Advancing Guyana's National Ambition

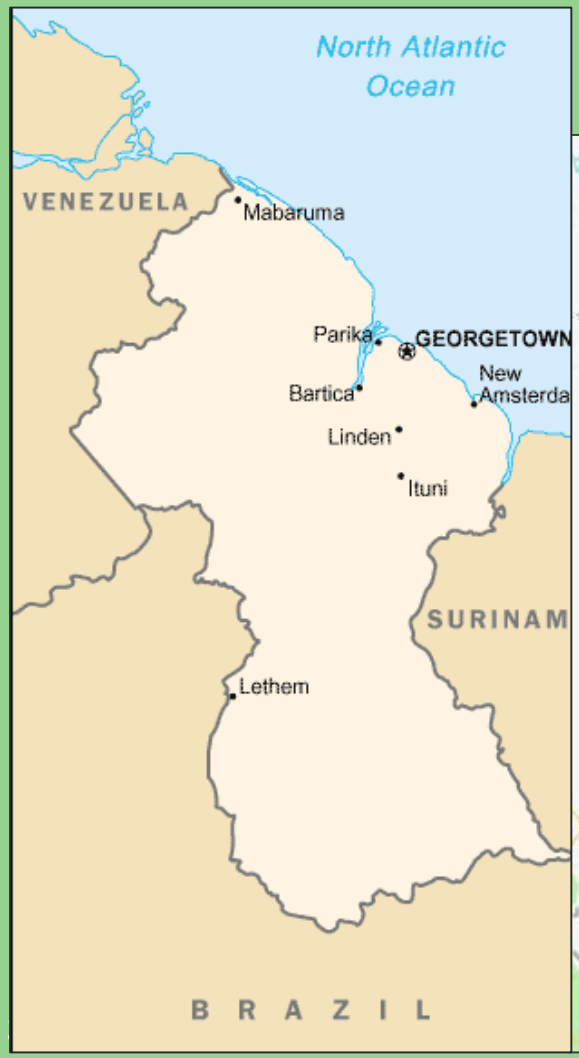
Mangrove Management

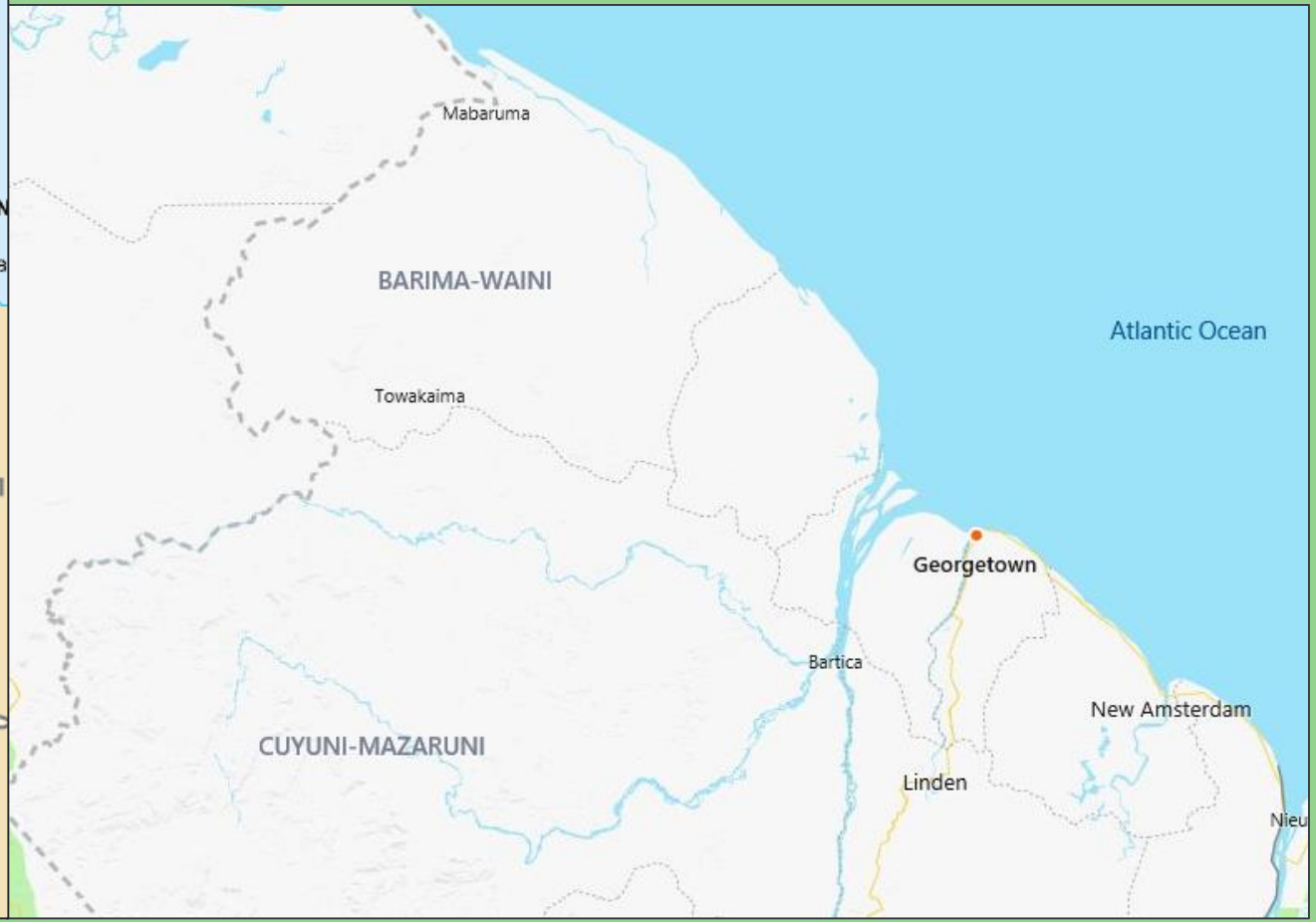
Adiola Walcott
Technical Officer-Mitigation
Office of Climate Change
Ministry of the Presidency
Guyana

