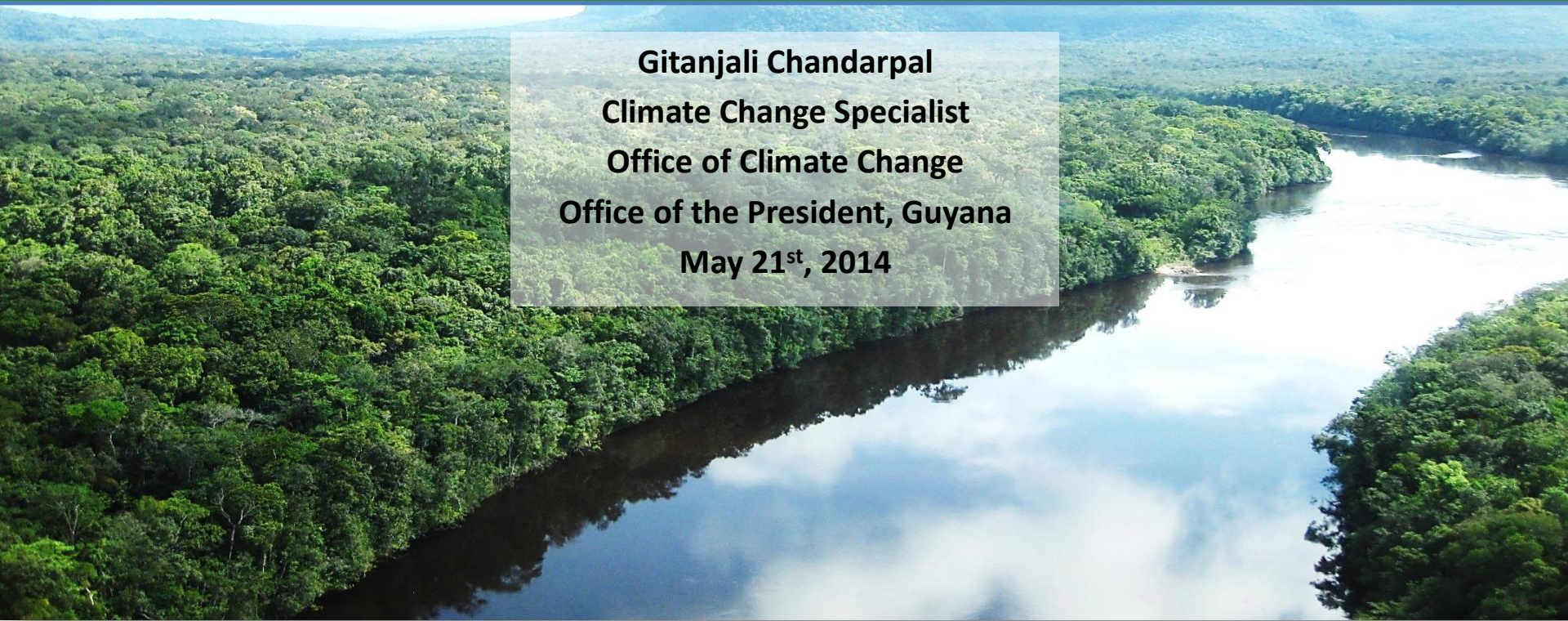


VYBZING GUYANA 2014 “YOUTH VOICES FOR CLIMATE CHANGE”

Climate Change Impacts on Guyana & Current Initiatives

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May 21st, 2014



Structure of the Presentation



Climate Change

- What is it ?
- What are the Effects & Impacts of it?
- What is being done to address Climate Change ?



Guyana's Low Carbon Development Strategy (LCDS)

- What is the LCDS?
- How will the LCDS work?
- The Guyana – Norway Agreement



The LCDS Projects

- The LCDS Priority Projects

Overview of Climate Change

What is Climate Change ?

Any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer)

What is Global Warming ?

