



Early Idea Presentation Emissions Reductions through Sustainable Natural Resources Management

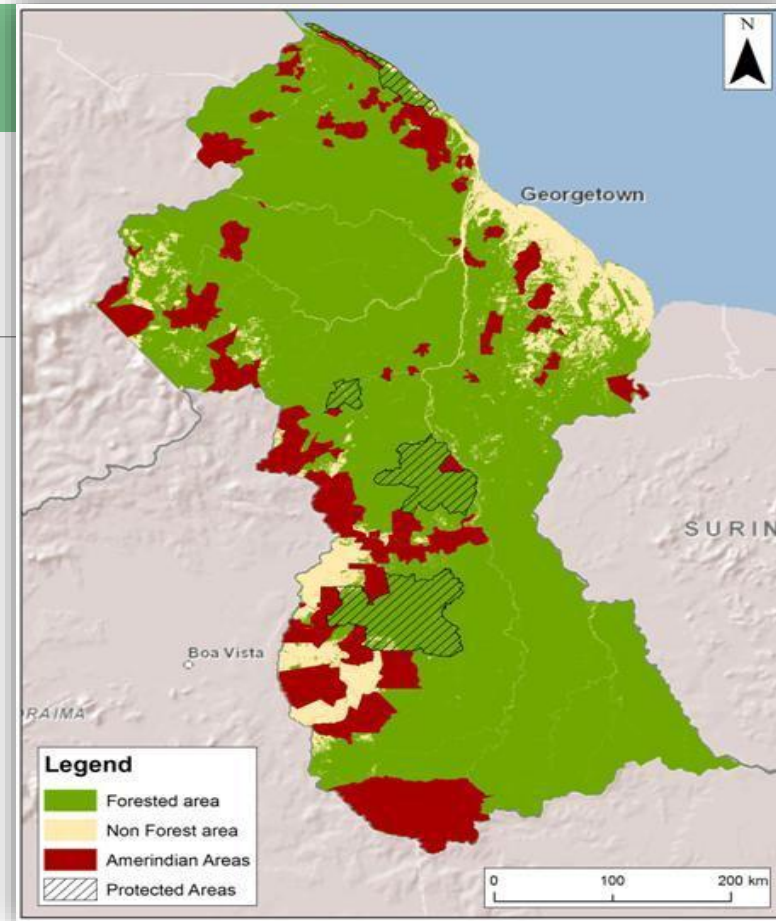
JAMES SINGH, COMMISSIONER OF FORESTS.
GUYANA FORESTRY COMMISSION



PARIS, APRIL 2015

Overview of Guyana

- Guyana has a population of approximately 750 thousand people with approximately 15% of our total population comprising of Amerindians.
- Guyana remains primarily an agriculture and resource-based economy in terms of its production base, and has rich natural resources – forests, minerals, biodiversity.
- One of Guyana's most valued natural assets is its forests.
- The national forest cover is approximately 85 % of the country; more than 8 % designated as Protected Areas, and close to 15% titled to Indigenous Peoples, making Amerindians the second largest land owner in Guyana after the Government.
- Guyana has had relatively low historical rates of gross annual deforestation of 0.02% to 0.078% over the past 23 years.



2013 Land Classes	Forest	Non-Forest					Total
		Grassland	Cropland	Settlements	Wetlands	Other Land	
	(Area '000 ha)						
State Forest Area	12 267	184	9	7	125	5	12 597
Titled Amerindian lands ** (incl newly titled lands)	2 584	691	2	11	22	5	3 315
State Lands	2 559	1 136	208	40	82	51	4 076
Protected Areas*	1 090	26	>1	>1	21	>1	1 140
Total Area	18 500	2 037	220	59	250	62	21 128

