IDENTIFICATION AND MAINSTREAMING

OF

POLICIES TO SUPPORT

AN

ALIGNED NATIONAL ACTION PLAN

TO

COMBAT LAND DEGRADATION

FINAL REPORT

SEPTEMBER 2015

Table of Contents

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

BHI	Bina Hill Institute
LCDS	Low Carbon Development Strategy
CCA	Climate Change Adaptation
CRG	Cooperative Republic of Guyana
DEWS	Desertification Early Warning Systems
DLDD	Desertification, Land Degradation and Drought
DRM	Disaster Risk Management
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
EFT	Environmental Trust Fund
FNSS	Food and Nutrition Security
FTCI	Forest Training Centre Inc.
GEF	Global Environment Facility
GFC	Guyana Forestry Commission
GHG	Greenhouse Gases
GIS	Geographical Information System
GL&SC	Guyana Lands and Surveys Commission
GOG	Government of Guyana
IIC	International Centre for Rainforest Conservation and Development (Iwokrama International Centre)
INDCs	Intended National Determined Contributions
HRD	Human Resource Development
MCDA	Multi Criteria Decision Analysis
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MMAADAA	Mahaica-Mahaicony-Abary Agricultural Development Authority Act
MOA	Ministry of Agriculture
NAP	National Action Plan/Programme
NAPs	National Action Plans/ Programmes
NAS	National Agricultural Strategy
NBSAP	National Biodiversity Strategy and Action Plan
NDIA	National Drainage and Irrigation Authority
NRA	Natural Resource Accounting
PES	Payment for Ecosystem Services
PPP	Polluter Pays Principle
RDC	Regional Democratic Council
RD&P	Resource Development and Planning Division
REDD+	Reduced Emissions from Deforestation and Forest degradation
SDGs	Sustainable Development Goals
SLM	Sustainable Land Management
UNFCCC	United Nations Framework Convention on Climate Change

UNCCD	United Nations Convention to Combat Desertification

EXECUTIVE SUMMARY

The Identification and Mainstreaming of Policies to support an Aligned National Action Plan to combat Land Degradation Report was prepared for a GEF Funded Project titled 'Support the Alignment of Guyana's National Action Plan to the UNCCD 10 Year (2008-2018) Strategic Plan'.

The assignment is being undertaken in fulfilment of the country's obligation to align the National Action Plan to the United Nations Convention to Combat Desertification (hereinafter UNCCD) Ten Year Strategy of 2008-2018. The UNCCD strategic and operational objectives are the guiding principles for the development of the UNCCD signatories to develop their aligned NAP.

Over the years, the Government of Guyana, as signatory to UNCCD, has been actively involved in implementing projects and programmes aimed at combating land degradation. One of such initiatives was the preparation of NAP in 2006. Subsequently, the country received funds to implement a Medium-Sized Project titled Capacity Development and Mainstreaming for Sustainable Land Management (hereinafter SLM) with GEF Executing Agency, the UNDP and funds from GEF. The Project was also supported by other complementary projects and programmes in Guyana which positively addressed land degradation, forest degradation and post-mining land restoration.

Consequently, this assignment builds on such past and current strives made by the country to align the National Action Plan (hereinafter ALIGNED NAP) and UNCCD reporting. The overall objective of the assignment is to align through integration and mainstreaming, the ALIGNED NAP activities to the existing national strategies and planning processes.

Approaches and methods

In the endeavour to achieve the objective of the assignment, the following methods, approaches and activities were employed:

- Literature review: A thorough review of the existing Acts, policies, Strategies and National Plans to identify the activities within the Strategies and National Plans where mainstreaming can be undertaken was conducted.
- Consultation with the stakeholders: this approach was undertaken to identify the planning and implementation structure within the various agencies and commissions that are mandated to manage land resources in the country. the purpose of this activity was to identify areas within the planning and implementation where NAP can be best placed.
- Scorecard: a scorecard is simply a management tool that is used to evaluate, track and monitor an institute's performance over time. There are various types of scorecards and for this assignment an institutional capacity scorecard was the appropriate instrument to assess capacity of institutes to

implement, monitor and manage data to combat land degradation in the country.

Key results/findings of the analysis

Areas for mainstreaming

Various strategies, national and sectoral plans were analysed to determine appropriate areas for mainstreaming and the table below depicts areas for mainstreaming the various aligned NAP activities.

NAP activity	Strategy/Plan for mainstreaming	Areas for mainstreaming
Rationalising the planning and management of land resources	National & Regional Land Use Plans	Development of National and Regional Land Use Maps (Compiled information on land tenure, land use types and developmental land use options)
	Poverty Reduction Strategy	Development of a computerised land information database
	National Strategy for Agriculture	Inventory of agricultural land, quantification of the required land for future while balancing ecosystem, environmental and demographic land requirements based on FAO assessments report on agricultural lands
		Establish soil health as a major priority and implement Integrated Soil Management techniques
	National Forest Plans	Compile information on forest types and concession allocations
Rationalising legislative overlaps	National Strategy for Agriculture	Continuous review of the policies and legislative framework
	DRM for Agriculture Sector	Review of policies and plans to determine integration of DRM and CCA
	NBSAP	Review legislation (and Aichi Convention Targets for CDB)
Promoting effective coordination and information exchange	NBSAP	Development of a database system for biodiversity freely accessible to users
	DRM plan for agriculture	Fostering optimal coordination in implementing the DRM programs

	Food and Nutrition Strategy	Increased institutional coordination and functioning for improved food and nutrient security Food and Nutrition Security Policy and Action Plan (developed) needs implementation
Establishing institutional synergies	Food and Nutrition Strategy	Increased Institutional coordination and functioning for improved food and nutrient security
	NBSAP	Inter-agency collaboration and sharing of technology amongst institutions
		Partnership with national and NGOs in research, consultations, fund-raising and dissemination of information
Securing financial resources and establishing financial mechanism	LCDS	REDD+
	NBSAP	Use of innovative environmental financing mechanisms
Promoting public education and awareness	NBSAP	Education and public awareness as an action plan to enhance biodiversity conservation
	National Strategy for Agriculture	Raise awareness of farmers on soil health, crop production, and train them in sustainable farming approaches
Undertaking training and capacity building	National Strategy for Agriculture	Priority 15- securing agricultural workforce through Human Resource Development
	National Forest Plan	Undertake training and education on issues pertaining to land use management and sustainable practises

	NBSAP Protected Areas Commission Strategic Plan	Training on biodiversity to raise awareness
Addressing issues of food security, management of agriculture and sustainable development	National Agricultural Strategy	Increase livestock production and diversification of crops production
		Grow more food" campaigns
		Environmental sustainability through development of the RIO+20 agricultural environmental agenda
		Emphasis on soil health
	LCDS	Encourage investment on low carbon economic sectors
Sustainably manage drainage basins and watershed	Drainage and Irrigation Plan	Sustainable Management of the waters in the country
	National Strategy for Agriculture	Priority 3: further advancing water security and water management- drainage and irrigation systems expansion and strengthening
Developing early warning systems and emergency plans to mitigate drought	National Agriculture Strategy & Drought Plan	Development of the agriculture risk reduction and disaster management programme-climate smart agriculture
		Increase holding capacity of the water conservancies
		Increase greater connectivity to water sources
	National Agriculture Strategy	Priority 19- further development of agriculture risk reduction management and disaster management plans
		Priority 20- hydrometeorology and weather forecasting as part of the lives of the farmers
Utilising traditional knowledge	NBSAP	Compilation and consolidation of traditional knowledge and development of data base

		Offer education programme on indigenous science and traditional knowledge
Promoting regional aspects of preventing land degradation	National Strategy for Agriculture	Establishing collaborations with regional and international higher education
		Enable Hydrometeorological Services/ Department to work effectively and benefit regional and international context of weather and climate
	NBSAP	Create stronger and wider national, regional and international partnerships

Implementation structure

An evaluation of the agencies under the Department of Natural Resources and Environment revealed that plans and programmes are planned and implemented by the agencies. Each unit under the agency implements activities within the strategic plans that they have identified. Additionally, there is inter-agency collaboration and coordination in projects and programme implementation. Thus, it is recommended that the current implementation setup should be utilised for NAP activities with each agency assigned specific activities as depicted in the table below. Moreover, it is recommended that DNRE should play a collaborative and coordinative role in implementation of the aligned NAP.

