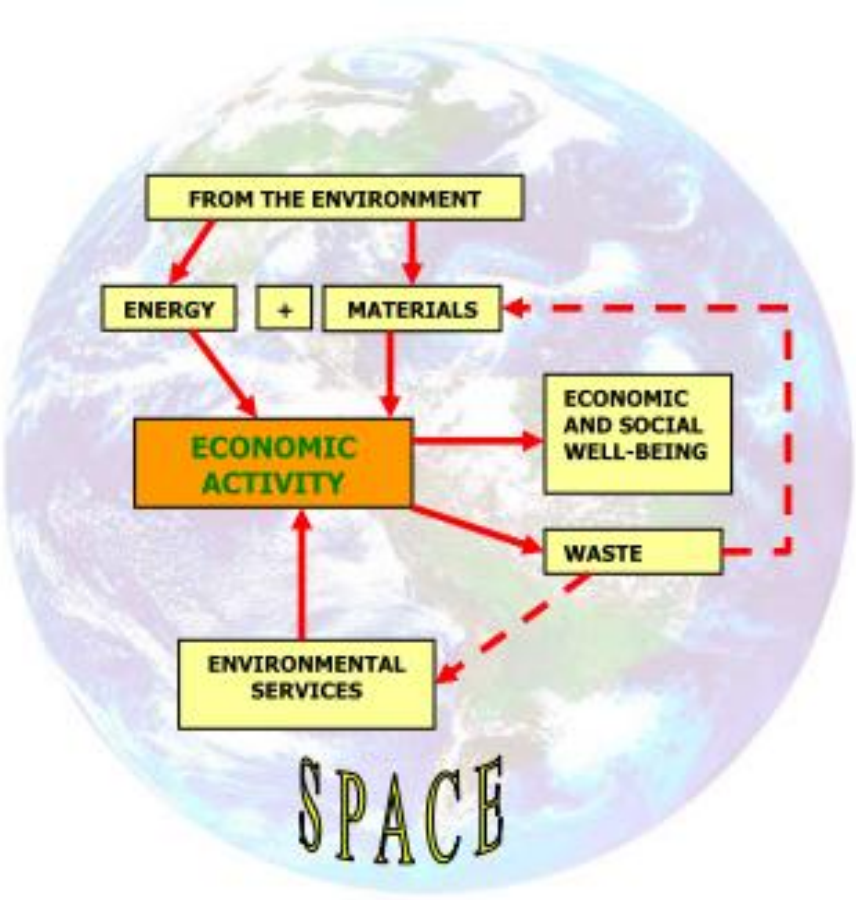
- The needs and constraints of specific groups such as female single heads of households are addressed in labour and welfare policies and practices
- Educational systems and options which offer young people knowledge, disciplines and skills that are relevant to their lives and potential career opportunities
- Dependency on imported or high carbon sources of energy is reduced and eliminated where feasible
- Available natural, human, cultural and physical resources are used efficiently, based on realistic assessment and optimal deployment
- Positive and mutually reinforcing intersectoral and rural-urban economic linkages are created

Group Exercise and Discussion

- For your country or your sector of interest, develop a set of Green Economy Principles economy.

Linkages between the Economy and the Natural Environment

To fully appreciate the concepts embodied within a green economy, it is important to recognize the linkages between the economy and the natural environment.



The above diagram depicts the important relationships between the economy, society and the environment. Economic activity, defined as the engine of growth of an economy and the basis for the level of well-being experienced by a society, is dependent on the environment for:

- Sources of energy and materials from the environment - the environment provides useful sources of energy and materials. Overuse of non-renewable sources of energy and natural resources can affect our economic activity.
- Sinks (the ability of the environment to assimilate waste from production processes) for waste and pollution
- Environmental services/ecological services of nature include water flow regulation, climate regulation, oxygen production, nutrient recycling, and waste

assimilation by water, air and land, radiation protection from the ozone layer. These are often ignored or undervalued.