Guyana's ER PIN Background and Context

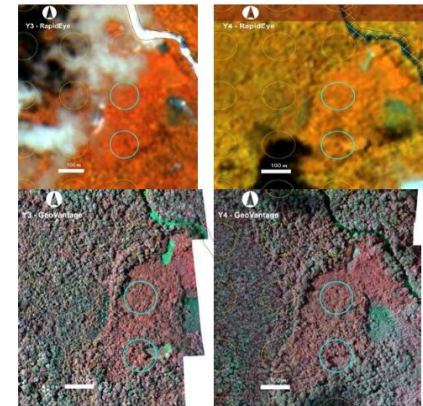
- Well developed and advanced National Forest Monitoring System with a 23 year period monitored including 4 consecutive annual national assessment completed (2010, 2011, 2012 and 2013), accuracy assessed, independently verified, and publicly available. Fifth annual assessment currently underway.
- Three annual assessments conducted with 5m resolution imagery at national scale.
- Monitoring and Reporting on deforestation and forest degradation.
- Concurrent development of local capacities and systems to report on forest carbon emissions and removals annually.
- Reporting framework developed, and peer reviewed, and published, for reporting on forest degradation impacts from forest harvest activities.



Guyana Forestry Commission

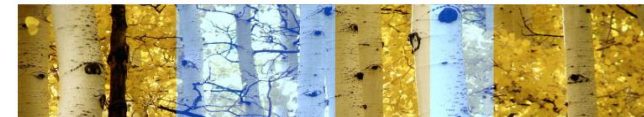
Guyana REDD+ Monitoring Reporting & Verification System
(MRVS)

Year 4 Interim Measures Report
1 January 2013 – 31 December 2013



Version 3

27 February 2015



Monitoring Forests in Guyana from 1990 to 2013

Driver	Historical Period			Year 1 2009-10	Year 2 2010-11 (15 months)		Year 3 2012		Year 4 2013	
	1990 to 2000	2001 to 2005	2006 to 2009		Deforestation	Degradation	Deforestation	Degradation	Deforestation	Degradation
	Area (ha)									
Forestry (includes forestry infrastructure)	6 094	8 420	4 784	294	233	147	240	113	330	85
Agriculture (permanent)	2 030	2 852	1 797	513	52	N/A	440	0	424	N/A
Mining (includes mining infrastructure)	10 843	21 438	12 624	9 384	9 175	5 287	13 516	1 629	**11 251	2 955
Infrastructure	590	1 304	195	64	148	5	127	13	278	112
Fire (deforestation)	1 708	235		32	58	28	184	208	96	395
Settlements									23	20
Year 4 Shifting Agriculture										765
Year 2 forest degradation converted to deforestation							148		67	N/A
Year 3 forest degradation converted to deforestation									200	N/A
Amaila Falls development (Infrastructure Roads)					225				64	20
Area Change	21 267	34 249	19 400	10 287	9 891	5 467	14 655	1 963	12 733	4 352
Area Change for Year 4 without Shifting Agriculture										3 587
Total Forest Area of Guyana	18 473 394	18 452 127	18 417 878	18 398 478	18 388 190		18 502 531		18 487 876	
Total Forest Area of Guyana Remaining	18 452 127	18 417 878	18 398 478	18 388 190	18 378 299		18 487876		18 475 143	
Period Deforestation (%)	0.01%	0.04%	0.02%	0.056%	0.054%		0.079%		0.068%	

**Forestry infrastructure accounts for the full total of deforestation from forestry activities.

**Mining Infrastructure accounts for 918 ha in 2013 out of the total deforestation driver by mining of 11 518 ha, when Year 2 & 3 transitional areas are taken into account.

***Amalia Falls Development has been split from other infrastructure driven change for reporting purposes.

Guyana's ER PIN

Guyana's Reference Level Proposal

The RL for Guyana, developed at the National scale, is based on the detailed and robust analysis of historic emissions from deforestation from all causes and from degradation due to timber harvesting, and includes the following:

The key drivers of deforestation, including conversion to agriculture, mineral extraction, and infrastructure expansion (mining and logging roads);

Degradation from timber production, representing a source of emissions;

Forest are defined as having a minimum area of land of 1 ha with tree crown cover (or equivalent stocking level) of more than 30% with the potential to reach a minimum height of 5 m at maturity in situ;