Warming that can occur as a result of increased emissions of greenhouse gases from human activities

Observed Changes

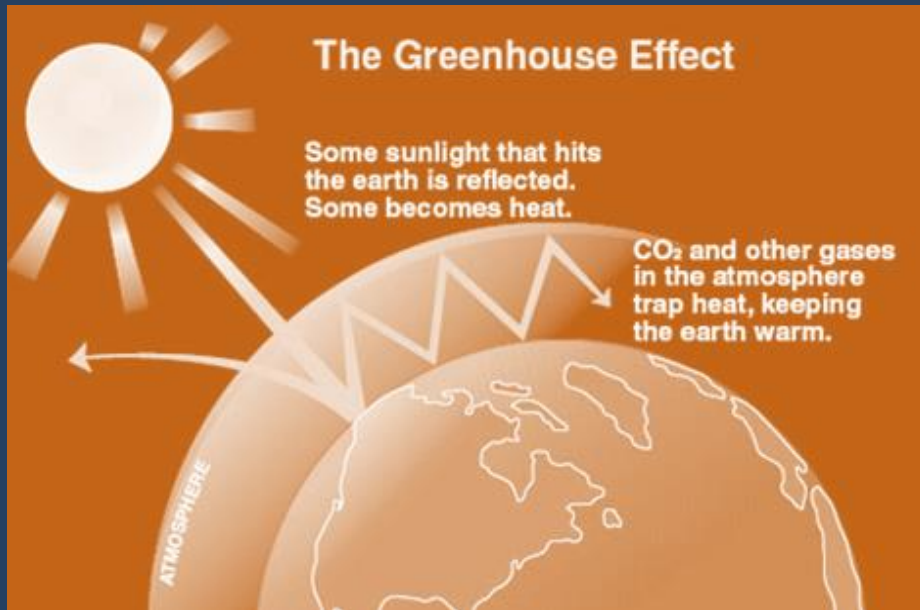
- Rising temperatures (+ 0.85 degrees Celsius since 1800's)
- More extreme weather events (rainfall & droughts)
- Rising sea levels (0.19m rise between 1901–2010)
- Decreasing snow cover, melting ice sheets, shrinking glaciers

Overview of Climate Change

What is causing Climate Change ?

Greenhouse gases (GHG) keep the Earth warm by trapping heat in the Earth's atmosphere.

The Greenhouse Effect - A natural process which results in the warming of the earth's temperature



Over the last century very high amounts of GHGs have been released in the environment resulting in **Global Warming** which causes **Climate Change**

Human activities have released extra GHGs

Overview of Climate Change

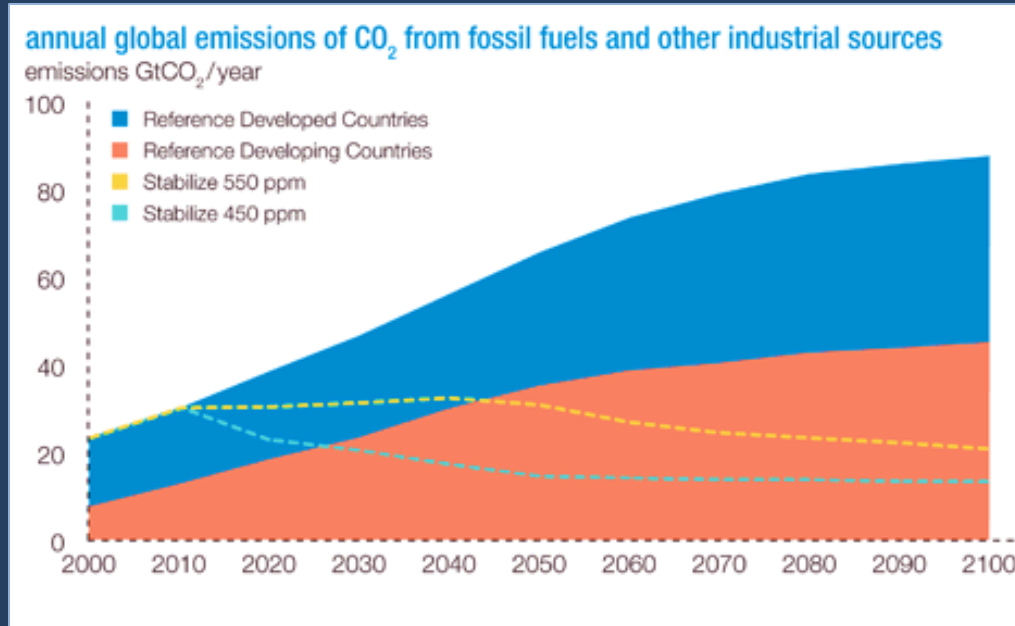
What Human Activities generate Greenhouse Gases ?