- Space for people, infrastructure, nature and aesthetics

The diagram also shows that once economic activity takes place, it affects environmental and social well-being.

Some ecosystem services

The list of benefits provided by nature is vast. Ecosystems provide food, fresh water, climate and flood regulation, and recreational and aesthetic enjoyment. Forests store carbon, provide timber and other valuable products as well as habitat to a wide array of species. Wetlands purify water, offer protection against floods, produce oxygen, store carbon dioxide, and help to regulate climate. Mangroves protect coasts and coastal populations from storms and tsunamis. Coral reefs provide breeding grounds for fish and attractions for tourists. Rivers provide fish, water and facilities for recreation and also other ecosystem functions such as holding and circulating water.

The quantity and quality of waste generated can affect economy activity in two ways:

- Waste, if not properly managed, re-enters the environment and can negatively affect the environmental services, upon which economic activity depends
- Waste, if recycled or reused can re-enter the production process as material input and by so doing reduce the strain on the environment to supply additional quantities of materials for the production process.

Relationship between Environmental/ Ecological Well-Being and Economic Well-Being

Environmental well-being contributes to economic well-being when the environment is able to properly carry out its functions. The economic benefits of healthy functioning ecological services, nutrient cycling, flood control, climate control, soil productivity, forest health, pollination and natural pest control underpin the everyday functioning of the environment and many jobs.

Economic activity itself does not present a threat to the environment. It is the speed and scale of this economic activity which presents a threat to the integrity of the environmental support system that underpins economic activity. The environmental problems that the world is now facing lies fundamentally in the massive expansion of overall economic activities, the excessive consumption of resources, and the emission of wastes beyond the environment's capacity to assimilate.

While economic activity is essential for the provision of human well-being, economic activity that does not take into account its effect on the environment through the

overexploitation of materials and the unmanaged generation of wastes, will ultimately not only endanger further economic activity, but will result in negative impacts to human economic and social well-being.

Links between the Natural Environment and Three Key Economic Sectors in the Caribbean

Tourism

Tourism depends on the environmental quality of a destination – i.e. – clean air, water and land. It depends on the natural environment for its wide array of ecosystems, for example, beaches and coastal areas, mountains and forests.

Negative Impacts of Tourism

The negative effects which tourism may have on the environment include:

- Destruction of wetlands and mangroves as a result of the construction of resorts and hotels
- Loss of beaches due to sand mining, dredging near-shore and sewage dumping
- Reef damage from diving, anchors of yachts and cruise ships and the development of marinas
- Reduction in ecosystem productivity due to physical transformations of coastal environments caused by hotel and marina construction
- Disturbance and destruction of aquatic habitats as a result of tourist recreational outings
- Loss and displacement of biodiversity due to the destruction of forests and other land areas for building new resort areas
- Destruction of beaches due to continuous operation of motor vehicles on sand beaches which destroys sand stability and vegetation
- Pollution of the sea by faecal coliform and other pathogenic bacteria as many hotels do not have adequate or properly maintained disposal facilities, causing raw sewage to be flushed into the sea
- Pollution of ground water through the introduction of toxic chemicals, pesticides and herbicides used on golf courses and resort landscaping
- Contamination of groundwater as a result of inadequate sewage, solid wastes and industrial effluent disposal systems compounded by water sports and boat discharges.
- Depletion of groundwater as the tourist industry is the single largest consumer of treated water demanding as much as 10 times more than the domestic average

- Direct and indirect solid waste impacts – due to difficulty in siting solid waste disposal facilities and in supporting economically viable recycling programmes

Agriculture

The first and foremost role of agriculture is the production of food. However, agriculture and related land use activity have other functions which can be broadly characterized as follows:

- Environmental Functions - agriculture and related land use influence the natural resource system and can have either beneficial or harmful effects on the environment. This function is relevant to a number of critical environmental problems including loss of biodiversity, climate change, land degradation, reduction in water quality and availability and pollution
- Economic Functions – agriculture is responsible for the delivery of a wider range of non-
- food goods and services, as well as the provision of employment and livelihoods
- Social Functions – agriculture shapes social and cultural systems, including the maintenance of cultural heritage as societies still identify strongly with their historical origins in agrarian communities and rural lifestyles.