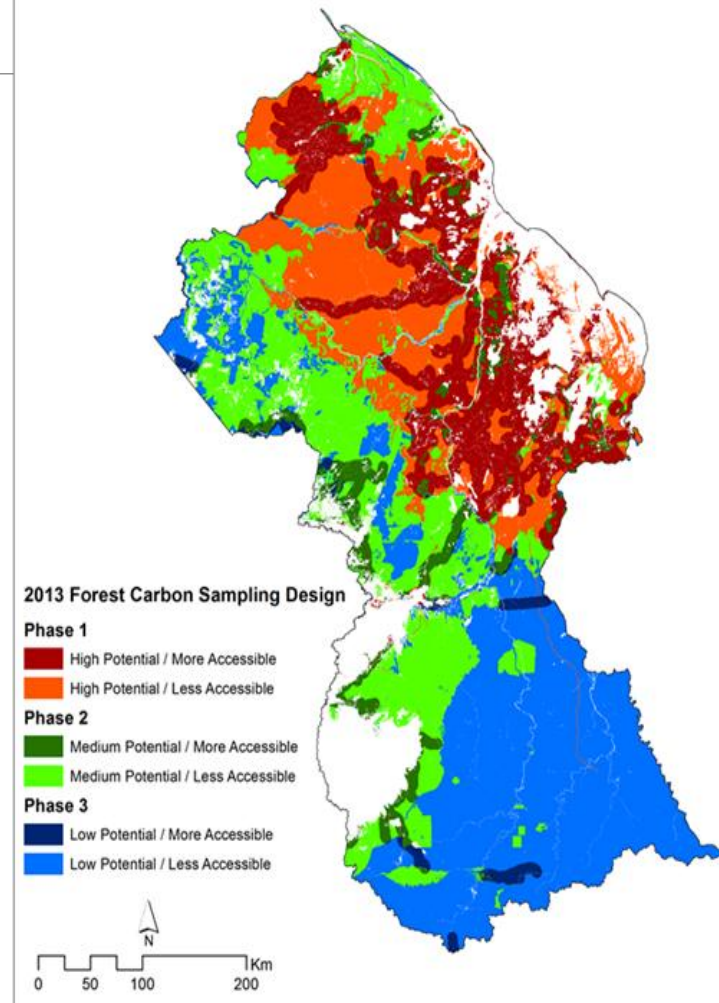
All five IPCC recognized carbon pools are included and the key GHG selected is CO₂;

The historic period selected is from 2001 to 2012, a total of 12 years;

The collection and analysis of activity data (AD) and field data on forest carbon stocks are consistent with good practice in that they neither over- nor under-estimate as far as can be judged; and

And all data are at Tier 2 and 3 levels:

- Wall-to-wall coverage of satellite imagery is used to obtain the AD related to conversion of forest lands to other uses and such data are combined and co-registered with other key spatial data bases in a GIS such as roads, rivers, settlements, vegetation class, location of logging concessions, location of mining concessions, and topography.
- A comprehensive, peer-reviewed, field sampling system was designed and implemented to attain a required precision target of a 95% confidence interval of $\pm 15\%$ of the mean total carbon stock of forests.



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Guyana's Total Carbon Stock

Forest Carbon Sampling strata		Area (ha)*	C stock per stratum t C/ha	Total stock tC
High potential for change	More accessible	3,165,731	259.8	822,456,914
HPfC	Less accessible	3,096,270	351	1,086,790,770
Medium potential for change	More accessible	960,633	300	288,189,900
MPfC	Less accessible	4,267,988	300	1,280,396,400
Low potential for change	More accessible	262,014	300	78,604,200
LPfC	Less accessible	5,872,574	300	1,761,772,200
TOTAL		17,625,210		5,318,210,384

Guyana's ER PIN

Guyana's Historic Emissions

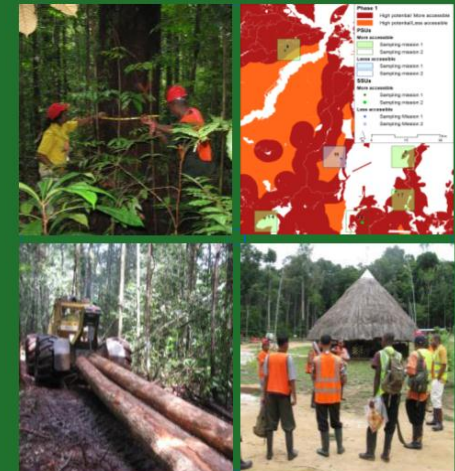
- Submission of Guyana's Proposal on Reference Level for REDD+ submitted to UNFCCC and currently under Assessment.

Total annualised historic emissions from deforestation and timber harvesting between 2001 and 2012.

