GUYANA

SIXTH NATIONAL REPORT TO THE CONVENTION ON BIODIVERSITY

SEPTEMBER 2019

Section I. Information on the targets being pursued at the national level

I. Information on the targets being pursued at the national level

☒ My country has adopted national biodiversity targets or equivalent commitments in line with the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets

NATIONAL TARGETS

Target 1	17% of terrestrial area for *in-situ* conservation in legal protection by 2020 effectively managed and financially sustainable.
Target 2	Reducing biodiversity loss and showing recovery by 2020.
Target 3	By 2020, Protected Areas Trust Fund established, have adequate resources, and fully functioning.
Target 4	By 2015, at least three (3) mined-out sites have been duly restored and managed.
Target 5	The Germplasm Facility (Gene Bank) is formalized by end of 2015 in accordance with FAO Germplasm Standards and 1st Report published in 2016.
Target 6	By 2020 REDD+ framework established and functioning
Target 7	By 2016, a National Conflict Resolution Strategy for REDD+ developed and functional.
Target 8	By 2020, biodiversity concerns are integrated into hinterland ecotourism development plans and strategies.
Target 9	By 2016, a GEF supported project designed to mainstream biodiversity into mining
Target 10	Guidelines for responsible recreational fishing and practices in ornamental fish collection and handling published and at least 2 awareness and training programmes conducted per year.
Target 11	The achievement of the intended impact of the full implementation of the communication strategy for the implementation of the NBSAP.
Target 12	By 2020, Coastal Wetlands, Savannahs, Mountain Highlands and Rainforests eco-systems featuring in the Zoological Park to highly encourage visitors and enhance informal education through interactive and engaging experiences.
Target 13	Fifth national report submitted in 2014.
Target 14	By 2014, revised NBSAP completed.
Target 15	By 2015, indicators developed, adopted and being used.
Target 16	By 2015, MEAs Committee established.
Target 17	By 2015, a status report on the implementation of MEAs.
Target 18	By 2015 finalise the ABS regulations
Target 19	By 2016, research interface developed with University of Guyana, Conservation International, and WWF.
Target 20	By 2020 all timber for export to the EU will be verified legal and granted a FLEGT license.
Target 21	By 2020, all developers and operators will secure environmental authorization.
Target 22	By 2020, develop standards for air and water quality.
Target 23	By 2020, EU-FLEGT VPA in place.
Target 24	By 2020, MRV system in place and functioning fully.
Target 25	By 2020, monitoring reports for large projects submitted to the EPA.
Target 26	Clearing House Mechanism fully functional.
Target 27	By 2020, a biodiversity information system established.
Target 28	By 2020, an updated and fully functional National Biodiversity Research Information System (NBRIS).
Target 29	Resource mobilization plan prepared in 2014.
Target 30	By 2015, all of the initial GEF SGP allocation programmed.
Target 31	By 2016, at least 2 biodiversity related projects designed and submitted for GEF Council approval

RATIONALE FOR THE NATIONAL TARGETS

Guyana's biodiversity provides an important basis for climate regulation, poverty reduction, provisioning of freshwater, economic growth and development in agriculture, forestry and fisheries, payment for forest climate services, and community based economies in hinterland communities. Loss of biodiversity and any disruption in the provision of ecosystem services would impact negatively on the economy and on the quality of life and in particular on the remote and Amerindian (indigenous) communities. Climate change, deforestation and land degradation have received greater recognition as current and future drivers of environmental change and threats to Guyana's biodiversity.

Guyana's Vision for biodiversity is "By 2030, biodiversity is sustainably utilized, managed and mainstreamed into all sectors contributing to the advancement of Guyana's bio-security, and socio-economic and low carbon development". The revised NBSAP (2012-2020) reflected Guyana's low carbon development thrust; mainstreaming of biodiversity in priority sectors such as agriculture, mining and ecotourism; *in-situ* and *ex-situ* conservation of biodiversity; recognized the need for better quality of information to assess status, threats and trends in biodiversity; emphasized the need for communication, resource mobilization, capacity building and coordination strategies to ensure effective natural resources planning and management; and placed emphasis on monitoring and evaluation and better implementation of conventions and protocols.

National Development Strategies and Plans in which and from which Targets were included and/or developed —National Development Strategy 2001-2010, Low Carbon Development Strategy and the National Strategy for Agriculture 2013 to 2020 and Poverty Reduction Strategy Papers.

It was reaffirmed in the National Development Strategy (NDS) 2001-2010 that environmental considerations should underpin all aspects of development, whether physical or social and that environmental protection is a matter of human survival. It was stressed that the development of the NDS 2001-2010 must be predicated on the basic principle that Guyana's development must not threaten the integrity of the environment. In the NDS, Guyana signalled its commitment to ensuring the integrity of forest systems, conservation and protection of selected forests areas with high species diversity, as genetic reservoirs for the future. The establishment of a National Protected Area System was given priority and was set to begin in 2000. Identified for protection was the Kaiteur National Park (legally established in 1929), 14 other natural areas including a biosphere reserve in the southwest of the country and a World Heritage Site at Mount Roraima. It was also acknowledged that the creation of a Protected Area System, or at the very least, according of special status to areas known to possess unique natural characteristics, was fundamental to the development of tourism and in particular ecotourism. To reinforce this linkage, it was proposed to place the institutional arrangements for tourism under a Minister responsible for Environment, Protected Areas and Amerindian Affairs.

Faced with fiscal constraints in its quest for economic improvement and the recognition that the conservation of

the forest ecosystem not only benefitted Guyana but also had global benefits, a mechanism was proposed in the NDS that would compensate Guyana for any decision related to not exploiting its forests for the production of timber and timber products. A special foundation, known tentatively as the Guyana Rainforest Foundation, was to be established with a mandate to mobilise funding from international NGOs, corporations, and bilateral governmental donors. The proposed Guyana Rainforest Foundation would have also sought to promote ecotourism, the medicinal uses of the forest, and other income-generating activities, which do not entail the felling of trees for commercial purposes. It would also promote international agreements on carbon offset for industrial pollution in developed countries.

In 2009, a Low Carbon Development Strategy (LCDS) was launched. The Strategy was aimed at transforming Guyana's economy into a low carbon, sustainable development trajectory, while at the same time combating climate change. The goal of the LCDS was to protect and maintain the forests in an effort to reduce global carbon emissions and at the same time attract payments from developed countries for the climate services that the forests would provide globally. These payments would then be invested to foster growth and development along a low carbon emissions path, without compromising the sovereignty over the forests or affecting the development prospects of the country's population.

It was estimated that with the implementation of the LCDS, Guyana could avoid cumulative forest-based emissions of 1.5 gigatons of CO2e (carbon dioxide equivalent which includes other greenhouse gases) by 2020 that would have been produced by an otherwise economically rational development path. Apart from carbon storage and sequestration, avoided deforestation would also have other positive effects on critical environmental services such as biodiversity and ecosystems.

Outlined in the Low Carbon Development Strategy (LCDS) was how Guyana intended to ensure that at least 10% of the country's land area would be under some form of protection. Stated in the LCDS was Guyana's policy objective of achieving the UNCBD target of having at least 17% of the country's land and inland water under some form of protection by 2020 and a key milestone to this achievement was the passing in 2011 of the Protected Areas Act. For the first time, Guyana had in place a national legislative framework that allowed for the establishment, management and growth of an effective system of protected areas. In Guyana's revised Nationally Determined Contribution (NDC, 2015) submitted to the UNFCCC one of the measures proposed for the emission reduction programme for forests was the conservation of an additional two million hectares through the National Protected Areas System.

The decision to sustainably manage the forestry resources to derive benefits for the economy and create livelihood opportunities resulted in Guyana having one of the lowest rates of deforestation in the world. In doing so, the new

economic opportunity created through avoided deforestation (Reducing Emissions from Deforestation and forest Degradation plus REDD+) allowed Guyana to be one of the first countries to benefit from financial incentives. Part of Guyana's efforts to prove that payments for avoided deforestation could work was demonstrated under a Guyana-Norway partnership agreement. In 2009, a Memorandum of Understanding was signed in which Norway committed to providing Guyana with result-based payments for forest climate services of up to US$250 million by 2015 in a co-operation agreement between the two countries in the fight against climate change, the protection of biodiversity and the enhancement of sustainable development. The REDD+ framework was included in the NBSAP as one of the national targets.

Since 2009, the LCDS has aimed to meet two complementary objectives – the first objective was to sustain Guyana's development and prosperity through following a low carbon development trajectory. The second objective was to build a fully functioning REDD+ model that would provide further operational insights and which would be used to inform the development of the UNFCCC REDD+ mechanism. Guyana began implementing in 2010 the first national scale REDD+ Monitoring Reporting and Verification System (MRVS). This was intended to provide the basis for reporting in accordance with the principles and procedures of estimating and reporting on carbon emissions and removals at the national level as specified by the Inter-Governmental Panel on Climate Change (IPCC) Good Practice Guidelines and Guidance for Reporting.

Reported in the 2013 revised LCDS were the commitments Guyana made because of its engagement with international enforcement and trading initiatives. These were related to forestry and mining and included commitments to the Extractive Industry Transparency Initiative (EITI), the European Union Forest Law Enforcement, Governance and Trade (EU-FLEGT) initiative, Independent Forest Monitoring (IFM) and the UN's Minamata Convention on Mercury. These all relate to land degradation/land reclamation, sustainable use and conservation targets as set out in the NBSAP.

In the NDS 2001-2010 general environmental problems in Guyana were reported as being in two categories *viz.* resource degradation and resource contamination. Examples of resource degradation cited were overfishing leading to the depletion of stocks especially breeding stocks of commercial species; the deforestation of mangrove swamps, resulting in the loss of habitats for juveniles of important marine species and an increase in the danger of flooding in coastal areas; the over-harvesting of inland forests with a consequential loss of habitats and a reduction of species diversity; and soil erosion, with the attendant decrease in the water-holding capacity of watersheds, thus rendering the affected area susceptible to episodes of flooding and siltation. The most common examples of resource contamination were water pollution from mercury, cyanide and other chemical wastes; untreated human and animal wastes; and agricultural and industrial wastes. The greatest signs of environmental degradation were found to be in the bauxite and gold mining industries.

Bauxite mine clearing in Guyana involves the removal of forest cover to allow stripping to be carried out. This is seen as representing a direct destruction of portions of the ecosystem of which the major casualties were fauna and flora. In the process of drying and calcining the bauxite, the ore is heated to remove moisture and to effect a limited degree of chemical transformation. These processes result in the escape of fugitive dust from the kilns, accidental oil spillages, and the release of bauxite tailings. Air pollution was identified as a public health concern, particularly in areas such as Linden, where bauxite is mined and where suspended mineral particulates have been implicated in certain respiratory disorders.

Described as of immense ecological significance was the fouling of streams by colloidal clay suspensions produced by "de-sliming" of deposits in preparation for final recovery of the gold. The more obvious effects of this fouling were the prevention of the growth of aquatic plants as a result of light exclusion, leading to the "death" of streams; the fouling of fish gills causing death by asphyxiation; the smothering of the eggs of aquatic animals, further depopulating streams; and the displacement of human communities due to the loss of domestic water supplies from streams, and of fish and wildlife. Hence the inclusion of targets related to air, water quality and land reclamation in the NBSAP.

Identified in the NDS were the actions, related to mining, which would be required by law to address the environmental issues. These were related to land degradation, land reclamations, air and water quality, all of which were targets that were incorporated in the NBSAP. The actions identified were:

- Early and comprehensive environmental impact assessments, pollution control and other preventive and mitigating measures, monitoring and auditing activities, and emergency response procedures.
- Adoption of best practices to minimise environmental degradation.
- Adoption of environmentally sound technologies in all phases of mining activity and increased emphasis on the transfer of technologies which lessen adverse environmental impacts, including those from small-scale mining operations.
- Long-term mining investment by establishing clear environmental standards with stable and predictable environmental criteria and procedures.
- Site restoration. The backfilling of excavations and the re-vegetation of sites as mining operations proceed will be mandatory. The replacement of topsoil in mined-out areas will be an essential part of site restoration.
- Run-off from dewatering activities in the mines will be channelled initially into settling ponds and not directly into rivers and creeks.
- Maximum allowable dust emission levels will be established and enforced by the Environmental Protection Agency.
- Operating mining entities will be legally required to equip themselves with the necessary equipment and

tools to deal effectively with accidental spillages.

Other actions identified in the NDS related to the development and adoption of the national biodiversity targets were:

- A thorough review of the existing legislation relating to natural resources and the environment with a view to harmonisation and rationalisation in keeping with national priorities.
- Programmes and projects aimed at promoting public awareness and environmental education.
- Community participation in the efforts to manage many vulnerable ecosystems and to conserve the resources of protected areas.

The economic importance of ecotourism was first recognised in the Poverty Reduction Strategy Paper (PRSP) 2002 (*Poverty Reduction Strategy Papers are documents required by the International Monetary Fund and World Bank before a country can be considered for debt relief within the Heavily Indebted Poor Countries initiative*) where it was identified as an economic opportunity for Amerindians who were classified as "extreme poor" based a household income survey. The marketing of Guyana's pristine forests, its fauna and waterfalls was seen as a stimulus to tourism and as expansion of economic opportunities for Amerindians to market their art and crafts, thereby creating employment opportunities. In the PRSP 2011-2015 eco-tourism was once again identified as having promise for employment and growth. To support the nature based tourism products and at the same time ensure sustainable use and conservation of the environment, the creation of a Protected Area Management system (PAMS) was proposed. Recognition of the growing importance of ecotourism to the economy and more importantly to hinterland communities led to the inclusion of the target related to hinterland ecotourism when the NBSAP was revised.

The importance of Agriculture to Guyana's economy is outlined in the National Strategy for Agriculture 2013-2020. Agriculture accounts for more than 33% of employment, 40% of export earnings and around 11% of the national budget goes to agriculture. The vision outlined in the strategy pointed to agriculture continued contribution towards wealth generation, providing entrepreneurs with investment opportunities, promoting employment, helping to eliminate inequity and poverty, preserving and enhancing Guyana's reputation as a food-secured country.

The promotion of sports fishing was envisaged as combining agriculture and tourism in a viable industry. One of the priority areas identified in the Strategy was sustaining and expanding Guyana's agro-diversity policy and programme. Included among the 13 activities identified was the strengthening of the gene bank jn-house and field facility to the FAO germplasm standards. Another priority area was the promotion of sustainable development of inland fishing through the development of guidelines for responsible recreational fishing and ornamental fish collection and handling. Given the importance of agriculture to Guyana's economy and growing focus on ecotourism these targets were included in the revised national biodiversity strategy.

Level of application

The targets are all national level targets.
☒ National/federal

Relevance of the national targets to the Aichi Biodiversity Targets

Guyana's biodiversity targets and the relationship to the Aichi targets are linked to the strategic objectives of the NBSAP and were mapped out therein as shown in **Table 1**.

Table 1 Guyana's National Targets and Relationship to CBD Aichi Targets

STRATEGIC OBJECTIVE (NBSAP)	NATIONAL TARGET	RELATED TO AICHI TARGET
SO1	1,2,3,4,5	11,14,15
SO2	6,7,8,9,10	7
SO3	11,12	1
SO4	13,14,15,16,17,18	9,16,17
SO5	19	1,19
SO6	20,21,22	2
SO7	15,23,24,25	4,5
SO8	26,27,28	19
SO9	29,30,31	19,20

Process of Developing the NBSAP 2012-2020, the Associated Targets and the Stakeholders Involved

In 2014, through a process involving extensive desktop reviews of documents, meetings with key sector stakeholders, international and national NGOs, the private sector and a national consultation exercise, a revised NBAP III (referred to as the National Biodiversity Strategy and Action Plan (NBSAP) 2012-2020) was completed. A stocktaking exercise was done and the information gathered was used also to prepare the NBSAP and the associated national biodiversity targets. As part of the updating process, assessments of stakeholders' knowledge and use of the NBAP (2007-2011) were also undertaken. Opinions and views on the draft NBSAP were received from more than 60 persons from 28 different institutions comprising international development organisations, international NGOs, international financial institutions, Caribbean regional institutions, government ministries and agencies, national NGOs, indigenous organisations and communities, private sector, local government and national legal institutions.

Process of Developing the Sixth National Report and the Stakeholders Involved

A wide range of literature was reviewed and subsequently used to prepare four technical reports from which relevant information was extracted and used in the preparation of the Sixth National Report (6NR). The Information for these reports were sourced from academic and applied research papers; project documents and

reports: publications from various Government ministries and agencies and their departments, national and international institutions and organisations (such as the Food and Agriculture Organisation, World Wildlife Fund, World Bank, Inter-American Development Bank, Conservation International) and from global databases.
The four technical reports prepared were:

1 Endemic Species Assessment
2 Invasive Species Assessment
3 Climate Change Impacts with a focus on Wetlands and Coastal Areas
4 Impacts of Habitat Conversion on Biodiversity

These reports contained information on policies, strategies and plans; research and country assessments; projects/programmes and initiatives related to gender, youth and Indigenous Peoples. The technical reports were circulated to key stakeholders for peer review and feedback.

National sectoral strategies, policies, plans and activities were critically reviewed for contribution to the Aichi Biodiversity Targets (ABTs). Key stakeholders involved in implementing actions related to the NBSAP were consulted through individual meetings, national workshops/meetings and a National 6NR Validation Workshop. These stakeholders included the University of Guyana; Ministry of Natural Resources; Ministry of Public Health, Guyana Geology and Mines Commission; Guyana Forestry Commission; the Ministry of Public Infrastructure (Marine Administration Department); World Wildlife Fund; United Nations Development Programme; Office of Climate Change; Centre for Study on Biological Diversity; University of Guyana; Environmental Protection Agency; National Agriculture Research and Extension Institute; Department of Environment; Ministry of Agriculture (Fisheries Department); Protected Areas Commission; Private Sector Commission and Tourism and Hospitality Association.

Relevant websites, web links, and files

National Development Strategy
http://parliament.gov.gy/documents/documents-laid/4968
national_development_strategy_2001_to_2010_a_policy_framework_eradicating_poverty_and_unifying_guyana.pdf
Low Carbon Development Strategy
https://www.lcds.gov.gy/index.php/the-lcds
Low Carbon Development Strategy
https://www.lcds.gov.gy/index.php/the-lcds/206-a-low-carbon-development-strategy-may-2010/file
Memorandum of Understanding between the Government of Guyana and the Government of Norway
https://theredddesk.org/resources/memorandum-understanding-between-government-cooperative-republic-guyana-and-government
Concept note Guyana-Norway Agreement
https://theredddesk.org/resources/joint-concept-note-guyana-norway

Monitoring, Reporting verification System Roadmap Phase1
https://forestry.gov.gy/mrvs-roadmap-phase-1/
Monitoring, Reporting verification System Roadmap Phase 2
https://forestry.gov.gy/mrvs-roadmap-phase-2/
Guyana's Revised NDC to the UNFCCC
https://www4.unfccc.int/sites/submissions/INDC/Published Documents/Guyana/1/Guyana's revised iNDC - Final.pdf
Revised LCDS 2013
https://www.lcds.gov.gy/index.php/the-lcds/207-low-carbon-development-strategy-update-march-2013/file
Administrative Agreement Government of Guyana and Norway
https://www.lcds.gov.gy/index.php/documents/miscellaneous/269-administration-agreement/file
Guyana Norway Partnership
https://www.lcds.gov.gy/index.php/guyana-norway-partnership
Mangrove Action Plan
http://parliament.gov.gy/documents/documents-laid/4002-the_national_mangrove_management_action_plan_for_2010_to_2012.pdf
Poverty Reduction Strategy Paper 2002
https://finance.gov.gy/wp-content/uploads/2017/06/prsp.pdf
Poverty Reduction Strategy Paper 2015
http://eeas.europa.eu/archives/delegations/guyana/documents/eu_guyana/prsplaugust2011_en.pdf
Agriculture Strategy 2013-2020
http://www.ptccb.org.gy/documents/MoA Agriculture Strategy 2013-2020 .pdf
EU FLEGT VPA Update
http://www.euflegt.efi.int/guyana
https://forestry.gov.gy/vpa-updates/

II. Implementation measures taken, assessment of their effectiveness, associated obstacles and scientific and technical needs to achieve national targets

The following are the measures to ensure the implementation of the NBSAP and to achieve the national targets within the timeframe of 2012-2020 and their relationship to the Strategic Objectives of the NBSAP and CBD Aichi Biodiversity Targets (ABTs).

NBSAP SO1: Improve the status of biodiversity by conserving ecosystems, species and genetic diversity and by restoring biodiversity and ecosystem services in degraded areas.

National Target:	**Aichi Biodiversity Target:**
1-17% of land protected 2-Reducing biodiversity loss 3-Trust fund for Protected Areas 4-Restoration of degraded sites and 5-Gene bank facility formalised	11- Protected areas 12- Species conservation 14- Restoration of ecosystems and 15- Enhanced carbon stocks and restoration of degraded lands

Measures to achieve Targets 1 and 2

Target 1 *— 17% of terrestrial area for in-situ conservation in legal protection by 2020 effectively managed a and financially sustainable and*

Target 2 *— Reducing biodiversity loss and showing recovery by 2020*

Global Commitments

In Guyana's revised Nationally Determined Contribution (NDC, 2015) submitted to the UNFCCC one of the measures proposed for the emission reduction programme for forests was the conservation of an additional two million hectares through the National Protected Areas ensuring that Guyana achieve the 17% target established in the Aichi Biodiversity Target related to protected areas.

Legislative

The Protected Areas Act of 2011 established the Protected Areas Commission (PAC), and the National Protected Areas System (NPAS). The PAC is a corporate body responsible for establishing, managing, maintaining, promoting and expanding the NPAS in Guyana.

Management

A Management Plan for the Shell Beach Protected Area (SBPA) was completed. The plan was developed through a highly participatory process involving consultations with 11 Amerindian communities located in and around the protected area; and with conservation NGOs, the Ministry of Amerindian Affairs (now known as the Ministry of Indigenous Peoples Affairs), and sector agencies in the natural resources sector. A Management Plan was also completed for the Kanuku Mountains Protected Area (KMPA).

Indigenous initiative

The Wai Wai Kanashen community holds title to 1.5 million acres or nearly 3% of Guyana's land area. The Kanashen Village Council applied in 2015 to have their titled lands declared as an Amerindian protected area under the National Protected Area System (NPAS). A legal opinion on the implications of including Amerindian Protected Areas (APA) in the NPAS was prepared. The opinion examined the Amerindian and Protected Areas Acts to guide the PAC's engagement with Kanashen Village on the implications of its land being subject to the laws and regulations of the NPAS. As draft management plan was completed as required by the PAC Act 2011.

Policy

A Sea and River Defence Sector Police/Integrated Coastal Zone Management Policy was drafted in 2017. This policy reflects the integration of the many multi-sectoral functions and management in the coastal zone, which is vital for efficient and effective planning, management and monitoring, regarding the utilization, development, and protection of the coastal zone.

Programme

Knowing the value of mangroves, the threats and the increased risks to Guyana's low lying coastline from by sea level rise, and the high cost of maintenance of the sea defence structures, a programme to restore, protect and monitor coastal mangrove forests was implemented. The programme focused on production of mangrove seedlings; replanting of sites where mangroves were depleted; construction of groynes and breakwater aimed at creating a suitable mangrove habitat; combining protection and restoration with livelihood activities; monitoring and raising awareness.

A programme of research was conducted in selected areas to assess mangrove forest biodiversity, effects of

disturbed/undisturbed mangrove ecosystems on birds and fishes and avifaunal diversity in mangrove forests.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measures taken were partially effective	a Guyana to date has achieved 50% of the target identified for protected areas. The methodology used in the assessment was a desk review annual reports of the Protected Areas Trust. b Results show from mangrove restoration activities the production of 500,000 mangrove seedlings, 142 ha of mangroves restored and 30 km of existing mangroves were protected from further depletion. c No assessment was possible for the overall reduction in biodiversity loss (Target 2) as insufficient information is available. d Methodologies used were desk review of reports and expert opinion.

Relevant websites, web links and files

PAT Annual Report 2014
https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2014-2015.pdf
PAT Strategic Plan 2017-2021
https://protectedareastrust.org.gy/pat/ptc/media/PAT-STRATEGIC-PLAN-2017-2021.pdf
PAT Annual Report 2017
https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2017_web.pdf
PAC 2015 Annual Report
http://www.parliament.gov.gy/documents/documents-laid/7356-new_pac_draft_annual_report_2015.pdf
Kanuku Mountain Management Plan
http://dev.ultimate-dimensions.net/nredev/wp-content/uploads/2016/05/Protected-Area-Mgmt-Plan-Kanuku-Mountains.pdf

Shell Beach Management Plan
https://nre.gov.gy/wp-content/uploads/2016/05/Protected-Area-Mgmt-Plan-Shell-Beach.pdf
Report on Mangrove
https://panorama.solutions/en/solution/increasing-coastal-resilience-and-social-development-opportunities-guyana-mangrove
Newspaper Article on funding
https://www.stabroeknews.com/2019/news/guyana/04/08/around-100m-to-be-spent-on-mangroves-restoration-ministry/.
NAREI reports on mangroves
http://narei.org.gy/departments/mangroves/
http://www.mangrovesgy.org/home/
Increasing coastal resilience and social development opportunities: Guyana Mangrove Restoration Project (GMRP). NARIE
https://panorama.solutions/en/solution/increasing-coastal-resilience-and-social-development-opportunities-guyanamangroveP
Sea and River Defence Sector Policy
http://publicworks.gov.gy/files/docs/Policy_Final_GoG_Cover_Cabinet_December_8_2015.pdf

Obstacles

- No baseline data on biodiversity cover and loss of biodiversity.
- Funding constraints to cover the full establishment of new Protected Areas (PA), from area identification, biodiversity assessments, legislative and legal components leading to gazetting of

selected sites.

- Limited number of staff for PA management and to meet needs of all PA sites.
- Inadequate/limited expertise in specific areas for establishing and managing of protected areas.

Scientific and Technical needs

- Technical expertise in protected area management and resource mobilisation.
- Technical expertise in assessing biodiversity cover and losses.
- Annual assessments of biodiversity to generate data on trends in populations

Measures to achieve Target 3

Target 3 — By 2020, Protected Areas Trust Fund established, have adequate resources, and fully functioning

Legislative

The Protected Areas Trust (PAT) was legally established as a corporate body under the Protected Areas Act 2011, and the Protected Areas Trust Fund (PATF) was set-up to provide co-financing for the management of the NPAS principally through the Protected Areas Commission.

Financial

The PAT provides co-financing for the management of the protected areas. The PATF functions as an endowment fund to preserve the capital while investing globally. Revenues generated are used to support projects that contribute to, or promote, the conservation and preservation of the biological diversity and maintenance of the ecosystem services of the protected areas.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measures taken were partially effective	**a** The Protected Areas Trust (PAT) and Protected Areas Trust Fund (PATF) were established. While some financial resources were mobilised the targetted amount is yet to be achieved. A review of investments was conducted and results showed that the target of 5% return on investment was not met. **b** Desk reviews and was the methodology used to assess effectiveness

Relevant websites, web links and files

PAT Annual Report 2014
https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2014-2015.pdf
PAT Strategic Plan 2017-2021
https://protectedareastrust.org.gy/pat/ptc/media/PAT-STRATEGIC-PLAN-2017-2021.pdf
PAT Annual Report 2017
https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2017_web.pdf
PAC 2015 Annual Report
http://www.parliament.gov.gy/documents/documents-laid/7356-new_pac_draft_annual_report_2015.pdf

Obstacles

- Current funds small.
- Insufficient funds mobilised

- Absence of communication plan.
- Limited knowledge and other technical skills related to trust funds
- Potential for lack of transparency and accountability in management of trust.

Scientific and technical needs

- Fund raising capacity and capability
- Well funded communication plan
- Technical skills specific to managing trust funds

Measures to achieve Target 4

Target 4 — *By 2015, at least three (3) mined-out sites have been duly restored and managed.*

Policy

It was recognised that a national land policy is essential for the implementation of the sustainable management of land and its resources. The draft National Land Use Policy was revised to include sustainable land management. The revised draft covers the political and administrative boundaries of the Country, tenure and security, transportation, geospatial information, signatory to international agreements and hinterland areas. Other considerations for inclusion into the Land Policy are a Code of Practice for Land Reclamation to ensure mining complies with land reclamation, and alternative land uses for post-mining activities.

Programme

The mining sector has contributed to growth and expansion of transport services, telecommunications, and distribution of goods and services to remote locations. However, gold mining has been identified as the main driver of deforestation and forest degradation. The Guyana Geology and Mines Commission (GGMC) in collaboration with the Ministry of Natural Resources (MNR) is supporting a process of mainstreaming land reclamation in Guyana`s extractive industries. The Commission has incorporated an approach for increased education and awareness with respect to mine reclamation and closure. A Land reclamation programme was also initiated. Sites were selected for piloting and demonstrating land reclamation activities.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measures taken were effective.	a Success was achieved in piloting land reclamation in more than the three sites targetted. b The methodology used was desk reviews and data that was provided by the Guyana Geology and Mines Commission.

Relevant websites, web links and files

Report on Land Reclamation
https://www.ggmc.gov.gy/sites/default/files/document/land_reclamation_project_godfrey_scott.pdf

Obstacles

- Insufficient technical and financial resources

Scientific and technical needs

- Increased pool of technical officers specific to the discipline.
- Joint institutional collaboration for research and capacity building.