Greenhouse Gas	Industrial Sources	Land Use Sources
Carbon dioxide (CO ₂)	Fossil Fuel Combustion and cement manufacturing	Deforestation and burning of forests
Methane (CH ₄)	Landfills, coal mining, natural gas production	Conversion of wetlands Rice paddies Livestock production
Nitrous oxide (N ₂ O)	Fossil fuel combustion , Nitric acid production	Fertiliser use Burning of biomass
Hydrofluorocarbons (HFCs)	Industrial processes Manufacturing	---
Perfluorocarbons (PFCs)	Industrial processes Manufacturing	---
Sulphur hexafluoride (SF ₆)	Electrical transmission & distribution systems	----

**Carbon dioxide (CO₂) is a major GHG responsible for global warming -
Contributes to approximately 78% of total GHG emission**

Overview of Climate Change

Who is Responsible for Climate Change ?



All countries emit GHGs and contribute to climate change (however some countries contribute a much larger portion than others)

Developed countries have the greatest historical responsibility for increased greenhouse gas emissions...

Overview of Climate Change

What Are The Impacts Of Climate Change ?

Climate change will affect all aspects of human life...globally

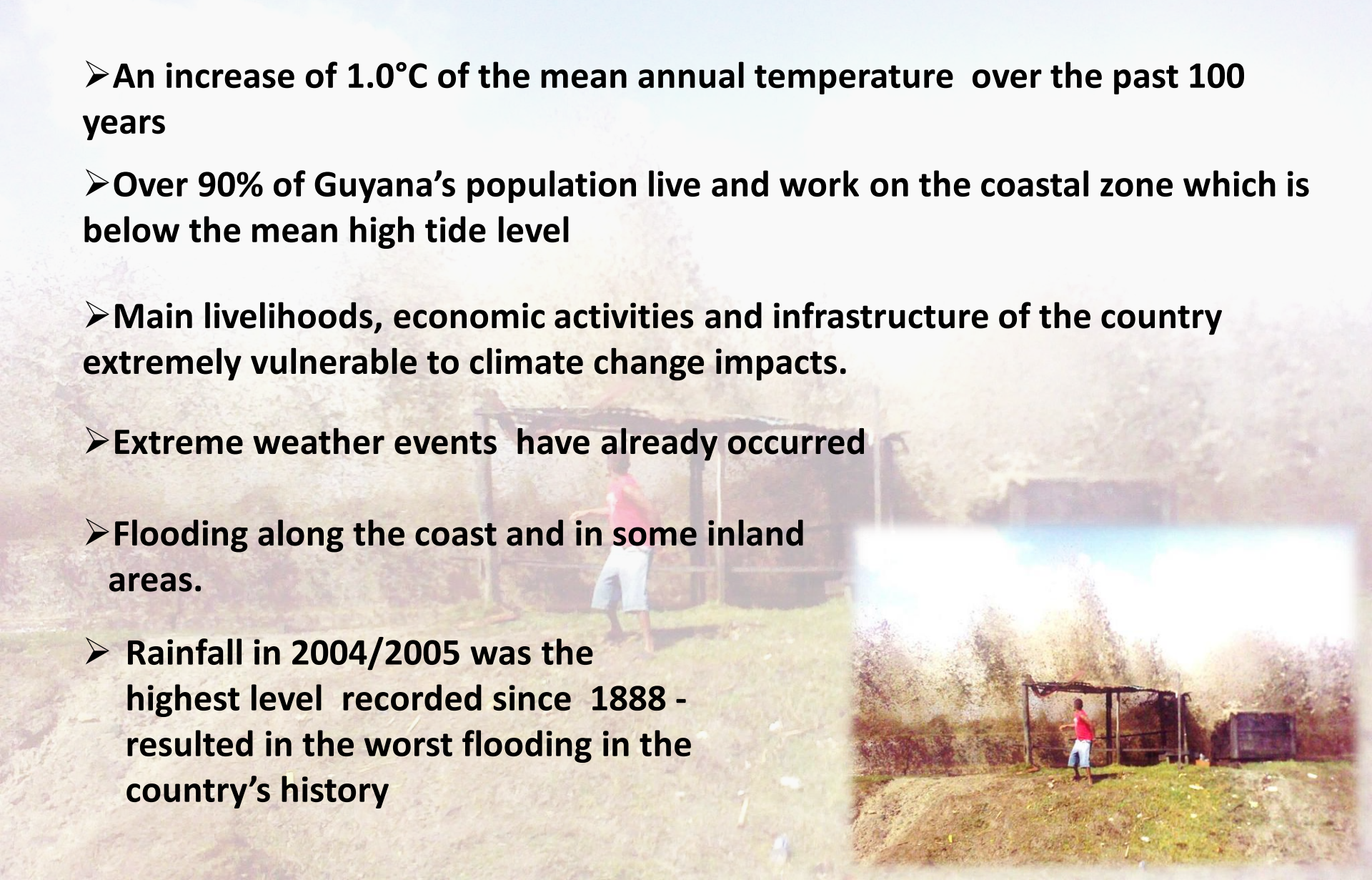
Floods , Droughts , Threats to Food Security , Threats to Health , Damage to Eco-systems , Loss of Habitats & Species , New and invasive species , Water quantity and quality affected, Threats to Human Security

Impacts will get worse if **Strong Actions** are not taken to **Reduce GHG Emissions**