Drivers	2001-2012		
	t CO ₂ e	Annual t CO ₂ e	% of total
Forestry infrastructure	12,631,213	1,052,601	9%
Agriculture	7,727,589	643,966	6%
Mining (medium and large scale)	66,803,751	5,566,979	48%
Mining infrastructure	6,608,576	550,715	5%
Infrastructure	3,078,549	256,546	2%
Fire-Biomass burning	276,929	23,077	0%
Timber harvesting	42,886,201	3,573,850	31%
Total	140,012,808	11,667,734	100%

Government of Guyana
December 2014

The Reference Level for Guyana's REDD+ Program



Guyana's ER PIN

Guyana's Proposed Reference Level

Guyana's proposal for Reference Level for REDD+ is based on the Combined Reference Level Approach, in which a global forest carbon emissions loss of 0.44%, as concluded by Baccini et. al. 2012 is used, along with Guyana's historic emissions level for the period 2001 to 2012, as established in this Proposal.

The use of the combined reference level is determined to be the most appropriate method for Guyana and one which allows for the broadly accepted objective within the UNFCCC negotiations to be fulfilled. This objective expresses general agreement that a REDD+ mechanism must provide genuine incentives for forest conservation in low deforestation countries, as well as ensure global additionality.

Guyana stipulated in its submission to the UNFCCC that the Proposal can also be adjusted to be congruent with existing internationally accepted methods, such as those established for the FCPF Carbon Fund which allows for 0.1% of total carbon stock, as adjustments to emissions over the historic level – which equates to 31,185,566 tCO₂e annually.

Setting the Reference Level					
	Global average rate of forest carbon stock loss (global forest carbon stock loss divided by global forest carbon stock) - Baccini et. al. 2012			0.440 %	
	Guyana's 2001-2012 Average Historic Emissions Level (derived by dividing the historic emissions of 11,667,734 tCO ₂ by total forest carbon converted to CO ₂ of 19,517,832,109tCO ₂). The total forest carbon stock in tC is 5,318,210,384 tC.			0.060 %	
	Combined reference level in % =			0.250 %	
	Combined reference level in t CO ₂ =			48,794,580	tons CO ₂

Guyana ER PIN

Programme Areas (1) – Sustainable Mining

This Emissions Reductions Programme Area will include:

- ❑ The improvement of technology and mining practices will:
 - (1) shift miners away from the use of mercury and
 - (2) to improve the recovery efficiency of mining operations. New technologies such as centrifuge systems can increase recovery rates in mines from 30% to 80% compared to traditional practices. This means that a mine need only be worked once, after which it can be closed and the forest restored.
- ❑ Guyana has prioritized sustainable practices such as land reclamation within the extractive sectors that will provide an effective and replicable solution for increasing forest biomass and carbon stocks, while ensuring sustainable resource consumption.

The general objective of the program is to promote sustainable natural resources and environmental management by facilitating coordinated remedial land reclamation interventions, aimed towards managing and combatting land and forest degradation from the activities within Guyana's extractive sectors.

From 48% of total
annualized emission
for 2001-2012

5,566,979 tCO₂

To 30% of total
annualized emissions by
2020

3,479,362 t CO₂

Guyana ER PIN

Programme Areas (2) – Sustainable Forestry

This Emissions Reductions Programme Area will include:

Emphasis ranging from the development of the timber potential of the forests to management of the multiple goods and services (including ecosystem services) for the national benefit remain pivotal to the mandate of the GFC.

Improve added value activities locally. This will assist in creating a higher potential for carbon storage in long term wood products. This could also potentially reduce the pressure on forest resources as a higher value may result in reduced harvest levels.

Further, a key priority for the forest sector is the implementation of sustainable forest management methods of which Reduce Impact Logging (RIL) is a key aspect. RIL, among other advantages, is intended to lower collateral and incidental damage associated with logging including tree damage from tree felling and logging infrastructure impacts, such as skid trails.

- Reducing the incidental and collateral damage during tree felling by about 10% and the damage from skid trails by about 35% (avoiding mid-size trees during skidding), could reduce the annual emissions by about 13.5% each year. This translates to a reduction of about 430 thousand t CO₂ per year and can target more predominantly the smaller concession category.