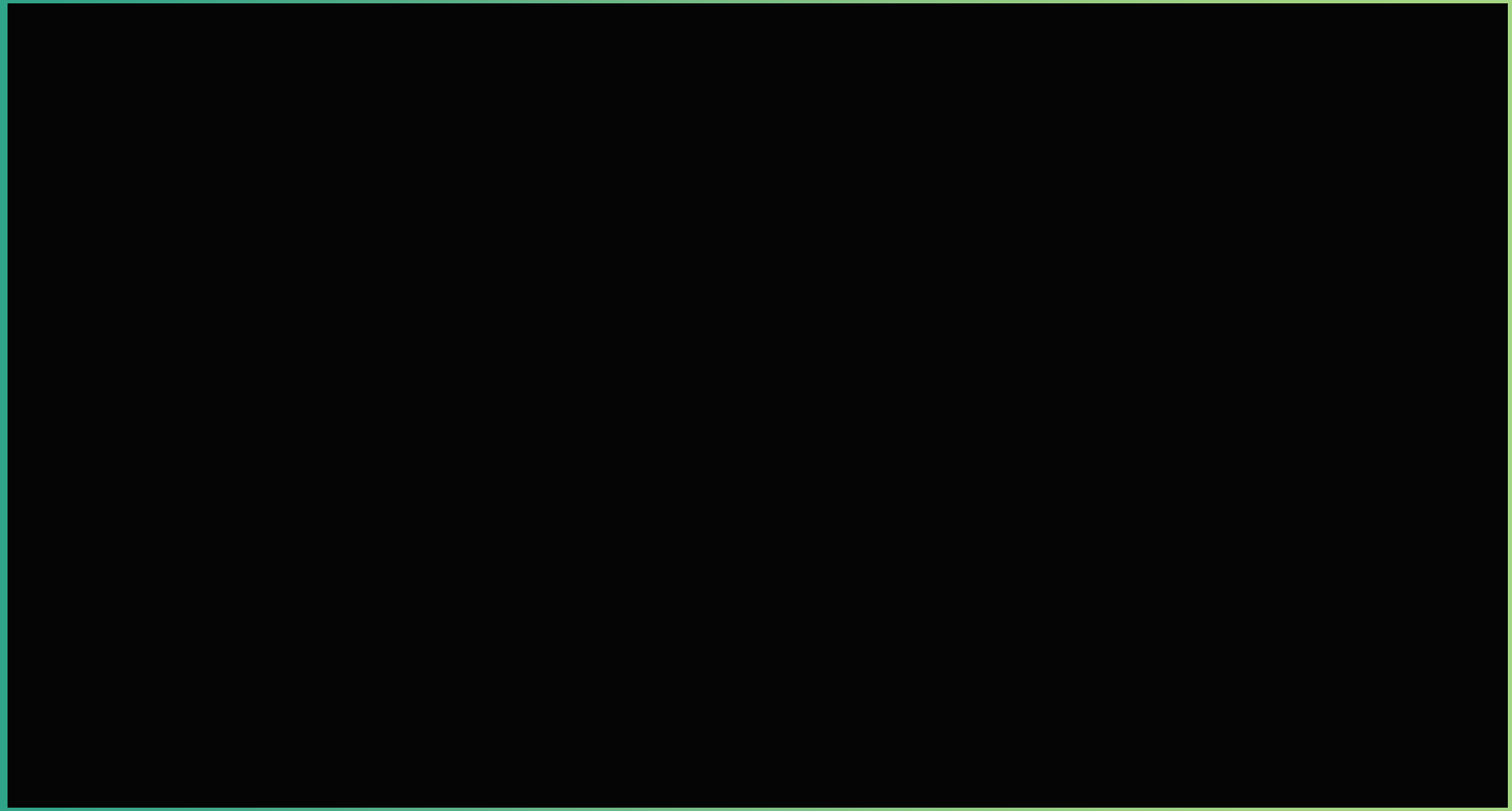
Outline

- ❑ Country Context
- ❑ National Mangrove Restoration Programme
- ❑ Governance
- ❑ GCF Project
- ❑ Other Mangrove Projects
- ❑ Recommendations

Geography


North Atlantic Ocean
VENEZUELA
Mabaruma
Parika
GEORGETOWN
New Amsterda
Bartica
Linden
Ituni
SURINAM
Lethem
BRAZIL


Mabaruma
BARIMA-WAINI
Atlantic Ocean
Towakaima
Georgetown
Bartica
New Amsterdam
CUYUNI-MAZARUNI
Linden
Nieu



Coastal Profile

- The coastline extends for 430 kilometers
- Protected by hard and soft engineering structures
- 90% of the population reside on the Coast.
- The administrative, agricultural, industrial and residential activities are concentrated.
- Infrastructure was first constructed by the early Dutch settlers.

Guyana's Vulnerability Along the Coast

- The Coastal belt is 1.4 meters below mean sea level
- Vulnerable to flooding, erosion and salinization, sea level rise
- 55% of all Guyanese reside within 10 metres of the average sea level
- Guyana is number 5 of ten countries with the largest share of their population living within ten meters of the average sea level.
- Sea level rise in Guyana rose at a rate some six times the global average, (10.2 millimeters per year), around 6 times the twentieth century average, or 3 times the 1993 to 2009 annual average.