Measure to achieve Target 5

Target 5 — The Germplasm Facility (Gene Bank) is formalized by end of 2015 in accordance with FAO Germplasm Standards and 1st Report published in 2016

Policy

The National Strategy for Agriculture 2013-2020 highlighted the importance of agriculture to the economy. It accounted for more than 33% of employment, 40% of export earnings and around 11% of the national budget. The vision outlined in the Strategy pointed to agriculture continuing to contribute towards wealth generation, providing entrepreneurs with investment opportunities, promoting employment, helping to eliminate inequity and poverty, preserving and enhancing Guyana's reputation as a food-secured country. Homestead cultivation of plant species diversity for food and agriculture represents an informal but significant depository of *in situ* diversity and represents the greatest diversity of plant genetic resources for food and agriculture (PGRFA) assembled in Guyana; accounting for more than 80% of the plant species diversity for food and agriculture. One of the priority areas identified in the Agriculture Strategy for safeguarding, sustaining and expanding Guyana's agro-diversity policy and programme was the strengthening of the gene bank jn-house and field facility to the FAO germplasm standards.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure has been partially effective	**a** Protocols were developed for 5 crop plants. NAREI is designated as the main depository of ex situ collections for seed regenerated crop species for all 70 agricultural crops species other than rice and sugarcane. **b** The methodology was desk review of the national reports.

Relevant websites, web links and files

Biotechnology and Genetic Resources
http://narei.org.gy/plant-biotechnology-genetic-resources/
Agriculture Strategy 2013-2020
http://www.ptccb.org.gy/documents/MoA Agriculture Strategy 2013-2020 .pdf

PGRFA Report 2016
http://www.fao.org/3/CA3472EN/ca3472en.pdf

Obstacles

- Inter-agency cooperation and information transfer.
- No policies, plans or strategies for the adoption of ecosystem approach in production system.
- No incentives or benefits that support the conservation and sustainable use for food and agriculture.

Scientific and technical needs

- Ecological studies and conservation and sustainable use of biodiversity for food and agriculture.
- Promotion and awareness of importance of ecosystem services.
- Monitoring of the implementation of plans which support conservation and sustainable use of biodiversity for food and agriculture.

NBSAP SO2: Promote the conservation, sustainable use and value of biodiversity into key productive sectors used for growth, expansion and diversification of the economy

National Target:	**Aichi Target:**
6 - REDD+ Framework 7 - REDD+ Conflict Resolution 8 - Biodiversity concerns in hinterland tourism strategy 9 - Mainstream biodiversity in mining 10 - Guidelines for recreational fishing, awareness and training,	7- Sustainable agriculture, aquaculture and forestry

Measures to achieve Target 6 and Target 7
Target 6 — By 2020 REDD+ framework established and functioning and
Target 7 — By 2016, a National Conflict Resolution Strategy for REDD+ developed and functional.

Policy
A Low Carbon Development Strategy (LCDS) was launched in 2009. The goal of the LCDS was to protect and maintain the forests in an effort to reduce global carbon emissions and at the same time attract payments from developed countries for the climate services that the forests would provide globally. It was revised in 2013 to include the commitments Guyana made because of its engagement with international enforcement and trading initiatives. These were related to forestry and mining and included commitments to the Extractive Industry Transparency Initiative (EITI), the European Union Forest Law Enforcement, Governance and Trade (EU-FLEGT) initiative, Independent Forest Monitoring (IFM) and the UN's Minamata Convention on Mercury. The Guyana´s Green State Development Strategy (GSDS), launched in 2017 was a framework providing guidance and a platform for Guyana to become a leading example of a 'Green State'. This framework Strategy was further developed and expanded in 2019 into the Green State Development Strategy: Vision 2040. This expanded Strategy is a twenty-year, national development policy that has three key messages — manage natural resource

wealth, support economic resilience and build human capital and institutional capacity.

National Forest Policy Statement (NFPS) and National Forest Plan were revised in 2018. Taken together with the revised Policy Statement, the overall objective of the National Forestry Plan 2018 is to conserve, protect, and utilise the forests whilst at the same time ensuring its social, economic and environmental attributes and benefits are sustained and enhanced for the benefit of current and future generations and taking cognisance of Guyana's commitment to international agreements and conventions. Forest Regulations detailing the legal modalities for forest activities were also gazetted in 2018.

Programme

Reducing Emissions from Deforestation and forest Degradation (REDD+) has been a central issue in the global climate negotiations since the 2007. A key outcome from the United Nations Framework Convention on Climate Change's (UNFCCC) 19th Conference of the Parties (COP19) was the adoption of the 'Warsaw Framework for REDD+'. This has provided guidance to Guyana in the development of a REDD+ framework and implementing REDD+ activities — reducing emissions from deforestation; reducing emissions from forest degradation; sustainable management of forests; conservation of forest carbon stocks; allocation of carbon rights and enhancement of forest carbon stocks. Guyana conducts annual mapping and reporting on forest change.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measures taken were effective	**a** The MRVS Framework was developed and using the framework Guyana was able to enter into an agreement with the Government of Norway for forest services to which a payment of $ US250 Million was agreed. **b** A Grievance and Redress Mechanism for REDD+ is currently being designed. **c** Methodology used in the assessment was desk reviews of REDD+ related reports, the Memorandum of Agreement with Norway.

Relevant websites, web links and files

Forest Carbon Partnership Facility
https://forestry.gov.gy/2017/10/04/forest-carbon-partnership-facility-fcpf-project-advances-redd-readiness-in-guyana/
Forestry Reports
https://www.forestry.gov.gy/wp-content/uploads/2018/11/MRVS-Summary-Report-Year-7_November-2018_Final.pdf
https://forestry.gov.gy/2019/04/15/redd-strategy-sees-reduction-in-deforestation-and-co2-emittance/

Obstacles

- Along with affecting timelines, adverse weather conditions can impact on access to areas identified for data collection
- Guyana experiences persistent issues of cloud cover that has the potential to affect the quality of the data generated
- One of the primary concern is involving communities that do not have titles to land in REDD+

Relevant websi
Norway Assess
https://theredd
REDD Readi
https://forestr
in-guyana/
MOU with N
https://www.f
REDD+ Stra
https://reddpl
http://guyanac
youths
Payments ma
https://guyanac

activities and resolving existing land issues relating to titling, demarcation and extension. titling. https://www.in

Scientific and technical needs

- Due to the highly technical nature of the activities being undertaken and required compliance with IPCC guidance, highly specialised skill sets are required.

Measure to achieve Target 8

Target 8 — By 2020, biodiversity concerns are integrated into hinterland ecotourism development plans and strategies

Policy

The National Tourism Policy and Strategic Action Plan 2018-2025 aligns with the vision, goals and objectives of the Green State Development Strategy (GSDS). It ensures that tourism supports economic development/green growth and climate compatible tourism development and that tourism plans are linked to the Sustainable Development Goals with an emphasis on Goals 8, 12 and 14. The Policy is driven by three strategic objectives — growth in tourism's contribution to Gross Domestic Product, generation of increased employment in the tourism sector and meaningful and beneficial involvement of rural and hinterland communities in tourism enterprises.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure taken was effective	a Several areas in both the Tourism Strategy and Plan emphasised the importance of protecting and conserving biodiversity and their importance to ecotourism in Guyana.

Relevant websites, web links and files

Tourism Policy
https://www.business.gov.gy/wp-content/uploads/2018/03/20180206DRAFTNATIONALTOURISM-POLICY_Final-Version.pdf
Tourism Strategy and Plan
https://www.business.gov.gy/wp-content/uploads/2018/11/Tourism-Strategy-2018-2025.pdf
IADB Study Tourism and Ecotourism Guyana
https://publications.iadb.org/en/publication/12357/tourism-and-ecotourism-development-guyana-issues-and-challenges-and-critical-path

Obstacles

- A weak enabling environment.
- Lack of appropriate infrastructure at the main attractions.
- Poorly trained hospitality service workers.
- Enforcement of legislation related to wildlife/wild meat and mining
- Construction of roads in areas of high biodiversity

Scientific and technical needs

- A well-funded professional marketing campaign.
- Effective tax and investment incentive policies.
- Explicit legislation for the sector.

- Hospitality education and training at university level and vocational training institutes as well as at community level.

Measure to achieve Target 9

Target 9 — By 2016, a GEF supported project designed to mainstream biodiversity into mining

Initiative

A GEF supported medium sized project entitled "Enhancing Biodiversity Protection Through Strengthened Monitoring, Enforcement and Uptake of Environmental Regulations in Guyana's Gold Mining Sector" was designed and submitted to the GEF in 2014.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure taken was effective	The project document was submitted to the GEF and was approved

Relevant websites, web links and files

https://www.thegef.org/project/enhancing-biodiversity-protection-through-strengthened-monitoring-enforcement-and-uptake

Obstacles

- In many instances projects are develop by experts who have limited knowledge and experience of the local context.
- The appropriated stakeholders are not included in project development from the initial stages
- Project design that is not best suited to the local situation.

Scientific and technical needs

- Improved capacity in project development, stakeholder engagement, project monitoring and evaluation
- Training in the policies and strategies of the GEF.

Measures to achieve Target 10

Target 10 — Guidelines for responsible recreational fishing and practices in ornamental fish collection and handling published and at least 2 awareness and training programmes conducted per year

Strategy

A National Strategy for Agriculture 2013-2020 was launched in 2013. The vision outlined in the strategy pointed to agriculture continuing to contribute towards wealth generation, providing entrepreneurs with investment opportunities, promoting employment, helping to eliminate inequity and poverty, preserving and enhancing Guyana's reputation as a food-secured country. The promotion of recreational fishing was envisaged as combining agriculture and tourism in a viable industry. Guyana shares with the Amazon River over 1800 fish

species; among these are several game fish species such as the Payara, Arowana, Himara, and what professional anglers consider worldwide as the world's most popular fresh water game fish, the Peacock Bass (known in Guyana as Lukanani).

Initiative

The Department of Fisheries, Ministry of Agriculture is collaborating with Food and Agriculture Organization (FAO) to develop guidelines on recreational fishing and practices in ornamental fish collection and handling. Site visits were made and training session(s) conducted for selected communities.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The effectiveness of this measure is unknown.	There is insufficient information on guidelines for recreational and ornamental fishing. Some promotion of sports fishing has occurred and limited sports fishing training conducted. A draft legislative and administrative framework to regulate catch and release activities was prepared for only one region of the country. The methodology used was desk reviews of reports and information received from the Ministry of Agriculture.

Relevant websites, web links and files

Surama Eco-lodge
https://suramaecolodge.com/activities/ Promoting sports fishing
GTA training
https://www.guyanatourism.com/wp-content/uploads/2019/07/GTA-Press-Release-GTA-conducts-3-day-Sport-Fishing-Training-in-Warapoka-2019.06.06.pdf
Training and management plan Nappi
https://guyanatimesgy.com/3-day-consultation-training-concludes-at-nappi/
Rupununi Sports fishing
http://competecaribbean.org/wp-content/uploads/2016/05/CC-Project-Highlight-Rupununi-v6.pdf
Sports fishing in Guyana
https://www.costadelmar.com/us/en/inside-costa/protect/protect-guyana?thefisherman

Obstacles

- Increasing use of fishing nets in some communities causing over-harvesting and the catching of juvenile fish.

Scientific and technical needs

- A national regulatory framework for recreational fishing is needed.
- A stock-taking of fish resources, especially in riverine areas.
- A study on both the local and international potential of the ornamental fish industry.

NBSAP SO3: Expand and improve awareness, appreciation and communication on biodiversity and ecosystems.

National Target:	Aichi Target:
11 - Communication strategy for the implementation of the NBSAP. 12- Eco-systems in the Zoological Park to enhance informal education.	**1-** Awareness of biodiversity increased

Measures to achieve Target 11

Target 11 — The achievement of the intended impact of the full implementation of the communication strategy for the implementation of the NBSAP.

Strategy

REDD+ Communication and Outreach Strategy was completed which served as a guidance document to communicate to the relevant stakeholders the effects of climate change and deforestation in Guyana, as well as the opportunities offered by REDD+ to address these challenges.

Programme

a REDD+ communication and outreach programme. More than 30 workshops were conducted countrywide targetting hinterland communities.

b Weekly features by the EPA on the environment in the national newspapers.

c Weekly TV programmes by the Ministry of Agriculture.

d Training programme related to biodiversity, climate change and the environment for the schools' environmental clubs, teachers, hotels that included activities such as tours, camps, debating competitions.

- Capacity building programmes at the University of Guyana — BSc Biology, Forestry, Agriculture, Environmental Sciences, Food Science, MSc Forest Biology, Agro-business, Environmental management, PhD and MPhil in Biodiversity, research programmes and tailored professional programmes.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measures taken were partially effective.	A draft communication strategy was prepared but not fully implemented. Some aspects were implemented on a sectoral level e.g the REDD+ Communication Strategy through the Guyana

Forestry Commission and the Department of Environment.

Relevant websites, web links and files
REDD+ Resources
https://reddplusguyana.org
https://doe.gov.gy/

Obstacles

- Absence of a comprehensive communication strategy for the implementation of the NBSAP.
- Lack of knowledge on how to measure impacts.

Scientific and technical needs

- A well-funded comprehensive communication strategy.
- Training and development of tools to measure impacts.

Measures to achieve Target 12

Target 12 — By 2020, Coastal Wetlands, Savannahs, Mountain Highlands and Rainforests eco-systems featuring in the Zoological Park to highly encourage visitors and enhance informal education through interactive and engaging experiences

Policy

The Protected Areas Commission's Strategic Plan 2016-2020 provides for improvements in the administrative systems; conducting research and ecological monitoring; strengthening planning and adaptive management and the legislative framework; mobilising resources; involving stakeholders in protected areas management and for awareness, education and outreach.

Initiative

The Three Parks Initiative prepared that incorporates the development of an urban plan for the Zoological Park, National Park and the Botanical Gardens and management plans for these parks. The Initiative includes plans for the construction of three benabs (an Amerindian hut built from leaves and branches supported by a framework of wooden poles) that would be used for training and other educational activities.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measures taken were partially effective	The Plan is in place to implement this initiative and construction of the training benabs have started.

Relevant websites, web links and files

Obstacles

- Funding and access to resources
- Public misconception: i.e. development of natural ecosystems and habitats can be misinterpreted as overgrown vegetation (bush) and a lack of care and maintenance. (such a situation occurs with the Biodiversity Gardens that is a bird sanctuary zone but criticized as overgrown bush.
- Loss of institutional knowledge on the Three Parks Initiative

Scientific and technical needs

- Well-funded communication strategy and implementation plan.

NBSAP SO4: Improve national implementation, monitoring and reporting for Multilateral Environmental Agreements (MEAs) and other bilateral commitments.

National Target:	**Aichi Target:**
13- 5NR submitted, 14-Revised NBSAP 15-Indicators developed 16-MEAs Committee established 17-Status Report on MEAs 18-ABS regulations finalised	13- Safeguarding genetic diversity 16 – Nagoya Protocol on Access to genetic resources 17- NBSAP

Measure to achieve Target 13, Target 14 and Target 15

Target 13 — Fifth national report submitted in 2014.
Target 14 — By 2014, revised NBSAP completed.
Target 15 — By 2015, indicators developed, adopted and being used

Programme Initiative

A Project Cooperation Agreement to prepare Guyana's National Biodiversity Strategy and Action Plan (NBSAP) and the Fifth National Report (5NR) with United Nations Environment Programme (UNEP) was signed. Funding support was from the Global Environment Facility. (GEF)

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	**Reason for the selection and tools or methodology used for the assessment of effectiveness**
The measure taken was partially effective.	a The 5NR and revised NBSAP were completed. b Draft M&E framework has been developed for the NBSAP. c Methodology used to assess effectiveness was desk review of reports.

Relevant websites, web links and files
5NR and NBSAP
http://www.epaguyana.org/epa/downloads/epa-reports

Obstacles

- Poor coordination with focal point and key agencies.
- Inadequate financing.
- Limited capacity to do M&E.

Scientific and technical needs

- Increased capacity to do monitoring and evaluation, data analysis and modelling
- Revised NBSAP for post 2020

Measure to achieve Target 16 and Target 17

Target 16 — By 2015, MEAs Committee established

Target 17 — By 2015, a status report on the implementation of MEAs

Initiative

A project to strengthen the technical capacities to mainstream and monitor Rio Conventions implementation through policy coordination was formulated and was approved for funding from the Global Environment Facility (GEF). The goal of the project was to enable Guyana to make better decisions to meet and sustain global environmental obligations. The project focused on management of data and information, institutionalising capacities to meet the Multi-lateral Environmental Agreements (MEAs) obligations and updating of key technological needs. One outcome from the project was the development of the Terms of Reference for an MEA Committee and the identification of the members.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure taken was effective	a TORs for MEAs Committee drafted. It sets out the membership, roles and responsibilities, chairperson, organisational structure b Several reports related to the implementation of the Rio Conventions were prepared. c Methodology used to assess effectiveness was desk reviews of reports and expert opinion of the Department of Environment

Relevant websites, web links and files

Assessment of Policy Framework

https://doe.gov.gy/published/document/5c7943119f71fc795a0140bd

Reports from Rio Convention Project

https://doe.gov.gy/library-documents

Obstacles

- The level of financing needs greatly surpasses the level of resources that can be expected from domestic sources.
- Absence of a dedicated person within each Agency and Ministry to mainstream RIO convention goals and objectives.
- Limited coordination among government agencies to maximise efforts.
- Limited participation in the Conventions' preparatory meetings and training
- Limited communication with the CBD Secretariat

Scientific and technical needs

- Capacity for data analysis, modelling and forecasting
- Capacity for negotiating, stakeholder engagement

Measure to achieve Target 18

Target 18 — By 2015 finalise the ABS regulations

Initiative

Guyana benefitted from two GEF supported projects "Implementation of Access to Genetic Resources and Benefit-Sharing regimes (ABS) in Latin America and the Caribbean" and " Advancing the Nagoya Protocol in the Countries of the Caribbean" that resulted in the preparation and revisions of the draft ABS regulations.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure taken was effective	The draft ABS regulations underwent several revisions and is at the stage of legal assessment.

Relevant websites, web links and files
https://www.cbd.int/financial/abs.shtml

Obstacles

- Limited legal expertise in the subject matter of access and benefit sharing
- Limited technical understanding and awareness in this area

Scientific and technical needs

- Capacity building in managing and implementing actions related to access and benefit sharing, preparing agreements, contracts, establishing the institutional framework
- A well-funded communication strategy and action plan

NBSAP SO5: Create stronger and wider national, regional and international partnerships that contribute to achieving the goal and objectives of the Plan.

National Target:	**Aichi Target:**
19- research interface developed with University of Guyana, Conservation International, and WWF.	2 Biodiversity Values integrated

Measure taken to achieve Target 19.

Target 19 — By 2016, research interface developed with University of Guyana, Conservation International, and WWF.

No measure was put in place to implement this target since subsequent to the revision of the NBSAP a revised initiative (see Target 27) was put in place that expanded the stakeholder base for contributing to biodiversity

research and the provision of information and as such this target was not pursued.

NBSAP SO6: Consolidate/harmonize policy, legal, regulatory, and administrative frameworks that support the sustainable use, protection and management of biodiversity resources.	
National Target: 20- Timber for export to the EU verified legal, granted FLEGT license. 21-Developers and operators secure environmental authorization 22- Air and water quality standards	**Aichi Target:** **2 Biodiversity values integrated**

Measure to achieve Target 20

Target — By 2020 all timber for export to the EU will be verified legal and granted a FLEGT license

Programme
The measure put in place to ensure timber exported to the EU is legal was the development of a Guyana REDD+ Programme. The EU FLEGT programme was identified as an enabling activity under the area of REDD+ Governance.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	**Reason for the selection and tools or methodology used for the assessment of effectiveness**
The measure taken was partially effective.	a Guyana initialled a VPA in 2018. To implement the agreement Guyana will have to develop systems and procedures for verifying timber legality throughout the supply chain, which can take 3-5 years before a FLEGT, license is issued. b The methodology used for the assessment was desk review of reports.

Relevant websites, web links and files
Signing of VPA
https://forestry.gov.gy/2018/11/27/historic-eu-flegt-voluntary-partnership-agreement-initialled/
VPA
https://forestry.gov.gy/2018/12/11/high-hopes-for-guyana-eu-partnership-on-legal-timber-trade/

Obstacles
- Effective Coordination
- Financial resources

Scientific and technical needs
In order to achieve the compliance of timber legality Guyana will need to
- Strengthen the implementing structures to ensure effective coordination,
- Develop a financial mechanism to implement the VPA

- Build capacity along the value chain and implement education and awareness activities.

Measure to achieve Target 21

Target 21 — By 2020, all developers and operators will secure environmental authorization

Legislative
Regulations under the Environmental Protection Act 1996 set out the process for developers and operators to obtain the required authorisation as well as the terms and conditions.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure taken was partially effective	a Approximately 90% of all developers and operators that applied for environmental authorisations have valid permits. **b** Desk reviews of information related to environmental authorisation and expert opinion of the EPA were the methodologies used.

Relevant websites, web links and files
Regulations
http://www.epaguyana.org/epa/downloads/regulations
Applications
http://www.epaguyana.org/epa/component/search/?searchword=environmental authorisation&searchphrase=all&Itemid=101
Workshops on Authorisation
http://www.epaguyana.org/epa/news/authorization

Obstacles
- Centralised location of the EPA office
- Poorly maintained databases with information on applications received and permits granted
- Limited public knowledge on the environmental authorisation process and requirements

Scientific and technical needs
- Improved database and data management that allows for tracking of applications and permits
- Capacity building for operators and developers and public awareness and education on environmental authorisations.

Measure to achieve Target 22

Target 22 — By 2020, develop standards for air and water quality.

Legislative
The Air Quality Regulations require that facilities that emit air pollutants from any process are required to obtain an environmental authorization from the EPA to discharge air contaminants into the atmosphere. The Water Quality Regulations control the discharge of any effluent into any of the coastal and inland waterways.

Assessment of the effectiveness of the implementation measures	Reason for the selection and tools or methodology used for the assessment

taken in achieving desired outcome	of effectiveness
The measure taken was partially effective	In 2015 the 2002 Guyana National Bureau of Standards Interim Guidelines for Industrial Effluent Discharge in the Environment was revised but not finalised due to insufficient baseline data. The Agency currently utilises international standards such as WHO Standards when developing terms and conditions for environmental authorisations. Desk reviews and expert opinion of the EPA were the methodologies used.

Relevant websites, web links and files
Water Quality Regulation
http://www.epaguyana.org/epa/downloads/regulations/download/7-regulations/20-ag-1epa-water-quality-regs
Air Quality Regulations
http://www.epaguyana.org/epa/downloads/regulations

Obstacles

- Limited personnel with specific skill sets for conducting assessment of air and water quality
- Lack of baseline information for developing standards
- Lack of funding
- Lack of required equipment

Scientific and technical needs

- Training in the areas of hydrology and air and water quality assessments

NBSAP SO7: Improve substantially biodiversity monitoring at the national level and within key productive sectors

National Target:	Aichi Target:
23- EU-FLEGT VPA in place. 24 -MRV system in place and functioning fully. 25-Monitoring reports for large projects submitted to EPA	**4 Sustainable production and consumption** **5 Habitat loss halved or reduced**

Measure to achieve Target 23

Target 23 — By 2020, EU-FLEGT VPA in place

Programme
The measure put in place to ensure timber exported to the EU is legal was the development of a Guyana REDD+ Programme. The EU FLEGT programme was identified as an enabling activity under the area of

REDD+ Governance. A Voluntary Partnership Agreement (VPA) with the European Union would facilitate increased market access for Guyana's timber into the lucrative EU market.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure that was taken was effective	a Guyana initialled a VPA in 2018. b The methodology used for the assessment was desk review of reports.

Relevant websites, web links and files
Signing of VPA
https://forestry.gov.gy/2018/11/27/historic-eu-flegt-voluntary-partnership-agreement-initialled/
VPA agreement
https://forestry.gov.gy/2018/12/11/high-hopes-for-guyana-eu-partnership-on-legal-timber-trade/

Obstacles

- Effective Coordination
- Financial resources

Scientific and technical needs
In order to achieve the compliance of timber legality Guyana will need to:

- Strengthen the implementing structures to ensure effective coordination,
- Develop a financial mechanism to implement the VPA,
- Build capacity along the value chain and implement education and awareness activities.

Measures to achieve Target 24
Target 24 — By 2020, MRV system in place and functioning fully

Policy
A Low Carbon Development Strategy (LCDS) was launched in 2009. The Strategy was aimed at transforming Guyana's economy into a low carbon, sustainable development trajectory, while simultaneously combating climate change through the protection and maintainance of the forests and contribution to reducing global carbon emissions.

The National Forest Policy Statement 2018 and National Forest Plan 2018 reflect a movement away from valuing of forests for simply their wood and trees, and instead treat forests as part of our national patrimony, to be managed collectively. They present a set of policies and plans that address the economic, conservation, governance and capacity facets of forest management, while seeking to value the forest for more than the price of the timber.

Legislative
Forest Regulations detailing the legal modalities for forest activities were gazetted in 2018.

Bilateral partnership agreement

The climate and forest partnership between the Government of Guyana and the Government of the Kingdom of Norway was initiated in 2009. The partnership entails Guyana's commitment to verifiably meeting goals detailed in a Memorandum of Understanding (MOU) and a Joint Concept Note (JCN). Under this agreement Norway agreed to provide up to US$250 million in performance-based payments to help Guyana transition to a low-carbon green development path.

Programme

A key outcome from the United Nations Framework Convention on Climate Change's (UNFCCC) 19th Conference of the Parties (COP19) was the adoption of the 'Warsaw Framework for REDD+'. This enabled Guyana to develop a REDD+ programme and begin implementing REDD+ activities — reducing emissions from deforestation; reducing emissions from forest degradation; sustainable management of forests; conservation of forest carbon stocks; and enhancement of forest carbon stocks. The development of a Monitoring Reporting and Verification system (MRVS) was guided by MRVS Roadmaps. The System seeks to provide the basis for verifiably measuring changes in Guyana's forest cover and resultant carbon emissions from Guyana's forests as an underpinning for results-based REDD+ compensation in the long-term, based on international guidance and best practice. A Community Monitoring Reporting and Verification programme is in place which allows the Guyana Forestry Commission (GFC) to produce data on the hotspots or areas to be targeted as a result of regular mapping. Communities were trained to ground-truth the information produced by physically assessing these areas for the causes of deforestation and forest degradation, validating the extent of the changes and producing images.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measures taken were effective	a Guyana was able to receive payments emanating from the GoG/Norway agreement as a result of The Monitoring Reporting and Verification System (MRVS) that was in place and functioning. b Desk reviews of the REDD+ reports was the methodology used.

Relevant websites, web links and files

Independent verification Reports

https://www.forestry.gov.gy/wp-content/uploads/2018/11/Accuracy-Assessment-Guyana-MRVS-Year-7.pdf

https://www.forestry.gov.gy/wp-content/uploads/2018/05/MRVS-Year-6-Independent-Verification-Report.pdf

https://www.forestry.gov.gy/wp-content/uploads/2015/09/DNV-Interim-Measures-Verification-Report-

Year-4.pdf
https://www.forestry.gov.gy/wp-content/uploads/2015/09/DNV-Interim-Measures-Verification-Report-Year-3.pdf
https://www.forestry.gov.gy/wp-content/uploads/2015/09/DNV-Interim-Measures-Verification-Report-Year-2.pdf
https://www.forestry.gov.gy/wp-content/uploads/2015/09/Accuracy-Assement-Year-1.pdf
https://www.forestry.gov.gy/wp-content/uploads/2015/09/Accuracy-Assement-Year-1.pdf
https://www.forestry.gov.gy/wp-content/uploads/2018/11/MRVS-Summary-Report-Year-7_November-2018_Final.pdf
https://www.forestry.gov.gy/wp-content/uploads/2015/09/Terms-of-Reference-for-Guyanas-MRVS-Roadmap-Phase-1.pdf
https://www.forestry.gov.gy/wp-content/uploads/2015/09/Guyanas-MRVS-Roadmap-Phase-2-September-2014.pdf

Obstacles,

- Along with affecting timelines, adverse weather conditions can impact on access to areas identified for data collection
- Guyana experiences persistent issues of cloud cover that has the potential to affect the quality of the data generated
- One of the main challenge is securing predictable financing to create a sustained programme on reporting and building local capacities to meet reporting needs such as the MRVS.
-

Scientific and technical needs

- Due to the highly technical nature of the activities being undertaken and required compliance with IPCC guidance, highly specialised skill sets are required

Measures to achieve Target 25.

Target 25 — By 2020, monitoring reports for large projects submitted to the EPA

Legislative
Annual reporting is mandatory for all scales of developers.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure was partially effective	All scales of developers are required to submit annual reports to the EPA by March 31 of the following year. Large scale operators are also required to submit quarterly reports, water quality reports and waste management reports.

Relevant websites, web links and files
http://www.epaguyana.org/epa/downloads/regulations/download/7-regulations/24-draft-compliance-and-enforcement-regulations-august-2014

Obstacles

- Inadequate system for tracking submission of reports. As such, if reports are not submitted as required this is most often flagged only when the operation undergoes a compliance inspection.

Scientific and technical needs

- Improved database and data management system for tracking submission of reports.

NBSAP SO8: Strengthen the knowledge base and capacity for conservation, management and sustainable use of biodiversity.