Strengthening forest governance is also a high priority for Guyana. The continued implementation of the National Log Tracking System and chain of custody programme, both of which are aspects of Guyana's current negotiation process with the EU on a FLEGT VPA (Forest Law Enforcement Governance and Trade, Voluntary Partnership Agreement).

From 31% of total
annualized emission
for 2001-2012

3,573,850 tCO₂

To 20% of total
annualized emissions by
2020

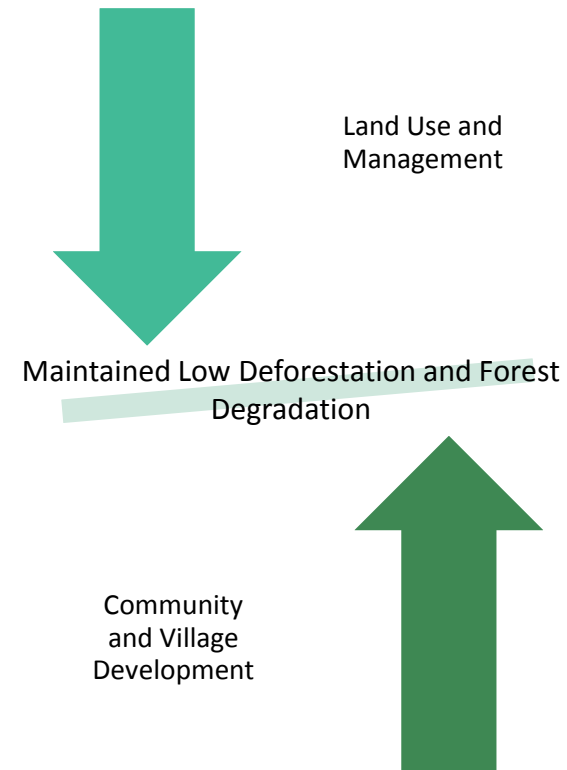
2,305,709 t CO₂

Guyana ER PIN

Programme Areas (3) – Community Forestry

This Emissions Reductions Programme Area will include:

- An emphasis on maintaining a low rate of deforestation and forest degradation on community owned and managed areas through working with local stakeholders.
- these partnerships will assist in creating opportunities for a broader range of livelihood options thereby reducing pressure on forest and encouraging multiple use of forest resources, include non timber forest good and services.
- developing capacities of communities to monitor and manage impacts on forests.



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Emissions Reductions Offered to the Carbon Fund

Emissions Reductions Offered to the
Carbon Fund = 22,873,590 tCO₂e

Reductions in Emission from the Mining Sector based on Historic Emissions =
2,087,617 tCO₂e annually