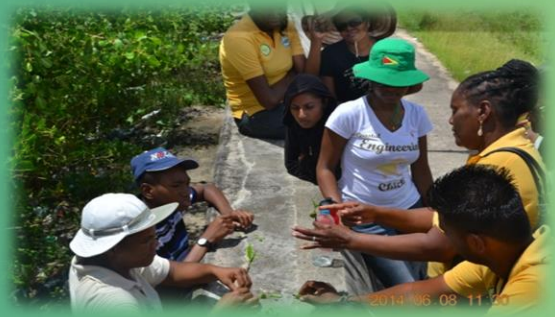
National Mangrove Restoration Programme

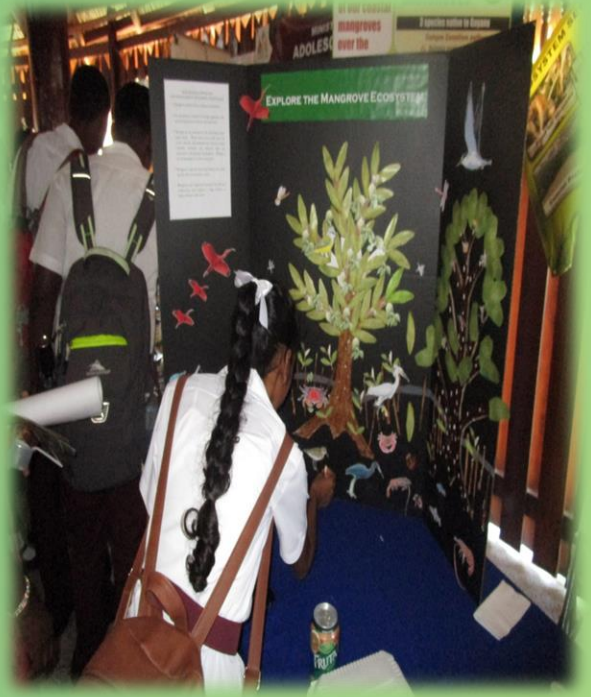
The NMRP works to:

- Strengthen administrative capacity,
- Promote sustainable management of mangrove,
- Support research and development of Guyana's mangrove forest,
- Develop effective protection and/or rehabilitation of mangrove ecosystems,
- Increase public awareness and education on mangrove

Community Involvement:

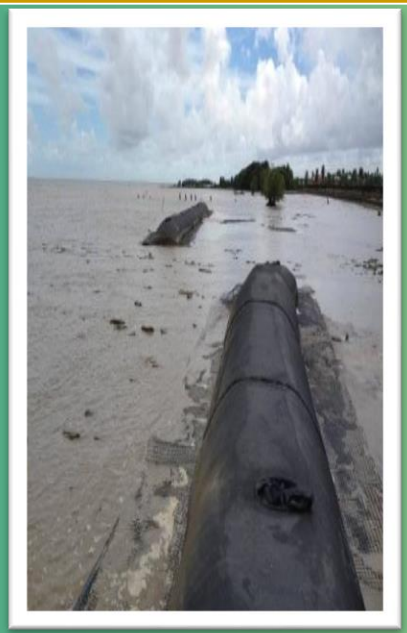
Public Awareness, Education and Training





Restoration Interventions

Mangrove seedling planting	Coastal Engineering Structures	Spartina Grass Planting	Restrictive Gates and Fences



Governance

- Mangroves were declared protected species under the Forest Act (CAP.67:01) in 2010.
- Embedded in Guyana's Green State Development Strategy, National Climate Change Policy, Nationally Determined Contribution and the Mangrove Management Action Plan
- The Mangrove Department coordinates restoration and monitoring activities.

GCF Project

- Project Title: Unlocking the Potential of Guyana's Inland and Mangrove Forests to further Reduce Emissions and to Build Resilience to Climate Change.

Objective

- To harness Guyana's forests (including mangroves) to enhance climate change mitigation and ecosystem-based adaptation, resulting in 12 MtCO2e avoided emissions and 465,000 people who are more resilient to floods.

Outcomes

- Outcome 1 (Forests/mitigation Component): Deforestation and forest degradation from mining and logging activities reduced.
- Outcome 2 (Ecosystem-based Adaptation Component): Resilience of communities vulnerable to flooding is improved.
- Outcome 3 (Monitoring and Reporting Component): Use of climate information in decision-making is increased.

Status of the GCF Project

- The concept note will be revised to remove the components that are being advanced under other projects.