NAP activity	Appropriate agency	Strategy/plans to mainstreaming
Rationalising the planning and management of the land resources	GL&SC	Land use plan
Rationalising the legislative overlaps	DNRE	
Promoting effective coordination and information exchange	DNRE	NBSAP
Establishing institutional synergies	DNRE	NBSAP
Securing financial resources and establishing financial mechanism	EPA	NBSAP and through ETF
Promoting public education and awareness	EPA	NBSAP
Undertaking training and capacity building	EPA	NBSAP and NSA
Addressing issues of food security, management of agriculture and sustainable development	MOA, NAREI,	NSA
Sustainably manage drainage basins and watersheds	NDIA	NSA
Developing early warning systems and emergency plans to mitigate drought	CDC	NDRM
Utilising traditional knowledge	EPA and MOA	NBSAP and NSA
Promoting regional aspects of preventing land degradation	EPA	NBSAP

Institutional Scorecard

Implementation of the aligned NAP activities would require adequate skill, manpower and comprehensive planning, as well as an effective Monitoring and Evaluation (M&E) mechanism. Therefore, an assessment of the institutes' capacity was assessed based on the developed institutional scorecard. The scorecard has four (4) main components being Human Resource Development; Planning, Implementation, Monitoring and Evaluation; Knowledge and Data Management; and, Community Engagement Capacity. For the Human Resource Development and the Planning, Implementation, Monitoring and Evaluation components, the average result obtained by the institutes was 57%. The interpretation of the results is

that the institutes have satisfactory human resource and development programmes in place to implement activities under the NAP. Additionally, the institutes have satisfactory planning, implementation and M&E programmes in place. However, under these two components, the institutes obtained low marks on the following aspects;

- Frequency of sending staff for refresher courses on emerging land management techniques;
- Comprehensive training on emerging land management techniques;
- Allocation of adequate resources for staff training;
- Dynamic, long-term programmes and project planning mechanism that respond to land degradation;
- Resource allocation to the planning unit within the agencies, and;
- Resources allocation for improving coordination.

Conversely, the institutes under investigation scored an impressive overall average mark of 76% and 78% on Knowledge and Data Management, and Community Engagement Capacity respectively. Thus, under these components of the scorecard, there are robust programmes and systems in place for data management and coordination with the community to engage them on land resource management. However, there is still room for improvement on mainstreaming gender issues and vulnerable groups in land planning and management and improving coordinated research on land resource planning and management.

Based on the analysis of the existing strategies and national plans, conclusions are made that there are currently active strategies and national plans which would accommodate mainstreaming of the NAP activities. Moreover, the national agencies are adequately resources to implement the Aligned NAP activities and also manage data and information to monitor land degradation in the country.

It is cautioned that though mainstreaming and integration is a good implementation approach which reduces duplication of efforts at the national level, it has major shortcoming. The main one being that failure of the identified strategy/plan for mainstreaming the second strategy would inevitably result in failure both strategies. It is therefore recommended that an assessment of the strategies which have been identified for mainstreaming the NAP activities be conducted in terms of their implementation status and progress. Where it is deemed that the strategy implementation has failed, it is recommended that another strategy for possible mainstreaming be identified.

1.0. INTRODUCTION

This report is prepared for a GEF Funded Project titled 'Support the Alignment of Guyana's National Action Plan to the UNCCD 10 Year (2008-2018) Strategic Plan' and has the specific aim of "identifying and mainstreaming policies to support an aligned National Action Plan to combat land degradation".

The project was commissioned in May, 2014 and is executed by the Guyana Lands and Surveys Commission (hereinafter GL&SC) with financial support from the Global Environmental Facility (hereinafter GEF) which is the United Nations Development Programme. The assignment is being undertaken in fulfilment of the country's obligation to align the National Action Plan to the United Nations Convention to Combat Desertification (hereinafter UNCCD) Ten Year Strategy 2008-2018. The UNCCD Strategy has the specific strategic objectives and operational objectives (UNCCD Strategy) to support the alignment process of its member countries.

As stated in the UNCCD Strategy, "the following "strategic objectives" will guide the actions of all UNCCD stakeholders and partners for the period 2008–2018, including raising political will."

The Strategic Objectives are as follows:-

- Strategic objective 1: To improve the living conditions of affected populations
- Strategic objective 2: To improve the condition of affected ecosystems
- Strategic objective 3: To generate global benefits through effective implementation of the UNCCD
- Strategic objective 4: To mobilize resources to support implementation of the Convention through building effective partnerships between national and international actors

Operational Objectives of the UNCCD Strategy are as follows:-

- Operational objective 1: Advocacy, awareness-raising and education
- Operational objective 2: Policy framework-to support the creation of enabling environments for promoting solutions to combat desertification/land degradation and mitigate the effects of drought.
- Operational objective 3: Science, technology and knowledge
- Operational objective 4: Capacity-building
- Operational objective 5: Financing and technology transfer

Consequently, both the strategic and operational objectives are the guiding principles for a UNCCD signatory to develop their aligned NAP.

Over the years, the Government of Guyana, as signatory to UNCCD, has been actively involved in implementing projects and programmes aimed at combating desertification. The Cooperative Republic of Guyana had prepared a NAP in 2006

and subsequently received funds to implement a Medium- Sized Project named Capacity Development and Mainstreaming for Sustainable Land Management (hereinafter SLM) with GEF Executing Agency, the UNDP and funds from GEF. The Project was also supported by other complementary projects and programmes in Guyana which positively addressed land degradation, forest degradation and post-mining land restoration.

This assignment builds on past and current strives made by the country to align the National Action Plan (hereinafter ALIGNED NAP) and UNCCD reporting. Incidentally, the assignment endeavours to integrate the country's obligation under the UNCCD into its National Development and Sectorial Planning frameworks through a renewed and participative ALIGNED NAP framework and strategizing processes.

This study has its basis in UNCCD's Strategy Operational objective 2: Policy framework, aimed to support the creation of enabling environments for promoting solutions to combat desertification/land degradation and mitigate the effects of drought.

The outcomes for Policy are as follows:-

Outcome 2.1: Policy, institutional, financial and socio-economic drivers of desertification/land degradation and barriers to SLM are assessed, and appropriate measures to remove these barriers are recommended.

Outcome 2.2: Affected country Parties revise their national action programmes (hereinafter NAPs) into strategic documents supported by biophysical and socio-economic baseline information and include them in integrated investment frameworks.

Outcome 2.3: Affected country Parties integrate their NAPs and SLM and land degradation issues into development planning and relevant sectorial and investment plans and policies.

Outcome 2.4: Developed country Parties mainstream UNCCD objectives and SLM interventions into their development cooperation programmes/projects in line with their support to national sectorial and investment plans.