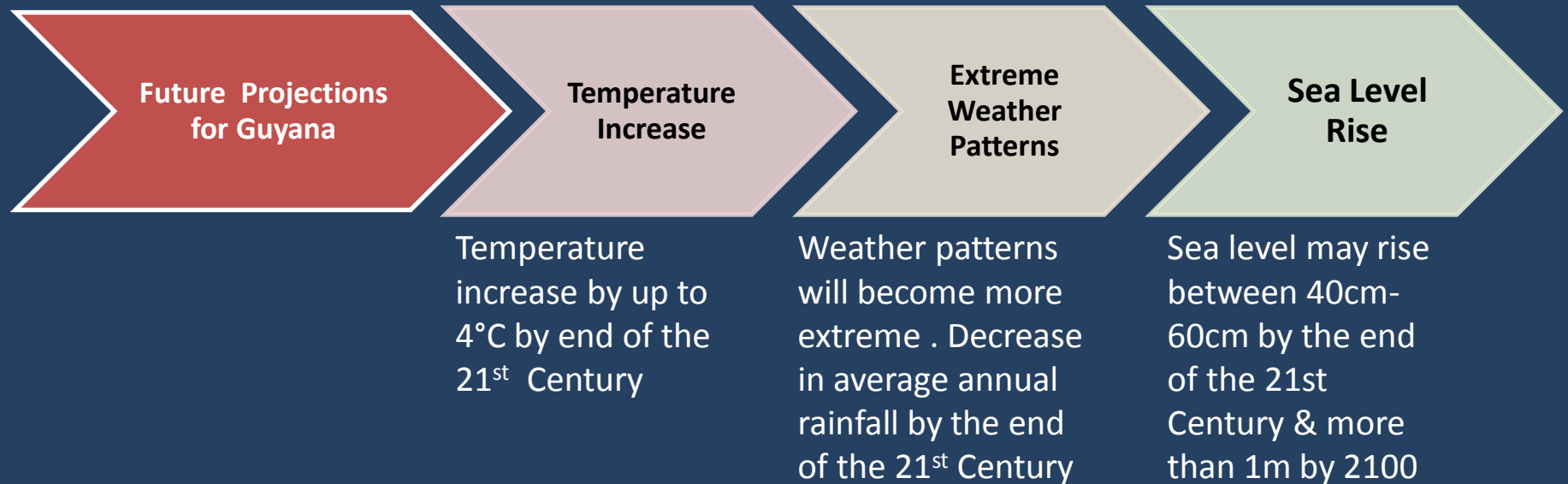


How is Climate Change Affecting Guyana ?

- **An increase of 1.0°C of the mean annual temperature over the past 100 years**
- **Over 90% of Guyana's population live and work on the coastal zone which is below the mean high tide level**
- **Main livelihoods, economic activities and infrastructure of the country extremely vulnerable to climate change impacts.**
- **Extreme weather events have already occurred**
- **Flooding along the coast and in some inland areas.**
- **Rainfall in 2004/2005 was the highest level recorded since 1888 - resulted in the worst flooding in the country's history**



Projections of Climate Change for Guyana



Sectoral Impacts of Climate Change for Guyana



Agriculture:

Decrease in yield of crops as temperature increases in different parts of Guyana.

Loss of crop yields from inundation and salinisation.

Coastal Zone:

Sea level rise is projected to displace populations in coastal zones

Increased flooding in low-lying coastal areas



Water resources:

Increase in the severity of droughts and intensity of floods .

General reduction in the quantity of available run-off



CLIMATE CHANGE

Human Health:

Higher incidence of vector-borne (i.e. malaria and dengue) and water-borne (i.e. cholera and diarrhoea) diseases

Malnutrition



Addressing Climate Change

In order to prevent catastrophic climate change at a global level, the world has to take urgent action in reducing the amount of greenhouse gas emissions in the atmosphere.

There are two main approaches of addressing climate change:
Mitigation and **Adaptation**

Adaptation

Adjusting natural or human systems in response to actual or expected climate change and its effects

Mitigation

Reducing climate change by reducing the level of Greenhouse gases emitted

Addressing Climate Change



Global and Local Framework

The UNFCCC (1992) (Guyana signed on in 1992) & other conventions

The Kyoto Protocol (1997) and amendment (2012) (Guyana acceded to the KP in 2003)

On-going negotiations to find global solutions – Guyana participates

Research and studies - Guyana has prepared several studies

Partnerships - Guyana works along with other countries to address climate change

Climate Change mitigation and adaptation initiatives and projects – Guyana has taken key steps towards this

Addressing Climate Change

Forests and Climate Change

Forests hold a significant standing stock of global carbon.

When forests are damaged or cleared, the carbon stored in trees is released in the form of carbon dioxide (CO₂), thereby increasing the levels GHGs.

Deforestation and land use change account for nearly 20% of GHG emissions.

More than 14 million hectares of forests are deforested each year, releasing about 2.2 billion tonnes of Carbon Dioxide (CO₂) per year.