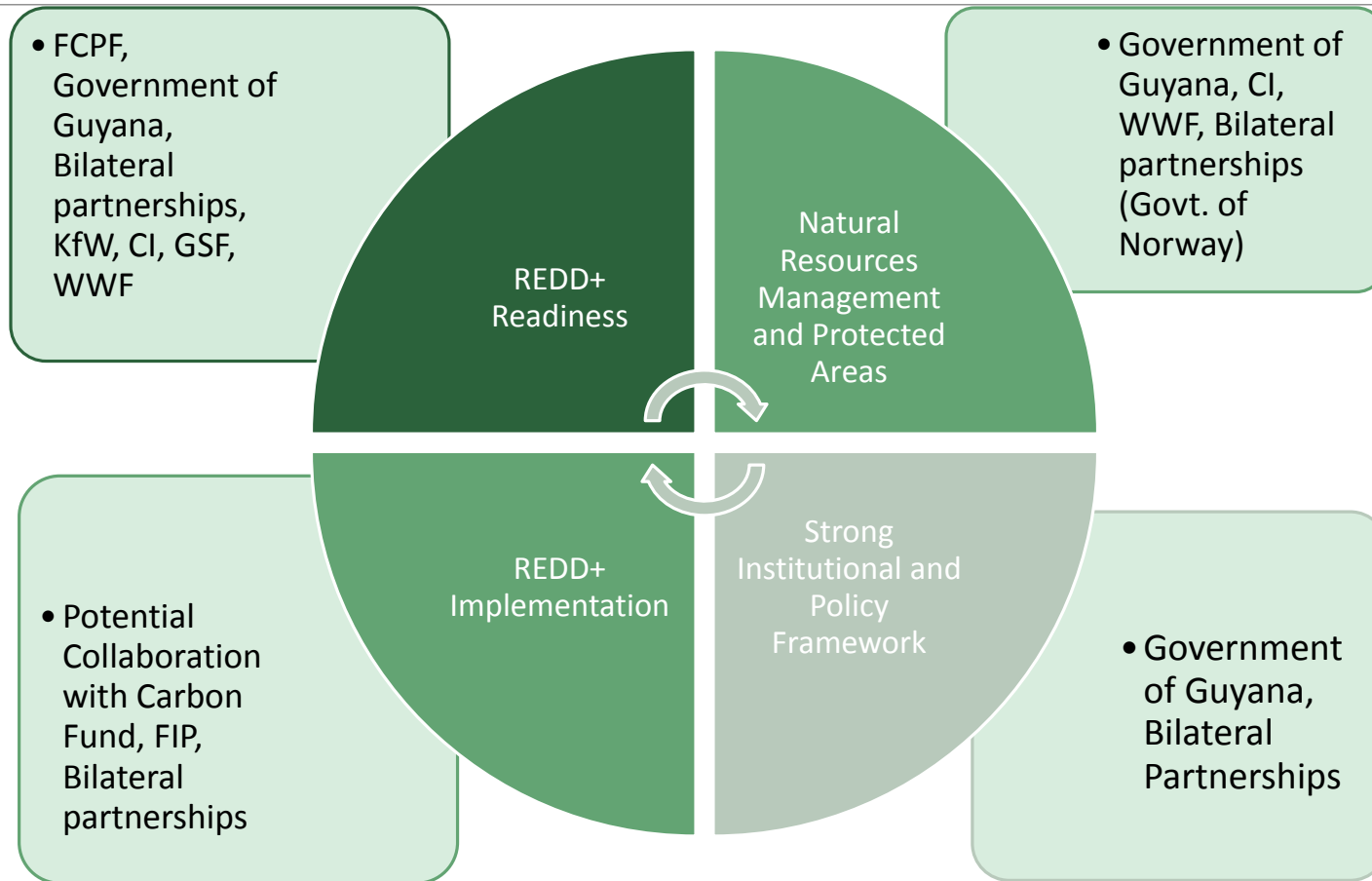
Reductions in Emissions from the Forest Sector based on Historic Emissions =
1,268,141 tCO₂e annually

*Upward Adjustment of Guyana's Reference Level based on 0.1% of Guyana's
Carbon Stock as at 2012 and anchored by Guyana's Proposal of Reference
Level submitted to UNFCCC = 19,517,832 tCO₂e annually

* Upward adjustment will be supported by relevant documentation and justification during the design.

Guyana ER PIN

Linkages in REDD+ Financing



Guyana's ER PIN

Strong Political Commitment

There has been strong political commitment dedicated to natural resources management as evidenced by:

- National support for Guyana's Low Carbon Development Strategy which shows how Climate Change mitigation and Economic Development can co exist.
- Finalization of a National Land Use Plan in 2013
- Recent Revision of the Forest Act in 2009
- Establishment of the Protected Areas System, Commission and Trust Fund.
- Revision and bipartisan support for National Forest Policy and Plan 2012.
- Strong Policy and institutional Framework

DRAFT FOR CONSULTATION



Transforming Guyana's
Economy While Combating
Climate Change

May 2009 | Office of the President,
Republic of Guyana

Guyana's ER PIN National Land Use Plan (NLUP)

Guyana's National Land Use Plan has been finalized in June 2013, and provides a solid platform for land use and land management across all sectors, including the forest sector.

Main Objective of Plan: to provide a strategic framework to guide land development in Guyana. The NLUP builds on a number of national policies and strategies including the National Forest Plan and Policy, and Guyana's LCDS.

Main Rationale and Core Aspects of NLUP:

- Addressing Climate Change, adaptation and mitigation
- Land Pressures
- Land Use Development – forestry, mining, agriculture, infrastructure, etc.
- Management of competing land use
- Linking Regional Plans to National Plan

This Plan is currently in implementation with significant progress made to date in each of the above areas.