Outcome 2.5: Mutually reinforcing measures among desertification/land degradation action programmes and biodiversity and climate change mitigation and adaptation are introduced or strengthened so as to enhance the impact of interventions.

1.1. OBJECTIVES AND THE SCOPE OF THE ASSIGNMENT

The main objective of the assignment is to identify appropriate areas within the existing national strategies, work programme and national development plans

where the NAP and land degradation can be integrated and mainstreamed to ensure that land degradation efforts and activities are strategically placed within the planning frameworks and implementation structures. This main objective will be achieved through the following activities:

- To review the existing sectorial and policy structures to identify entry points for NAP integration into existing planning processes and sectorial plans;
- To determine how land degradation and the NAP can be integrated and mainstreamed into sectorial policies and work programmes;
- To prepare a NAP implementation plan and identify barriers to implementation.

The specific objectives of the assignment can be divided into four (4) thematic areas as follows:

a. Identification of areas in national policies, strategies and sectorial plans for mainstreaming NAP and land degradation
   - Review the existing structures with a view of how best to place NAP implementation and make a proposition for this structure
   - Identify the areas in national documents, policies, strategies and sectorial plans where NAP can be mainstreamed
   - Conduct consultations and prepare a report on recommendations detailing how land degradation and an Aligned NAP can be integrated and mainstreamed into sectorial policies, work programmes, and identifying synergies.

b. Development of NAP implementation plan
   - Prepare a NAP implementation plan.

c. Assessment of institutional capacity and gaps to support long term monitoring and data management to combat desertification
   - Review the capacities available and capacities needed to support the institutions for long term monitoring and data management undertaken with recommendations for the development of the necessary capacities.

d. Submit reports on mainstreaming NAP
   - Finalize and submit all Reports based on comments/feedback from Stakeholders and the Implementing Agencies.

1.2. METHODS AND APPROACHES

In order to achieve the main and specific objectives of the assignment, multiple methodological approaches were adopted. The methods comprised mainly of intensive consultation sessions with the stakeholders, primarily the government employees were employed. Consultation sessions were predominantly undertaken to gain an in-depth understanding of the planning and implementation processes in the country. Additionally, the institutional capacity scorecard was also employed to assess the capacities of the various institutions under the Department of Natural Resources and Environment (hereinafter DNRE) to implement, monitor and evaluate

land degradation in the country. The scorecard comprised of four (4) components essentially; Human Resource Development; Planning, Implementation, Monitoring and Evaluation; Knowledge and Data management; and Community engagement Capacity. Lastly, literature review on various policies, Acts, national Strategies and developmental plans was also undertaken as a pinnacle method for identifying areas for mainstreaming and integrating NAP activities.

2.0. BACKGROUND TO LAND DEGRADATION AND NAP IN THE COUNTRY

Guyana ratified the UNCCD on 24th September 1997 (GL&SC, 2006) and effectively prioritised desertification and land degradation as a national issue of concern on its agenda. Accordingly, the country developed the NAP as a framework for combating desertification and land degradation. Sequentially, NAP combats land degradation through promoting sustainable land management (hereinafter SLM) practises in the country. The development of the programme takes into cognisance the need for integration and mainstreaming NAP action plans into existing policies and strategies (GL&SC, 2006). Although the GoG has prioritised land degradation and desertification in its national agenda, an assessment of land status and quality reveals that currently land degradation and desertification is relatively at its infant stage relative to other regions of the world. This is highlighted in the NAP which noted that "land degradation in Guyana has not reached a critical proportion as is evident in many parts of the world" (GL&SC, 2006:8).

However, this does not mean that efforts must not be intensified to combat land degradation, as projections depicts a negative picture of increasing land degradation and desertification globally. For instance, GL&SC (2006) highlighted that land degradation in the country has a high potential for rapid expansion given the current baseline, future socio-economic and biophysical scenario. Ominously, climate change has been identified as one of the future drivers of land degradation and desertification globally. As UNFCCC has noted that Climate change is equivocal, it is therefore inevitable that more efforts should be concentrated on SLM practises as cumulative impacts of climate change, economic development and demographic changes have the potential to amplify land degradation in the country.

Thus, based on the NAP assessment, although land degradation in the country has not yet reached a critical point, there are indications that it is occurring at an increasing rate corresponding to an increase in the exploitation of natural resource and coastal erosion. Some of the issues of primary concern that will predictably contribute to land degradation include:

- Incidents of flooding;
- Sea level rise;
- Salt water intrusion along the Guyana's developed and vulnerable coast;

- Destruction of mangroves and coastal subsidence which weakens the coastal sea defences (GL&SC, 2006).

Therefore, evidence of land degradation in the country led to the development of a NAP, as a guiding framework for combating land degradation. Cognizant of the fact that land degradation has not yet reached a critical point, a prognostic preventative and proactive approach was adopted in the development process.

3.0. NAP AND ACTIVITIES

In order to combat land degradation and desertification, the developed NAP identified comprehensive and robust activities which must be implemented over time. The identified NAP activities include:

- Rationalising the planning and management of land resources,
- Rationalising legislative overlaps,
- Promoting effective coordination and information exchange by establishing and managing a central shared database with quality checks ,
- Establishing institutional synergies,
- Securing financial resources and establishing financial mechanisms,
- Promoting public education and awareness,
- Undertaking training and capacity building with emphasis on remote sensing, GIS, Multi Criteria Decision Analysis, Information Management/Information Technology, drought monitoring, Desertification Early Warning Systems and training on ecologically appropriate land restoration,
- Addressing issues of food security, management of agriculture and sustainable development,
- Sustainably managing drainage basins and watersheds,
- Developing early warning systems and emergency plans to mitigate drought,
- Utilising traditional knowledge,
- Promoting regional aspects of preventing land degradation,
- Mainstreaming Desertification, Land Degradation and Drought (DLDD) into relevant national policies, strategies and plans,
- Finalise the National Land Policy or Sustainable Land Management Policy (SLM) policy,
- Strengthen the links between the UNCCD and the poverty and livelihoods elements of the sustainable development agenda, including Millennium Development Goals (hereinafter MDGs) and sustainable Development Goals (hereinafter SDGs),
- Strive for mainstreaming of SLM within educational establishment,
- Acquire the capacity to cascade regional (international) forecasts of Desertification Early Warning Systems (hereinafter DEWS) to the national context,
- Generate sound scientific evidence and determine the relevant roles of drivers of Desertification, Land degradation and Drought; and,

- Conduct a national scientific study on land degradation.

The next section highlights relevant existing policies and Acts which provide legal support for implementing the NAP activities. Pertinently, existing national strategies and developmental plans where mainstreaming and integration of these activities is credible are highlighted. Some of the NAP priority areas that deals with mainstreaming programmes are excluded this exercise as they are beyond the scope of this assignment.

3.1. RATIONALISING THE PLANNING AND MANAGEMENT OF LAND RESOURCES

Effective planning and management of Land resource is pivotal to combating land degradation in the country. This entails optimising land uses allocation, i.e. distribution of uses based on pragmatic available information – mainly soil characteristics, resource distribution (biodiversity hotspots, forestry distribution, mineral deposits and groundwater resources) and socio-economic parameters. The ultimate goal is to minimise land use conflicts, ensure compatibility between existing land uses and ultimately attain sustainable land development. In Guyana, planning and management of the land resources is one of the national priority areas as economic growth over time has led to multiplicity of land use problems (GL&SC, 2013).

There are various policies and Acts that make reference to operationalizing land planning and management in the country which can be used as supporting legal framework for improved planning and management of land resources.