National Target:	**Aichi Target:**
26-Clearing House Mechanism fully functional. 27-Biodiversity information system established 28 -Updated and fully functional NBRIS	19 - Sharing information and knowledge

Measure to achieve Target 26

Target 26 — Clearing House Mechanism fully functional

International Commitment

The Clearing-House Mechanism (CHM) of the Convention on Biological Diversity was established under Article 18.3 with the aim of the CHMs contributing to the implementation of Strategic Plan for Biodiversity 2011-2020 and achievements of the Aichi targets. The national CHM is expected to provide effective information services to facilitate the implementation of national biodiversity strategies and action plans and all parties are expected to build capacity to sustain effective CHMs.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	**Reason for the selection and tools or methodology used for the assessment of effectiveness**
The measure that was taken was partially effective	a A website was established and a national focal point nominated b Internet search of the CBD web site was the methodology used

Relevant websites, web links and files

Guyana CHM
https://gy.chm-cbd.net/
CBD CHM
https://www.cbd.int/chm/work/

Obstacles

- Lack of dedicated human resource for managing and uploading information resulting in limited information uploaded to the CHM.

Scientific and technical needs.

- Capacity for data management

Measure to achieve Target 27

Target 27 — By 2020, a biodiversity information system established

Programme.
Biodiversity Information for Development, or BID, is a multi-year, €3.9 million programme funded by the European Union and led by Global Biodiversity Information Facility. In 2017 Guyana received funds to strengthen the management of biodiversity data and improve its accessibility in country to foster sound decision-making and management of the country's natural resources by government, conservation NGOs and civil society. One element of the project was developing a database to assemble and organize biodiversity data.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure that was taken was partially effective	a A database to allow for improved accessibility to biodiversity data was developed. b Desk reviews was the methodology used. Expert opinion of the Environmental Protection Agency

Relevant websites, web links and files
https://www.gbif.org/en/project/83251/enhancing-guyanas-national-biodiversity-information-system-database
https://www.biodivguyana.org/

Obstacles
- Loss of personnel trained on modalities for operating the database.
- Human capacity to input the data into the database is currently unavailable.

Scientific and technical needs
- Capacity building in database management
- Technical capacity in data science

Measure to achieve Target 28
Target 28 — By 2020, an updated and fully functional National Biodiversity Research Information System (NBRIS)

Legislative
The Environmental Protection Act 1996 empowers the EPA to oversee the environmental activities of all persons. It is a regulatory Agency with authority to grant or not grant permits for developmental project that will impact on the environment. All persons must apply for a Biodiversity Research Permit from the EPA to conduct biodiversity research in the country. Applications for a Permit, along with supporting documents can be submitted online through the National Biodiversity Research Information System (NBRIS).

Assessment of the effectiveness of the implementation measures taken in achieving desired	Reason for the selection and tools or methodology used for the assessment of effectiveness

outcome	
The measure taken was effective	NBRIS website has been established. Desk reviews of annual report and internet searches were the methodologies used

Relevant websites, web links and files
Annual Report EPA
http://www.epaguyana.org/epa/downloads/environmental-education-publications/annual-reports/download/10-annualreport/57-epa-annual-report-2015
NBRIS information
http://guyanachronicle.com/2017/08/20/know-more-about-the-epa
NBRIS website
http://www.epabiodiv.gy/rap/index.aspx

Obstacles

- The architecture of NBRIS is dated.

Scientific and technical needs

- An updated system is required to be able to continue to function effectively and efficiently. . Financial resources are required to make the necessary updates.

NBSAP SO9: Secure adequate resources from national, regional and international sources for the implementation of the Plan.

National Target:	**Aichi Target:**
29- Resource mobilization plan. 30- All GEF SGP allocation programmed 31 - Two biodiversity projects submitted to GEF	**19** Sharing information and knowledge **20** Mobilising resources from all sources

Measure to achieve Target 29.
Target 29 — Resource mobilization plan prepared in 2014

Plan
A resource mobilisation plan was prepared. The plan supports the implementation of the NBSAP. The principal objectives of the plan are to ensure there is a diverse portfolio of resources and a better update and distribution of existing funds for biodiversity; rationalise available resources and maximise co-benefits of various sources; identify and explore the possibilities of forming strategic partnerships with providers of different types of resources.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure taken was effective.	The Plan is included in the NBSAP.

Relevant websites, web links and files

Obstacles
There were no obstacles identified

Scientific and technical needs
Building of in-house capacity to prepare strategies for mobilisation of resources

Measure to achieve Target 30
Target 30 — By 2015, all of the initial GEF SGP allocation programmed

Strategy
A Country Programme Strategy (CPS) was prepared for the utilization of the initial allocation of US$750,000.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
This measure was partially effective	Data from the GEF SGP showed that not all of the initial allocation of 750,000 USD were disbursed. Review of GEF SGP reports was the methodology used.

Relevant websites, web links and files
GEF SGP Guyana
https://sgp.undp.org/component/countrypages/?view=countrypage&country=134&Itemid=271
https://www.gy.undp.org/content/guyana/en/home/operations/projects/environment_and_energy/project_sample1.html
GEF SGP Country Programme Strategy
https://sgp.undp.org/all-documents/country-documents/448-sgp-guyana-cps/file.html

Obstacles
- Weakness in project management by the beneficiaries
- Inability of the beneficiaries to compile adequate project reports
- Lag time between application and approval of project
- Weak monitoring and evaluation mechanisms
- Lack of knowledge transfer within the community projects

Scientific and technical needs
- Public Awareness activities to provide information on the GEF SGP
- Capacity building in project preparation, monitoring for results, project reporting
- Capacity building in project management

Measure to achieve Target 31
Target 31— By 2016, at least 2 biodiversity related projects designed and submitted for GEF Council approval

Initiatives
Five project initiatives were submitted for approval by the Global Environment Facility. These projects were;

i A Gold/ Supply Chain Approach to Eliminating Mercury in Guyana's ASGM Sector: El Dorado Gold Jewellery Made in Guyana.

ii Minamata Initial Assessment for Guyana.

iii Strengthening Technical Capacities to Mainstream and Monitor Rio Convention Implementation through Policy Coordination.

iv Enhancing Biodiversity Protection through Strengthened Monitoring Enforcement and Uptake of Environmental Regulation in Guyana's Gold Mining Sector.

v Strengthening the Enabling Framework for Biodiversity Mainstreaming and Mercury Reduction in Small and Medium-scale Gold Mining Operations.

Assessment of the effectiveness of the implementation measures taken in achieving desired outcome	Reason for the selection and tools or methodology used for the assessment of effectiveness
The measure taken was effective Relevant websites, web links and files **https://www.thegef.org/projects-faceted?f[]=field_country:73**	a Five projects were submitted for approval by GEF Council b GEF website was used to validate the information

Obstacles

- In many instances projects are develop by experts who have limited knowledge and experience of the local context.
- The appropriated stakeholders are not included in project development from the initial stages
- Project design that is not best suited to the local situation.

Scientific and technical needs

- Improved capacity in project development, stakeholder engagement, project monitoring and evaluation
- Training in the policies and strategies of the GEF.

III. Assessment of progress towards each national target

Assessment of progress towards National Target 1 -17% of terrestrial area for *in-situ* conservation in legal protection by 2020 effectively managed and financially sustainable

The National Protected Areas System currently comprises approximately 8.4% of Guyana's landmass and includes the Iwokrama Forest; Kaieteur National Park; Kanashen Amerindian Protected Area; Kanuku Mountains Protected Area; Shell Beach Protected Area and Urban Parks — National Park, Zoological Park, Botanical Gardens, Joe Vieira Park. Kanashen is the newest and largest area declared legally as a protected area in 2017. The Kanashen Indigenous District, an area of 648,567.2 hectares (3% of Guyana), is home to the Wai Wai people, and

is the only indigenous-owned territory in the protected area system. The community's role as owners and managers of the area represents a new and innovative approach to conservation in Guyana.

Under the EU supported project "Sustainable Management of Natural Resources and Resilience" the establishment of two mangrove reserves is proposed. In Guyana's revised (Intended) National Determined Contribution (NDC) to the UNFCCC, one of the actions proposed was the conservation of an additional 2 million hectares through the National Protected Area System.

PARAMETERS	
Category of progress towards implementation of target	Progress towards target but at an insufficient rate
Date of Assessment	July 2019
Evidence for Assessing implementation of this Target	Met only 50% of the target identified for protected areas
Indicators used	% of terrestrial land under protection as protected areas against Guyana's total land area.
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Target is monitored by the designation of legal protection i.e legal declaration and gazetting of area as a Protected Area. Monitoring is done by the Protected Area Commission. Total land covered by legally designated PAs against Guyana's total land area, gives the % PA coverage.
Relevant websites, weblinks and files	PAT Annual Report 2014 https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2014-2015.pdf PAT Strategic Plan 2017-2021 https://protectedareastrust.org.gy/pat/ptc/media/PAT-STRATEGIC-PLAN-2017-2021.pdf PAT Annual Report 2017 https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2017_web.pdf PAC 2015 Annual Report http://www.parliament.gov.gy/documents/documents-laid/7356-new_pac_draft_annual_report_2015.pdf Amerindian Protected Area **https://www.minfor.gov.gy/press-releases/kanashen-amerindian-protected-area-accredited-to-the-queens-commonwealth-canopy/** Bicknell, J. E., *et al*, 2017. Designing protected area networks that translate international conservation commitments into national action https://www.sciencedirect.com/science/article/pii/S0006320717301386

Assessment of Progress towards National Target 2 - Reducing biodiversity loss and showing recovery by 2020.

Land development for agriculture and aquaculture and infrastructure development, overharvesting for firewood and bark and the effects of fire, have all contributed to the depletion of mangroves. Recognising the value of mangroves, the threats and the increased risks to Guyana's low lying coastline from by sea level rise, and the high of maintenance of the sea defence structures, a programme to restore coastal mangrove forests was implemented. More than 500,000 mangrove seedlings were produced and 142 ha of mangrove were restored and 30 km of existing mangroves were protected from further depletion.

PARAMETERS	
Category of progress towards implementation of target	Unknown
Date of Assessment	July 2019
Evidence for Assessing this Target	Limited evidence available - Mangroves have been restored, monitoring systems put in place, allocation in 2019 National budget for mangrove restoration
Indicators used	Information on acreage of mangroves restored provided in technical reports
Confidence level and explanation for the level of confidence	Based on limited evidence and expert opinion of EPA
Adequacy of monitoring information to support Assessments	Monitoring is partial
How the target is monitored/monitoring system	Topographic surveys completed at potential and restored mangroves sites. Annual periodic topographic surveys in the form of low-cost rapid assessment surveys. As part of its annual monitoring of the coastline. Data is collected on survival rates of planted seedlings and natural regeneration on an annual basis.
Relevant websites, weblinks and files	National budget allocation mangrove https://www.stabroeknews.com/2019/news/guyana/04/08/around-100m-to-be-spent-on-mangroves-restoration-ministry/. Study mangrove https://panorama.solutions/en/solution/increasing-coastal-resilience-and-social-development-opportunities-guyana-mangrove Mangrove Report http://narei.org.gy/departments/mangroves/ Mangrove http://www.mangrovesgy.org/home/

Assessment of Progress towards National Target 3 - By 2020, Protected Areas Trust Fund established, have adequate resources, and fully functioning.

The Protected Areas Trust (PAT) was legally established as a corporate body under the Protected Areas Act 2011, and the Protected Areas Trust Fund (PATF) was set-up to provide co-financing for the management of the NPAS. The PATF functions as an endowment fund to preserve the capital while investing globally to earn annual returns of approximately 5%. PAT funds are used to co-finance the implementation of protected areas management plans, strengthen monitoring and enforcement in protected areas, support sustainable community enterprises, biodiversity conservation, and environmental education and awareness. Approximately USD 8.5 million have been raised, with the ultimate goal of growing the Fund to USD 65 million. The PAT and PATF were successfully established and operational at the end of 2015. During 2017 based on submissions by the Protected Areas Commission grants were issued for three protected areas, which included a grant to the Kanashen Amerindian Protected area.

PARAMETERS	
Category of progress towards implementation of target	Progress towards target but an insufficient rate
Date of Assessment	July 2019
Evidence for Assessing this Target	The PAT and PATF established and functioning. (The Protected Areas Act passed in Parliament is the legislation under which the Trust was established).
Indicators used	PAT and Trust fund exist and funds made disbursed
Confidence level and explanation for the level of confidence	Based on comprehensive evidence, due to the PA Act in existence and funds were disbursed
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Release of funds from the PA Trust Fund to finance PA management activities, annual reports of the PAT and auditing/periodic third party assessment of the PATF
Relevant websites, web links and files	PAT Annual Report 2014 https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2014-2015.pdf PAT Strategic Plan 2017-2021 https://protectedareastrust.org.gy/pat/ptc/media/PAT-STRATEGIC-PLAN-2017-2021.pdf PAT Annual Report 2017 https://protectedareastrust.org.gy/pat/ptc/media/PAT-Annual-Report-2017_web.pdf

Assessment of Progress towards National Target 4 - By 2015, at least three (3) mined-out sites have been duly restored and managed.

Based on the existing literature, the adverse impacts of mining in Guyana have been identified as being in three distinctive categories - land degradation, vegetation/biological degradation, and water degradation. The Guyana Geology and Mines Commission (GGMC) has integrated activities for addressing mine restoration within its yearly work programme and budget. These activities include research, data collection and stakeholder education and awareness.

Active restoration through earthworks and/or tree planting was implemented on several sites ranging from 0.6 ha to 8.76 ha within the mining districts. The sites restored to date, comprise sites degraded by gold mining and bauxite mining. Restoration efforts by the GGMC are informed through site visits, technical evaluations, landform analyses, and restoration plans (e.g. direct planting, natural regeneration). There are on-going efforts to expand the scope of reclamation and restoration to waterways impacted by mining.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Implementation of land reclamation project The project was implemented under the Ministry of Natural Resources and executed by the Guyana Geology and Mines Commission. The Guyana Geology and Mines Commission to date has reclaimed a total of 22 hectares of mined out areas located at 5 different sites
Indicators used	Number of sites/locations under restoration
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate.
How the target is monitored/monitoring system	The GGMC is responsible for monitoring this target through the periodic field visits.
Relevant websites, web links and files	**Public Awareness land reclamation** https://www.youtube.com/watch?v=tM9Cp6b6dk8 https://www.youtube.com/watch?v=8g78pEYllwk&t=3s **Land Reclamation Project Report** https://www.ggmc.gov.gy/sites/default/files/docume

nt/land_reclamation_project_godfrey_scott.pdf

Assessment of Progress towards National Target 5 - The Germplasm Facility (Gene Bank) is formalized by end of 2015 in accordance with FAO Germplasm Standards and 1st Report published in 2016 Gene bank facility formalised

Plant species diversity for food and agriculture is an integral part of the national patrimony. The tissue culture facility at the National Agricultural Research and Extension Institute (NAREI) has the only dedicated laboratory in the country capable of *in vitro* crop species conservation. Protocols for local accessions of plantain, banana, pineapple, yams, and sweet potato were established.

NAREI is designated as the main depository of *ex situ* collections for seed regenerated crop species and as such has the mandate for all crops (approximately 70 agricultural crops species) except rice and sugarcane. The field gene banks are spread throughout the country at all of the Institute's research stations, plant propagation nurseries, and smaller satellite stations. The number of species conserved in field gene banks is restrained by NAREI's capability to manage these depositories. There are extensive evaluation and characterization data for sweet potato.

PARAMETERS	
Category of progress towards implementation of target	No significant change. No significant measures have been taken
Date of Assessment	July 2019
Evidence for Assessing this Target	
Indicators used	No Indicator used
Confidence level and explanation for the level of confidence	Based on limited evidence
Adequacy of monitoring information to support Assessments	No monitoring system in place
How the target is monitored/monitoring system	No information is available
Relevant websites, web links and files	National report on biodiversity for food and agriculture http://www.fao.org/3/CA3472EN/ca3472en.pdf

Assessment of Progress towards National Target 6 - By 2020 REDD+ framework established and functioning

Guyana advanced its REDD+ readiness preparation by:

a. Submitting to the World Bank in 2008 a Readiness Plan Idea Note (R-Pin)

b. Receiving approval in 2009 from the World Bank for its REDD+ Readiness Preparation Proposal (R-PP).

c. Inter-American Development Bank (IDB) as a support partner for REDD+ readiness actions

d. Signing a US$3.8 million agreement with the IDB under the Forest Carbon Partnership Facility (FCPF).

The REDD+ readiness activities included consultation and stakeholder engagements on REDD+ and Readiness activities; development of a grievance and redress mechanism (GRM); development of a REDD+ strategy and strategic environmental and social assessment (SESA); and a national Survey of perception of REDD+. These activities formed the basis for the institutional and governance framework for REDD+ procedures, strategies and implementation.

To date the following progress have been made:

a An Operations Manual -Towards a Grievance and Redress Mechanism for REDD+ Implementation

b REDD+ Strategy - which identified the drivers of deforestation and forest degradation and include proposals to address the drivers among which are strengthening the policy, legal and institutional framework; direct actions to slow deforestation and forest degradation; national land use planning and implementation; improving forests' capacity to store carbon; and economic alternatives to mining.

c A Guidance Note for Gender Integration in Guyana's REDD+ Readiness Process. This outlined the conduct of gender analysis to capture the gender dimensions, gender differentiated analysis to capture use, inequities (in participation, transparency, distribution of benefits), measures to ensure that monitoring and evaluation processes are gender-sensitive, measures to ensure adequate financial resources to mainstream gender and provision of gender expertise.

d A Communication Strategy and Action Plan and Communication products e.g posters, videos, a teacher's kit, flyers, radio slots. Materials were prepared in 4 Amerindian languages (Akawaio, Patamuna, Macushi and Wapishana) as well as in English.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Guyana received payments from the Government of Norway for implementing REDD+ actions under the GoG/Norway under the MOU

Indicators used	Indicators were the REDD+ Performance Indicators under the Guyana-Norway REDD+ Partnership Agreement
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Monitoring related to this target is adequate
How the target is monitored/monitoring system	Independent third party annual assessments and verifications
Relevant websites, web links and files	FCPF Guyana https://forestry.gov.gy/2017/10/04/forest-carbon-partnership-facility-fcpf-project-advances-redd-readiness-in-guyana/ FCPF https://www.forestcarbonpartnership.org/about REDD+ Strategy Youth and Women http://guyanachronicle.com/2019/03/29/new-redd-strategy-seeks-to-broaden-involvement-of-women-youths Guyana REDD+ Strategy https://reddplusguyana.org/redd-strategy/ REDD+ audio-visuals https://reddplusguyana.org/audiovisual-resources/

Assessment of Progress Towards Achievement of National Target 7 - By 2016, a National Conflict Resolution Strategy for REDD+ developed and functional.

An Operations Manual -Towards a Grievance and Redress Mechanism for REDD+ Implementation was drafted. It outlined the purpose, principles, grievance and redress policy, procedures, grievance uptake, logging and tracking, engagement and verification, eligibility screening, assessment and assigning ownership, categorising grievance, response and responsibilities.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019

Evidence for Assessing this Target	Based on comprehensive evidence
Indicators used	IDB/FCPF project indicators
Confidence level and explanation for the level of confidence	Based on comprehensive evidence. This was reported in the IDB/FCPF project output reports
Adequacy of monitoring information to support Assessments	Monitoring related to this target is adequate
How the target is monitored/monitoring system	Through the FCPF project management office, Ministry of Natural Resources
Relevant websites, web links and files	Guyana REDD+ Strategy https://reddplusguyana.org/redd-strategy/ REDD+ audio-visuals https://reddplusguyana.org/audiovisual-resources/

Assessment of Progress Towards Achievement of National Target 8 - By 2020, biodiversity concerns are integrated into hinterland ecotourism development plans and strategies.

Assessment of Progress Towards Achievement of National Target 8

A National Tourism Policy and a Tourism Strategic action Plan 2018-2025 were developed in 2017. The Policy defines the path that Guyana has chosen for the development of its tourism industry and aligns with the vision, goals and objectives of the Green State Development Strategy. It ensures that tourism plans are linked to the SDGs with an emphasis on Goals 8, 12 and 14. One of the strategic objectives that drives the plan is the meaningful and beneficial involvement of rural and hinterland communities in tourism enterprises.

Several strategic actions proposed which align with supporting biodiversity protection, conservation and sustainable use and with a focus on hinterland tourism include:

- Improving Guyana's top tourism sites as well as supporting Protected Area Business Planning.
- Supporting the identification of ecotourism zoning within existing protected areas and conservancies.
- Supporting the development of protected area business plans.
- Establishing a system for tendering and awarding concessions with compulsory provisions for environmental management systems, green building, and experience working in protected areas and with local communities.
- Establish designated tourism zones in the hinterland regions under special regulations designed to support sustainable tourism projects and discourage malpractices.
- Designing and implementing a strategy for the development of nature-based/ecotourism.

In 2019, Guyana was named the No.1 "Best of Ecotourism" destination in the world. The award was presented to Guyana at the Internationale Tourismus-Börse Berlin (ITB), the world's largest tourism trade fair. Guyana has also been named the #1 'Best in Sustainable Tourism' at the Latin American Travel Association (LATA) Achievement Awards, which took place during 'Experience Latin America', Europe's largest travel conference focused on the Latin America region. The LATA Achievement Awards recognise destinations, individuals and/or companies with exemplary case studies of tourism or that have made an exceptional contribution to the development of sustainable travel to Latin America. Guyana was selected as the winner of this award for its "impressive sustainable tourism practices and community-led tourism framework which promotes job creation, helps preserve local traditions and customs, promotes low-carbon lifestyles and provides a livelihood for indigenous communities."

Guyana has also recently become the first country to adopt the Adventure Travel Trade Association's International Adventure Travel Guide Qualification & Performance Standards.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve the target
Date of Assessment	July 2019
Evidence for Assessing this Target	Approval of the National Tourism Policy and Plan and the international awards received.
Indicators used	Number of national documents related to tourism
Confidence level and explanation for the level of confidence	Comprehensive evidence. It is clearly stated in the National Tourism Policy and Action Plan
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	
Relevant websites, web links and files	Draft National Tourism Policy https://www.business.gov.gy/wp-content/uploads/2018/03/20180206DRAFTNATIONALTOURISM-POLICY_Final-Version.pdf Guyana Tourism Strategic action Plan 2018-2025 Draft https://www.business.gov.gy/wp-content/uploads/2018/11/Tourism-Strategy-2018-2025.pdf LATA award https://www.business.gov.gy/2019/06/13/guyana-wins-the-best-in-sustainable-tourism-at-lata-achievement-awards/ Best ecotourism destination https://www.business.gov.gy/2019/05/30/guyana-wins-1-best-eco-tourism-award/

Assessment of Progress Towards Achievement of National Target 9 - By 2016, a GEF supported project designed to mainstream biodiversity into mining

The project "Strengthening the Enabling Framework for Biodiversity Mainstreaming and Mercury Reduction in Small and Medium-scale Gold Mining Operations" was submitted and approved by the GEF. The goal of the project was to strengthen the regulatory framework and institutional capacity for the management of small and medium-scale gold mining and promote greater adoption of environmentally-friendly mining techniques in Guyana in order to protect globally significant biodiversity, reduce mercury contamination, enhance local livelihoods and human health.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Project document
Indicators used	Approval of project by the Global Environment Facility (GEF) Council and posting on the GEF website
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the Environmental Protection Agency, the GEF Operational Focal Point
Relevant websites, web links and files	GEF approved projects Guyana https://www.thegef.org/projects-faceted?f[]=field_country:73

Assessment of Progress Towards Achievement of National Target 10 - Guidelines for responsible recreational fishing and practices in ornamental fish collection and handling published and at least 2 awareness and training programmes conducted per year.

The promotion of recreational fishing was envisaged as combining agriculture and tourism in a viable industry. Guyana shares with the Amazon River over 1800 fish species; among these are several game fish species such as the Payara, Arowana, Himara, and what is considered by professional anglers worldwide as the world's most popular fresh water game fish, the Peacock Bass (known in Guyana as Lukanani).

The Ministry of Agriculture's catch-and-release Arapaima protocols and draft legislation were completed for a sport fishing project in the North Rupununi. The project covers Karanambu, Surama and Rewa eco-lodges. The key output of the project was a strong regulatory framework for sustainable management of the Arapaima

(*Arapaima gigas*) and Catch-and-Release activity based upon data and best practices research carried out under the project. The guidelines serve to preserve the Arapaima, while promoting eco-tourism in Region Nine.

The Tourism Authority (GTA), in collaboration with Rewa Eco-lodge, conducted three days of sport fishing training involving residents of Warapoka in Region 1.

It is expected that after the completion of the proposed Technical Cooperation Project with Food and Agriculture Organisation (FAO) activities in this area would be developed further. It is recognised that a regulatory framework should be national and not just for selected areas.

PARAMETERS	
Category of progress towards implementation of target	Progress towards target but at an insufficient rate
Date of Assessment	July 2019
Evidence for Assessing this Target	Information provided on websites and newspaper articles
Indicators used	Draft legislation and guidelines for Arapaima
Confidence level and explanation for the level of confidence	Comprehensive evidence from newspaper reports, websites, information from the Guyana Tourism Association and expert opinion of the Ministry of Agriculture
Adequacy of monitoring information to support Assessments	Monitored by the Ministry of Agriculture and the Guyana Tourism Authority.
How the target is monitored/monitoring system	
Relevant websites, web links and files	Draft Arapaima legislation https://agriculture.gov.gy/2016/06/03/catch-release-draftarapaima-legislation-completed/ GTA training https://www.guyanatourism.com/wp-content/uploads/2019/07/GTA-Press-Release-GTA-conducts-3-day-Sport-Fishing-Training-in-Warapoka-2019.06.06.pdf Rupununi Sports fishing http://competecaribbean.org/wp-content/uploads/2016/05/CC-Project-Highlight-Rupununi-v6.pdf Sports fishing in Guyana https://www.costadelmar.com/us/en/inside-costa/protect/protect-guyana?thefisherman

Assessment of Progress Towards Achievement of National Target 11 - The achievement of the intended impact of the full implementation of the communication strategy for the implementation of the NBSAP

A draft communication strategy was prepared. It was not finalised. Some aspects of the Strategy were implemented by the Guyana Forestry Commission and the Department of Environment.

PARAMETERS	
Category of progress towards implementation of target	Progress towards target but at an insufficient. rate
Date of Assessment	July 2019
Evidence for Assessing this Target	A draft Strategy is included in the NBSAP.
Indicators used	Number of publications, Communication Plans that are related to biodiversity.
Confidence level and explanation for the level of confidence	Comprehensive evidence.
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the EPA, CBD focal point, rapid assessment
Relevant websites, web links and files	Uploaded file

Assessment of Progress Towards Achievement of National Target 12 - By 2020, Coastal Wetlands, Savannahs, Mountain Highlands and Rainforests eco-systems featuring in the Zoological Park to highly encourage visitors and enhance informal education through interactive and engaging experiences

A Master Plan for the Zoological Park was completed with the objective of creating zones representative of major ecosystems of Guyana. The Plan is not yet implemented.

PARAMETERS	
Category of progress towards implementation of target	No significant change
Date of Assessment	July 2019
Evidence for Assessing this Target	Information provided by the Protected Areas Commission (PAC)
Indicators used	Presence of ecosystem features in the Zoological Park
Confidence level and explanation for the level of	Comprehensive as information was provided by the PAC

confidence	which has responsibility for management of national parks
Adequacy of monitoring information to support Assessment	Adequate
How the target is monitored/monitoring system	Progress is monitored by the PAC
Relevant websites, web links and files	

Assessment of Progress Towards Achievement of National Target 13. - Fifth national report submitted in 2014 and Target 14 - By 2014, revised NBSAP completed

Guyana submitted its Fifth National Report to the CBD in 2015 and completed the revision of the NBAP to align with the goals, objectives and targets of the CBD Strategic Plan 2011-2020.

The NBSAP was expanded to encompass the new national development context, the emerging threats to biodiversity and the ecosystems, the strategic approach to biodiversity management, a monitoring and evaluation framework to measure the results and resource mobilization and capacity building frameworks for its implementation. It allowed, as well, partners at all levels to better identify how they could contribute and support Guyana in achieving its national biodiversity vision while meeting at the same time, its obligations to the UNCBD. The sum of all the proposed actions in the NBSAP (2012-2030) contributes directly to all five Goals of the CBD Strategic Plan 2011-2020 and 14 of the 20 Aichi Targets.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve targets
Date of Assessment	July 2019
Evidence for Assessing this Target	Submission of the 5NR and approval of the NBSAP by Cabinet
Indicators used	Report can be accessed from the CBD website
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitoring is done by the EPA, the CBD focal point
Relevant websites, web links and files	NBSAP http://www.epaguyana.org/epa/component/jdownloads/download/24-strategies-and-action-plans/302-guyana-nbsap-2012-2020?Itemid=311 **Guyana 5 NR** https://www.cbd.int/doc/world/gy/gy-nr-05-en.pdf

Assessment of Progress Towards Achievement of National Target 15 - By 2015, indicators developed, adopted and being used.

Draft monitoring framework with indicators prepared, still to be adopted or used for monitoring implementation and reporting on MEAs.