Environmental Services Vital To Agriculture

Environmental services vital to agriculture include:

- Soil Forming and Conditioning – Invertebrates develop upper soil layers through decomposition of plant matter, making organic matter more readily available, and creating structural conditions that allow oxygen, food and water to circulate
- Waste Disposal – Ecosystems recycle, detoxify and purify themselves, provided that their carrying capacity is not exceeded by excessive amounts of waste and by the introduction of persistent (synthetic) contaminants. (Nutrient filtering by mangroves can be likened to oxidation ponds of traditional wastewater treatment plants)
- Pest Control – Predator-prey populations create a self-regulating balance, whereby biological (inter-species) competition keeps more pests in check than could ever be accomplished through the use of pesticides.
- Biodiversity – Ecosystem stability depends on the results of competition between different species for food and space. It is this competition that increases species diversity.
- Pollination – 220,000 out of 240,000 species of flowering plants are pollinated by insects.
- Carbon Sequestration – Because biomass has the capacity to store carbon, where the soil is not tilled, or where minimum tillage is practised, soil contributes to carbon retention.

- Habitat – The provision of space, shelter and food for many important macro and microrganisms, such as earthworms.

Environmental Implications of Agriculture

The pressure to produce enough food has had a worldwide impact on agricultural practices. In many countries, this pressure has resulted in the expansion of agriculture onto marginal lands, mainly for subsistence purposes. In other countries, food needs have forced the expansion of irrigation and the steady increase in the use of fertilizers and pesticides, in order to achieve and sustain higher yields.

Some significant negative effects of conventional agricultural practices include:

- Degradation of agricultural land and decline in soil fertility continue to be major threats to food security, and sustained agricultural productivity, especially in developing countries.
- Reduction in soil productivity as a result of one or a combination of the following:
    - Wind and water erosion of exposed topsoil
    - The compaction of soil through intensive use of tractors and ploughs
    - The loss of soil organic matter and water holding capacity through overuse of fertilizers
    - The loss of biological activity
    - Salinization of soil and irrigation water
    - Overgrazing, which results in land degradation
- Excessive consumption of water – agriculture is the single largest user of freshwater resources in the world, using on average, approximately 70 per cent of all surface water supplies, most of which is recycled back into surface and/or groundwater sources.
- Water pollution - agriculture is the largest non-point source of water pollutants contributing to water pollution, for example, through the discharge of pollutants (fertilizers - nitrates and phosphorous - and pesticides) and sediment to surface and /or groundwater

Nutrient run-off has the ability to affect rivers, lakes and oceans, causing eutrophication and the creation of ‘dead zones’. And while agriculture affects water quality it is also affected by water pollution through the use of wastewater and polluted surface and groundwater, which can:

- contaminate crops
- affect fishery production
- transmit disease to consumers and farm workers

Land degradation caused by poor agricultural practices can also affect water resources, reducing water availability and quality and altering the regimes of rivers and streams.

Potential impacts include flooding, silting of reservoirs and rivers, groundwater depletion, salinization of aquifers and pollution of water.

Energy

Fossil fuels (e.g. coal, oil, natural gas) are non-renewable sources of energy which come from the natural environment. Their increased use requires continuous imports by Caribbean countries which do not have their own supplies (Trinidad & Tobago being one notable exception). Continued and increasing use of fossil fuels also depends on seeking to exploit new sources which are either located in in environmentally sensitive areas or must use more damaging extraction methods. Natural gas is the most environmentally benign fossil fuel and is relatively cheap to produce. These two factors have greatly increased the use of natural gas to generate electricity. Natural gas does cause air pollution but not as much as the other fossil fuels.