For instance The Environmental Protection Act Cap 20:25 mandates the Environmental Protection Agency (hereinafter EPA) to "conduct and coordinate compilation of resource inventories, surveys, and ecological analysis to obtain information on social and biophysical environment with special reference to environmentally sensitive areas and areas where development is already taking place or is likely to take place". Consequently, such information will enhance optimising planning and management of land resources in the country. Similarly, the Guyana Land and Survey Commission Act calls aims at improving land resources planning and management in the country.

Similarly to the legislative framework which supports planning and management of land resources, there are various on-going strategies and plans where improved land resources planning and management can be mainstreamed.

National Land Use Plan

The National Land Use Plan was specifically developed to achieve the objective of improving land use planning and land management in the country. The output of the National Land Use Plan is a land use map indicating

- Land availability and suitability,
- Biodiversity hotspots,
- Regional development options,
- Wetland and drainage systems,
- Groundwater Resources, and,
- Potential development areas.

Already, GL&SC has prepared a national land use map which requires further information on aspects such as biodiversity hotspot, groundwater resources amongst others.

Good Governance and Business Environment – Poverty Reduction Strategy

One of the strategies identified by The Poverty Reduction Strategy (hereinafter PRS) is to improve land development and allocations in the country. Thus, this strategy presents opportunities for mainstreaming land resources planning in the country.

Making land availability, land zoning and land tenure – National Strategy for Agriculture

The National Strategy for Agriculture (hereinafter NSA) aims at making land available, through zoning and improving land tenure as an approach to increase food production in the country. Subsequently, the priority area will involve inventory of agricultural land and quantification of the required land to meet the future demand while balancing the ecosystem, environmental and demographic land requirements. Thus, this presents some good opportunities for integrating land planning and management in the country.

Establishes Soil Health as a major priority in the development of a modern and effective agricultural sector, assuring food security, economic benefits and environmental protection- NAS

This is another activity for mainstreaming planning and management of land resources in the country. This activity will be achieved through Integrated Soil Management (hereinafter ISM), Integrated Plant Nutrient Management (hereinafter IPNM) and Pest Management Practices (hereinafter PMP). Consequently, implementing these soil management concepts will facilitate and enhance management of the land resources in the country. Farmers will be trained on these concepts to raise awareness on sustainable management of the land resources. According to the NRA, a GIS Map for Soils will be developed for long term usage.

Table 1 below depicts a summary of areas for mainstreaming the planning and management of land resources in the country and appropriate activities within the strategies

Table 1: Summary of appropriate plans and areas for mainstreaming

Activity for mainstreaming	Legal framework	Role of policy	Appropriate strategies/Plans for mainstreaming	Areas for mainstreaming	Outputs
Rationalising planning and management of land resources	Environmental protection Act	Allows for resource inventory to contribute to development of maps	NAS	Achieving land availability, land zoning and land tenure-	To contribute to the development of land use maps
	Guyana Lands & Survey Commission Act	Allows for land use inventory and development of land use maps		Establish soil health as a priority in the agriculture sector-train farmers on sustainable farming techniques to enhance soil health	To contribute to management of soil as a component of land resource
	Lands and Survey Act	Allows to undertake land survey and GIS for development of maps	PRS	Good Governance and Business Environment – improve land development and management and development of GIS	To reduce incidents of squatting and development of computerised land information

				information on land resources	
	Town and Country Act	Mandates settlement planning and production of settlement layout maps/schemes	LCDS	Interface land planning with forestry, mining and other sectors	To contribute to development of land use map
	Land Use Policy	Allows for sharing of spatial information amongst agencies	National Land Use Plans	Development of national and regional land use maps	Land use maps that can accurately depict national land resource status and use
	GIS National Policy				

Table 2 depicts activities to be undertaken and their implementation status on the basis of on-going strategies for mainstreaming optimising land resources planning and management.

Table 2: Activities of rationalising planning and management of land resources

Activity	Status
Development of GIS as a tool for land planning and management	On-going
Set up a centrally-shared database for depositing spatial and non-spatial land data	On trials
Train personnel on interfacing MCDA and GIS in planning	Pending
Identification of biodiversity hotspot	On-going
Introduction of agricultural tax to improve land management	Recommended
Natural Resource Account for land resources	Pending
Training the farmers on soil management techniques	On-going

3.2. RATIONALISING LEGISLATIVE OVERLAPS

This activity involves an assessment of the existing legal framework to determine overlaps within the land planning and management sphere. The objective of rationalising legislative overlaps is to ensure that existing policies and Acts do not contradict each other, creating grey areas which can results in land conflicts and ultimately land degradation in the country. An assessment of the legislation reveals that the current legislative on land management is overly complex, inefficient and multi-structured (Government of Guyana, undated). Therefore, this calls for the harmonisation of the legislatives to enhance its efficiency in combating land degradation in the country. The National Land Use Plan assessed the legal and regulation framework and the findings were that there is a need for improving the legal and regulatory framework dealing with land use. Some of the issues that were raised include the following (GoG, 2013):

- Overlapping mandates between agencies particularly GL&SC and CH&PA
- Obsolete law governing planning with particular reference to the Town and Regional Planning Act
- No land use policy to resolve pertinent land allocation issues
- Policy and strategy in some instance can be in conflict

It is thus vital that these raised issues are addressed to ensure that there is elimination of legislative overlaps on land resources planning and management. Additionally, this will reduce enforcement conflicts where overlaps are unavoidable. This will emphatically contribute to combating land degradation in the country. The following are some of the existing where this NAP activity can be mainstreamed:

Continuous review of the policies and legislative framework- NAS

With the overarching goal of improving the agricultural sector in the country, NAS has identified the need for continuous review of policies and legislative framework in the endeavour to modernise the sector. The activity involves the Ministry of Agriculture (hereinafter, MOA) establishing an inventory of policies, legislations and regulations to be addressed by 2020.

Review of policies and plans to determine integration of DRM and CCA- Disaster Risk Management Plan for Agriculture sector

One of the proposed activities under the DRM plan for the Agriculture sector is to review the policies and strategic plans governing operation of the agriculture sector to determine the extent to which DRM and Climate Change Adaptation (hereinafter CCA) are integrated. Therefore, this is one of the areas for mainstreaming rationalising legislative overlaps.

Review existing legislative – National Biodiversity Strategy and Action Plan

The National Biodiversity Strategy and Action Plans (hereinafter NBSAP) which is currently active up to 2020 has an activity that involve review of the existing legislation to determine the need for further provisions to conserve/use biodiversity sustainably. Therefore, this activity can be extended to include issues of land legislative. Additionally, NBSAP aims at consolidating/harmonizing policy, legal, regulatory, and administrative frameworks that support biodiversity sustainable use, protection and management of biodiversity resources, thus presenting opportunities for mainstreaming.

Table 3 summaries the strategies and activities for mainstreaming rationalising legislative overlaps and activities under the strategies.

Table 3: Summary of Strategies and areas of mainstreaming

Activity for mainstreaming	Strategy/Plan for mainstreaming	Areas for mainstreaming	Outputs
Rationalising legislative overlaps	NAS	Continuous review of policies and legislative framework to improve land planning and management	Identification of overlaps and how to rationalise the overlaps and minimise conflicts
	DRM Plan for Agriculture Sector	Review of policies and plans to determine integration of DRM and CCA	
	NBSAP	Review existing legislative framework to determine the need for further provision to conserve biodiversity and extend to land planning and management	

3.3. PROMOTING EFFECTIVE COORDINATION AND INFORMATION EXCHANGE

Coordination and information exchange is one of the fundamental principles for sustainable management of land resources and combating land degradation. However, lack of proper channels for information exchange has been identified as one of the major setbacks in combating land degradation in areas prone to desertification (Weerasinghe, 2013). Cognisant of the fact that land resource planning and management is cross-sectoral, GoG has created legislative framework that emphasis on coordination between agencies in the country. It is for this reason that various policies, Acts and strategies in the country make reference to promoting effective coordination and information exchange for sustainable management and planning of the natural resources.