Guyana National Land Use Plan

June 2013

Guyana Lands and
Surveys Commission

Guyana's ER PIN Consultation and Participation

Guyana's has conducted several national scale, community led stakeholder engagements under the following programmes:

- MRVS Development
- EU FLEGT
- REDD+ Policy and Implementation
- Low Carbon Development



These session have seen close to 100 communities engaged directly or in cluster based sessions, many engaged on repeated missions.

Some engagements, such as those under EU FLEGT are in part led by Indigenous NGOs.

Guyana's ER PIN Stakeholder Engagement

Year	Clusters	# of Communities engaged
2012	Anna Regina (Region 2)	13
	Bartica (Region 7)	11
	Charity (Region 2)	8
	Annai (Region 9)	15
	Georgetown (Region 4)	3
	Lethem (Region 9)	11
	Linden (Region 10)	7
	Mahdia (Region 8)	8
	Moraikabai (Region 5)	3
	Soesdyke (Region 4)	15
	Kamarang (Region 7)	15
	Kwakwani (Region 10)	3
	Mabaruma (Region 1)	7
	Moruca (Region 1)	9
	New Amsterdam (Region 6)	9
	Orealla (Region 6)	3
	Port Kaituma (Region 1)	7
	Shulinab (Region 9)	8

Themes covered

- National Forest Plan
- National Forest Policy
- REDD+
- Guyana's Progress and Plans under the Forest Carbon Partnership Facility (Including SESA, REDD+ Strategy)
- Code of Practice for Forest Management

Guyana's ER PIN Stakeholder Engagement

Year	Clusters	# of Communities engaged
2013	Mabaruma (Region 1)	11
	Kwebana (Region 1)	4
	Santa Rosa (Region 1)	12
	Anna Regina (Region 2)	9
	Parika (Region 3)	5
	Linden (Region 10)	10
	Kamarang (Region 7)	12
	Soesdyke (Region 4)	7
	Georgetown (Region 4)	22
	Annai (Region 9)	12
	Kwakwani (Region 10)	8
	Mabaruma (Region 1)	11
	Kwebana (Region 1)	4
	Santa Rosa (Region 1)	12
	Anna Regina (Region 2)	9
	Parika (Region 3)	5
	Linden (Region 10)	10
	Kamarang (Region 7)	12

Themes covered

- **Guyana's Low Carbon Development Strategy**
- **REDD+ Readiness**
- **Progress to date on REDD+ Readiness under the FCPF**
- **Guyana's MRVS**
- **Forest Governance areas including EU FLEGT**
- **Reference Level for REDD+**

Guyana's ER PIN Stakeholder Engagement

Year	Clusters	# of Communities engaged
2014	Region 1	6
	Region 7	3
	Region 2	3
	Annai (Region 9)	10
	Moraikabai (Region 5)	1
	Mahdia (Region 8)	5
	Lethem (Region 9)	8
	Shulinab (Region 9)	11
	Warawatta Village, Region 7	12
	Mabaruma (Region 1)	13
	Santa Rosa	17
	Charity (Region 2)	6
	Mainstay (Region 2)	3
	Region 1	6
	Region 7	3
	Region 2	3
	Annai (Region 9)	10
	Moraikabai (Region 5)	1

Themes covered

- **Guyana's Low Carbon Development Strategy**
- **REDD+ Readiness**
- **Progress to date on REDD+ Readiness under the FCPF**
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- **Reference Level for REDD+**

Guyana's ER PIN Safeguards

Guyana has commenced the process of developing Safeguards for REDD+ and aligning this with national framework already in place:

Consultation and Participation Processes: stakeholder engagement session held in 2012 to 2014 have included various elements of SESA. Needed now would be more specific, dedicated session on SESA areas such as SESA Plan and TOR.