Impacts of Energy Use

The production, storage, transport and use of energy has effects on human health, ecosystems and biodiversity, climate change and the economy:

- Human health – The generation of electricity is responsible for the emission of sulphur dioxide, nitrogen dioxide, mercury and fine airborne particles, resulting in the deterioration of air quality. Nitrogen oxides, mercury and fine airborne particles aggravate asthma conditions, reduce lung functions and can cause respiratory diseases and premature deaths.

- Ecosystems and biodiversity – the mining, drilling and pipeline installation for the supply of energy can disrupt entire ecosystems. The combustion of fossil fuels emits gaseous pollutants which cause global warming, acid rain and smog. Smog can cause damage to crops, forest and property as it is formed from the combination of nitrogen oxides and reactive organic gases. Acid rain acidifies the soils and waters which can cause damage to plants, fish and the animals that they support. The extraction of coal from mines can cause severe erosion and the destruction of natural habitats and leaches toxic chemicals into nearby streams and groundwater supplies.

  Although hydro power is considered to be a clean form of energy, the construction of dams for large hydro-power facilities has significant environmental impacts. These include the destruction of entire ecosystems such as rivers, having effects on fish and other water species, the loss of scenic natural

areas and reduced water flow for other uses. Large dams block the natural flow of water, thereby degrading water quality. However, small-scale hydro facilities are considered to be an environmentally-friendly form of energy.

- Climate change – Climate change is caused by many gases, referred to as greenhouse gases, of which carbon dioxide is the most significant. Energy production results in the emission of 80 per cent of global carbon dioxide. The two main anthropogenic sources of carbon dioxide emissions are fossil fuel combustion and land use changes, mainly deforestation. Energy's contribution to greenhouse gas production is greatest in the high-consumption industrialised countries.

- Economic effects – The production of energy from fossil fuels have significant economic impacts that are not reflected in the price of energy itself. Acid rain can cause significant damage to crops, forests, lakes and buildings and air pollution increases health care costs. Air pollution that has an impact on global warming has a potential cost from flooding and hurricane damage, low agriculture yields and population resettlement. Lost productivity due to workers emissions-related illnesses also comes at an economic cost to a country.

Barriers to Transitioning to a Green Economy

While the rationale for change is clear and there is an expressed interest in the region in moving toward a green economy, there are a number of barriers or challenges to making this transition.

Through its work with the GE dialogue in the Caribbean, CANARI has identified some primary barriers to transitioning to a GE in the region:

Political disincentives

Few politicians are prepared to take substantive leadership towards changes that could alienate powerful interest groups that benefit from the current paradigm. Divisive partisan politics in most countries reduces the ability of any government to achieve the political consensus required to make major policy shifts.

Weak bottom-up demand

Over the past twenty years the influence of civil society on national and regional development has declined significantly. Some of the roles once played by NGOs have been captured by the state and financial support for civil society work has therefore declined. Issues that created a sense of solidarity among civil society and academia in earlier decades are no longer on the table. Few young people are engaging in development action and debate. As a result, civil society organizations are becoming increasingly demoralized and dispersed, despite the continued leadership and engagement of a few.

Declining human resource base

The region has for decades suffered from significant brain drain and this is now being compounded by the poor performance of national education systems. In many countries, drop-out rates are at all-time highs, especially for boys, and rates of illiteracy and innumeracy are increasing. For example, over 70 per cent of boy school leavers in Jamaica failed their qualification exam in mathematics. Most countries also lack any system of training in skills that match the opportunities available. Skilled jobs are often outsourced or filled by persons from outside the country or region, and opportunities to add value to existing sectors through enhanced human resources are lost.

Outdated and inadequate regulatory frameworks

Existing legal frameworks and regulations do not encourage improved environmental and economic practices or innovations that could create new, sustainable economic opportunities. In some cases, they actually encourage perverse practices.

Group Exercise and Discussion

- Do you agree with the barriers identified by CANARI?
- What are the main barriers to developing a green economy in your country?