For instance, Environmental Protection Act and Guyana Lands and Surveys Commission Act make provision for coordination and information exchange as one of the vehicles to protect the environment. Other Acts such as Guyana Forestry Act (2007) also mention information exchange and coordination amongst the governmental agencies.

The following are some of the strategies and activities where mainstreaming can be undertaken for this NAP activity.

NBSAP- development of database system for biodiversity

One of the priority areas of NBSAP is the development of a centrally shared database system for biodiversity. Consequently, the data base can contribute to the development of the National Land Use maps.

DRM plan for Agriculture –optimal coordination in implementing DRM programmes

The DRM plan for Agriculture prioritises fostering optimal coordination in implementing the DRM programmes. Therefore, this coordination should also be extended to include improving land resource planning and management to combat degradation hence a good area for mainstreaming coordination and information exchange.

Food and Nutrition Strategy –increased institutional coordination

Additionally, the Food and Nutrition Strategy also calls for increased institutional coordination and functioning for improved food and nutrient security. As land degradation threatens and negatively affects food production and security, it is

important that this priority area be leveraged upon to foster coordination for land management and also information exchange for land management.

National Land Use Plan

GL&SC in co-ordination efforts with the sister agencies provides a national land use map which currently aims at aiding coordination in land use decision-making for all relevant sectors in the country mainly agriculture, forestry, mining, water, settlement planning. Therefore, the development of the maps will require further coordination to enable optimal land use planning and corresponding production of the land use maps.

Based on the identified areas of mainstreaming, table 4 below depicts legal framework supporting mainstreaming, strategies where mainstreaming can occur and specific areas for mainstreaming.

Table 4: Summary of areas for mainstreaming coordination and information exchange

Activity for mainstreaming	Legal framework	Role of policy	Appropriate strategy for mainstreaming	Areas for mainstreaming	output
Coordination and information exchange	Environmental Protection Act	To facilitate information exchange and mandate EPA to coordinate environmental conservation related initiatives and projects	NBSAP	Establish common data standards to allow sharing of information	Develop a database system for land management alongside biodiversity data that can be centrally accessed
	Guyana Lands and Surveys Commission Act	To facilitate land use information exchange and survey information	Food and Nutrition Strategy	National committee on food production comprising of other agencies to integrate land management issues	Increased coordination
	GIS Policy	To guide sharing of information in terms of format and items to be included	National Land Use Plan	Coordination amongst agencies to produce and use national land use map	National land Use Map
	Guyana	To facilitate forestry			

	Forestry Commission Act	information exchange and mandate Commission to coordinate forestry related activities			

Activities to be undertaken to achieve mainstreaming, coordination and information exchange amongst the stakeholders and the governmental agencies

Table 5: Activities to be undertaken for mainstreaming Coordination and information exchange

Activity	Status
Development of focal points between land based agencies	Pending
Development of national land use committee	Existing
Development of nationally, centrally shared database to be housed at GL&SC to deposit and access information	On trials
Establish a Research Committee within the existing research units for joint research and publication of research findings	Pending
Annual conferences, seminars and workshop on land management	On-going

3.4. ESTABLISHING INSTITUTIONAL SYNERGIES

Institutional synergies simply involve institutions joining forces, creating leverages or pull force to jointly implement some of the activities under their planning mandate. Undoubtedly, creating synergies is one of the best strategies to implement NAP activities and for combating land degradation in the country. Land as a resource is cross-sectorial which makes institutional synergies to be inevitable in its planning and management. Common areas for institutional synergies, particularly for land resources management include amongst others:

- Science-policy interface
- Stakeholder engagement/consultation and participation
- Fund sharing
- Harmonization of Reporting
- Resource sharing such as office space
- Joint research, harmonization of report and publication
- Joint implementation of action plans activities

There are various Acts and policies and strategies that highly emphasis on creating functional synergies amongst the existing agencies and authorities mainly Environmental Protection Act; Guyana Lands and Survey Commission Act.

Similarly, there are existing strategies and development plans that present opportunities for mainstreaming institutional synergies. These are discussed below:

NBSAP-inter-agency collaboration areas such as stakeholder consultation and sharing of technology

The NBSAP strategy identifies the need for more inter-agency collaboration and sharing of technology amongst governmental and non-governmental institutions. some of the areas for synergies identified by NBSAP include joint stakeholder consultation and sharing of information and technology.

Critically, one of the areas for synergies implemented under NBSAP is partnership with national and international non-governmental organizations (NGOs) in research, consultations, fund-raising and dissemination of information.

Table 6 below highlights areas for mainstreaming institutional synergies within the existing strategies.

Table 6: Summary of areas for mainstreaming institutional synergies

Activity for mainstreaming	Legal framework	Role of policy	Appropriate strategy for mainstreaming	Areas for mainstreaming	Output
Establishing institutional synergies	Environmental Protection Act Guyana Lands and Surveys Commission Act Guyana Forestry Act	Support joint implementation of projects and information sharing and collaboration	NBSAP	Partnership between national, international and NGO in research on desertification, land degradation, and drought, joint stakeholder consultations, information and technology sharing, fund-raising and dissemination of information	Jointly implemented activities (reports, data generation).

3.5. SECURING FINANCIAL RESOURCES AND ESTABLISHING FINANCIAL MECHANISM

Financial resource is one of the most limiting factors in implementation of environmental projects and programmes in the developing countries. As such, it is important that mechanisms are in place to ensure that adequate financial resources are mobilised for the implementation of the proposed NAP activities. Currently, the existing legislative framework (Guyana Lands and Survey Commission Act, Guyana Forestry Commission Act, Environmental Protection Act, Mahaica-Mahaicony-Abary Agricultural Development Authority Act) guarantees that all responsible governmental agencies will obtain funding from the consolidated fund. Provision is also made within the existing Acts that the agencies can borrow for projects/programmes implementation.

The Environmental Protection Act promotes securing financial resources and establishing financial mechanism for environmental conservation through implementation of Polluter Pays Principle as an environmental management tool and deposit refunds schemes.

LCDS-REDD+: securing funding from reduced deforestation and land degradation

The REDD+ under LCDS is another existing strategy to mainstream financial resource security and establish financial mechanism. Through REDD+ land planning and management would be enhances to reduce degradation while at the same time secure financing for implementation of NAP. REDD+ present huge opportunities as countries are requested to submit their Intended Nationally Determined Contribution (hereinafter, INDCs) highlighting Greenhouse Gases (hereinafter GHGs) reduction targets by 2030. The emission reductions targets will be achieved through mitigation measures and also by investing in offsetting projects in other countries.

NBSAP-development and use of innovative financing mechanism

Another appealing area for mainstreaming securing of financial resources and establishing financial mechanism is the NBSAP. One of the NBSAP activities which can be mainstreamed into, is promoting the development and use of innovative financing mechanism such as market-based instruments and payments for Ecosystem services for mobilising resources for environmental protection. It is thus important that NAP component leverage on this NBSAP activity of raising funds.

Table 7 depicts summary of areas for mainstreaming this activity.