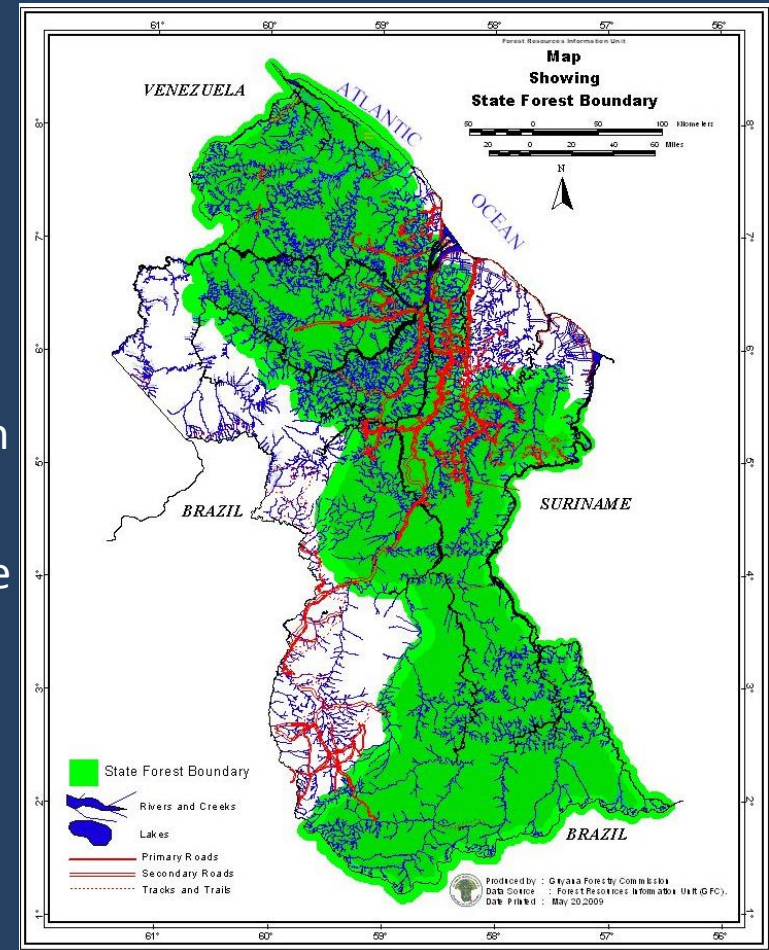
The UNFCCC adopted a mechanism to support and reward countries that avoid deforestation - Reducing emissions from Deforestation in Developing Countries (REDD).

REDD+ creates more incentive for High Forest Cover, Low Deforestation (HFLD) countries like Guyana to maintain a low rate of deforestation.

Addressing Climate Change

How is Guyana using its forests to address climate change ?

- 85% of Guyana's (estimated 18.39 million hectares) is covered in pristine forests
- Guyana has historically low rates of deforestation
- The Government of Guyana (GoG) has placed the protection and sustainable management of its forest as a major national priority.
- By opting to maintain its low rates of deforestation, Guyana is helping to reduce CO2 emissions into the atmosphere





Low Carbon Development Strategy

Transforming Guyana's Economy While Combating Climate Change

Guyana's Low Carbon Development Strategy (LCDS)

In 2009, Guyana launched a pioneering initiative – the Low Carbon Development Strategy (LCDS)

- It seeks to enable a development pathway for Guyana which balances economic development and sustainability.
- It aims to transition the country towards a low deforestation, low carbon, climate resilient economy.
- It examines how we can maintain the forests while receiving payments for the services that the forest provide in the fight against climate change



Guyana's Low Carbon Development Strategy (LCDS)

Economic Development

- Guyana wants to increase incomes, employment and create a better standard of living for its people
- New economic opportunities are emerging in Guyana, including infrastructure development and globally increasing prices for commodities
- However, unconstrained economic development could endanger Guyana's standing forests and natural environment

Done poorly, development could cause deforestation



Addressing Climate Change

- Urgent action is needed to address climate change and to reduce greenhouse gas emissions
- Reducing deforestation is one of the most cost-effective and practical solutions to addressing climate change
- Guyana can make a difference by being part of the solution and using its forests to address climate change
- However, our forests are one of our greatest assets, and we also have to develop as a country

Done poorly, climate policy could stunt development

How does the Strategy work?