PARAMETERS	
Category of progress towards implementation of target	No significant change
Date of Assessment	July 2019
Evidence for Assessing this Target	Reported by the EPA, focal point for the CBD
Indicators used	Monitoring Framework
Confidence level and explanation for the level of confidence	Comprehensive. It was reported by the EPA
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the EPA
Relevant websites, web links and files	

Assessment of Progress Towards Achievement of National Target 16 - By 2015, MEAs Committee established

An MEA Committee was established with a mandate to advise on matters relating to environmental governance and facilitate improved coordination and collaboration amongst stakeholders. The Membership comprise convention focal points, sector agencies, donors, private sector, the GEF Focal Points and technical experts and the Centre for the Study on Biological Diversity.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Based on information provided by the Department of Environment that is responsible for coordinating the implementation of MEAs
Indicators used	Terms of reference of the MEA Committee and identification of members
Confidence level and explanation for the level of	Comprehensive Information provided by the

confidence	Department of Environment
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the Department of Environment which has coordination responsibility for the MEAs
Relevant websites, web links and files **Department of Environment** **https://doe.gov.gy/**	

Assessment of Progress Towards Achievement of National Target 17 - By 2015, a status report on the implementation of MEAs

In 2018 the Department of Environment (DoE) commissioned an assessment of the policy framework for the implementation of the three Rio Conventions - the UNCCD, UNCBD and UNFCCC. Key challenges identified in implementing the MEAs related to financing, knowledge, coordination and collaboration among the different conventions and an apparent capacity disconnect between mainstreaming at the national level and the capabilities of sector Agencies and Ministries.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Based on the implementation of the Mainstreaming of the MEAs project and project reports.
Indicators used	Project technical reports
Confidence level and explanation for the level of confidence	Comprehensive
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	By the Department of Environment which has oversight responsibility for MEAs
Relevant websites, web links and files	Assessment of Policy Framework https://doe.gov.gy/published/document/5c7943119f71fc795a0140bd

Assessment of Progress Towards Achievement of National Target 18 - By 2015 finalise the ABS regulations

Several technical and legal revisions of the regulations have been undertaken.

PARAMETERS	
Category of progress towards implementation of target	Progress toward target but at insufficient rate
Date of Assessment	July 2019
Evidence for Assessing this Target	Draft legislation and information provided by the EPA on the process (consultation reports)
Indicators used	Draft legislation
Confidence level and explanation for the level of confidence	**Comprehensive**
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	**Monitored by EPA, focal for Nagoya protocol**
Relevant websites, web links and files	

Assessment of Progress Towards Achievement of National Target 19 - By 2016, research interface developed with University of Guyana, Conservation International, and WWF.

Over the past two years, the Centre for the Study of Biological Diversity (CSBD) conducted training programmes to faculty and students from the University of Guyana and personnel from governmental and non-governmental natural resource management agencies. These programmes support biodiversity research by training participants to monitor biodiversity, mine biodiversity data and prepare scientific reports and journal articles. These programmes have been largely funded through a grant (between the CSBD and University of Florida) through the WWF-Guianas sustainable forest resources management project. The CSBD has collaborated with CI, WWF and several Government agencies such as PAC to conduct research that are directly align with the Agencies' research mandate.

PARAMETERS	
Category of progress towards implementation of target	Progress towards target but at an insufficient rate
Date of Assessment	July 2019

Evidence for Assessing this Target	Based on information provided by the CSBD
Indicators used	The number of training and research programmes
Confidence level and explanation for the level of confidence	Comprehensive evidence. Information provided by the CSBD
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the Faculty of Natural Sciences of the University of Guyana
Relevant websites, web links and files **http://fns.uog.edu.gy/centre-study-biological-diversity**	

Assessment of Progress Towards Achievement of National Target 20 - By 2020 all timber for export to the EU will be verified legal and granted a FLEGT license

In order to issue FLEGT licences, Guyana will build on existing national initiatives to develop a robust timber legality assurance (GTLAS). The system for verification along the value chain is still being developed. Guyana will begin issuing FLEGT licences only when the timber legality assurance system has been successfully tested (field testing conducted in 2017), and when Guyana and the EU are satisfied that it functions as described in the VPA. No FLEGT licence has been issued.

PARAMETERS	
Category of progress towards implementation of target	Progressed achieved towards target but at an insufficient rate
Date of Assessment	July 2019
Evidence for Assessing this Target	Guyana Timber Legality Assurance System(GTLAS).
Indicators used	EU FLEGT Facility profile
Confidence level and explanation for the level of confidence	Based on comprehensive evidence.
Adequacy of monitoring information to support Assessments	Adequate.
How the target is monitored/monitoring system	Monitored by the Guyana Forestry Commission and EU FLEGT.
Relevant websites, web links and files	http://www.euflegt.efi.int/q-and-a-guyana

National Target: 21- By 2020, all developers and operators will secure environmental authorizations

As at 2019, 90% of developers have received environmental authorisations.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Applications received from developers
Indicators used	Number of environmental authorisations issued
Confidence level and explanation for the level of confidence	**Comprehensive. The information was provided by the EPA which is the only Agency which can issue environmental authorisations**
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	**Monitored by EPA**
Relevant websites, web links and files	

Assessment of Progress Towards Target 22 - By 2020, develop standards for air and water quality

Standards have not been developed due to insufficient baseline data specifically for Guyana.

PARAMETERS	
Category of progress towards implementation of target	No significant progress
Date of Assessment	July 2019
Evidence for Assessing this Target	The current use of international standards e.g WHO for air quality
Indicators used	National air and water quality standards
Confidence level and explanation for the level of confidence	Comprehensive
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by EPA, Guyana National Bureau of Standards

Relevant websites, web links and files

Assessment of Progress Towards Achievement of National Target 23 - By 2020, EU-FLEGT VPA in place

The Voluntary Partnership Agreement (VPA) is a legally binding bilateral trade agreement that aims to improve forest governance and promote trade in legal timber from Guyana to the EU. Guyana and the EU began negotiating the VPA in December 2012 and in 2018, Guyana and the EU reached agreement on the content of the VPA. In November they initialled the VPA, ahead of signing and ratifying it. Under the VPA both parties commit to trading only in legal timber products. After Guyana and EU sign and ratify the VPA, its commitments will become legally binding. A Guyana-EU joint body will oversee the implementation of the VPA.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	- the initialled VPA.
Indicators used	EU FLEGT Facility profile
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the Guyana Forestry Commission and EU FLEGT
Relevant websites, web links and files	**http://www.euflegt.efi.int/q-and-a-guyana**

Assessment of Progress Towards Achievement of National Target 24 - By 2020, MRV system in place and functioning fully

Guyana continues to conduct annual mapping and reporting of forest change. This reporting on forest change is the responsibility of the Guyana Forestry Commission through its Monitoring Reporting and Verification System for REDD+. Guyana has completed reporting on status of forest including assessing drivers of forest change from deforestation and forest degradation from 1990 to 2017 with assessment for 2018 currently in progress. This has resulted in 7 annual assessments from 2010 to 2017 (with Year 6 being 2015 and 2016 counted as one reporting year in a single report) to date being completed, and independently verified as part of Guyana's

Monitoring Reporting and Verification System for REDD+. Guyana had submitted its Reference Level for REDD+ to the UNFCCC in December 2014. This underwent a technical review by the UNFCCC and was subsequently approved.

Mapping and reporting are done at national scale, and includes protected areas. One of the indicators reported on annually is that of Intact Forest Landscapes (IFL), which is the extent of forest cover which contains forest and non-forest ecosystems minimally influenced by human economic activity, with an area of at least 500 km2 (50 000 ha) and a minimal width of 10 km (measured as the diameter of a circle that is entirely inscribed within the boundaries of the territory.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve Target
Date of Assessment	July 2019
Evidence for Assessing this Target	The deforestation assessments and third party verifications.
Indicators used	Indicator used were those established in the MRVS Roadmaps
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Target is monitored by the GFC and independent third party
Relevant websites, web links and files	https://www.forestcarbonpartnership.org/system/files/documents/3.b_Guyana_MRV_System_2.pdf MRVS Interim measures Reports https://www.forestry.gov.gy/wp-content/uploads/2018/11/MRVS-Interim-Measures-Report-Year-7-Version-1.pdf https://www.forestry.gov.gy/wp-content/uploads/2018/05/MRVS-Interim-Measures-Report-Year-6-Version-3.pdf https://www.forestry.gov.gy/wp-content/uploads/2015/09/Guyana-MRVS-Interim-Measures-Report-Year-2-V3.pdf https://www.forestry.gov.gy/wp-content/uploads/2015/09/Guyana-MRVS-Interim-Measures-Report-Year-1-V3.pdf https://www.forestry.gov.gy/wp-content/uploads/2018/05/MRVS-Interim-Measures-Report-Year-6-Version-3.pdf https://www.forestry.gov.gy/wp-content/uploads/2015/09/MRVS-Interim-Measures-Report-Year-4-V3.pdf https://www.forestry.gov.gy/wp-

	content/uploads/2015/09/MRVS-Interim-Measures-Report-Year-3-V3.pdf https://www.forestry.gov.gy/wp-content/uploads/2015/09/Accuracy-Assement-Year-1.pdf **https://redd.unfccc.int/files/guyana_proposal_for_reference_level_for_redd_.pdf** http://www.forestry.gov.gy/wp-content/uploads/2017/01/UNFCCC-Final-Assessment-Report.pdf http://www.forestry.gov.gy/wp-content/uploads/2015/09/Terms-of-Reference-for-Guyanas-MRVS-Roadmap-Phase-1.pdf

Assessment of Progress Towards Achievement of National Target 25 - By 2020, monitoring reports for large projects submitted to the EPA

All scales are required to submit monitoring reports. All large scale reports have been submitted as required.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve targets
Date of Assessment	July 2019
Evidence for Assessing this Target	All the types of Monitoring Reports
Indicators used	Number of annual reports, water and air quality reports, waste management reports, biodiversity monitoring reports
Confidence level and explanation for the level of confidence	**Comprehensive**
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by EPA through a compliance data base
Relevant websites, web links and files	

Assessment of Progress Towards Achievement of National Target 26 - Clearing House Mechanism fully functional.

CHM website has been established for Guyana.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Functioning CHM website for Guyana
Indicators used	Number of documents uploaded
Confidence level and explanation for the level of confidence	Comprehensive
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	**Monitored by EPA**
Relevant websites, web links and files https://gy.chm-cbd.net/	

Assessment of Progress Towards Achievement of National Target 27- By 2020, a biodiversity information system established

A biodiversity platform was established. Data mobilisation and collation is on going. The Centre for the Study of Biological Diversity has worked closely with the EPA to develop the format for and to test the system as well as providing electronic datasets of museum specimens to populate this database. Datasets were also received from WWF.

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Establishment of database and website
Indicators used	Number of datasets received

Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	It is monitored by the EPA, which has oversight and permitting for all biodiversity research conducted in Guyana.
Relevant websites, web links and files	http://biodivguyana.org/

Assessment of Progress Towards Achievement of National Target 28 - By 2020, an updated and fully functional National Biodiversity Research Information System (NBRIS)

The National Biodiversity Research and Information System (NBRIS) has been established and is functional.

Persons are encouraged to use the online system to apply for research permits**.**

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	Website active
Indicators used	Number of online applications received through NBRIS
Confidence level and explanation for the level of confidence	Based on comprehensive evidence Easily accessible online
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the EPA. System used to receive applications for biodiversity research
Relevant websites, web links and files	Annual Report EPA http://www.epaguyana.org/epa/downloads/environmental-education-publications/annual-reports/download/10-annualreport/57-epa-annual-report-2015 NBRIS information http://guyanachronicle.com/2017/08/20/know-more-about-the-epa NBRIS website http://www.epabiodiv.gy/rap/index.aspx

Assessment of Progress Towards Achievement of National Target 29 - Resource mobilization plan prepared in 2014

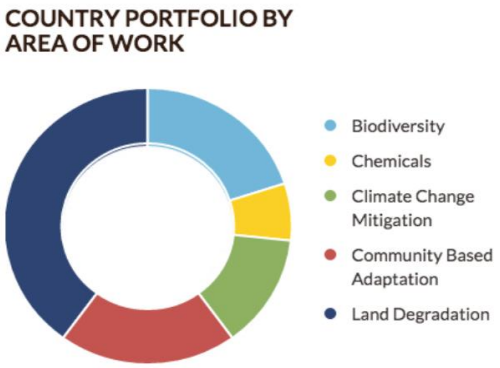
A mobilisation plan was prepared. It is included in the National Biodiversity Strategy and Action Plan 2012-2020. Identified in the Strategy were the different types of resources — financial, human and goods and services, resource mobilisation actions, coordination and disbursement of resources

PARAMETERS	
Category of progress towards implementation of target	On track to achieve target
Date of Assessment	July 2019
Evidence for Assessing this Target	It is included in the NBSAP 2012-2020
Indicators used	Mobilisation Plan
Confidence level and explanation for the level of confidence	Based on comprehensive evidence. The NBSAP is easily accessed online
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	By the EPA
Relevant websites, web links and files NBSAP http://www.epaguyana.org/epa/component/jdownloads/download/24-strategies-and-action-plans/302-guyana-nbsap-2012-2020?Itemid=311	

Assessment of Progress Towards Achievement of National Target 30 - By 2015, all of the initial GEF SGP allocation programmed

The GEF Small Grants Programme (GEF SGP) was established in Guyana in 2013**.** The initial grant allocation was 750, 000 USD. Disbursement as at 2019 was 543,492 USD. Figure 1 shows the country portfolio by areas of work.

Figure 1 Country Portfolio by Area of Work



PARAMETERS	
Category of progress towards implementation of target	Progress towards target but at an insufficient rate
Date of Assessment	July 2019
Evidence for Assessing this Target	Information in Reports posted on the Global Environment Facility Small Grant Programme's website
Indicators used	Number of projects designed and amount of funds allocated and disbursed.
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate
How the target is monitored/monitoring system	Monitored by the GEF/SGP Office, Steering Committee and the EPA, the GEF Operational Focal
Relevant websites, web links and files	**Country portfolio and disbursement** **https://sgp.undp.org/component/countrypages/?view=countrypage&country=134&Itemid=271**

Assessment of Progress Towards Achievement of National Target 31 - By 2016, at least 2 biodiversity related projects designed and submitted for GEF Council approval

Five project proposals were submitted and approved by the GEF. These projects were;

i A Gold/ Supply Chain Approach to Eliminating Mercury in Guyana's ASGM Sector: El Dorado Gold Jewellery Made in Guyana. The goal of the project was to assist Guyana with converting to mercury-free mining by 2025 by directly involving business enterprises to lead the shift in the development of a mercury-free ASGM supply chain and downstream El Dorado brand jewellery.

ii Minamata Initial Assessment for Guyana. The goal was to undertake a Initial Mercury Assessment to identify the national mercury challenges and the extent to which legal, policy and regulatory framework

will enable Guyana to implement future obligations under the Minamata Convention

iii Strengthening Technical Capacities to Mainstream and Monitor Rio Convention Implementation through Policy Coordination. The goal of this project was to strengthen technical capacities for mainstreaming and monitoring achievement of Rio Convention objectives through policy coordination

iv Strengthening the Enabling Framework for Biodiversity Mainstreaming and Mercury Reduction in Small and Medium-scale Gold Mining Operations. The goal of the project was to Strengthen the regulatory framework and institutional capacity for the management of small and medium-scale gold mining and promote greater adoption of environmentally-friendly mining techniques in Guyana in order to protect globally significant biodiversity, reduce mercury contamination, enhance local livelihoods and human health.

v Strengthening the Enabling Framework for Biodiversity Mainstreaming and Mercury Reduction in Small and Medium-scale Gold Mining Operations.

PARAMETERS	
Category of progress towards implementation of target	On track to exceed target
Date of Assessment	July 2019
Evidence for Assessing this Target	Approval by the All four projects were approved
Indicators used	Approval received from the GEF Council
Confidence level and explanation for the level of confidence	Based on comprehensive evidence
Adequacy of monitoring information to support Assessments	Adequate. The information is posted on the GEF website
How the target is monitored/monitoring system	By the EPA, the GEF Operational Focal Point
Relevant websites, web links and files	GEF approved projects Guyana https://www.thegef.org/projects-faceted?f[]=field_country:73

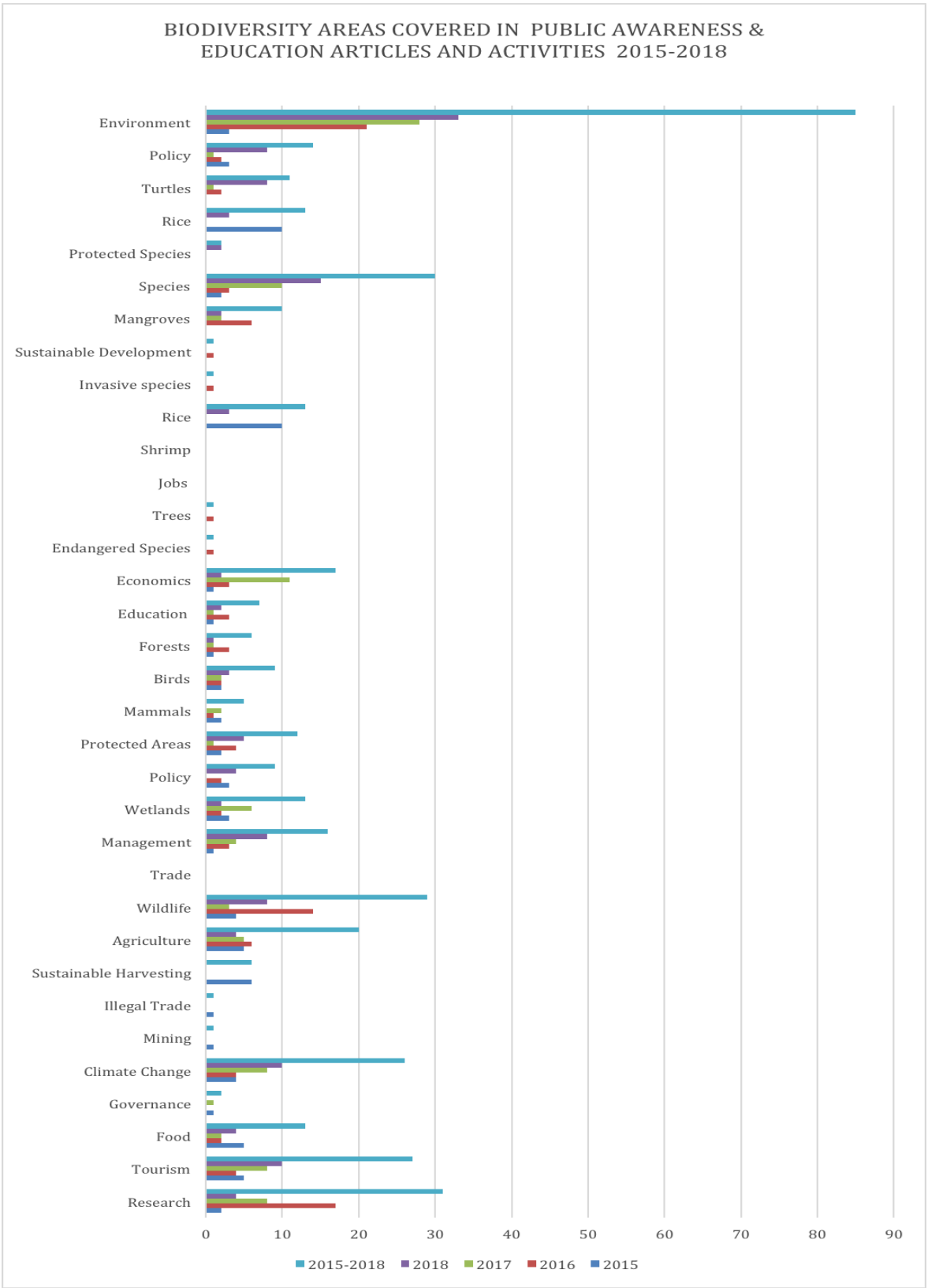
Section IV. Description of the national contribution to the achievement of each global Aichi Biodiversity Target

IV. Description of national contribution to the achievement of each Aichi Biodiversity Target
Aichi Biodiversity Target 1: Awareness of biodiversity increased
A rapid but limited examination of websites of conservation agencies, sector agencies and newspapers for

biodiversity public awareness information related to biodiversity revealed only one had a dedicated public awareness/education page/section. A total of 432 articles/awareness activities were reported between 2015 and 2018. Public awareness activities and articles were focused on the environment, research, wildlife and species. Figures 2 and 3 show biodiversity related topics covered and types of articles written and activities conducted. The effectiveness of these awareness activities is still to be determined.

According to the terminal evaluation, the GEF supported project "Enhancing Biodiversity Protection through Strengthened Monitoring, Enforcement and Uptake of Environmental Regulations in Guyana's Gold Mining Sector" made a significant contribution to raising awareness of mainstreaming biodiversity in the gold sector and how such actions can be transformative for the environmental and sustainable development.

Figure 2 Biodiversity Areas Covered in Public Awareness and Education Articles and Activities


BIODIVERSITY AREAS COVERED IN PUBLIC AWARENESS & EDUCATION ARTICLES AND ACTIVITIES 2015-2018
Environment
Policy
Turtles
Rice
Protected Species
Species
Mangroves
Sustainable Development
Invasive species
Rice
Shrimp
Jobs
Trees
Endangered Species
Economics
Education
Forests
Birds
Mammals
Protected Areas
Policy
Wetlands
Management
Trade
Wildlife
Agriculture
Sustainable Harvesting
Illegal Trade
Mining
Climate Change
Governance
Food
Tourism
Research
0
10
20
30
40
50
60
70
80
90
2015-2018
2018
2017
2016
2015

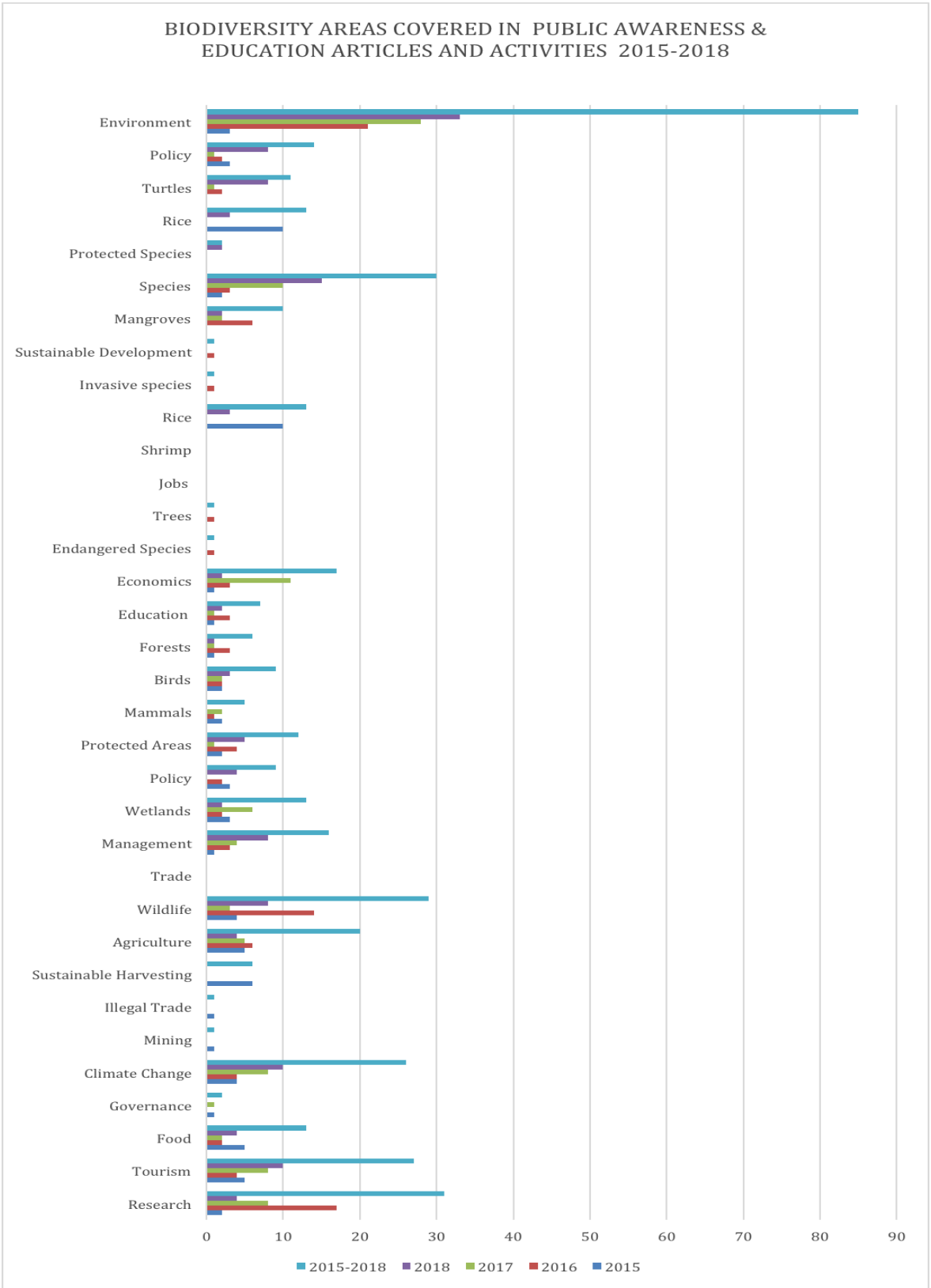
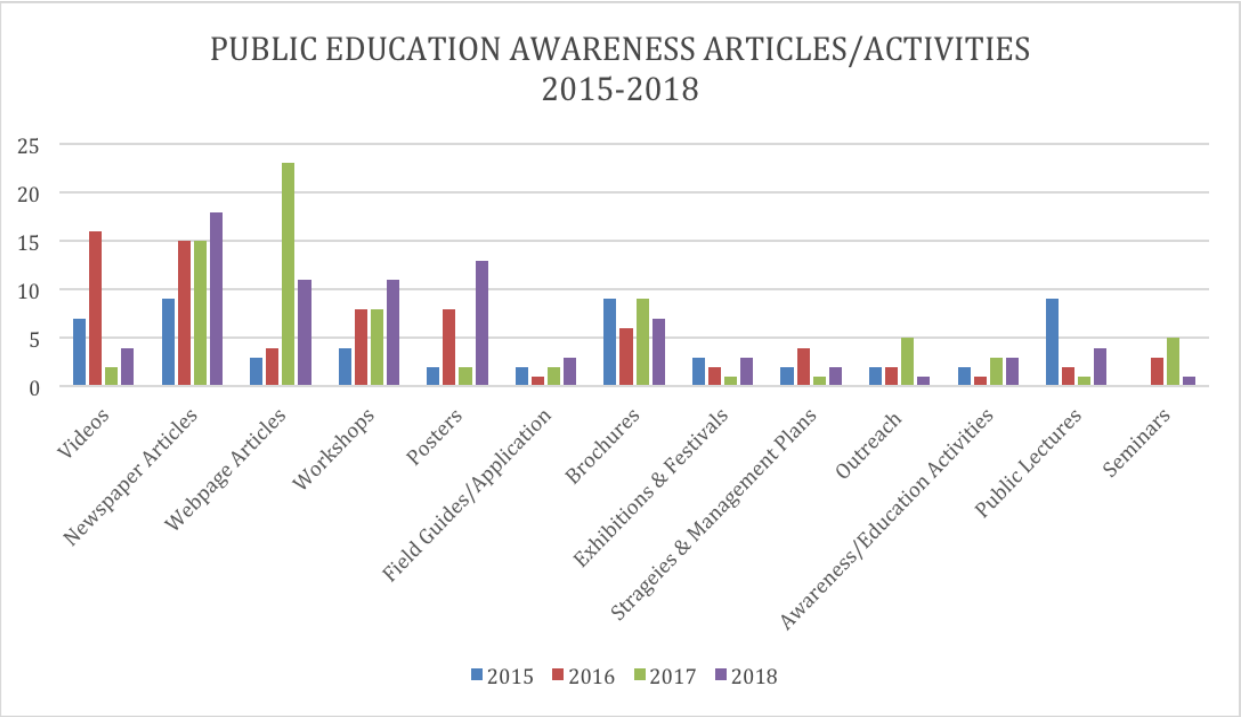

BIODIVERSITY AREAS COVERED IN PUBLIC AWARENESS & EDUCATION ARTICLES AND ACTIVITIES 2015-2018
Environment
Policy
Turtles
Rice
Protected Species
Species
Mangroves
Sustainable Development
Invasive species
Rice
Shrimp
Jobs
Trees
Endangered Species
Economics
Education
Forests
Birds
Mammals
Protected Areas
Policy
Wetlands
Management
Trade
Wildlife
Agriculture
Sustainable Harvesting
Illegal Trade
Mining
Climate Change
Governance
Food
Tourism
Research
0
10
20
30
40
50
60
70
80
90
2015-2018
2018
2017
2016
2015

Figure 3 Public Education Awareness Articles and Activities 2015-2018



The Ministry of Education, with international support, piloted the inclusion of climate change and biodiversity education in all levels within the school system. Conservation International – Guyana (CI-Guyana) collaborated with the Ministry of Education through the National Centre for Educational Resource Development (NCERD) to complete a number of strategic initiatives. These included the development of a video series on climate change and biodiversity for secondary school students (Grades 9-12); drafting a climate change and biodiversity resource book; and completion of a study for inclusion of climate change and biodiversity education at the primary level.

The Mangrove Restoration and Management Department at the National Agricultural Research and Extension Institute (NAREI) collaborated with NCERD to implement the public awareness and education component of the National Mangrove Management Action Plan. Several resources for schools on the sustainable coastal zone protection through mangroves were developed. These included a video titled "Holding Back the Sea" and a teacher's resource manual for secondary schools in Guyana – "Mangroves: Our Natural Sea Defence". The establishment of the Mangrove Visitors' Centre, Victoria, East Coast Demerara, led to numerous field trips by primary and secondary school teachers and students. This was cited as a good example of learning from the environment which bridges formal, non-formal and informal learning.