Table 7: Summary for mainstreaming securing financial resources and financial mechanism

Activity for mainstreaming	Legal framework	Role of policy	Appropriate strategy for mainstreaming	Areas for mainstreaming	Output
Securing financial resources and establishing financial mechanism	EPA	Support establishment of PPP and PES as environmental management tools and revenue generation for environmental protection and management	LCDS	REDD+	Identification of countries to offset their emission
			NBSAP	Use of innovative environmental financing mechanisms	List of Market based instruments to be implemented

Based on the existing legal framework and the identified strategies where mainstreaming can occur, the following activities are critical for raising financial resource for NAP implementation:

Activity	Status
Identification of the appropriate PES and optimal charges	Pending
Development of proposal for REDD+ funding	Pending
Intensify efforts to collect administrative fees, service charges and penalties	Pending

3.6. PROMOTING PUBLIC EDUCATION AND AWARENESS

Successful NAP implementation is dependent on various factors inclusive of public education and awareness. Therefore, it is inevitable that measures are put in place to intensify efforts targeting promotion of public education and awareness. Auspiciously, the existing legislative framework (Acts, Policies, strategies and national Plans) advocate for promotion of public education and awareness in environmental and land resource planning and management.

The Environmental Protection Act, Education Act and Guyana Lands and Surveys Commission Act explicitly emphases on public awareness and education programmes as a way of promoting and enhancing an in-depth understanding on environmental protection and natural resource management in the country.

Based on the on-going strategies and national plans, the following are the appropriate areas within the strategies where promotion of public education and awareness can be mainstreamed.

NBSAP-education and public awareness

NBSAP strategy identifies education and public awareness as one of the strategic areas to enhance biodiversity conservation. As biodiversity and land resource planning and management are inseparable, it is important that the NAP activity of promoting public education and awareness be streamlined into the NBSAP education and public awareness.

NSA-Human Resource Development

The NSA has identified skilled and capacitated human resource as one of the drivers of accelerated agricultural development in the country. In order to achieve this objective, NSA has identified the Guyana School for Agriculture and the Agriculture Department of the University of Guyana to develop curriculum and undertake appropriate training. It is proposed that a new curriculum review will be conducted

to ensure that the programs are in line with the Vision for Agriculture 2020. Thus, it is within this area that training can be undertaken to address land resource management to combat degradation.

Table 8 summaries areas for mainstreaming public education and awareness into existing strategies and national plans.

Table 8: Summary of mainstreaming promoting public education and awareness

Activity for mainstreaming	Legal framework	Role of policy	Appropriate strategy for mainstreaming	Areas for mainstreaming	Output
Promote public education and awareness	Environmental Protection Act	Mandates EPA to promote public education and awareness on environmental protection and conservation initiatives	NBSAP	Communicate awareness of biodiversity to a wide range of public, as a critical element of national planning and development	An informed nation on land planning and management
	Protected Areas Commissions Act		PAC Strategic Plan has a strategic objective to promote Awareness and Conduct Outreach for protected areas	Build upon current public awareness programmes and engagement	
	Guyana Lands and Survey Commission	Mandates GL&SC to provide the public with information on land records in the country	NSA	Priority 15: secured agriculture workforce through human resource development	
	Education Act	Aims at providing public education in the country			

The following activities are critical for promoting public education and awareness into existing strategies and legislation:

- Review the NBSAP public education and awareness strategies and strategically factor in land planning and management
- Review the NSA public education and awareness strategies and strategically factor in issues of land planning and management

3.7. UNDERTAKING TRAINING AND CAPACITY BUILDING ON LAND MANAGEMENT TECHNIQUES, EARLY WARNING SYSTEMS AND APPROPRIATE LAND RESTORATION PROGRAMMES

NAP Implementation will require appropriate and adequate skills for both NAP activities implementation and, Monitoring and Evaluation (hereinafter M&E) particularly on techniques such as Remote Sensing, GIS, MCDA, Information Management, drought monitoring and early warning systems, and land restoration and reclamation techniques. It is thus critical that the relevant institutions (agencies) tasked with NAP implementation are adequately capacitated and trained. Noticeably, the legislative framework creates a conducive environment in the country for agencies, institutions to extensive training and build capacity for their human resource. For instance, Guyana Forestry Commission Act orders the commissioner to recommend to the Minister suitable personnel for selection for training in forestry and to provide training in forestry. Similarly, the Land Surveyor Act makes provision for a land surveyor to take an apprentice for a period not exceeding three (3) years. Below is the identification of the existing strategies where this activity can be mainstreamed.

National Forest Land –Training and human resource capacity

National Forestry Plan Statement focuses on training and education on issues pertaining to Land Use Management and sustainable practises. Consequently, the National Forest Plan highlights training and human resource capacity as one of the core areas for implementation. It is therefore important that land planning and management training is mainstreamed in the courses that are offered by the Forest Training Centre Inc (hereinafter FTCI).

NBSAP-inclusion in the school curriculum

Another potential avenue for mainstreaming training and capacity building is the NBSAP. One of the NBSAP activities to facility training in the country is to biodiversity management in the University of Guyana (hereinafter UG) to be offered at both undergraduate and postgraduate courses. Therefore, this is a potential area for including SLM to combat land degradation**.**

SLM Teacher's Kit on Sustainable Land Management and Land degradation

Emanating from the SLM Project in 2012, was the establishment of a Teachers' Kit on Sustainable Land Management and Land Degradation. The kit was recognised as a tool built to further embed sustainability within the Secondary School Syallbus. Thus, the NAP training and capacity building can be nested with the SLM teacher's Kit.

NSA-Human Resource Development

NSA also recognises Human Resource Development as a major driver in accelerating agricultural development in the country. The Guyana School for Agriculture and Agriculture Department of the University of Guyana are seen as the drivers of training and capacity building initiative. Therefore, training and capacity building for NAP can also be mainstreamed into the agriculture strategy for training particularly priority 15- securing agricultural workforce through Human Resource Development.

PRS-Investing in Communities and Human Capital

The PRS identified investing in communities and human capital as one of the strategies to alleviate poverty in the country. The strategy identified both formal and non-formal education as the main avenues for training and capacity building. Proposed measures include reforming the curriculum and expanding the teaching of Information Technology; amongst other. Therefore, it is within this area of reforming the curriculum that SLM approaches can be streamlined to combat land degradation and GIS techniques for enhancing land planning.

Table 9 below depicts potential areas for mainstreaming and the supporting legislative framework.

Table 9: Summary of areas for mainstreaming training and capacity building

Activity for mainstreaming	Legal framework	Role of policy	Appropriate strategy for mainstreaming	Areas for mainstreaming	Output
Undertake training and capacity building	Guyana Forestry Commission Act	Mandates the commissioner to send staff for training and for the Training Institute to train staff	National Forest Plans	Courses offered at FTCI to be streamlined to include aspects of land management	Trained communities and human resource in land management issues including farmers and forest loggers
	Land Surveyor Act	Provision for the qualified surveyor to train apprentice	NSA	Priority 15-secured agricultural workforce through human resource development	
			LCDS	Invest in communities and human development	

The following activity is proposed to effect mainstreaming of the training and capacity building into existing strategies and developmental plans

- Review the existing curriculum and include land planning and management issues.

3.8. ADDRESSING ISSUES OF FOOD SECURITY, MANAGEMENT OF AGRICULTURE AND SUSTAINABLE DEVELOPMENT

Food security is one of the national priority areas in the country (GoG, 2012). Incidentally, food security is a function of various factors such as access to agricultural land by the poor communities, land quality, soil fertility, and climatic variability; mainly drought, flood and poverty levels. Invariably, climate change could significantly compound food security in the country through increased incidents of droughts and flooding. It is therefore crucial that issues of food security is mainstreamed into the existing strategies, policies and Acts to ensure that it is adequately addressed and the proposed activities implemented. Similar to other NAP activities where ample reference is made by the existing strategies, policies and Acts, food security is also no exception. The Disaster Risk Management Plan for the Agriculture Sector which covers the period 2013 – 2018, emphatically notes the importance of food security by highlighting that "the need to integrate disaster risk management (DRM) in the agriculture sector is imperative, cognizant of the immense importance of the industry to socio-economic development, food and nutrition security".