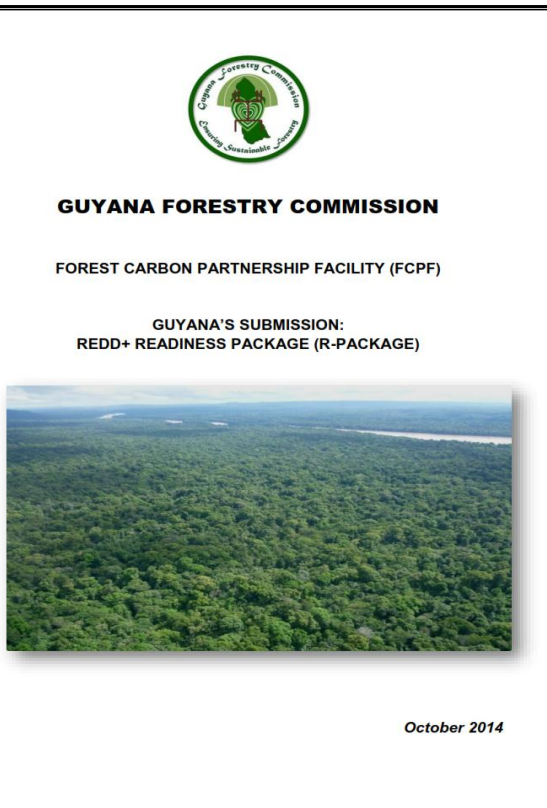
Progress on SESA: in the next 6 months, it is planned that the ToR for the SESA will be developed, and the development of the SESA Plan will commence.

Feedback and Grievance Redress Mechanism: Over the next 6 months, a full ToR will be developed for this mechanism. Assessment of existing platforms for feedback and grievance will be conducted. Existing strategic, legal and policy support mechanisms will also be examined, including the EPA Act, the Amerindian Act, and the Forest Act.

Guyana's ER PIN

Status of REDD+ Readiness

- R Package completed and submitted to Guyana's delivery partner for the FCPF.
 - Published on the GFC's website in October 2014.
-
- Summarizes significant progress in several areas of REDD+ Readiness



Component	Sub-component	Overall Achievement
1.Readiness Organization and Consultation	1.a.National REDD+ Management Arrangements	Significant progress
	1.b.Consultation, Participation, and Outreach	Progressing well, further development required
2.REDD+ Strategy Preparation	2.a.Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance	Significant progress
	2.b.REDD+ Strategy Options	Progressing well, further development required
	2.c.Implementation Framework	Progressing well, further development required
	2.d.Social and Environmental Impacts	Further development required
3.Reference Emissions Level/Reference Level (REL/RL)		Significant progress
4.Monitoring System for Forests and Safeguards	4.a.National Forest Monitoring System	Significant progress
	4.b.Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards	Significant progress

Guyana's ER PIN

Generating Co Benefits

Guyana's ER PIN has the potential to:

- ❑- Potential to impact positively on protecting biodiversity as Guyana has a very high biodiversity in the world with approx. 1,168 vertebrate species, 1,600 bird species, and one of the richest mammalian fauna assemblages of any comparably sized area in the world.
- ❑ Potential to reduce vulnerability to climate change as 15% of Guyana's population comprise of Indigenous Peoples, most of whom live in and depend on the forests for their survival.
- ❑ Potential to create employment for small scale miners and forest operators through more efficient operations and through added value activities.
- ❑ Create a broader range of livelihood options for Guyana's indigenous peoples.
- ❑ Create positive example for the National Protected Areas system and opportunities for Communities to advance Community Owned Conservation Areas.

Guyana's Participation in the Carbon Fund

Guyana's is an ideal candidate to participate in the Carbon Fund for the following reasons:

- Guyana is one of few HFLD and REDD+ countries that had implemented a national scale annual system for MRVS that has produced four annual assessment reports (with fifth assessment due at end of 2015), that have not only been produced but has been verified by an third party verifier for every year. A significant amount of this work is done by local personnel.
- Guyana is one of the first REDD+ countries that has develop and submit to the UNFCCC a national position on Reference Level informed from Activity data emanating from four annual national assessment, two of which have been generated from a 5m resolution products; and informed also by a comprehensive national field survey of forest carbon assessment, with results of high statistical accuracy and precision.
- Guyana has been a leader on REDD+ both internationally and locally, and has launched its Low Carbon Development Strategy with the highest level of political commitment.
- Guyana offers a unique example of a country with historically low deforestation rates, a fairly mature REDD+ readiness mechanism for MRVS, and a national scale model ready for immediate implementation. This enables Guyana to deliver immediately on results and to corroborate this through robust reporting systems, already established and fully functioning.
- With deforestation rates that have shown fluctuations over the past 23 years, much of this seen over the past 5 years, Guyana can demonstrate how a country can take quick, and early action to maintain low rates of deforestation and keep over 99% of its forests in tact.



Thank You.