Mangrove Projects

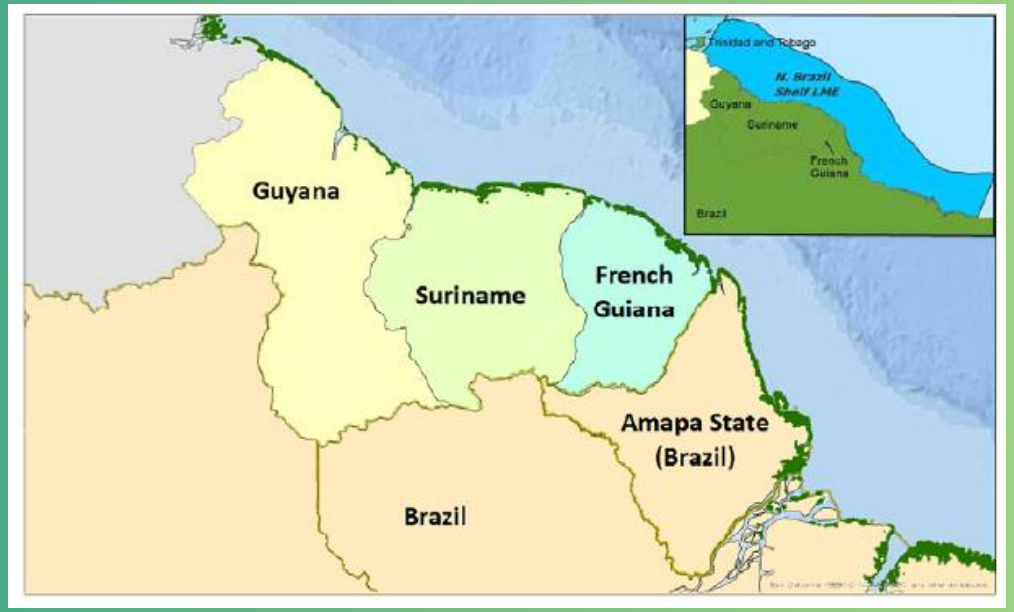
11th EDF

Specific objectives

- Provide technical support to key stakeholder for the establishment of two mangrove reserves.
- Draft a Mangrove Forest Reserve Management Plan for two locations

Mangrove Project

Title: “Setting the foundations for zero net loss of the mangroves that underpin human wellbeing in the North Brazil Shelf Large Marine Ecosystem”



Mangrove Project

Objective:

- To generate the necessary baseline knowledge and technical assessments as inputs towards a collaborative vision and a coordinated well-informed management of NBS mangrove systems, with emphasis on the information needs of Guyana and Suriname.