Correspondingly, the PRS also notes the need to accelerate land allocation for agricultural production and also construct sea wall defence to protect the fertile land strips along the coastal area.

NAS-livestock production and crop production diversification

The National Agricultural Strategy has identified food security as a means to end poverty and hunger by 2025. The strategy is developed around F-5 strategic Approach, being Food security, Fibre and Nutritious, Food Accessibility by Citizens, Fuel Production, Fashion and Health Products, and Furniture and Crafts. Therefore, within the NRA, the following are the potential areas for mainstreaming issues of food security, management of agriculture and sustainable development:

- Increased Livestock Production as a priority in the agriculture strategy and in the diversification of Guyana's agriculture portfolio. In order to achieve this objective, the strategy aims to increase production of fish, rice, sugar, crops and diversify crop production
- Address Food and Nutrition and safety: this will be achieved by the "Grow more food" campaign to address impeding production factors such as inadequate selection of cultivars, scarcity of planting materials, lack of extension services and poor access to land for cash crops

- Environmental Sustainability through the agricultural sector: already the agriculture vision is consistent with the LCDS and the sector will strive to be green thus reducing the environmental impacts associated with agriculture. It is envisaged that the country will develop its own RIO +20 Agricultural Environmental Agenda
- Emphasis on Soil Health as a major priority in the development of a modern and effective agricultural sector, assuring food security, economic benefits and environmental protection. This is another area of emphasis in the endeavour to achieve sustainable development. The sector has recognised that the demand for agriculture products have resulted in unsustainable agricultural practises resulting in increasing land degradation. Therefore, improved soil fertility management based on the principle of improved soil nutrient and pest management practices will be embraced.

LCDS-Investing in Low-Carbon sectors

Another potential area for mainstreaming sustainable development is LCDS; specifically the strategy of facilitating investment in high-potential low-carbon sectors. Currently low-carbon economic sectors that have been identified include fruits and vegetables, aquaculture, sustainable forestry and wood processing, business process outsourcing, eco-tourism, and possibly bio-ethanol.

Table 10 depicts the areas of mainstreaming food security, management of agriculture and sustainable development.

Table 10: Summary of areas for mainstreaming food security, management of agriculture and sustainable development

Activity for mainstreaming	Appropriate strategy for mainstreaming	Areas for mainstreaming	Output
Addressing food security, management of agriculture and sustainable development	NAS	Increased livestock production and diversification of crop production	Increase food production
		Environmental sustainability in the agricultural sector by developing RIO+ agricultural environmental Agenda	Green economy
		Soil health as priority in modern agriculture	
	LCDS	Investment in low carbon sector	

3.9. SUSTAINABLY MANAGE DRAINAGE BASINS AND WATERSHEDS

Uncoordinated drainage of the basins and wetland is one of the factors that contribute to land degradation globally. It is therefore apt that efforts are put in place to coordinate and sustainably manage the drainage systems and the wetland. Consequently, wetland ecosystems such as mangrove have over the years been unsustainably drained resulting in over 50% of the mangrove degradation and deforested. Therefore, as indicated in the NAP activities, it is critical that this activity is implemented as one of action plans to combat land degradation in the country. Correspondingly, sustainable management of the drainage basin and wetlands is also supported by the legislative framework making it simple to mainstream it within the existing strategies and national plans.

At the pinnacle of the existing Acts and policies that regulate the drainage of basins and wetlands are the Drainage and Irrigation Act of 2006 and Water and Sewerage Act of 2002. The Drainage and Irrigation Act make provision for the Minister to order the board to ascertain if land is suitable for drainage and to make plans, specifications and estimate for the land. In addition, the Act made the provision for the establishment of the National Drainage and Irrigation Authority (hereinafter NDIA). Additionally, the MMAADAA also regulate construction and drainage activities in the Mahaica-Mahaicony-Abary region.

NAS-Priority 3: advancing water security and water management

The agriculture sector is the main sector that requires drainage of the wetlands, therefore, the NAS present opportunities for mainstreaming sustainable drainage of basins and wetlands.

Drainage and Irrigation Plan –sustainable management of water resources

The Drainage and Irrigation Plan of 2013-2020 is another area where this NAP activity can be mainstreamed. The strategy has five (5) priority areas – the relevant one being sustainable management of the water resources in the country.

Table 11: Summary of areas for mainstreaming sustainably manage drainage and watershed

Activity for mainstreaming	Legal framework	Role of policy	Appropriate strategy for mainstreaming	Areas for mainstreaming	Output
Sustainable manage drainage basin and watershed	Drainage and Irrigation Act	Regulates drainage areas, their assessment and mandates that plans be developed for drainage	Drainage and Irrigation Plan 2013-2020	Sustainably manage water resources in the country	Sustainable development of drainage basin and watershed to attain healthy wetland and drainage basins
	Water and Sewerage Act	Regulates water resource management, protection, conservation	NSA	Priority 3: further advancing water security and water management- drainage and irrigation system expansion and strengthening	

3.10. DEVELOPING EARLY WARNING SYSTEMS AND EMERGENCY PLANS TO MITIGATE DROUGHT

Guyana is one of the countries that are highly vulnerable to extreme events mainly hydro-meteorological hazards as it is ranked 13 out of the 162 countries for flood risk (MOA, 2013). Factors that exacerbate exposure of the country to extreme events are the distribution of the population and economic activities along the coast which are generally below the sea level. Lastly, the complex drainage system in the country is poorly maintained (GoG, 2012). These factors increase the vulnerability of the country to the extreme events.

An assessment of the existing strategies, particularly the NSA, DRM plan for the Agriculture Sector, and the PRS reveal that there are ample areas within these strategies where integration and mainstreaming of the early warning system and emergency plans to mitigate drought can occur. These areas are highlighted below.

NSA-development of agriculture risk reduction and disaster management programmes

The NSA highlights the need for further development of the agriculture risk reduction and disaster Management programme as one of the priority areas to manage extreme events in the country. Therefore, one of the mitigation strategies is to adopt climate-smart agriculture.

The second area where drought can be nested within the existing strategies is increased hydrometeorology and weather forecasting. According to the NAS, an Early Warning System is being developed to ensure that farmers are alerted at the earliest possible times and appropriate mitigation measures can be implemented.

DRM plan for Agriculture –Risk identification, information systems and early warning

The DRM plan for agriculture sector has four thematic areas in addressing the DRM. Thematic area 2- Risk identification, information systems and early warning is identified as the appropriate area for mainstreaming developing early warning system for NAP activity. This will involve risk assessment and improving the capacity of institutions to monitor hazard and transmit the information to the stakeholders.

Table 12 below depicts the activity plans for mainstreaming early warning system and emergency plans to mitigate drought.