The Protected Areas Commission (PAC) has included biodiversity education in school programme tours and

the nature school zoo camp. Projects included designing of a nature-based education centre within the Guyana Zoological Park and Botanical Gardens, with focus on biodiversity, environmental education and conservation.

The Centre for the Study of Biological Diversity (CSBD) curates and maintains the national research collection of flora and fauna and collaborates with the institutions and universities such as the Royal Ontario Museum, Smithsonian, University of Michigan, University of Warwick, University of Florida etc., to offer a full range of education, research and training programmes consistent with local efforts to conserve, manage and raise awareness of biodiversity. The CSBD also works closely with the Guyana EPA, on the verification of specimens/samples that are collected by researchers for export and is responsible for the repatriation of these specimens. In addition, the CSBD facilitates biodiversity research collaborations between many scientists and students from foreign and local institutions and also conducts educational tours and visits for local schools and researchers.

Guyana was the first place winner for the "Destinations" category at the "Golden City Gate" Film Awards held in Berlin for its nature destination video in a worldwide video competition that has been running for 19 years. The video (https://bit.ly/2T4DsCz) profiled Guyana as an adventurous nature and culture destination. A 45 member jury reviewed all submissions and Guyana received a nearly unanimous vote from 40 judges for the top spot. The evaluation was based on criteria such as the clarity of the marketing statement presented, the emotion generated, the level of creativity, the memory instilled, and the overall impression.

Aichi Biodiversity Target 2: Biodiversity values integrated

Guyana planned to have in place by the end of 2018 a National Strategy for Development of Statistics Roadmap (NSDS). The objective of the NSDS is to develop the national statistical system (NSS) to produce good quality statistics that provide information about the economy, people, natural environment and resources. This information is essential to enabling the government to make evidence-informed decisions, develop facts-based policies and strategies across a broad range of development priorities.

These statistics are intended to:

- Provide unambiguous evidence to inform governments of the priorities that need to be set across sectors, in terms of geography (urban-rural, sub-national administrative geographies), and focusing on specific population groups (such as children, youth, the elderly, unemployed, the

poor);

- Provide an objective foundation (benchmarks) for any policy, strategy and associated intervention as well as targets related to the achievements of the various policies and plans;
- These benchmarks, along with regular collection of underlying statistics allow the monitoring of progress on a regular basis and to re-align policies and adjust programmes, if needed, to achieve the intended results; and
- Ensure that limited resources are utilized in an effective and efficient manner and highlight where additional resources are needed.

A Roadmap for the development of the NSDS was prepared is to provide direction for developing the national statistical system of Guyana, and guide the production, dissemination and use of statistics (data) and statistical information to inform the development of policy and planning across all areas of Government and the country's ten regions and to contribute to the overall development of the nation.

Two NSS assessments were completed in 2017, prior to the official launch of the Guyana NSDS process in 2018. The Bureau of Statistics noted in the Roadmap that for the achievement of the *2030 Agenda for Sustainable Development* a data revolution is needed to improve the quality of statistics and information available to people and governments. The Bureau also recognised that given Guyana's endorsement of, and commitment to, achieving the Sustainable Development Goals (SDGs), the magnitude of statistical indicators required for benchmarking and monitoring progress dwarfs those of the MDGs, and as such makes development of the Guyana NSDS both timely and essential for the Government to fulfil its regular monitoring and reporting commitments, both nationally and globally. To this end the Guyana Bureau of Statistics intends to expand its traditional focus on economic and socio-demographic statistics, and set-up a dedicated department to focus on environmental statistics given Guyana's wealth of natural resources, including petroleum, citing that such a move would be wise and timely.

Aichi Biodiversity Target 3: Incentives reformed

No information is available.

Aichi Biodiversity Target 4: Sustainable production and consumption

Guyana is now in compliance with the convention on international endangered species of wild fauna and flora (cites) with the passage of the wildlife conservation and management act 2016. The 2016 Act provides for the protection, conservation, management, sustainable use, internal and external trade of Guyana's wildlife. it applies to all wildlife species including those listed in Appendices I, II and III of CITES. It also provides for the establishment of the Guyana Wildlife Conservation and Management Commission, also designated as the CITES management authority; the Wildlife Scientific Committee (the CITES scientific authority of Guyana) and a wildlife general fund. The Act covers aspects of wildlife related to captive breeding of animals; artificial propagation of plants; wildlife ranching; importation, exportation, re-exportation and introduction; commercial importation and exportation; transportation of wildlife and licensing of holding premises.

In accordance with the Act, Cabinet approved in 2018 three new regulations:

- Wildlife Conservation Management and Sustainable Use Regulations.
- Zoo Administration and Management Regulations
- Wildlife Holding Premises Regulations

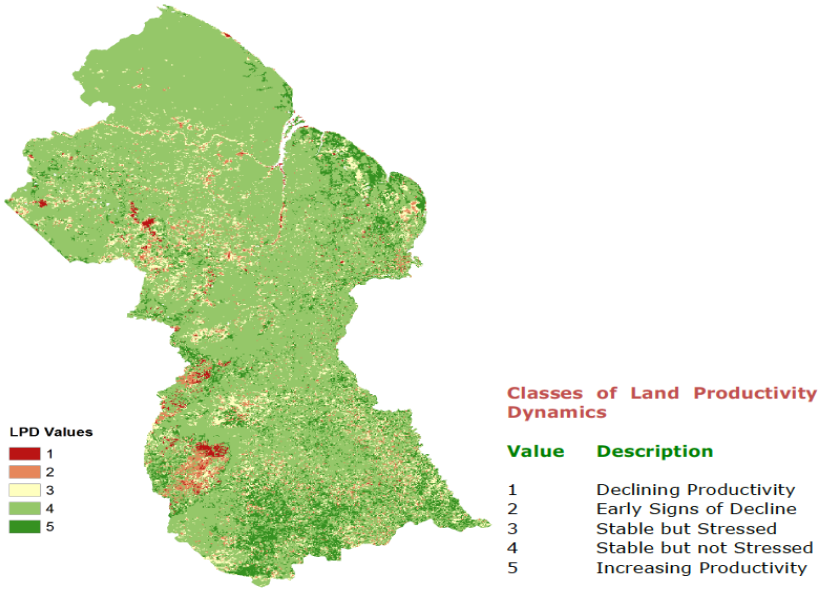
The new regulations will provide the legal framework for conservation and management of all species of wildlife and will ensure the conservation, preservation, management and protection of Guyana's biodiversity and licensing and decisions which support the principles of transparency and justice in the management and conservation of wildlife in Guyana.

Aichi Biodiversity Target 5: Habitat loss halved or reduced

In 2017, Guyana agreed to implement the UNCCD Land Degradation Neutrality Target Setting Programme (LDN TSP), the main object of which was to establish the baseline for the three indicators the UNCCD uses to monitor land degradation - land cover, land productivity and soil organic carbon. Guyana opted to use for its LDN TSP programme 2017-2030, the Tier 1 global data generated by the UNCCD to establish a Land Degradation Neutrality (LDN) baseline, complemented by national and/or subnational level indicators for a

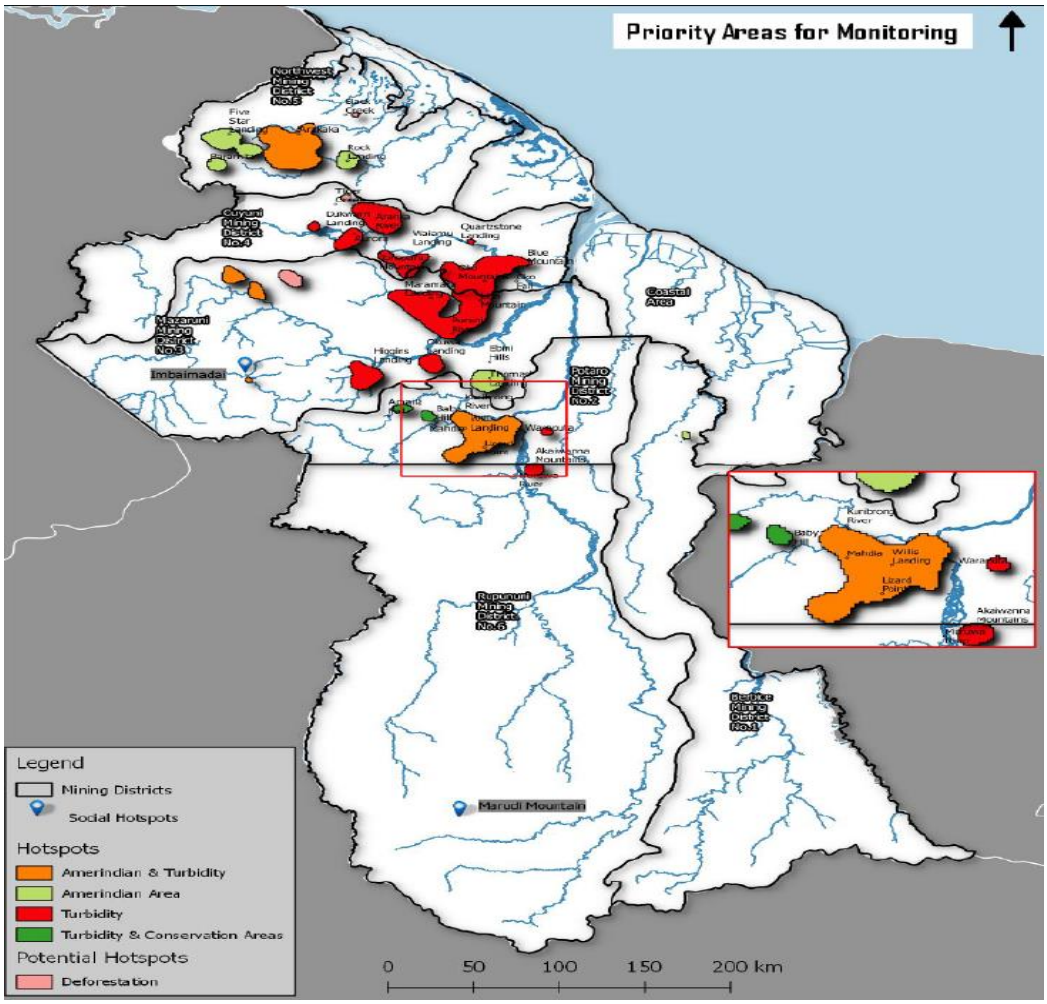
more accurate picture of land degradation. Figure 4 shows the land productivity dynamics values for Guyana reflecting areas where land degradation was occurring.

Figure 4 Spatial Distribution of Land Productivity Dynamics Values



The mining sector plays an important social and economic role in Guyana, creating direct and indirect employment opportunities. The sector has contributed to growth and expansion of transport services, telecommunications, and distribution of goods and services to remote locations. Gold export was valued at 7,66.8 Million USD in 2018. However, gold mining has been identified as the main driver of deforestation and forest degradation. Through the GEF supported project "Enhancing Biodiversity Protection through Strengthened Monitoring, Enforcement and Uptake of Environmental Regulations in Guyana's Gold Mining Sector"; hot spots and priority areas were identified for land degradation monitoring (Figure 5). According to the terminal evaluation of the project, identification of these areas was useful in determining priorities for land reclamation and increased monitoring by the Guyana Geology and Mines Commission (GGMC). Land reclamation has been integrated into the annual work programme of the GGMC and working jointly with the Multi-Agency Task Force on these actives is expected to continue.

Figure 5 Hot spots and Priority Areas for Monitoring



The Guyana Geology and Mines Commission successfully piloted reclamation and re-vegetation in several of the identified sites (Table 1).

Table 1 Land Reclamation Pilot Sites

Location of Site	Size of Site	Dominant Species Used
1. Dakoura, Linden	1.72 Ha (4.24 ac)	*Acacia mangium*

2. Olive creek, Mazaruni	Project area: 14.7 Ha (36.3 ac) Area of Intervention 8.76 Ha (21.6 ac)	Naturally occurring shrubs, grasses and perennials
3.St Elizabeth, Mahdia	1 Ha (2.5 ac)	*Acacia mangium*
4.Nooitgedacht, Mahdia	0.8 Ha (under 2 ac)	*Acacia mangium*
5.Frenchman, Potaro	0.6 hectares (1.5 ac)	

Sites before and after implementation of reclamation activities at the Olive Creek, Mazaruni site

Several public awareness materials were produced:

a Land Reclamation and Environmental Compliance with Guyana's Extractive Industries.

b Self monitoring guidance notes for small and medium scale miners.

c Mainstreaming Reclamation and Environmental Compliance with Guyana's Extractive Industries Part 2.

d Draft Reclamation Booklet: 'Understanding Mine Reclamation and Closure in Guyana – A Guidance Handbook'.

e Posters (https://www.ggmc.gov.gy/album/all/posters

f Booklets 2017 English and Portuguese (https://www.ggmc.gov.gy/news/all/ggmc-guidance-notes-2017-englishportuguese).

g 2019 Booklet - Understanding Mine Reclamation English and Portuguese version (https://www.ggmc.gov.gy/news/all/ggmc-guidance-handbook-2019-englishportuguese)

h Videos Land Reclamation and Environmental Compliance with Guyana's Extractive Industries (Part 1). (https://www.ggmc.gov.gy/news/all/land-reclamation-and-environmental-compliance-guyanas-extractive-industries-part-1).

i Land Reclamation and Environmental Compliance with Guyana's Extractive Industries (Part 2) (https://www.ggmc.gov.gy/news/all/land-reclamation-and-environmental-compliance-guyanas-extractive-industries-part-2).

Currently the GGMC in collaboration with the Council for Technical & Vocational Education and Training (CTVET) is developing occupational standards for competency-based education and training for personnel interested in implementing the Mining Environmental Management Codes of Practice. One of the units related to reclamation is "Implement Mine Reclamation and Closure".

Recognising the strategic importance of a policy on land that should include sustainable land management, the draft National Land Use Policy was revised to include this objective. The revised draft Land Policy covers the political and administrative boundaries of the Country, tenure and security, transportation, geospatial information, signatory to international agreements and hinterland areas and regional (administrative regions) equity. Other considerations for inclusion into the Land Policy are a Code of Practice for Land Reclamation to ensure mining complies with land reclamation, and alternative land uses for post-mining activities,

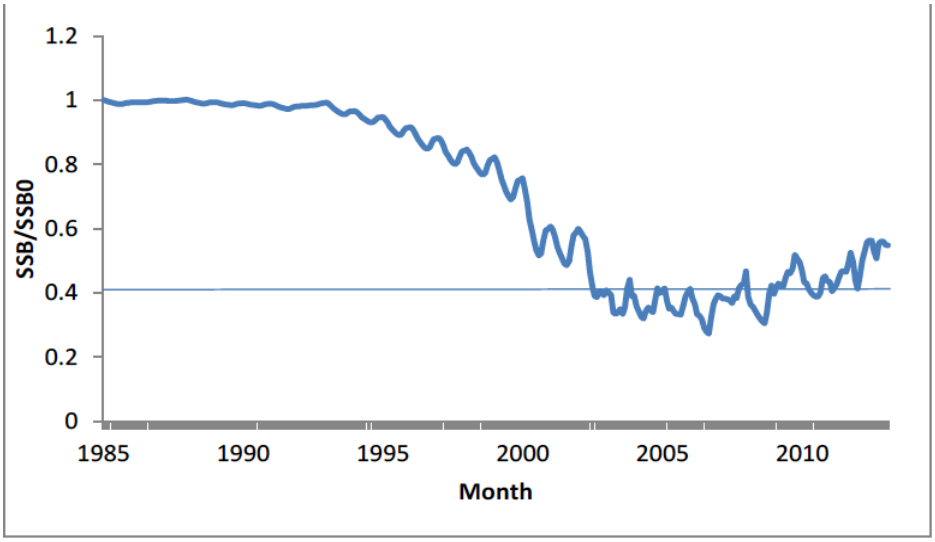
Aichi Biodiversity Target 6: Sustainable management of aquatic living resources

In the last decade, Guyana has undertaken to improve the sustainability of its fishing resources, focussing on the seabob shrimp *Xiphopenaeus kroyer*. The seabob and prawn fishery are the only officially zoned fishery in Guyana. Each vessel type can fish between varying depths. Seabob vessel trawl between 8 – 18 fathoms as of April 16, 2018 (vessels trawled between 7 – 18 fathoms from 2015 – April 15, 2018). Prawn vessels are permitted to fish above 18 fathoms.

In 2013 a seabob stock assessment was conducted. The stock was found to be close to a default precautionary target level and could be considered "fully exploited". The assessment suggested that the stock had recovered somewhat from a state where it might have been considered over-exploited. Based on the 2013 assessment, fishing mortality had only rarely exceeded fishing mortality at maximum sustainable yield (MSY), so overfishing had rarely taken place. Figure 6 shows spawning stock biomass by month

estimated from the stock assessment model. The horizontal line is a default provisional target reference point (40% SSB0). Spawning stock biomass at or above this line would suggest that the stock was not overfished. A second stock assessment is planned for 2019.

Figure 6 Spawning stock biomass by month estimated from the stock assessment model



The Marine Stewardship Council (MSC) conducted a pre-assessment of the seabob fishery and highlighted areas for improvement. Guyana's Seabob Working Group (SWG) is currently (2019) working towards obtaining MSC certification for the seabob fishery and to guide the Guyana Association of Trawling Owners and Seafood Processors (GATOSP) in achieving MSC certification. To date an action plan was developed to address obstacles to achieving MSC certification.

Subsequent to the 2013 stock assessment a Harvest Control Rule (HCR) was developed in 2014. Under this Rule, seabob vessels are restricted to 225 days at sea and to a Catch Per Unit Effort (CPUE) with varying indicator levels. Negative change in the CPUE would reduce the number of days at sea a vessel would have in the following year.

In 2014, a Vessel Monitoring System (VMS) was implemented and made mandatory for all seabob vessels. This resulted in prawn vessels also being equipped with a VSM.

The reduction of by-catch is an important aspect of sustainable fishing. By-catch reduction devices (BRD) became mandatory on all seabob trawlers from 2015. A number of other measures were implemented and are listed below:

- A General Marine Fisheries Regulations was put in place in 2018.
- The Guyana Marine Fisheries Management Plan 2013 – 2020 and Guyana Seabob Fisheries Management 2015 –2020 were adopted in 2019.
- Implementation of Observer Programme by the Fisheries Department in 2018.
- Enhanced monitoring control and surveillance (MCS) activities in the seabob fishery with the mandatory implementation of CCTV cameras on all seabob trawlers.
- The conduct of a second stock assessment on the seabob fishery in 2019.
- Improved data collection on endangered, threatened and protected (ETP) species through vigorous training (internal and external) and strategic data collection schemes from 2015 onwards.

Aichi Biodiversity Target 7: Sustainable agriculture, aquaculture and forestry

Aquaculture

In 2017, aquaculture contributed 673,879,528 GYD to the economy and has the potential to significantly increase through the promotion of investment in infrastructure, market acquisition and research. Guyana's aquaculture industry while still in its infancy (low technology, low production) has massive potential to contribute to the national gross domestic product. The industry is characterised by extensive and semi-intensive culture systems of freshwater and brackish water species primarily tambaqui (*Colossoma macropomum*), Jamaican red tilapia (*Oreochromis sp.*), Hassar (*Holopsternum littorale*) and brackish water shrimp. Production has been primarily been dominated by the tambaqui and brackish water shrimp. Tilapia (red and nile) production has drastically reduced from 2012 to date.

The Fisheries Department has been promoting as its mandate a sustainable aquaculture sector. A study conducted in 2019 on sustainable development of seafood processing by-products revealed there is a huge potential to provide fishmeal, shrimp meal and fish silage as main protein sources in aqua-feed formulation and production. The finfish industry collectively generated approximately 6,315 MT/annum (head, frame, viscera, and trimmings). The conversion of the seafood processing by-products to important protein sources for aqua feed development can significantly reduce the ecological impacts of the current practice of dumping the seafood processing by-products into rivers, contribute to socio-economic growth and boost aquaculture development.

The Fisheries Department is also working on the use of local or indigenous fish and shrimp as viable aquaculture species to reduce threats to local ecosystem and biodiversity from the use of introduced species that may become invasive. Currently, research is being conducted on hassar (*Holopsternum littorale*) and tambaqui (*Colossoma macropomum*). Even though, tilapia was introduced to Guyana, there are restrictions to its culture in the interior locations. In addition, the selections of species that are herbivorous are being promoted against carnivorous species that have a higher protein requirement and may need live feed. Another sustainability measure is the promotion of better aquaculture practices that disseminated through extension and training activities. The promotion of aquaponics as a climate smart technology is gaining attention. The recirculation of nutrients from fish culture into plant production can significantly reduce the quantity of nutrients being released into natural waterways that can affect aquatic organism and their habitats through eutrophication.

Forestry

Forests cover approximately 87 percent (18,483,000 hectares) of Guyana's total surface area. The country's economic development and prosperity is directly tied to the management and use of its forests and forested lands. Aside from the timber industry, Guyana's forests are key to tourism development, biodiversity conservation, wildlife management, bio-prospecting, soil fertility and nutrient cycling, and other ecosystem services such as water provisioning and carbon sequestration. Guyana has made steady progress in the sustainable management and use of its forests and, more recently, has been leading international efforts to more accurately value forests beyond their timber potential. The 2011 revision of the National Forest Policy Statement (NFPS) and the NFP came in response to Guyana's promulgation of its Low Carbon Development Strategy (LCDS). This strategy established that Guyana would maintain its forest cover in order to offer climate services to the global community. Figure 7 shows a snapshot of the National Forestry Policy.

Figure 7 Snapshot of the National Forest Policy

A first draft of the REDD+ Strategy was developed. Identified in the strategy are the drivers of deforestation and forest degradation and proposals to address the drivers. These proposals include reform; strengthening policy; legal and institutional framework; direct actions to slow deforestation and forest

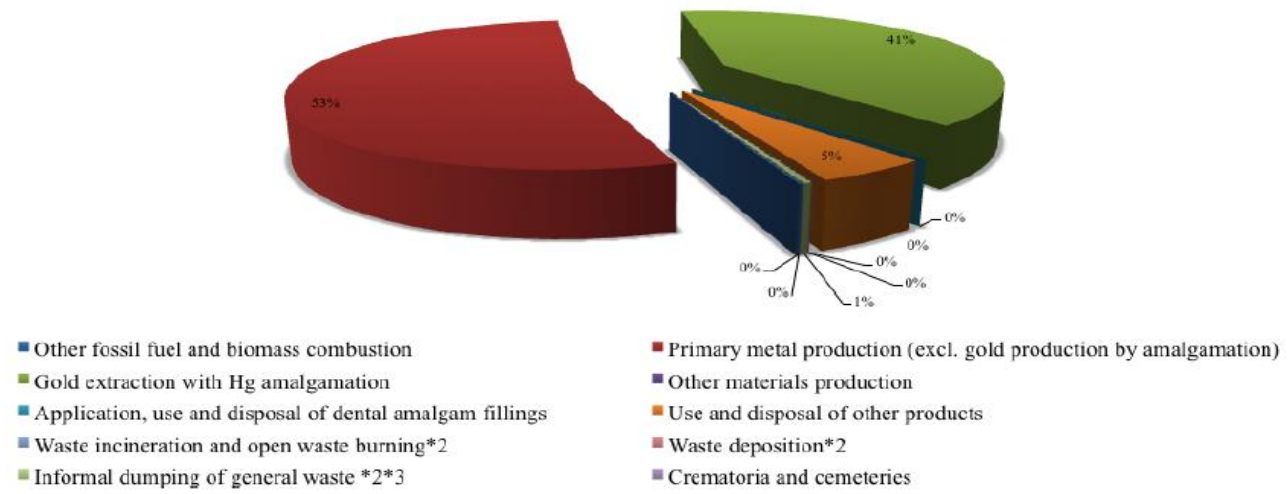
degradation; national land use planning and implementation; improve forests' capacity to store carbon; and economic alternatives to mining. A Guidance Note for Gender Integration in Guyana's REDD+ Readiness Process was also prepared that outlines the conduct of gender analysis to capture the gender dimensions, gender differentiated analysis to capture use, inequities (in participation, transparency, distribution of benefits), measures to ensure that monitoring and evaluation processes are gender-sensitive, measures to ensure adequate financial resources to mainstream gender and provision of gender expertise. A Communication Strategy and Action Plan and Communication products on REDD+ programme and activities have been completed. Communication materials were prepared in 4 Amerindian languages (Akawaio, Patamuna, Macushi and Wapishana) as well as in English.

The Iwokrama International Centre for Rain Forest Conservation and Development (Iwokrama) received certification for forest management from the Forest Stewardship Council™ (FSC™) and to date, is the only area in Guyana that has been certified for meeting international best practices for Forest Management.

Aichi Biodiversity Target 8: Pollution reduced

Guyana signed the Minamata Convention in 2013 and subsequently ratified it in Sep 2014. Mercury use remains active in Guyana. The goal is to gradually phase-out its use by 2027 . A Mercury Initial Assessment (MIA) Report was prepared in 2016. The Report presented a first overview of the Guyana's mercury baseline, with additional assessments of the national mercury profile, policy regulatory and institutional assessment, knowledge, attitude and practice study, communication strategy and its implementation plan. The Mercury Initial Assessment (MIA). The Report provided a basis for the development of its National Implementation Plan to reduce mercury emissions. The total estimated emissions and releases of mercury are shown in Figure 8.

Figure 8 Total Estimated Emissions and releases of mercury from Guyana's Anthropogenic sources



The assessment showed while Guyana has a robust legal and institutional framework for the management and use of toxic chemicals, including mercury and mercury compounds, there were limitations of the framework. These related to gaps in some of the regulations and the need for revision of others. Examples given were: the Mining Act makes reference to mercury use in large scale gold mining but does not consider small-scale gold mining and mercury and mercury compounds are not explicitly addressed.

A draft national Action Plan for Mercury Reduction was prepared and is currently undergoing revision. The GGMC's Mineral Processing Unit is actively involved in testing and demonstrating mercury free mining technology to miners such as the Shaking Table and Centrifugal Concentrators (Gold Kacha). Education and awareness activities on mercury management, including the proper use and recycling and the intended phase out of mercury were conducted for miners in all mining districts. Granting of permission to import mercury is jointly administered by the Environmental Protection Agency (EPA), the Pesticides and Toxic Chemicals Control Board (PTCCB), the Ministry of Natural Resources (MNR) and the GGMC.

The chemical industry in Guyana is represented by a network of importers, manufacturers and distributors. Chemicals are imported mainly for gold and bauxite mining, paint, sugar, rice and other agricultural sub sectors, for manufacture of industrial and domestic cleaning compounds.

Ground water quality was identified in Guyana's Chemical Profile Report as being at risk of contamination from

agricultural activities, hazardous waste generation, improper storage facilities, domestic waste disposal, mining, hospital waste generation and improper disposal. The potential of coastal and marine ecosystems degradation from agricultural and mining activities and improper disposal from industrial facilities was also highlighted. To address pollution issues a national integrated solid waste management strategy 2017 -2030 was prepared. Table 2 shows the strategic framework.