- To support development of transboundary coordination mechanism(s) between the countries of Guyana, Suriname, French Guiana, and Brazil (state of Amapá) towards the improved integrated coastal management of the extensive, ecologically-connected yet vulnerable mangrove habitat of the NBS region.

Outputs

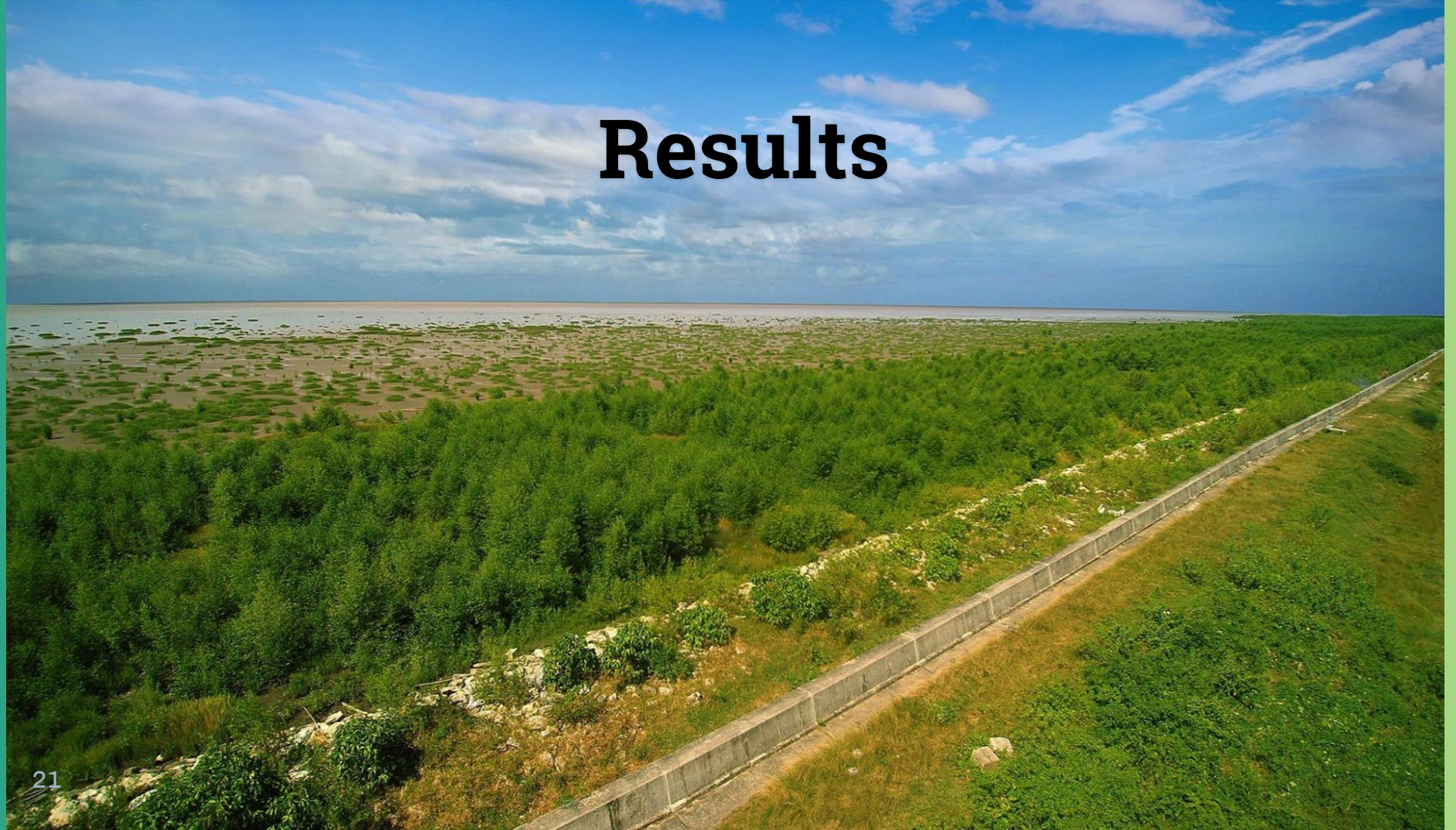
- Updated mangrove maps for Guyana and Suriname
- Ecosystem Valuation at the local, national and global level, including biocarbon feasibility study
- Biophysical Characterization and threats to mangroves
- Policy Analysis that identifies spatial management, use, regulations and tenure arrangement for mangrove