The Strategy addresses 4 Key Issues:

Value of Guyana's Forest

- Future development in Guyana requires the nation to use its assets to maximum effect.
- Guyana's forest is our most valuable asset (if it was harvested and put to agricultural and other after use, it could generate about US\$580 million per annum for the nation in future years (known as Economic Value to the Nation or EVN))
- REDD+ and Guyana's partnership with Norway and others may generate payment for forest services that make the forests worth more alive than dead.

Low Carbon Development Opportunities

- Payment for forest services can enable Guyana's economy to be realigned onto a low carbon development trajectory
- Investment in Low Carbon Economic Infrastructure - Hydropower; drainage, irrigation, Sea-defence, Road development; fibre optic cables
- Investment and Employment in Low Carbon Economic Sectors - Commercial production of fruits and vegetables, aquaculture, sustainable forestry, wood processing to produce high value products.

How will this Strategy work?

The Strategy addresses 4 Key Issues:

Supporting Adaptation and Climate Change Resilience

- Guyana's people and productive land can be protected from extreme weather patterns
- Currently 10% of current GDP lost from flooding annually
- Infrastructure (drainage & irrigation, sea defences)
- Systems (building codes, early warning systems)
- Flood Insurance
- Flood resistant crops
- Hinterland adaptation

Investment in Human Capital & Involvement of Guyanese

- Ensure that citizens will have expanded access to improved social services such as health, education/vocational training, low carbon electricity, clean water, and employment that does not threaten the sustainability of the forest resources
- Intense consultations and awareness sessions have involved all stakeholders across the country to participate in the development and implementation of the Strategy.

Involvement of Stakeholders in the LCDS



- Implementation of Guyana's LCDS is overseen by a **Multi-Stakeholder Steering Committee (MSSC)**, chaired by the President
- The MSSC represents a **cross-section of National Stakeholders** including: Indigenous NGO groups, Conservation NGOs, the Private Sector, Labour, Youth, Women, Academia and Civil Society.
- Stakeholder awareness, education and engagements on Guyana's climate initiatives and the LCDS ongoing.

The Guyana – Norway Agreement

- Guyana is supporting the implementation of the LCDS through national efforts and through partnerships with other countries.
- On November 9, 2009, former President Bharrat Jagdeo and Minister of the Environment and International Development of Norway, Hon. Erik Solheim, signed a historic MoU.
- Norway committed to providing Guyana up to US\$250M by 2015 for avoided deforestation.
- The agreement is the first of its kind and can be used as a model for other countries
- The MoU specified the establishment of the financial mechanism through which payments from Norway, and other donors can be channelled- the Guyana REDD+ Investment Fund (GRIF).



Status of the LCDS and the Norway Partnership

Guyana's has earned US\$ 115 million to date

- A Joint Concept Note was produced by the Governments of Guyana and Norway to guide work under the Partnership
- The money obtained from the Guyana-Norway MoU is being used to finance LCDS priority projects
- Several projects have been launched and have commenced.
- In March 2013, the LCDS was updated and outlined additional priority areas.

Priority Projects under the LCDS

Existing Projects	New Project Areas
Micro and Small Enterprise Development and Building Alternative Livelihoods for Vulnerable groups	Climate Resilience, Adaptation and Water Management
Institutional Strengthening	Hinterland Amerindian Development
Adaptation Project (Cunha Canal Rehabilitation)	International Centre for Biodiversity
Amerindian Development Fund	Clean Transportation Programme
Amerindian Land Titling	Facilitation of Investment in High Potential Low Carbon Sectors
Amaila Falls Hydropower Project	Curriculum Development
Expanding the Digital Economy and Avoiding a Digital Divide (One Laptop per Family Project, Fibre Optic Cable)	Eco-Tourism

Status of the LCDS Projects

Micro and Small Enterprise (MSE) Development and Building Alternative Livelihoods for Vulnerable Groups

The MSE will address bottlenecks that constrain the development of MSEs and the ability of vulnerable groups to build alternative livelihoods in Guyana:

- i) Limited access to finance and
 - ii) Limited technical and business skills
- Currently, loan applications are being processed at GBTI. There is also an interest payment support facility that helps clients to pay their interest
 - MOUs have been signed with two training providers - 522 persons trained in basic business management, marketing, record keeping, packaging and labelling, and a special course aimed at female entrepreneurs
 - The Grant component is being finalised and grant applications are expected to be processed soon



Status of the LCDS Projects

Adaptation Project – Cunha Canal Rehabilitation

- Works will improve the ability of the Government of Guyana to manage water resources in the East Demerara Water Conservancy (EDWC).
- Rehabilitation of the Canal will increase its discharge capacity and contribute to reducing the risks of the embankment overtopping and flooding of areas along the East Bank of the Demerara.
- Full project document is in final stages of completion



Status of the LCDS Projects

Amerindian Development Fund (ADF)

- Will provide funding to support the socio-economic development of Amerindian communities and villages through implementation of their Community Development Plans (CDPs).
- Phase 1 of the ADF was launched on March 2013.
- To date funds have been approx. G\$ 100 million has been disbursed to 26 of the initial 27 communities/villages in first phase.
- Preparation of full project document to fund remaining 160 CDPs in final stages of completion



Status of the LCDS Projects

Amerindian Land Titling Project

- Will facilitate and fast track the Amerindian Land Titling process.
- On the 21st October 2013, agreement for project implementation was signed between GoG and UNDP
- Project is being implemented
- Procurement of key project personnel ongoing



Status of the LCDS Projects

Expanding the Digital Economy & Avoiding a Digital Divide



- **Fibre Optic Cable:** Enhancing broadband connectivity between the coast and the hinterland, as well as connections to Brazil's telecommunications network.
- **One Laptop per Family (OLPF) Project:**
 - The Project is providing Internet-connected mobile computers to families throughout Guyana who otherwise might be excluded from the opportunities presented by modern ITC sector. As of March 2013, 26,832 laptops were distributed supported by on-going training.
- **Telecommunications Liberalisation**

New LCDS Project Areas

Several new initiatives targeted for the period 2013-2015

Climate Resilience, Adaptation and Water Management

Initiatives to improve Guyana's ability to cope with climate change:

- Upgrading infrastructure and assets to protect against flooding through urgent, near-term measures
- Hinterland Adaptation
- Adaptation Readiness Programme



New LCDS Project Areas

Facilitation of Investment in High Potential Low Carbon Sectors

- Will involve the development of priority low carbon sectors.
- Priorities to 2015 will include business process outsourcing, aquaculture, eco-tourism, and fruits and vegetables.
- In parallel, work to strengthen the sustainable forestry and mining sectors will continue.



New LCDS Project Areas

International Centre for Biodiversity Research

- Project will see investment in human resources, infrastructure, facilities and equipment to develop a self-sustaining scientific research centre at the University of Guyana (UG).
- The Centre will be dedicated to researching Guyana's biodiversity and assessing its economic value and how this can be maximized.
- It will work with emerging global institutes to ensure that Guyana is integrated with international advances in relevant fields



Second Set of LCDS Projects

Hinterland and Amerindian Development

Much of the work that has started including land titling initiatives will continue up to 2015.

The ADF will continue to be capitalized to provide financing for more CDPs. Further measures will also receive investment to support the following:

- Hinterland Adaptation measures;
- Improving Information and Communication Technology (ICT) access
- Facilitating Hinterland Distance Learning through ICT.

New LCDS Project Areas

Clean Transportation

Work will commence for seeking low carbon transportation options for Guyana, and to quantify how they can benefit the economy.

Curriculum Development

Steps are being taken to integrate low carbon development concepts into the primary school curriculum.



The Way Forward



- Ongoing development and implementation of climate change and LCDS projects & initiatives
- Guyana will continue to negotiate its positions on climate change
- Continued stakeholder engagements



Images by Earth Day Network

Climate Change is a Serious Global Problem that
Affects Everyone !

Let's Work Together to Find a Global Solution

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