Table 2 Strategic Framework for Integrated Solid Waste Management in Guyana

VISION	Informed communities participating in a nation-wide, integrated, and financially self-sustaining waste management and resource recovery system that preserves public health and the environment, realises maximum value from resources, and minimises long-term costs to households, industry, and government.		
OBJECTIVES	**A CLEANER ENVIRONMENT** *Minimise environmental harm* *Promote environmentally-sound waste management approaches*	**BETTER PUBLIC HEALTH PROTECTION** *Promote and regulate waste management approaches* *Develop future generations of environmentally-aware Guyanese*	**CONTRIBUTE TO ECONOMIC PROSPERITY** *Create resource recovery opportunities, incentives, and markets* *Integrate resource recovery into a whole-of-government approach*
GOALS & KEY STRATEGIC DIRECTIONS	**LESS LITTER & ILLEGAL DUMPING** *Identify and monitor dumping hotspots* *Strengthen enforcement capacity and activities* *Learn from successful behaviour change campaigns* *Implement national social marketing campaigns* *Integrate waste management into primary and secondary school curricula*	**LESS WASTE GENERATED** *Improve data collection* *Reduce plastic bag consumption* *Develop business waste reduction scheme* *Offer favourable tax breaks for waste-friendly activities* *Demonstrate public sector leadership in reducing waste* *Develop and enforce quality standards for products*	**BETTER RESOURCE RECOVERY** *Introduce backyard and community composting* *Implement container deposit programmes* *Ban Styrofoam and non-compostable food & beverage container imports* *Implement recycling programmes for e-waste, vehicles, tyres, used oil* *Demonstrate public sector leadership in utilisation of recovered materials*
	EFFICIENT AND COST-EFFECTIVE WASTE COLLECTION *Introduce full cost accounting for waste management* *Assess and improve waste collection efficiencies* *Centralise and optimise waste collection nationwide* *Assess feasibility of introducing environmental VAT* *Regulate waste transportation*	**BETTER WASTE INFRASTRUCTURE** *Centralise and optimise waste disposal nationwide* *Licence and regulate waste management facilities* *Introduce semi-aerobic landfilling method* *Progressively close polluting dumpsites*	**STRENGTHENED HUMAN AND INSTITUTIONAL CAPACITY** *Resolve overlapping roles and responsibilities* *Develop solid waste training programmes at local institutions* *Establish a technical advisory committee to guide national solid waste management*

KEY PERFORMANCE INDICATORS	INDICATORS	2014 BASELINE	COMMENTS
	Per capita waste generation	0.73 kg/person-day	To be verified in 1st year of strategy
	Percentage of total waste recovered	-	To be established in 1st year of strategy
	Waste collection coverage (%)	-	To be established in 1st year of strategy
	Waste management cost ($/tonne)	-	To be established in 1st year of strategy
	Percentage of government subsidy	-	To be established in 1st year of Waste
	Percentage of total Waste Recycled		

Aichi Biodiversity Target 9: Invasive alien species prevented and controlled

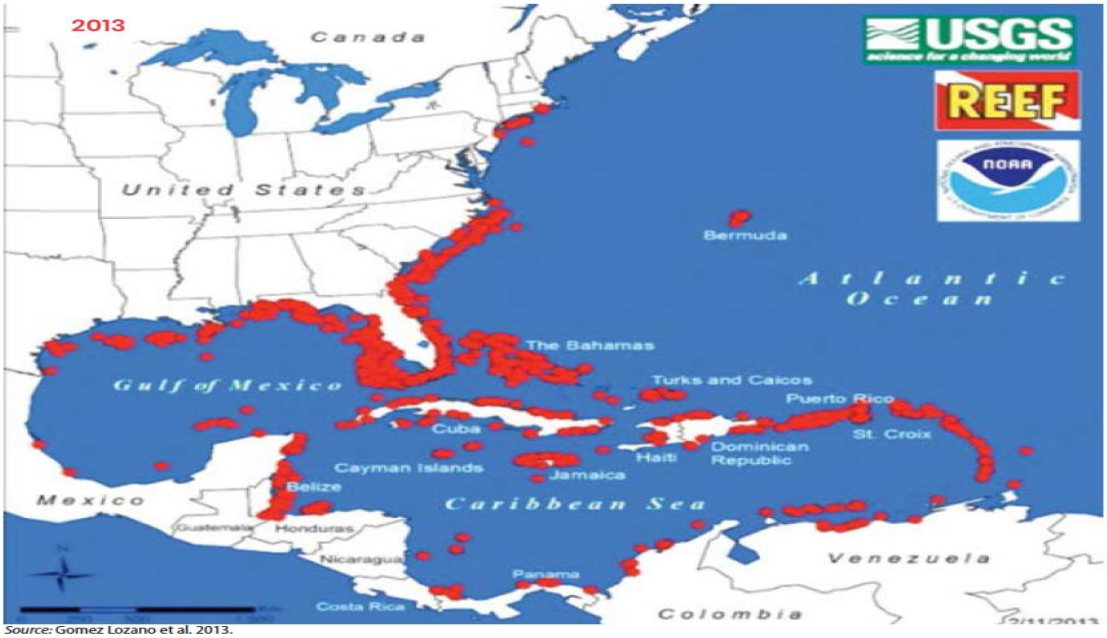
In the 2011 Invasive Alien Species Assessment Report, thirty-one species were present in Guyana as listed on the Global Invasive Species Database (GISD). An assessment of the same database in 2016, listed twenty-one (21) alien invasive species as being present in Guyana. The Global Register of Introduced and Invasive Species (GRIIS) in 2019, recorded 187 species of invasive/introduced species in Guyana. No

information on impacts of these species was recorded in the GRIIS database. The Global Invasive Species Database accessed in May 2019 reports 49 invasive species in Guyana.

The red palm mite (RPM), *Raoiella indica*, has continued to be a predominant and invasive pest of coconut and other palm plants in Guyana since its first discovery on the island of Wakenaam in 2013. Once the RPM was confirmed, internationally outlined procedures beginning with monitoring and surveillance was instituted. For long term control the introduction of the lacewing beetle is planned. This beetle is a natural enemy of the mite and is native to Guyana.

The lionfish was cited in a 2019 World Bank Report on marine pollution in the Caribbean prepared as an important example of how a marine invader can disrupt ecosystems and economies in the Wider Caribbean Region (WCR). The lionfish, native to the Pacific and Indian Oceans, has no major predators in Caribbean waters and these attributes allowed it to proliferate rapidly and colonize coastal waters in the WCR (Figure 9). Currently there appears to be no record of the Lionfish in Guyana. The risk of Lionfish arriving in Guyana may be high given it was reported to be present in Venezuela and Trinidad.

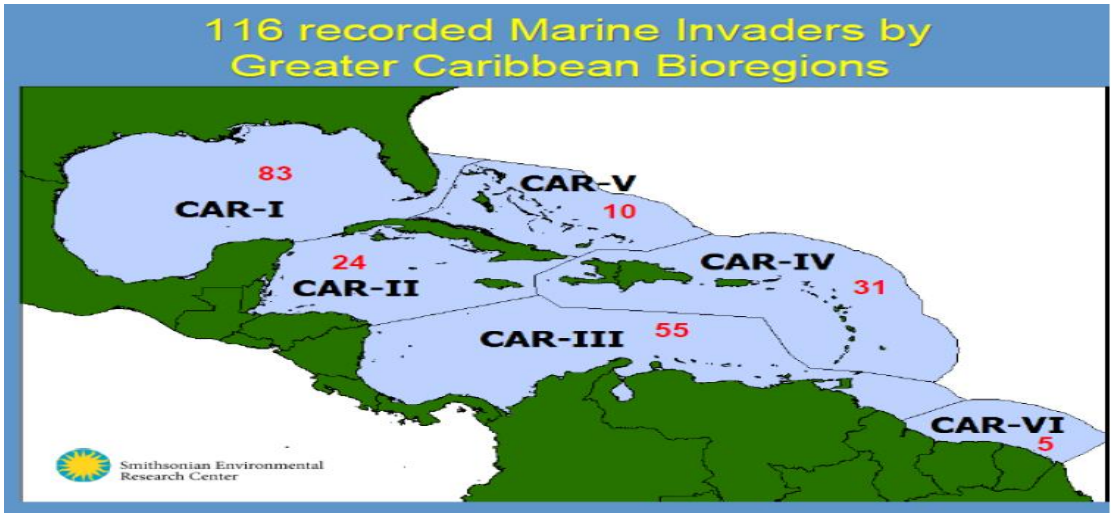
Figure 9 Distribution in 2013 of the Invasive Lionfish in the WCR



Source: Gomez Lozano et al. 2013.

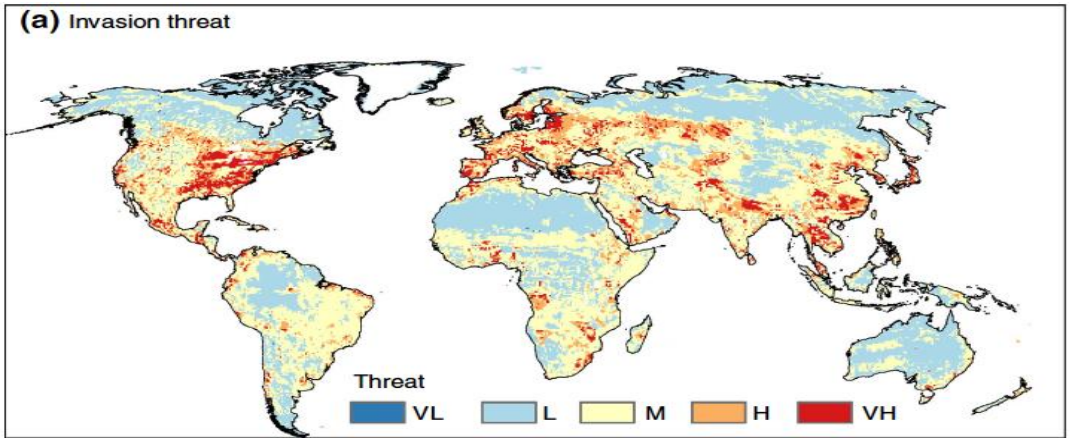
Figure 10 shows the number of marine invasive species recorded in the Greater Caribbean Region (GCR) by bioregions.

Figure 10 Recorded Marine Invaders by Greater Caribbean Bioregion



The prediction of invasion species threat is shown in Figure 11. It appears Guyana is mainly in the low to medium threat level.

Figure 11 Global Invasion Threat for the twenty-first Century



In 2018, Guyana deposited eleven international instruments of accession at the International Maritime Organization (IMO). The Treaties ratified ranged from the prevention of pollution from ships and dumping waste at sea to a maritime labour convention that establishes seafarers right to decent work conditions. With regards to monitoring and reporting Shipping Inspectors arc assigned to inspect ships flying the Guyana flag so as to ensure compliance with applicable laws and regulations. Port state control Inspectors are also

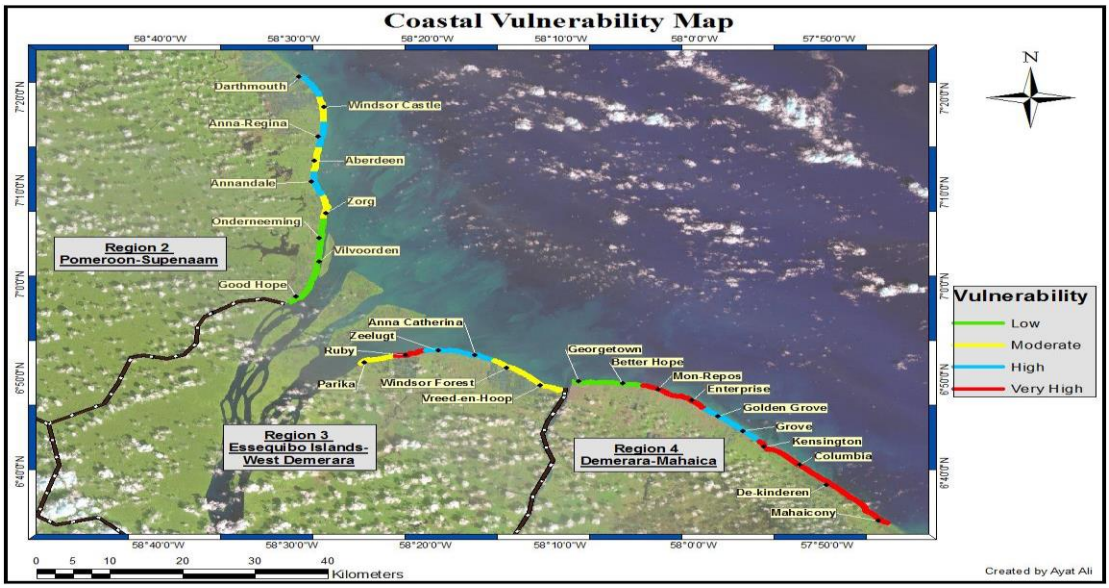
tasked with ensuring that foreign vessels entering domestic ports comply with international standards and best practices. Vessels found to be in very poor condition and considered unseaworthy are detained and prohibited from operating. Data collection from ships have started.

The National Plant Protection Organisation (NPPO) is a department of the National Agricultural Research and Extension Institution (NAREI) under the Ministry of Agriculture (MOA). The NPPO is legislatively mandated to Implement programmes and activities to protect Guyana's agricultural resources and the natural environment from harm caused by exotic pest invasions The Animal Health Act 2011 controls the movement of animals into and within Guyana to prevent the introduction and spread of animal diseases within Guyana and from other countries. The Wildlife Conservation and Management Bill 2016 was passed in 2016. This Act provides for the protection, conservation, management, and sustainable use, internal and external trade of Guyana's wildlife. It applies to all wildlife species including those listed in CITES.

Aichi Biodiversity Target 10: Ecosystems vulnerable to climate change

Guyana's coastal ecosystems are under threat from three main factors: human activities that include pollution; over-exploitation of resources and urbanization; and sea level rise associated with climate change. A significant part of the Guyana coastline is subject to erosion, along with saltwater intrusion and flooding, and losses of arable land. Saltwater intrusion into fresh water aquifers pose a serious threat to the availability of fresh water. Of the various coastal ecosystem types in Guyana, the mangrove ecosystem is predominant. The vulnerability of selected areas of the coastline (Figure 12) showed that the coastline can be grouped into four categories of vulnerability: very high (37 km), high (35 km), moderate (30 km), and low (26 km).

Figure 12 Coastal Vulnerability Map



In 2019 a National Climate Change Policy and Action Plan (NCCPAP) was drafted. The NCCPAP addresses gender, vulnerable communities and indigenous peoples across its entirety. The policy consists of nineteen Policy Objectives addressing adaptation, mitigation, resilience-building and risk reduction. There are nine Policy Directives — (i)establish climate resilient infrastructure and physical development; (ii) sectoral climate change mainstreaming for a healthy, educated society; (iii) implementation and use of green and clean technologies; (iv) Build a diversified, climate-ready, low-carbon Guyanese economy; (v) responsible management and utilization of natural resources; (vi) promote equitable participation in national decision-making processes; (vii) drive climate change decision-making that is based on leading-edge scientific evidence; (viii) develop and access finances and resources to achieve national climate change goals; and (ix)encourage and promote cooperation on climate action between the public and private sectors.

Despite strides being made in the fight against climate change Guyana still requires an overarching framework for planning and implementing climate resilience actions so as to achieve the Government's vision for a green economy. The Climate Resilience Strategy and Action Plan (CRSAP} was prepared to address this gap and aimed at providing a comprehensive and overarching framework for adapting and building resilience to climate change impacts. The Strategy and Action Plan are underpinned by the five crosscutting pillars of adaptation identified in the Second National Communication to the UNFCCC, namely information, research and systematic observation; institutions and capacity building; policy and legal frameworks; infrastructure and technology; and finance. The CRSAP included (a) a roadmap for the next

five years; (b) Project Concept Notes (PCNs) for four priority climate resilience programmes; (c) summary of the most significant climate risks and required resilience actions across 15 key sectors;
(d) a set of capacity building actions to enhance Guyana's capacity for national adaptation planning and becoming climate resilient to be undertaken within the next five years; and a strategy to finance the CRSAP inclusive of the following PCNs:

The PCNs focused on:

a Building climate resilient agricultural systems, by improving water management, developing climate proof sustainable farm systems and building the adaptive capacity of the sector to reduce the vulnerability of farmers (in particular small to medium scale).

b Guyana's sea defence enhancement and maintenance, through coordinated and complementary actions of mangrove development and restoration and rebuilding the most critical sea and river defences in low-lying coastal areas.

c Public health adaptation to climate change, through strengthened national disaster risk management and early warning response systems, enhanced access by communities to clean water and sanitation facilities and food hygiene, reduced impacts of water-borne diseases, increased human and physical sectoral capacity and increased public awareness.

d Strengthening drainage and irrigation Systems, by improving the capacity of the network, upgrading the existing drainage and irrigation system with a focus on the agriculture sector, institutional strengthening of the National Drainage and Irrigation Authority (NDIA) and development of a training curriculum on drainage and irrigation.

Aichi Biodiversity Target 11: Protected areas

The National Protected Areas System currently comprises approximately 8.4% of Guyana's landmass and includes:

- Iwokrama Forest (established by separate legislation, the Iwokrama Act 1996, and a joint mandate from the Government of Guyana and the Commonwealth Secretariat)
- Kaiteur National Park
- Kanashen Amerindian Protected Area
- Kanuku Mountains Protected Area

- Shell Beach Protected Area
- Urban Parks: National Park, Botanical Gardens, Zoological Park, and Joe Vieira Park

Kanashen Amerindian Protected Area is Guyana's newest and largest protected area was formally declared a protected area in 2017. The Kanashen Indigenous District, an area of 648,567.2 hectares (3% of Guyana) home to the Wai Wai people, and is the only indigenous-owned territory in the protected area system. The community's role as owners and managers of the area represents a new and innovative approach to conservation in Guyana.

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According to an analysis conducted, Guyana's current protected area network covers 1.8 million ha and represents only 48% of vertebrate species (60%, 24% and 11% for bird, mammal, reptile and amphibian species respectively) and five of the 17 vegetation types, namely, mangrove, marsh forest, mixed lowland forest and white sand forest. Grasslands, highlands and wetlands are missing from the current network. Eight threatened species were completely absent from the existing protected areas. These were:

a Four birds: Rio Branco antbird (*Cercomacra carbonaria*; CR), hoary-throated spinetail (*Synallaxis kollari*; CR), Red Siskin (*Carduelis cucullata*; EN), white-bellied piculet (*Picumnus spilogaster*; VU)

b Two amphibians: MacConnell's bush toad (*Oreophrynella macconnelli*; VU), Pebas stubfoot ad (*Atelopus spumarius*; VU)

c Two mammals: Reig's opossum (*Monodelphis reigi;* VU), and Venezuelan fish eating rat (*Neusticomys venezuelae*; VU).

To meet the CBD Aichi Target of 17%, Guyana needs to double the amount of its protected area with an additional 1.8 million ha by 2020 and to meet representation targets for biodiversity another 20 priority areas as shown in (Figure 13a). To meet all the representation targets, an additional 14% (3 million ha) of Guyana's terrestrial area would be required, bringing the protected area network to 22.5% (4.8 million ha) of the country. Approximately 750,000 ha would be required in the highlands; a little over 1 million ha in

the south-western grasslands; 660,000 ha in the north-eastern mixed grasslands, forests and wetlands; 200,000 ha in north western wetlands; and 190,000 ha in the southern forests, with the remaining approximately 200,000 ha distributed in smaller patches throughout the country. To meet the committed 17% target, the top priority areas identified were two areas of highlands in the west, grasslands in the south-west that join two existing protected areas, mixed grasslands, forests and wetlands in the north-east, and wetlands in the north-west (Figure 13b). Protecting these areas would mean every species and vegetation type would at least be represented within a protected area system in Guyana.

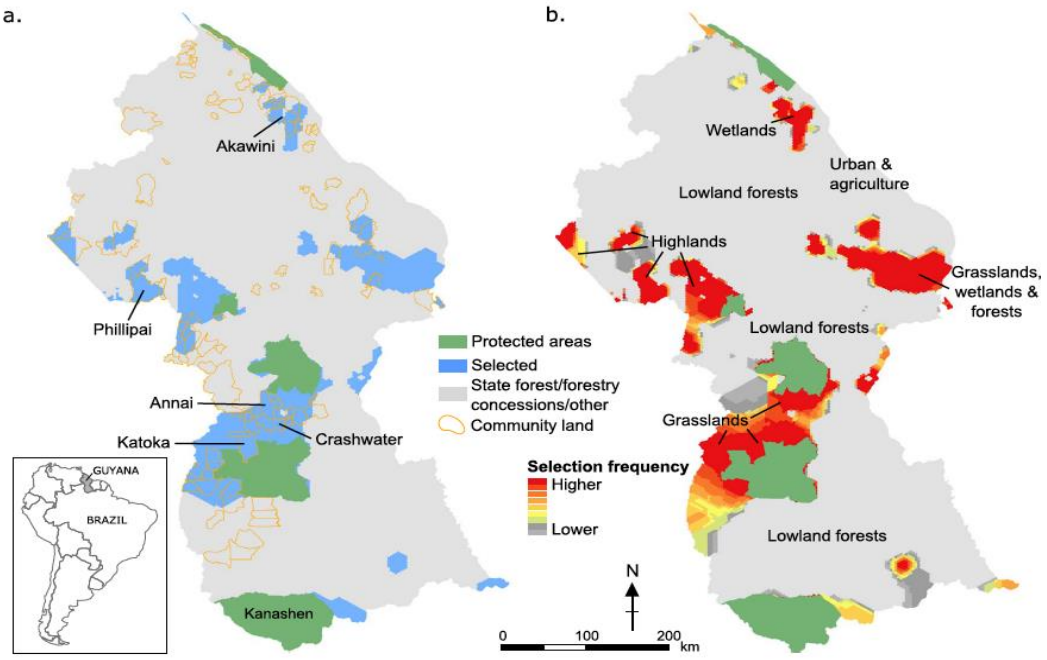
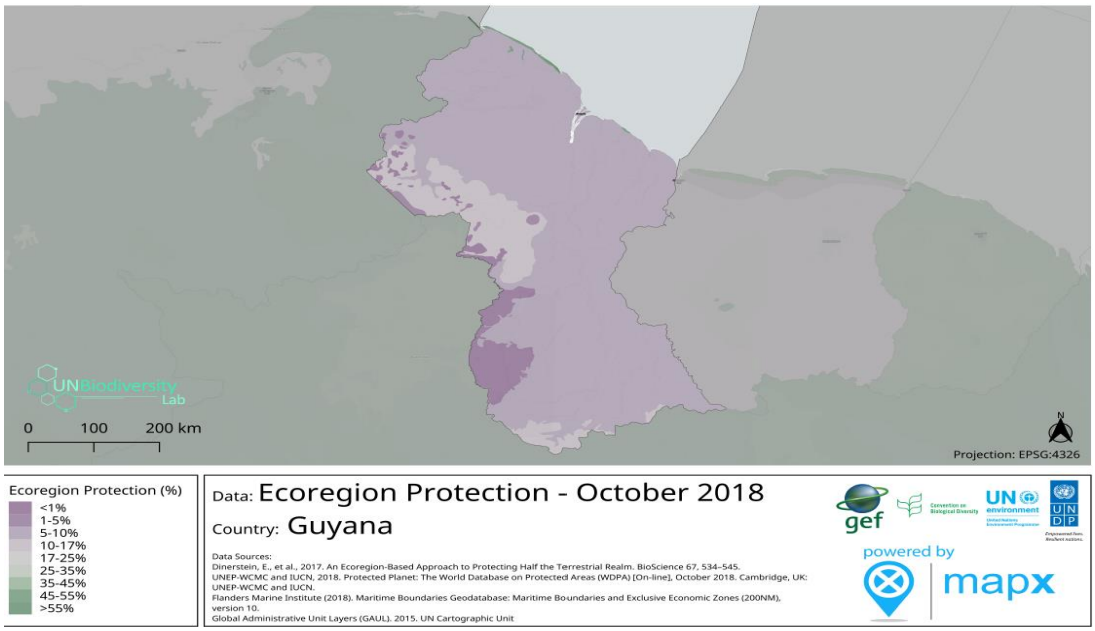


Figure 13. Results of the baseline systematic conservation plan for Guyana. Blue areas selected in the best solution of the analysis. b. Indicates the selection frequency of each planning unit from 100 Marxan runs, with the darkest red showing those areas selected in ≥ 90 runs. Existing protected areas are shown in green. The unselected grey areas include unallocated state land, forestry concessions, and mining concession, agricultural and urban areas (which are almost exclusively along the coastal belt). Areas and community lands mentioned are labelled.

The current state of ecoregion protection in Guyana is shown in MAP 1. This map was generated by the UN Biodiversity Lab.

MAP 1 Ecoregion Protection



The Protected Areas Trust (PAT) was established as a corporate body under the Protected Areas Act 2011. The Trust Fund was set-up to provide co-financing for the management of the NPAS. The Trust Fund functions as an endowment fund to preserve the capital while investing globally to earn annual returns of approximately 5%. Revenues are used to co-finance the implementation of protected areas management plans, strengthen monitoring and enforcement in protected areas, support sustainable community enterprises, biodiversity conservation, and environmental education and awareness. Approximately USD 8.5 million has been raised, with the ultimate goal of growing the Fund to USD 65 million.

A PAT Strategic Plan 2017-2021 was adopted in 2017. Several Instruments were developed to enable the PAT grant process. During 2017 two grants were approved (Table 3).

Table 3 Grants issued in 2017

Project Title	1. Effective Management of Guyana's Protected Areas System	1. Effective Management of Kanashen Amerindian Protected Area
Grantee	PAC	PAC and Kanashen Amerindian Protected Area
Grant value	G$9,183,142	G$7,030,740
Protected Area benefited	1. Kanuku Mountains Protected Area (KMPA) 2. Shell Beach Protected Area (SBPA)	Kanashen Amerindian Protected Area (KAPA)
Date of issue	October 19, 2017	December 13, 2017
Purpose of Grant	The Grant provided for: - hiring rangers to implement KMPA Management Plan; - monitoring of KMPA; and - printing and dissemination of SBPA ManagemePlans to improve awareness of PAs and their values.	The Grant provided for: - commencing plans for effective implementation of KAPA Management Plan via: - operations monitoring and administration, such as ranger monitoring and patrolling; and for - appropriate infrastructure and equipment to be in place This grant supported Guyana's first Amerindian protected area, KAPA (through the PAC), which was formally declared such on August 18, 2017.

Aichi Biodiversity Target 12: Reducing risk of extinction

Knowledge about endemism in Guyana is critical for determining conservation efforts and land use planning. Recent studies and flora and fauna surveys have contributed significantly to increased knowledge

about Guyana's biodiversity. However, in some cases. it appears that the results and information generated from these studies are not shared with local authorities and there is a perceived lack of coordination between researchers and research projects/programmes of the many institutions involved in studies of flora and fauna in Guyana.

Local plant endemism in Guyana is associated with such habitats as white sands, serpentine rock, swamps, flood plains, rock outcrops and cloud forest. The Pakaraima Mountains in Guyana has the highest level of plant endemism followed by the upper Mazaruni-Kako-Roraima. The majority of endemic vertebrate fauna of Guyana are restricted to highland areas, especially at elevations greater than 1500 m. The lowland endemics comprise largely of widespread species found across the lowland moist forest of the Guianan and Amazonia lowlands.

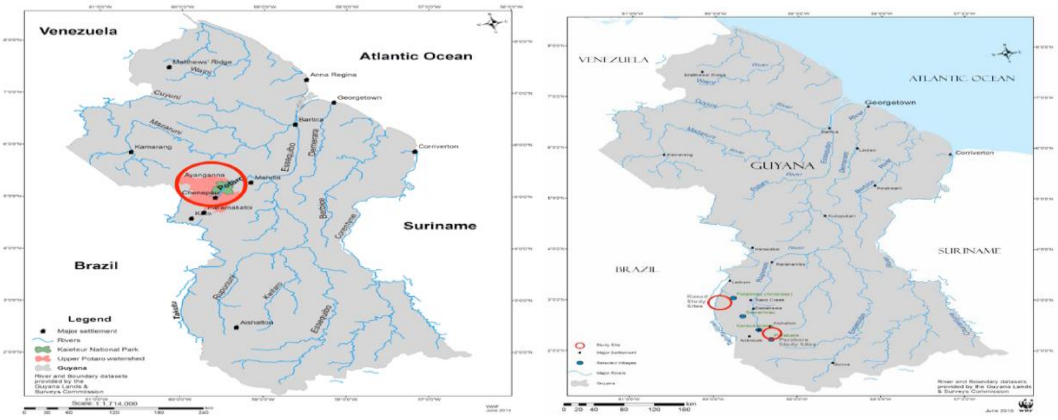
A 2014 WWF survey was conducted in under-researched sections and relatively pristine areas of the Upper Potaro watershed and within the Kaieteur National Park (KNP) and the neighbouring indigenous village of Chenapau. The Kaieteur Plateau – Upper Potaro area lies to the mid-west of Guyana, within the extensive Pakaraima Mountains range (Figure 14a) . The KNP harbours 30% of mammals, 43% of amphibians and close to 50% of birds known from Guyana and of these 44% of amphibians, 16% of mammals, 13% of reptiles, 12% of birds and 8% of plants are endemic to the wider region of the Guiana Shield and Guiana Highlands.

The survey revealed the more than 30 species, including 6 species of fish, 3 plants, 15 aquatic beetles and 5 odonates found, were new to science. Many species were also recorded for the first time in Guyana.

WWF conducted other surveys in Guyana's southern Rupununi region (Figure 14b) resulting in broad-based documentation of floral and faunal diversity collected, new data on terrestrial and freshwater taxonomic groups and an evaluation of water quality. The surveys also documented, based on consultations with the local indigenous Wai-Wai and Wapishana communities, the species that are important to the cultural and socioeconomic aspects of local livelihoods, and changes in their availability.

Figure 14 General Location of the Survey Areas

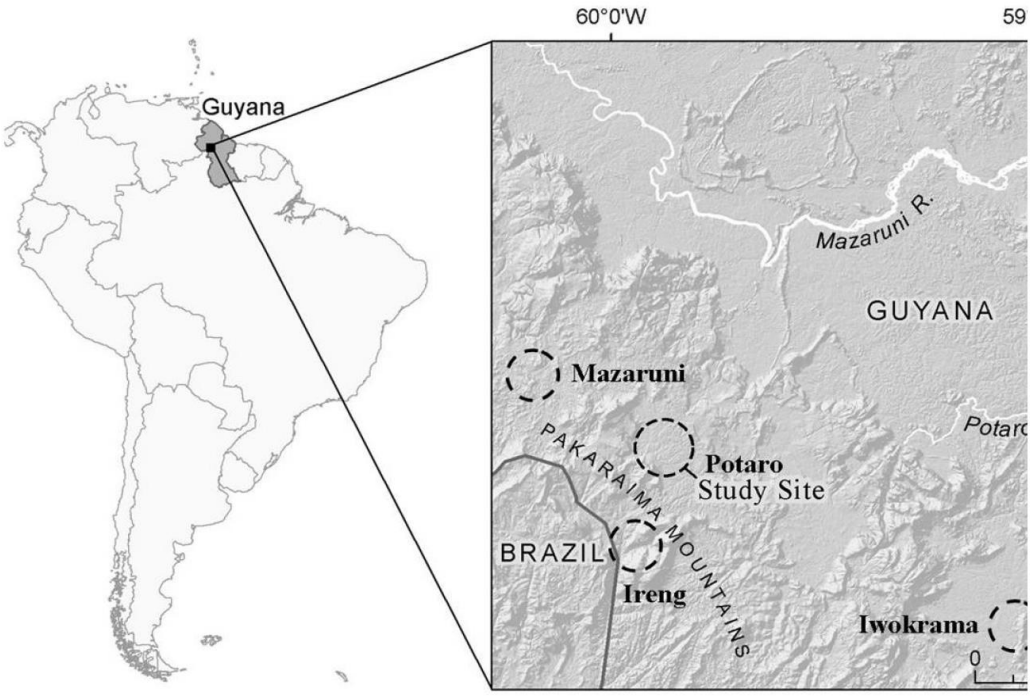
a b



Several of the species documented during the surveys in the Southern Rupununi were classified according to the IUCN Red List and categories as either vulnerable, near threatened, critically endangered and CITES Appendix II.