Blue Carbon Feasibility Assessment

Specific Objectives

- A review of NBS mangrove ecological structure, function, and key environmental factors regarding carbon sequestration and storage potential;
- dimensioning NBS mangrove potential as carbon sink
- dimensioning NBS mangrove carbon value.

Results



Carbon stock data for Guyana using mangrove area estimates from Global Mangrove Watch (2018).

Year	Area (ha)	AGB (Mg)	BGB (Mg)	AGB C (Mg C)	BGB C (Mg C)	Soil C (Mg C)	Total C (Mg C)	C stock change from prior year (%)
1996	27,983	6,428,715	2,778,484	3,085,783	1,083,609	4,334,503	8,503,895	
2007	27,424	6,300,276	2,722,973	3,024,132	1,061,959	4,247,904	8,333,996	-2.00
2008	27,284	6,268,122	2,709,076	3,008,698	1,056,539	4,226,224	8,291,462	-0.51
2009	27,202	6,249,324	2,700,951	2,999,675	1,053,371	4,213,550	8,266,596	-0.30
2010	27,393	6,293,226	2,719,926	3,020,749	1,060,771	4,243,151	8,324,671	0.70
2015	26,739	6,142,856	2,654,936	2,948,571	1,035,425	4,141,765	8,125,761	-2.39
2016	26,836	6,165,209	2,664,597	2,959,300	1,039,193	4,156,837	8,155,330	0.36

Carbon stock data for Guyana using mangrove area estimates from Hamilton and Casey (2016).

Year	Area (ha)	AGB (Mg)	BGB (Mg)	AGB C (Mg C)	BGB C (Mg C)	Soil C (Mg C)	Total C (Mg C)	C stock change from prior year (%)
2002	18,824	4,324,559	1,869,070	2,075,788	723,937	2,915,795	5,720,521	-0.01
2003	18,819	4,323,410	1,868,574	2,075,237	728,744	2,915,020	5,719,001	-0.03
2004	18,816	4,322,721	1,868,276	2,074,906	728,627	2,914,556	5,718,089	-0.02
2005	18,812	4,321,802	1,867,878	2,074,465	728,473	2,913,936	5,716,874	-0.02
2006	18,810	4,321,343	1,867,680	2,074,245	728,395	2,913,626	5,716,266	-0.01
2007	18,807	4,320,654	1,867,382	2,073,914	728,279	2,913,162	5,715,354	-0.02
2008	18,800	4,319,045	1,866,687	2,073,142	728,008	2,913,077	5,713,227	-0.04
2009	18,797	4,318,356	1,866,389	2,072,811	727,892	2,911,613	5,712,315	-0.02
2010	18,790	4,316,748	1,865,694	2,072,039	727,621	2,910,528	5,710,188	-0.04
2011	18,780	4,314,451	1,864,701	2,070,936	727,233	2,908,979	5,707,149	-0.05
2012	18,777	4,313,762	1,864,403	2,070,606	727,117	2,908,515	5,706,238	-0.02
2013	18,777	4,313,717	1,864,384	2,070,584	727,110	2,908,485	5,706,179	-0.001
2014	18,773	4,312,739	1,863,961	2,070,115	726,945	2,907,825	5,704,885	-0.02