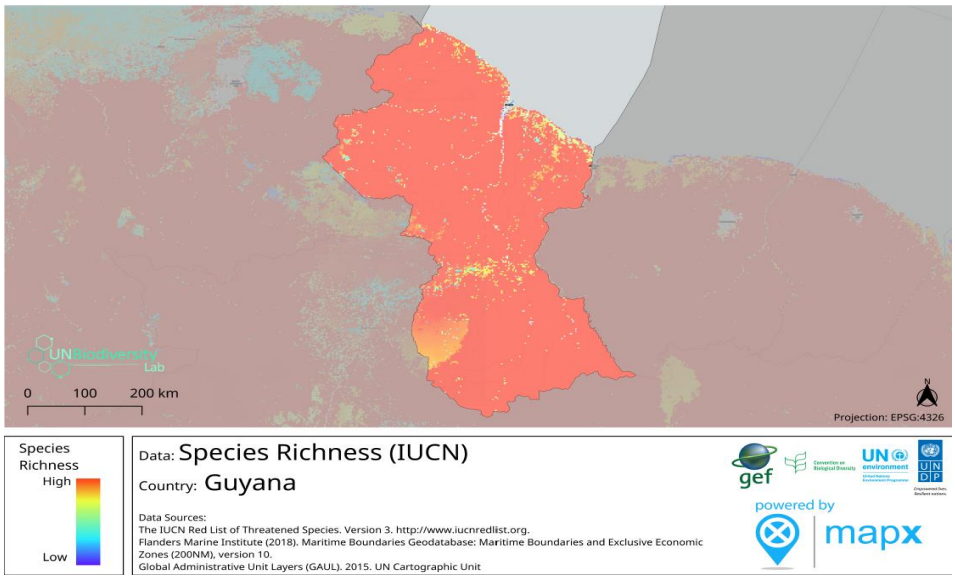
Knowledge of ECM plants and their fungal symbionts is critical to understanding the dynamics of neotropical forests, particularly those of the Guiana Shield. The Humbolt, Duke and Purdue Universities documented the diversity of ectomycorrhizal (ECM) fungi associated with host plants of the Caesalpinioideae, Dipterocarpaceae, Polygonaceae, Nyctaginaceae, and Gnetaceae at a variety of spatial scales in the central Guiana Shield - Pakaraima Mountains in Guyana (Figure 15). Several new species of ectomycorrhizal (ECM) fungi were found.

Figure 15 Research Site

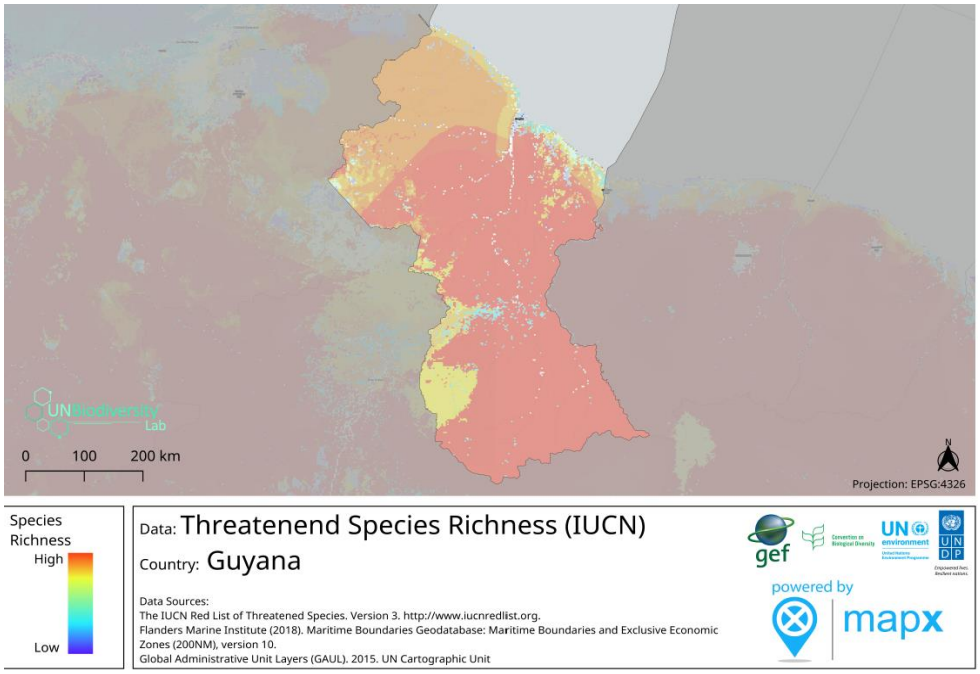


MAPS 2 and 3 generated by the UN Biodiversity Lab show species richness and threatened species richness in Guyana.

Map 3 Species Richness



MAP 4 Threatened Species Richness Guyana



Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional)

As relevant, please provide information on actions which your country has taken to contribute to the attainment of this Aichi Biodiversity Target at the global level. This could include assistance provided to other countries or territories or organizations. It could also include regional or international

cooperation, technology transfer or information-sharing.

<Text entry>

Aichi Biodiversity Target 13: Safeguarding genetic diversity

Plant species diversity for food and agriculture is an integral part of Guyana's national patrimony. This custom is strongly manifested in homestead cultivations and subsistence farming communities. The homestead cultivation of plant species diversity for food and agriculture represents an informal but significant depository of *in situ* diversity. Plant diversity found in homestead accounts for more than 80% of the plant species diversity for food and agriculture in Guyana. This form of '*in situ* homesteads' is encouraged as it has been successful in so far as it supports a culture of food self-reliance and the economic benefits it brings to lower income households. Crop species are also conserved *in vitro*. The National Agricultural research and Extension Institute (NAREI) maintains *ex situ* collections of seed generated crop species.

Aichi Biodiversity Target 14: Ecosystem services

Mangroves contribute substantially to sea defence in Guyana by damping wave action and reducing wave energy, trapping sediments and stabilizing shoreline substrates, while playing an important role in carbon sequestration. Guyana's remaining standing mangrove forests are threatened by a range of natural and man-made factors which include natural erosive and accretive cycle's characteristic of the coastline of the Guianas (Amazon river to the Orinoco river) and large scale mud bank movements. Guyana's mangrove belt appeared to have been wide enough to recover after erosion period but intensive settlement of the coastline has allowed the erosion cycles to wipe out some of the mangrove belt. Land development for agriculture and aquaculture and infrastructure development, overharvesting for firewood and bark and the effects of fire, have all contributed to the depletion of mangroves.

Recognising the value of mangroves, the threats and the increased risks to Guyana's low lying coastline from sea level rise, and the high of maintenance of the sea defence structures, a programme to restore coastal mangrove forests was implemented. More than 500,000 mangrove seedlings were produced and 142 ha of mangrove was restored. In addition 30 km of existing mangroves were protected from further depletion.

In 2018, as part of the national mangrove management programme and to obtain data to inform future investments in infrastructure development, graduated measuring gauges were installed along the foreshores in Region 2 and Region 4 to continuously monitor erosion and accretion. Topographic surveys have been

completed at potential and restored mangroves sites. In addition the National Agricultural Research and Extension Institute (NARIE) incorporated periodic topographic surveys in the form of low-cost rapid assessment surveys as part of its annual monitoring of the coastline. Given its low lying coast, its vulnerability to rising sea levels and flooding almost $ G100 million is budgeted to be spent in 2019 to support mangrove restoration as Guyana's economic well-being is tied to the safety and protection of coastal resources including 90% of its population.

©Stabroek News Installing measuring gauges

Case Study

Communities were integrally involved at all stages of the mangrove restoration and protection activities. Women were in the forefront in the initiative making up more than 80% of community participation. Training programmes focused on tourism, heritage trail tours, entrepreneurship and mangrove management. More than 50 women were trained in the production of mangrove seedlings produced in community nurseries. An estimated 250,000 seedlings were sold generating earnings of 115,000 USD. Members of 5 communities were trained as tour guides and are now conducting mangrove and bird watching tours.

© NAREI Community Seedling Nursery

A Mangrove Reserve Producers Cooperative Society was also formed. Activities of the Society focused on beekeeping and tourism. Income generation from production of honey has reinforced the importance of promoting protection and increased restoration of mangroves. The mangrove restoration programme undertaken was successful in combining protection and restoration with livelihood opportunities. The Village Mangrove Action Committees have continued to raise awareness among community members and schools.

A Sea and River Defence Sector Police/Integrated Coastal Zone Management Policy was drafted.
This policy reflects the integration of the many multi-sectoral functions and management in the coastal zone, which is vital for efficient and effective planning, management and monitoring, regarding the utilization, development, and protection of the coastal zone. The Policy is premised on four main policy principles:

i The coastal zone as one complex and dynamic system with a multi-sector range of users and functions namely, agriculture, fisheries, transportation systems, social and economic activities, protection against floods both from sea, rivers and conservancies, drainage, waste management, dredging activities, pollution prevention, and mangrove management.

ii Safety for people and assets comprising proper planning of land use and water management to prevent high risk use of land; safety of design, focusing on the height of the sea wall, the slope of the embankments and the type of revetments; disaster prevention and risk reduction, including early warning systems and disaster response

iii Dynamic hold-the-line-and-extend policy that will aim to extend the shoreline seawards by creating a coastline in dynamic equilibrium. This approach follows the "building with nature" concept. Thus a sustainable coastal defence strategy needs both to maintain the existing shoreline and to restore a dynamic mud-bank and mangrove system.

iv Institutional and legislative reform. At present no institution or agency exists which effectively updates and develops policy and strategy for the coastal zone as a whole. A new governance structure will be put in place that will strengthen the mandate of the Sea and River Defence Board.

Aichi Biodiversity Target 15: Ecosystem restoration and resilience

Guyana developed in 2009 a Framework for a Monitoring Reporting Verification System (MRVS) which allowed for historical assessment of forest cover. The total forest area in Guyana at 1990 was estimated at 18.3947 million hectares. Between 1990 and 2009 forest change to non forest excluding degradation, was estimated at 74,900 ha, representing an annualised forest loss of 0.12%. The estimates included changes from mining, road infrastructure, agriculture conversion and fire events that result in deforestation. It did not include forest degradation caused by selective harvesting, fire or shifting agriculture. Since the establishment of the benchmark period of September 2009, seven national and accuracy (third party) assessments of deforestation and forest degradation were conducted. The assessment periods were from 2009 to 2017 (Figure 16 and Figure 17).

Figure 16 Deforestation and Forest Degradation Area of Loss from Year 1 to Year 7

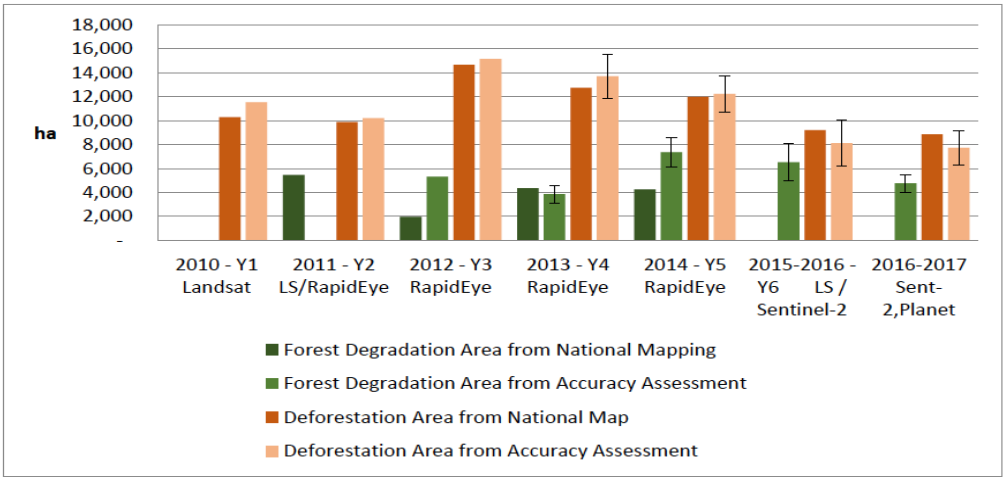
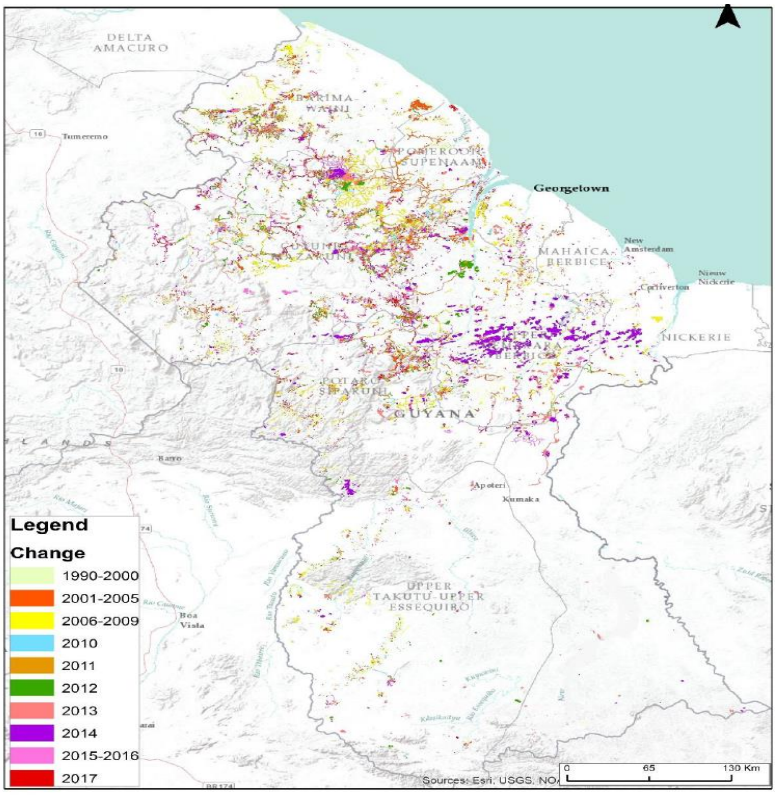
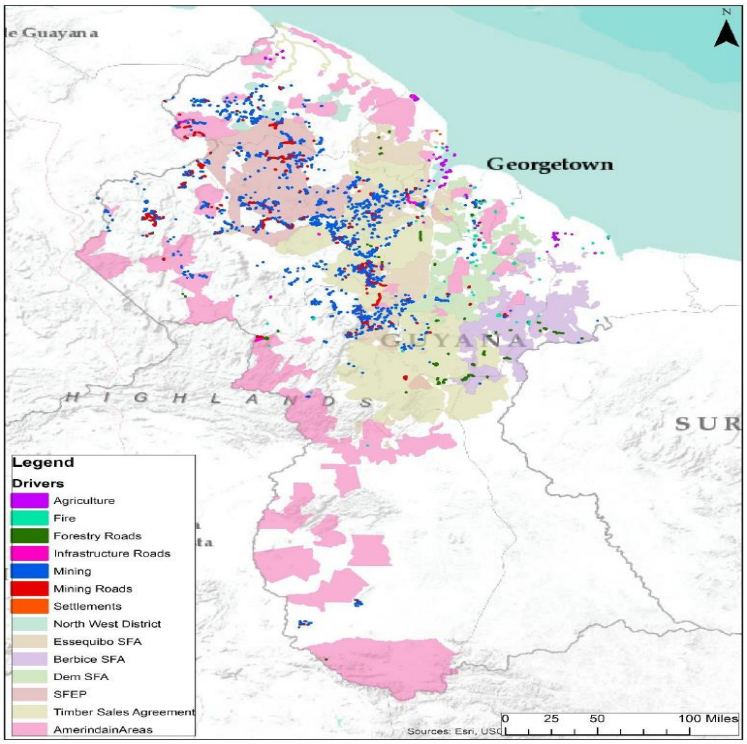


Figure 17 Forest Change by Reference Period



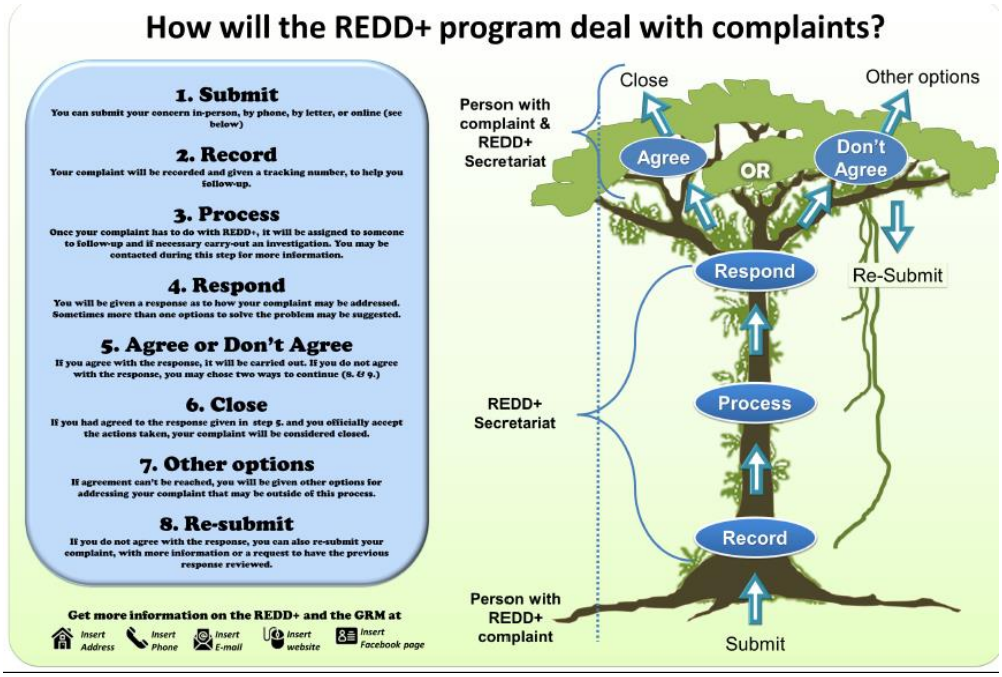
The identified anthropogenic change drivers of deforestation were forestry e.g clearance activities for roads and log landings; mining, primarily ground excavation associated with small, medium and large scale mining, the main driver; infrastructure such as roads (including roads to accommodate forestry and mining); conversion to agriculture; fire; and settlements such as new housing developments. Figure 18 shows the spatial distribution of the drivers of deforestation.

Figure 18 Spatial Distribution of Forest Change Drivers (2017)



An Operations Manual -Towards a Grievance and Redress Mechanism for REDD+ Implementation was drafted. It outlined the purpose, principles, grievance and redress policy, procedures, grievance uptake, logging and tracking, engagement and verification, eligibility screening, assessment and assigning ownership, categorising grievance, response and responsibilities. Figure 19 shows how the REDD+ programme will deal with complaints.

Figure 19 How the REDD+ programme will deal with complaints


How will the REDD+ program deal with complaints?
1. Submit
You can submit your concern in-person, by phone, by letter, or online (see below)
2. Record
Your complaint will be recorded and given a tracking number, to help you follow-up.
3. Process
Once your complaint has to do with REDD+, it will be assigned to someone to follow-up and if necessary carry-out an investigation. You may be contacted during this step for more information.
4. Respond
You will be given a response as to how your complaint may be addressed. Sometimes more than one options to solve the problem may be suggested.
5. Agree or Don't Agree
If you agree with the response, it will be carried out. If you do not agree with the response, you may chose two ways to continue (8. & 9.)
6. Close
If you had agreed to the response given in step 5. and you officially accept the actions taken, your complaint will be considered closed.
7. Other options
If agreement can't be reached, you will be given other options for addressing your complaint that may be outside of this process.
8. Re-submit
If you do not agree with the response, you can also re-submit your complaint, with more information or a request to have the previous response reviewed.
Get more information on the REDD+ and the GRM at
Insert Address
Insert Phone
Insert E-mail
Insert website
Insert Facebook page
Person with complaint & REDD+ Secretariat
Close
Other options
Agree
OR
Don't Agree
Respond
Re-Submit
REDD+ Secretariat
Process
Record
Person with REDD+ complaint
Submit

Aichi Biodiversity Target 16: Nagoya Protocol on Access and Benefit-sharing

Guyana developed a Policy on ABS in 2007. The full title of the document is the National Policy on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation. The National Policy on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation was developed prior to the text of the Nagoya Protocol. The Policy would therefore not have been developed with reference to the final text of the Nagoya Protocol. From an administrative perspective there are research agreements which are concluded by both national and international researchers conducting research on genetic resources in Guyana. During the period 2015 -2018, one hundred and eight (108) research permits were granted. Additionally, Guyana has prepared, and revised draft regulations regarding ABS. These drafts were prepared under the provisions of the Environmental Protection Act Cap. 20:05 of the Laws of Guyana.
https://absch.cbd.int/countries/GY/NR

Aichi Biodiversity Target 17: Biodiversity strategies and action plans

The recently developed (May 2019) Green State Development Strategy: Vision 2040 is Guyana's twenty-year, national development policy that has as its central objective, development that provides a better quality of life for all Guyanese derived from the country's natural wealth i.e its diversity of people and abundant natural resources. The GSDS: Vision 2040 comes at a unique time when Guyana is about to be propelled onto the global stage as the newest producer of oil and gas.

The Strategy was developed based on the premise that with revenues generated from the country's natural wealth, it will be possible to modernize traditional sectors such as forestry and fisheries, maximize efficiency and investment opportunities in high growth sectors like mining and rice, and invest in future value-adding sectors (e.g. business process outsourcing, tourism and agro-processing).

Sound fiscal and monetary policy is a key objective for managing development of the country's natural resource wealth. In the coming years, oil and gas revenues could dominate Guyana's economy and this could carry significant risk. The Natural Resource Fund Act was recently passed by the Parliament, which allows for the appointment of a Public Accountability Oversight Committee.

Sustainable management of land resources is the key to guide and safeguard the country's natural wealth for future generations. From a land use planning perspective, the most important objective of the recommended national land policy is to articulate the priorities for land use and the criteria for determining best use. The institutional architecture of natural resource management in Guyana currently involves a wide range of independent statutory agencies whose mandates often put them in competition. Consideration will be given to designating an overarching land use planning system and institutional mechanism for inter-agency coordination, based on feasibility assessments. Strategic investments are also needed to improve land administration.

Efforts to resolve the land rights issues of indigenous peoples will also continue as priority. The proposed revision of the Amerindian Act 2006 will be undertaken through an inclusive and consensual process based on free, prior and informed consent to address issues of concern to indigenous peoples and bring the Act in line with international obligations.

Natural resources define the country's natural wealth and require careful management, based on scientific research and a decision-making culture that is uncompromisingly evidence-based. The country's natural wealth must not be lost to economic growth but managed with a long-term perspective that embraces the principles of sustainable development.

Economic competitiveness and resilience will be achieved through green and inclusive economic diversification. Resource extraction will be guided by evidence-based methods; improved technical and economic support to accomplish diversification and transformation plans. A key priority is to make mining standards more stringent and provide incentives for the adoption of modern and environmentally sound technology and more accurate prospecting. Sustainability in forestry and fishing will be driven by facilitating greater certification and improved access to markets. New legislation and regulations will carefully govern oil production including the Natural Resource Fund Act, supported by action plans such as the Oil Spill Contingency Plan.

Building resilient Infrastructure, green towns and urban public spaces is the priority for all future development. The upgrades and designs of all new or existing networks, regional towns and public spaces must now conform to the priority for ensuring resilience against climate risk, minimising waste - particularly solid wastes, improving energy efficiency and reducing carbon emissions at every level.

Highlighted in Strategy is the need for a healthy, educated and socially cohesive population, which will provide the foundation for human capital development. A key objective of the Strategy is to ensure equal and universal access to quality healthcare and education. Respecting and preserving indigenous knowledge

and other traditions in medicine, well being and educational methods are also priorities.

Key policy instruments also developed which are aligned to the GSDS Vision 2040, the Sustainable Development Goals and which would contribute to the achievement of this target include the draft National Mineral Policy Framework, A Sea and River Defence Sector /Integrated Coastal Zone Management Policy, National Tourism Strategy and Action plan, National Strategy for Development of Statistics Roadmap and the draft National Climate Change Policy and Action Plan.

In 2016, Guyana prepared a state of the environment report that provided a critical analysis of the specific condition of the environment, the pressures and drivers and management interventions initiatives and systems in place to address environmental concerns and impacts.

Aichi Biodiversity Target 18: Traditional knowledge

The legal and institutional framework applicable to indigenous peoples in Guyana is governed by the Amerindian Act 2006. The Act provides "for recognition and protection of the collective rights of Amerindian Villages and Communities, the granting of land to Amerindian villages and communities and the promotion of good governance within Amerindian Villages and Communities". It lays out the Governance structure, composition, function and power of the Village Councils and mandate/duties of the Toshao as village representative. The Act establishes a National Toshao Council (NTC).

The Act gives Amerindian (indigenous) communities and villages wide-ranging legal powers to manage and conserve their lands. All Amerindian lands are owned collectively by the village and administered through an elected Village Council. The Village Councils have several functions relating directly to indigenous/traditional knowledge, biodiversity management and conservation that include — encouraging the growth of Amerindian culture; ensuring that sacred artefacts are protected and cared for; protecting the village's intellectual property and traditional rights. A minimum of three Village Councils can join together to a District Council to develop programmes for environmental protection and management (among other functions). The Act provides for requirements of persons who wish to conduct any scientific, anthropological or archaeological research or any other research or study which relates to biological diversity, the environment or natural resources or to use or knowledge within Village lands as well as the results of such studies. The act was translated into Macushi, one of the indigenous languages.

There has also been an increase in awareness and an appreciation of Amerindian culture over the years attributed to the establishment of the Ministry of Indigenous People's Affairs (previously known as the Ministry of Amerindian Affairs) and the designation of an Amerindian Heritage Month. Each year the Walter Roth Museum hosts an annual Amerindian myths, legends and oral traditions of and an Archaeological Fair and Exhibition in observance of indigenous heritage month.

A project entitled "Traditional knowledge and conservation in Guyana", supported by the Darwin Initiative, Defra, UK (https://cobracollective.org/portfolio/traditional-knowledge-and-conservation/) is currently being implement. The goal of the project is to provide policy-level guidance, capacity development and research-led experience for incorporating traditional knowledge into conservation and sustainable development decision-making, monitoring and policy. Activities include:

- Evaluating the opportunities and barriers to traditional knowledge integration using case studies focused on protected areas management.
- Streamlining a participatory cross-scalar process to incorporate local traditional knowledge at the national scale.
- Developing a National Action Plan for Traditional Knowledge that can be used as a model of best practice for other countries of the Guiana Shield and worldwide.

In 2015, the UNDP and the GEF Small Grants Programme (GEF SGP) supported a national dialogue of 50 indigenous leaders with the aim of contributing towards a stronger, more effective and more equitable climate outcome at the UNFCCC COP 21 by ensuring that the views and priorities of indigenous peoples are embedded in the climate agreement to be reached in Paris.

In 2019, the Ministry of Natural Resources signed an Memorandum of Understanding with the National Toshaos Council which allows the Ministry to formally collaborate with the NTC and to assist the organization in fulfilling its mandate in the areas of good governance and the preparing of strategies and plans for the protection, conservation and sustainable management of Indigenous community lands and natural resources. The NTC will, in turn, enable the MNR to achieve success in its programmes.

Case Study

Twenty-three indigenous Community atlases were produced as part of the US National Science Foundation-funded research on "Biodiversity dynamics and land-use changes in the Amazon: multi-scale interactions between ecological systems and resource-use decisions by indigenous peoples". Permission was received from 11 communities to share the maps on the webs. Maps and information generated covered Amerindian

titled lands, vegetation, topography and socioeconomic data summaries, total carbon per transect, fruiting trees, successful hunting grounds and spiritual sites among others. Some examples of the maps and information gathered for each of the 23 communities are shown in the Figures 20,21,22 and 23.