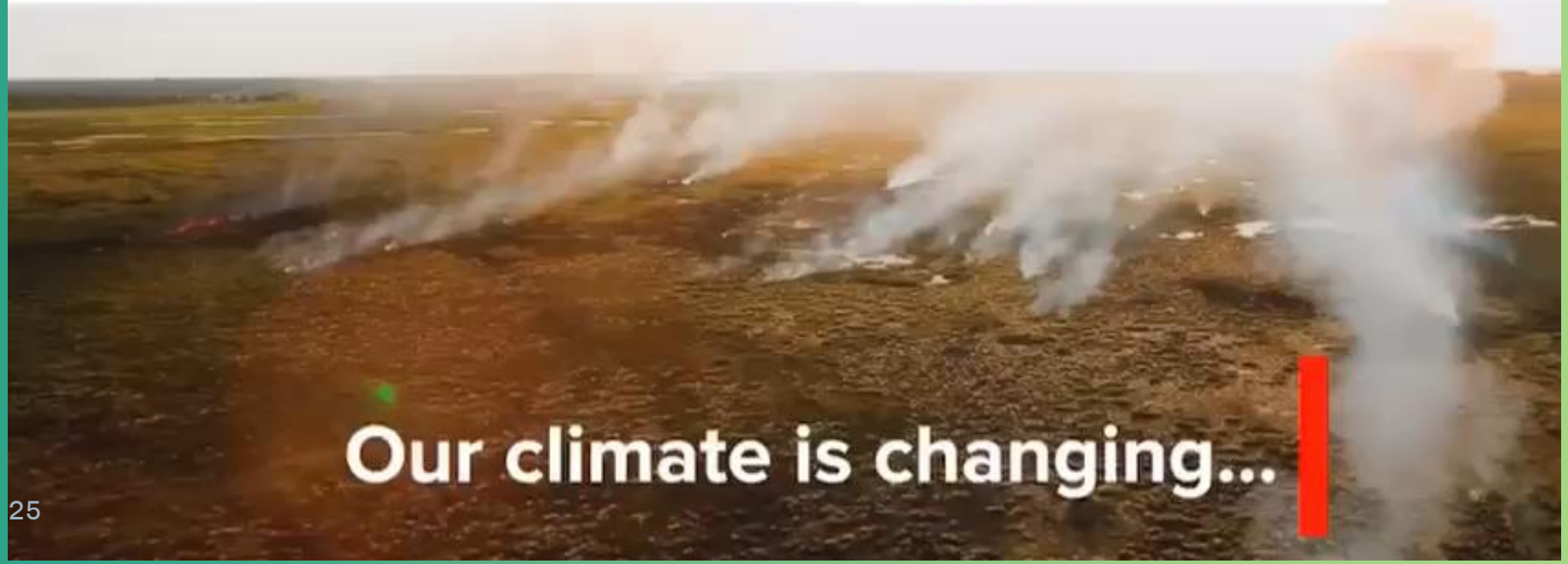
Recommendations

- Conduct further assessment combined with research
- Update the National Mangrove Management Action Plan to reflect new technologies and concepts
- Establish a scheme for Coastal Management synchronized with mudbank dynamic
- Upscaling building with nature approach by using construction of hybrid engineering structures such as bamboo brushwood dams
- Explore opportunities of establishment of mangrove based economy for local communities

Amazon fires: Record number burning in Brazil rainforest - space agency

21 August 2019

Share



Contact Information

 Adiola.Walcott.occ@motp.gov.gy

 climatechange.gov.gy

 Climate Change Guyana

 occguyana

 occguyana