Figure 20 Amerindian Language Fluency Among Adults

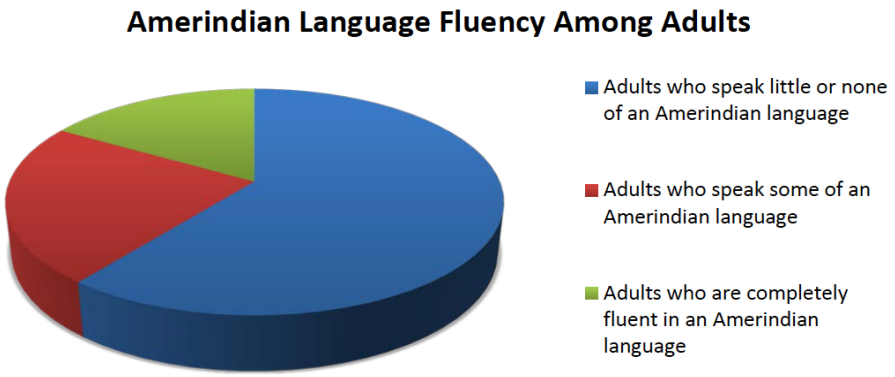


Figure 21 Total carbon per transect Fairview Village

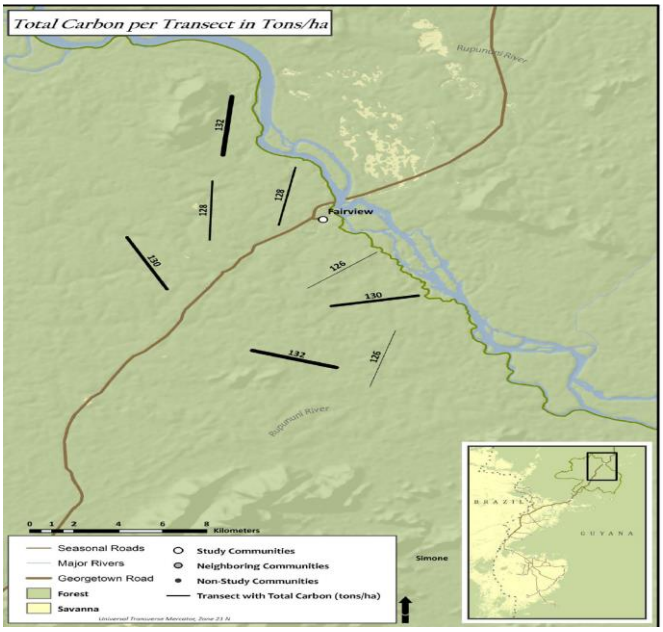


Figure 22 Spiritual Sites

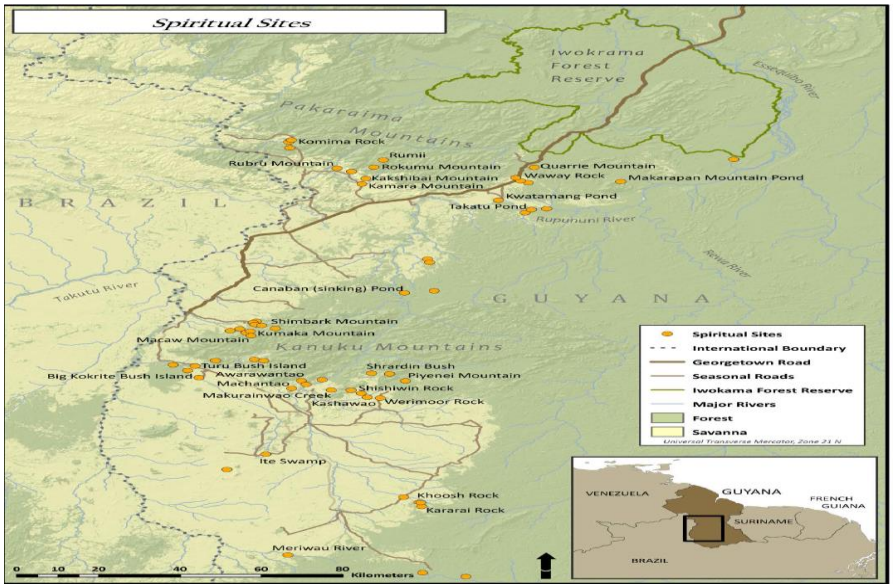
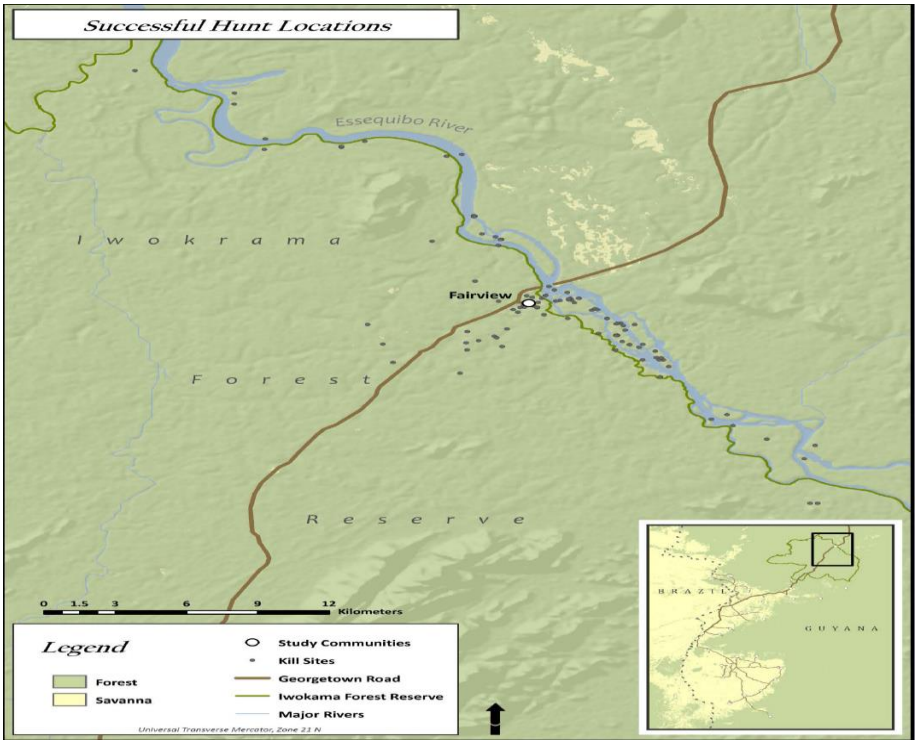


Figure 23 Successful Hunt Locations Fairview Village



A Wetlands Community Based Monitoring Manual was drafted. It provided guidelines for communities to implement a monitoring system for the wetland resources of the North Rupununi. The manual document has a review of the concepts and monitoring techniques for communities and provides a clear process for the implementation of practices for monitoring habitats, key species and land use impacts that communities can use in planning natural resource management.

Information in the Manual covers data collection structure, frequency of data collection, team dynamics, tasks rotation, data storage (Figure 24), site specific monitoring, choosing and classifying wetland sites (Figure 25), site selection (Figure 26) and parameters for monitoring.

Figure 24 Data Storage

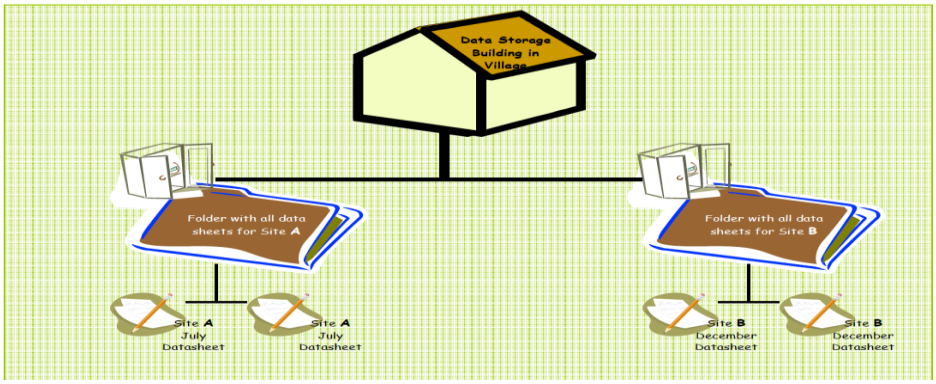


Figure 25 Classifications of Wetland Areas

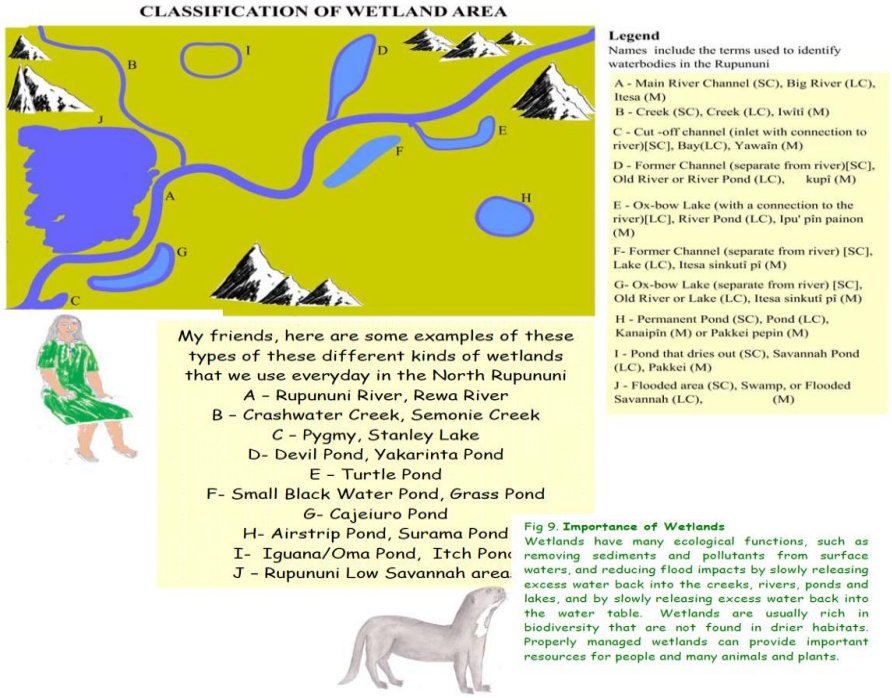
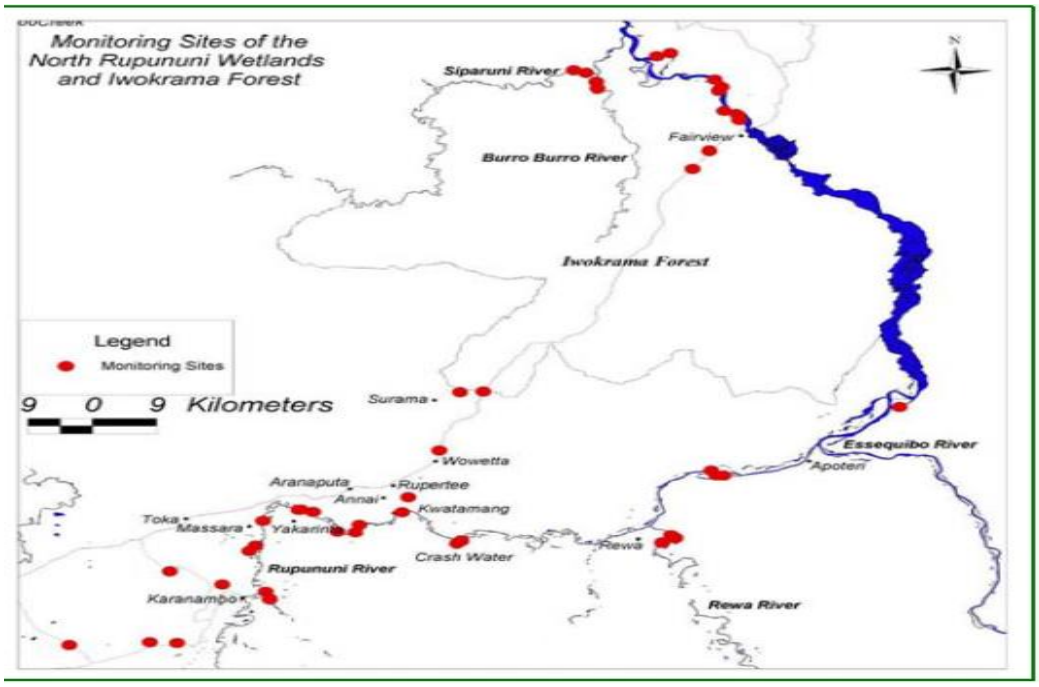


Figure 26 Monitoring Sites of the North Rupununi Wetlands and Iwokrama Forest



Aichi Biodiversity Target 19: Sharing information and knowledge

The Centre for the Study of Biological Diversity (CSBD) located at the Turkeyen Campus of the University of Guyana currently houses the National Herbarium and the Zoological research collections (approximately 50,000 plant specimens and over 29,000 animal specimens; to date there are over 10,000 fish, 700 amphibians, 300 retiles, 350 mammals, 820 birds and over 20,000 insect specimens in our collections). The Centre serves both the University and the nation in the facilitation of biodiversity research and promotion of biodiversity awareness, conservation and management.

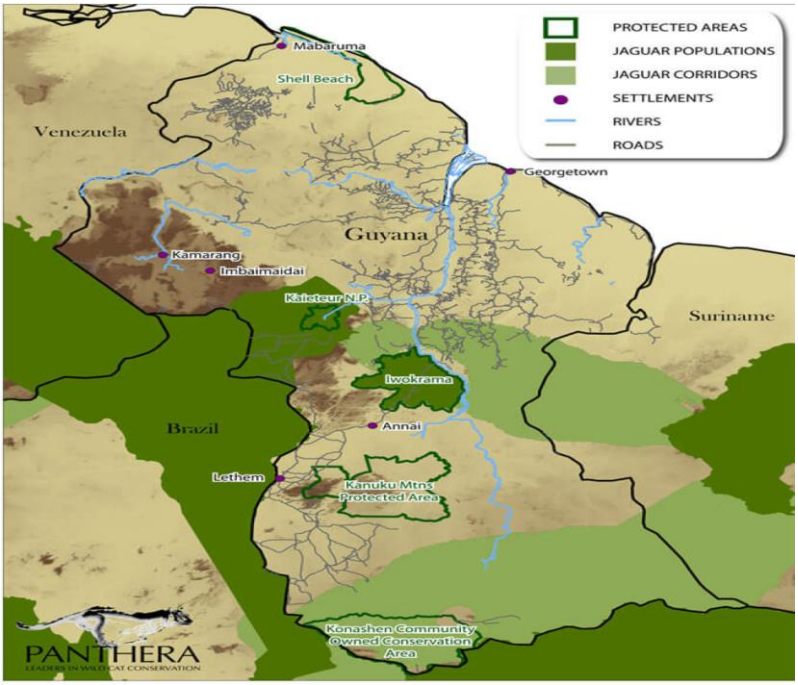
Guyana participated in the transboundary and regional initiatives — the Guiana Shield Initiative and Guiana Shield Facility —along with Brazil, Colombia, French Guiana, Suriname and Venezuela. The main objective

of these initiatives was the promotion and support to the conservation and sustainable development of the Guiana Shield. Under the aegis of the Guiana Shield Facility, there were two high-level technical events that signalled commitment towards, regional and transboundary collaboration on biodiversity conservation. One was a Guiana Shield Biodiversity Corridors Workshop held at Iwokrama, Guyana resulted in the Kurupukari Plan of Action and the other was a Symposium on protected areas of the Guiana Shield held in Cayenne, French Guiana that gave rise to the Declaration of Cayenne.

In 2018, Guyana launched and pledged to support the Triple A Eco-Cultural Corridor Initiative. The Triple A Eco-Cultural Corridor initiative is a regional initiative that seeks to establish and maintain connectivity between the three ecosystems - Andes, Amazon and Atlantic - in an effort to guarantee ecosystems and biodiversity services of the Amazon Basin and to bolster innovative solutions to climate change. The Initiative builds on the global significance of the Amazon biome and Amazon basin and recognizes the threats and opportunities presented by large scale production and extractive activities affecting biodiversity and indigenous cultures from the Andes through the Amazon to the Atlantic.

Guyana signed an agreement with Panthera to support the initiative to save the jaguar (*Panthera onca*). The Jaguar 2030 Conservation Roadmap for the Americas, aims to strengthen the Jaguar Corridor, ranging from Mexico to Argentina, by securing 30 priority jaguar conservation landscapes by the year 2030. The agreement marked an official commitment by both parties to collaboratively undertake research and conservation initiatives that ensure the protection of Guyana's national animal, jaguar conservation education, and mitigation of human-jaguar conflicts in the country. Several initial activities were undertaken including the mapping of the presence and distribution of jaguars across Guyana. Figure 27 shows the jaguar populations and jaguar corridors.

Figure 27 Jaguar Populations and Corridors



Aichi Biodiversity Target 20: Mobilizing resources from all sources

<Text entry> Information is not available to report on this target.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals.

The achievement of the sustainable development goals (SDGs) underpins Guyana's *Green State Development Strategy: Vision 2040*. This Strategy is expected to guide national development policies for the next 20 years. The vision for Guyana's development is one that is inclusive and prosperous and providing a good quality of life for all its citizens, based on sound education and social protection, low carbon and resilient development, providing new economic opportunities, justice and political empowerment‖ Guyana's national

development agenda is centred on improving the quality of life for all within the principles of a green economy, that is, economic growth characterised by low emissions; efficient use of natural resources; decent jobs and rising incomes sustained over generations; and a cohesive society: one that promotes equitable access to economic opportunities, recognises the strength of its cultural diversity and demonstrates tolerance among ethnic groups.

	SUSTAINABLE DEVELOPMENT GOALS	GUYANA'S CONTRIBUTIONS TO THE ATTAINMENT OF THE AICHI BIODIVERSITY TARGETS THAT ARE HELPING TO ADDRESS THE MAIN ISSUES TARGETTED BY THE SUSTAINABLE DEVELOPMENT GOALS
1	End poverty in all its forms everywhere	**Aichi Target 2.** Developing the national statistical system (NSS) to provide information about the economy, people, natural environment and resource, to make evidence-informed decisions, develop facts-based policies and strategies and to report on achievement of the SDGs.
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	**Aichi Targets 13, 18** Attainment of these targets ensure that Amerindian (indigenous) communities have rights to land, legal powers to manage and conserve their lands, protection intellectual property and traditional rights. Plant species diversity for food is conserved and protected since they critical for homestead cultivations, subsistence farming communities, for food security and economic benefits in particular to lower income households.
3	Ensure healthy lives and promote well-being for all at all ages	**Target 2,7,8,14,** Protecting and restoring mangrove ecosystems is critical to the safety of 90% of the population that live on the coast, and at the same time creating livelihood opportunities, in particular for women. The MRVS ensures the monitoring of forests for carbon emissions as well as deforestation and degradation.
4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	**Target 1** Biodiversity education promoted at all levels within the school system.
5	Achieve gender equality and empower all women and girls	**Target 14** Protecting and restoring mangrove ecosystems is critical to the safety of 90% of the population that live on the coast, and at the same time creating livelihood opportunities, in particular for women.
6	Ensure the availability and sustainable management of water and sanitation for all	**Target 8, 7,11** Phasing out the use of mercury to reduce contamination of water in mining areas. Establishing protected areas would ensure protection of watershed.
7	Ensure access to affordable, reliable, sustainable modern energy for all	No National Target
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	**Target 2,7 14** Promotion of sustainable use of biodiversity in the national Tourism Strategy and GSDS 2040 both of which address economic growth and employment.

9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	**Aichi Targets 13, 18** Attainment of these targets ensure that Amerindian (indigenous) communities have rights to land, legal powers to manage and conserve their lands, protection intellectual property and traditional rights, plant species diversity for food is conserved and protected since it is critical for homestead cultivations, subsistence farming communities, for food security and economic benefits in particular to lower income households.
11	Make cities and human settlements inclusive, safe, resilient and sustainable	**Target 2 and 14** Promotion of sustainable use of biodiversity in the national Tourism Strategy and GSDS 2040 both of which address economic growth and employment
12	Ensure sustainable consumption and production patterns	No National Target
13	Take urgent action to combat climate change and its impacts	**Targets 7, 15, 17** The country's economic development and prosperity is directly tied to the management and use of its forests and forested lands. Aside from the timber industry, Guyana's forests are key to tourism development, biodiversity conservation, wildlife management, bio-prospecting, soil fertility and nutrient cycling, and other ecosystem services such as water provisioning and carbon sequestration.
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	**Target 2 and 14** Promotion of sustainable use of biodiversity in the national Tourism Strategy and GSDS 2040 both of which address economic growth and employment
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss	**Targets 2, 7,13,15** Ensure that Amerindian (indigenous) communities have rights to land, legal powers to manage and conserve their lands, protection intellectual property and traditional rights. The country's economic development and prosperity is directly tied to the management and use of its forests and forested lands. Aside from the timber industry, Guyana's forests are key to tourism development, biodiversity conservation, wildlife management, bio-prospecting, soil fertility and nutrient cycling, and other ecosystem services such as water provisioning and carbon sequestration.
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	**Target 2 and 14** Promotion of sustainable use of biodiversity in the national Tourism Strategy and GSDS 2040 both of which address economic growth and employment
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	**Target 19** Participant in regional initiatives to protect ecosystems and endangered species.

Section V. Updated biodiversity country profiles

Guyana - Country Profile

Show map

Biodiversity Facts

Status and trends of biodiversity, including benefits from biodiversity and ecosystem services

Guyana's biodiversity provides an important basis for climate regulation, poverty reduction, provisioning of freshwater, economic growth and development in agriculture, forestry and fisheries, payment for forest climate services, and community based economies in hinterland communities. Loss of biodiversity and any disruption in the provision of ecosystem services would impact negatively on the economy and on the quality of life and in particular on the remote and Amerindian (indigenous) communities. Climate change, deforestation and land degradation have received greater recognition as current and future drivers of environmental change and threats to Guyana's biodiversity.

The National Protected Areas System currently comprises approximately 8.4% of Guyana's landmass and includes the Iwokrama Forest; Kaieteur National Park; Kanashen Amerindian Protected Area; Kanuku Mountains Protected Area; Shell Beach Protected Area and Urban Parks — National Park, Zoological Park, Botanical Gardens, Joe Vieira Park. Kanashen is the newest and largest area declared legally as a protected area in 2017. The Kanashen Indigenous District, an area of 648,567.2 hectares (3% of Guyana), is home to the Wai Wai people, and is the only indigenous-owned territory in the protected area system. The community's role as owners and managers of the area represents a new and innovative approach to conservation in Guyana.

Guyana's floral diversity is estimated to include over 8,000 species, with approximately 6,500 of these species having been identified. There are approximately 1,815 known species of fishes, amphibians, birds, reptiles and mammals. Fishes are very diverse, with 352 species of freshwater bony fishes and 501 species of marine fishes. Limited studies were conducted in the field of genetic diversity and mostly restricted to the agriculture sector. The percentage of cultivated land is approximately 2.37% (4,666 km2). The Illustrated World Compendium of Orchids List of Taxa show for Guyana 569 species of orchids with 34 listed as endemics. Guyana has a very distinctive herpetofauna. The presence of 324 species of amphibians and reptiles in the country comprising 148 amphibians and 176 reptiles have been documented. The diverse herpetofauna include 137 species of frogs and toads, 11 caecilians, 4 crocodylians, 4 amphisbaenians, 56 lizards, 97 snakes, and 15 turtles.

Local plant endemism is often associated with such habitats as white sands, serpentine rock, swamps, flood

plains, rock outcrops and cloud forest. The Pakaraima Mountains in Guyana has the highest level of plant endemism followed by the upper Mazaruni-Kako-Roraima. The majority of endemic vertebrate fauna of Guyana are restricted to highland areas, especially at elevations greater than 1500 m. The lowland endemics comprise largely of widespread species found across the lowland moist forest of the Guianan and Amazonia lowlands. Food and Agriculture Organisation (FAO) reported that the armoured catfish or atipa (*Hoplosternum littorale*) as endemic to Guyana and as an economically important species which fetched a high price on the local market. The FAO also reported the Salmon shrimp (*Mesopenaeus tropicalis*) as endemic to Guyana and is the main species farmed in brackish water operations and that it also fetched a very high market price locally.

The Centre for Study of Biological Diversity (CSBD) houses the National Herbarium and the Zoological research collections comprising approximately 50,000 plant specimens and over 29,000 animal specimens. To date there are over 10,000 fish, 700 amphibians, 300 retiles, 350 mammals, 820 birds and over 20,000 insect specimens. The Centre serves both the University and the nation in the facilitation of biodiversity research and promotion of biodiversity conservation and management. The collections of the CSBD represent a complete set of all specimens collected through scientific research in Guyana. There are also sister collections that are distributed among many institutions worldwide.

Main pressures on and drivers of change to biodiversity (direct and indirect)

The development of a Monitoring Reporting Verification System (MRVS) allowed for an historical assessment of forest cover and the implementation of a comprehensive, national system to measure forest cover based on Guyana's definition of forests and monitor, report and verify carbon emissions resulting from deforestation and forest degradation. Since the establishment of the MRVS seven national assessments and independent monitoring have been conducted. These assessments showed deforestation rates increased from 1990, peaked in 2012 at 0.079% and declined steadily to an annual rate of 0.048% in 2017. As of 2017 Forests cover approximately 87 percent (18,483,000 hectares) of Guyana's total surface area.

The identified anthropogenic change drivers of deforestation were forestry e.g clearance activities for roads and log landings; mining, primarily ground excavation associated with small, medium and large scale mining, the main driver; infrastructure such as roads (including roads to accommodate forestry and mining); conversion to agriculture; fire; and settlements such as new housing developments.

Forest degradation in 2017 was estimated at 4,764 ha. Mining and associated road infrastructure accounted for 81% of degradation followed by shifting agriculture at 11%, settlements at 6%, and agriculture at 2%.

Key Measures to Enhance Implementation of the Convention

Implementation of the NBSAP

Guyana's Vision for biodiversity is "By 2030, biodiversity is sustainably utilized, managed and mainstreamed into all sectors contributing to the advancement of Guyana's bio-security, and socio-economic and low carbon development".

The revised NBSAP (2012-2020) reflects Guyana's low carbon development thrust; mainstreaming of biodiversity in priority sectors such as agriculture, mining and ecotourism; *in-situ* and *ex-situ* conservation of biodiversity; recognized the need for better quality of information to assess status, threats and trends in biodiversity; emphasized the need for communication, resource mobilization, capacity building and coordination strategies to ensure effective natural resources planning and management; and placed emphasis on monitoring and evaluation and better implementation of conventions and protocols. There are 31 national targets in the NBSAP that incorporate the goals of the UNCBD Strategic Plan and align with 14 of the 20 Aichi Targets.

Actions taken to achieve the 2020 Aichi Biodiversity Targets

Several strategies, plans, programmes and initiatives have been developed and are being implemented. A key national strategy the Low Carbon Development Strategy (LCDS) launched in 2010 set out the strategy to forge a low-carbon economy, while seeking to mitigate the impacts of climate change. The goal of the LCDS was to protect and maintain the forests in an effort to reduce global carbon emissions and at the same time attract payments from developed countries for the climate services that the forests would provide globally. These payments would then be invested to foster growth and development along a low carbon emissions path, without compromising the sovereignty over the forests or affecting the development prospects of the country's population. The LCDS served as a cornerstone for the development and implementation of the NBSAP.

Building on the results and the experiences from the implementation of the LCDS led to the elaboration of the Green State Development Strategy: Vision 2040. This is Guyana's twenty-year, national development policy that has as its central objective, development that provides a better quality of life for all Guyanese derived from the country's natural wealth i.e its diversity of people and abundant natural resources. The GSDS: Vision 2040 comes at a unique time when Guyana is about to be propelled onto the global stage as the newest producer of oil and gas.

Other key sector policies, programmes and interventions which would make significant contributions to the achievement of the Aichi targets include a revised Forestry Policy and Plan, a draft national Action Plan for mercury reduction, the testing and demonstration of mercury free mining technology to miners, an agreement with Panthera to save the jaguar (*Panthera onca*) through strengthening the Jaguar Corridor, ranging from Mexico

to Argentina and a programme to restore coastal mangrove forests. The Iwokrama International Centre for Rain Forest Conservation and Development (Iwokrama) received certification for forest management from the Forest Stewardship Council™. The reduction of by-catch is an important aspect of sustainable fishing. By-catch reduction devices (BRD) became mandatory on all seabob trawlers from 2015. A number of other measures were implemented among which are an observer programme by the Fisheries Department in 2018, enhanced monitoring control and surveillance activities in the seabob fishery with mandatory implementation of CCTV cameras on all seabob trawlers.

Support mechanisms for national implementation (legislation, funding, capacity-building, coordination, mainstreaming, etc.)

As the designated CBD Focal Point, the Environmental Protection Agency collaborates with other agencies and institutions for the implementation of actions related to the Convention and two other Protocols Nagoya Protocol and Cartegena Protocol. One such coordination example is the granting of permission to import mercury which is jointly administered by the Environmental Protection Agency, the Pesticides and Toxic Chemicals Control Board, the Ministry of Natural Resources and the Guyana Geology and Mines Commission.

The Protected Area Act 2011 allowed for the establishment of a Protected Areas Trust (PAT) and the Protected Area Trust Fund (PATF) in 2016. The fund was set-up to provide co-financing for the management of the National Protected Area System. The PAT funds are used to co-finance the implementation of protected areas management plans, strengthen monitoring and enforcement in protected areas, support sustainable community enterprises, biodiversity conservation, and environmental education and awareness.

Mechanisms for monitoring and reviewing implementation

A Multilateral Environmental Agreements Committee (MEAC) will be established. This Committee will be the main advisory body on matters relating to environmental governance. The Committee will also serve as the overarching body that will facilitate improved coordination and collaboration amongst stakeholders in national environmental governance towards recommending relevant policy reform/development as well as necessary programmes, projects and activities for environmental protection/management. Key responsibilities related to the MEAs include advising on the incorporation of MEA obligations into relevant national and sub-national development plans and budgets and monitor implementation; identifying gaps, common issues and matters to be addressed in fulfilling obligations; facilitating collaboration amongst environmental actors with respect to actions to be taken to address synergies amongst conventions; promoting public awareness and capacity building on issues relating to MEAs; and preparing periodic reports on MEA performance indicators.

Membership of the Committee comprises convention focal points, sector agencies, donors, Private Sector, the GEF Focal Points and Technical Experts. An Environmental Information Monitoring and Management System (EIMMS) is currently being established and will network existing databases, reconcile their content (in particular indicators) that serve to inform planners and decision-makers about trends in meeting and sustaining global environmental outcomes. The objective of this is to strengthen the collection and management of data and information for improved monitoring, including the technical capacities to use data and information to create knowledge at both the national and sub-national level, with particular attention to decentralized planning and decision-making.