Table 12: Summary of areas for Mainstreaming developing early warning systems and emergency plans to mitigate drought

Activity for mainstreaming	Appropriate strategy for mainstreaming	Areas for mainstreaming	Output
Developing early warning systems and emergency plans to mitigate drought	DRM plan for agriculture sector-risk identification, information systems and early warning	Introduce smart climate initiatives and programmes	Improved prediction of drought and reduced vulnerability to drought
	NSA	Priority 19: Commit Guyana to further develop its agriculture Risk Reduction Management and disaster management Plans	
		Priority 20: Hydrometeorology and weather forecasting as part of the lives of the farmers	
		Develop National drought index	
		Incorporate traditional knowledge	
		Invest in communication and improve communication channels	

In order to ensure that early warning systems and development of emergency plans to mitigate drought are mainstreamed into the existing DRM plan for agriculture and NSA, the following activities will be essential:

- Review the existing plans and include the drought management plans
- Develop the drought index based on annual rainfall and evapo-transpiration and aridity factor
- Invest in traditional weather pattern observation to enhance modern forecasting
- Invest in communication and improve communication channels

3.11. UTILISING TRADITIONAL KNOWLEDGE

Until recently, science has acknowledged the importance and significant roles that traditional knowledge can potentially play in ecosystem management and conservation. In the country, it has been acknowledged that "Traditional knowledge has been an important part of Guyana's land management historically with the accompanying cultural traditions" (GoG, 2012:18). Undoubtedly, it is for this underlying reason that the Nagoya Protocol on the Access and Benefit sharing which is an internationally agreed framework emphasis on use of traditional knowledge in natural resource management (GoG, 2014). Therefore, the Nagoya Protocol which will be an internationally binding agreement forms the major legal framework which will support mainstreaming utilisation of traditional knowledge to combat land degradation.

NBSAP-compilation of traditional knowledge and development of database system

NBSAP presents a good opportunity for mainstreaming the use of traditional knowledge into existing strategies and planning processes to combat land degradation. Critically, one of the planned NBSAP activities is compilation and consolidation of biodiversity data from local, international and web-based sources including traditional knowledge and development of a database system for biodiversity which makes data freely available to users as one of the priority areas of action. In order to achieve the priority area, the NBSAP, recommend considering offering a special course or programme in Indigenous Science that emphasises Traditional Knowledge in the management of biodiversity (GoG, 2014). Thus, the course can be extended to include techniques in traditional knowledge on land resource management and sustainability. Current initiatives that can support and enhance use of traditional knowledge include the Iwokrama International Centre (IIC) for Rain Forest Conservation and Development which utilise traditional knowledge, science and business to produce sustainable forest products and Services. Additionally, the Bina Hill Institute (BHI) offer courses in Wildlife Management, Forestry, Computer Science, Agriculture, and is assessing the

possibility of including traditional knowledge systems and Natural Resource Management.

Table 13: areas for mainstreaming Traditional Knowledge in existing strategies

Mainstreaming activity	Supporting Legal framework	Areas of mainstreaming	Proposed activities
Utilise traditional knowledge	Nagaya Protocol	NBSAP	Compilation of traditional knowledge methods and areas where they can be utilised
			Collaborate with IIC and BHI and develop curriculum on traditional knowledge
			Identify areas suitable for implementing traditional knowledge

3.12. PROMOTING REGIONAL ASPECTS OF PREVENTING LAND DEGRADATION

This is the last thematic areas of NAP to combat land degradation in the country and it involves promoting regional aspects of preventing land degradation. This activity will involve the country to be actively involved in regional programmes aimed at combating land degradation at the regional level. In particular, this activity is more inclined to issues of trans-boundary land degradation issues mainly tropical rainforests and mangrove ecosystems. Additionally, this activity will involve monitoring of invasive and exotic species as this is one of the main factors that results in land degradation and also timber poaching.

NSA is one of the strategies that can be used to promote regional aspects of preventing land degradation. Specifically, priority 15-human resources development aims at building and securing HR capacity for the agriculture sector through establishing collaboration with regional and international higher education and vocational training colleges.

Another priority area under the NSA which can promote regional aspects of preventing land degradation is enhancing hydrometeorology and weather forecasting. Under this priority area, the action activity where regional aspects of land degradation can be mainstreamed is enabling HydroMet to work effectively and benefit from regional and international context of weather and climate.

The NBSAP is another on-going strategy which promotes regional aspects of preventing land degradation. The specific activity within this strategy is to create stronger and wider national, regional and international partnership that contribute to achieving the goal and objective of biodiversity conservation.

Table 14: Summary of areas for mainstreaming promoting regional aspects of preventing land degradation

Activity for mainstreaming	Strategy for mainstreaming	Appropriate strategy for mainstreaming	Outputs
Promoting regional aspects of preventing land degradation	NSA-Priority 15: Human resource development	Establishing collaboration with regional and international higher education and vocational training colleges Enable HydroMet to work effectively and benefit from regional and international context of weather and climate	Strengthened regional partnership on combating land degradation
	NBSAP	Create stronger and wider national, regional and international partnership that contribute to achieving the goal and objectives of biodiversity conservation	

4.0. IMPLEMENTATION STRUCTURE FOR NAP ACTIVITIES

4.1. INTRODUCTION

In order to ensure and guarantee full implementation of the NAP activities, it is fundamental that NAP is optimally placed within the appropriate planning and implementation structures. This section of the report thus assesses the existing implementation structure within the government institutional setup. The ultimate objective of this section is to determine the suitability of the existing implementation structure in implementing NAP activities and design an appropriate implementation structure if it is deemed that the existing one is not suitable. Consequently, an assessment of the implementation structure was conducted for the relevant agencies which fall under DNRE mainly GFC, GL&SC, EPA, CDC and NDIA which falls under the Ministry of Agriculture. Due to time constraints other agencies were not consulted. In addition to assessing the implementation structure, the planning process is briefly discussed to gain an insightful view of the system's operations.

4.2. PLANNING AND IMPLEMENTATION PROCESSES

Planning processes in the country can be categorised into three (3) distinct facets being national, regional and sectoral. There is an interrelationship between the levels of planning with the national informing the regional and the regional informing sectoral planning. Thus, results from the national feeds into the regional and the regional feeds the sectorial as depicted in figure 1 below.

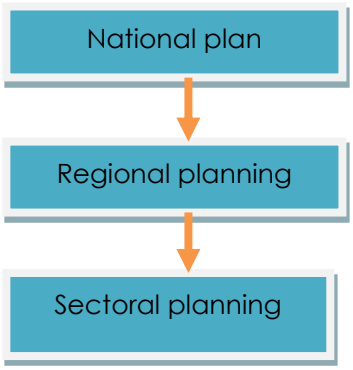

Figure 1: Planning processes in the country

Consequently, land use planning also follows the same pattern where national land use maps are developed and based on the adopted National Land Use Map, Regional Land Use Maps are produced which inform the settlements planning. Planning at the sectorial level is done by the individual agencies/commissions and they develop strategic plans based on targets set by the national plans. As the assignment is totally inclined to land resource planning and management, the

processes of land use planning as undertaken by GL&SC in developing the Land Use Map has approximately six (6) stages excluding implementation and monitoring.

The first stage in land use planning as defined by GL&SC is the preparation stage. This stage has various activities, the primary one being setting up a planning team comprising mainly of the GL&SC staff. In addition, the commission will also set up a steering committee whose function is to advise and give technical guidance on issues pertaining to land use planning. These activities are followed by the demarcation of the earmarked area and the preparation of the base maps for the areas. Upon completion of the demarcated area, the planning team develop a work plan and schedule highlighted the deliverables, milestones and budget for the project. Lastly, the planning team conduct a stakeholder mapping and identification exercise and also develop the planning objectives. Stakeholder consultation is an important and integral part of the land use planning processes in the country.

The second stage is situational analysis of the demarcated area in terms of current land uses and tenure. Perceptibly, the stage will involve data collection and data analysis. Based on collated and analysed data, the team will develop a land use map of the current situations from which there will be identification and analysis of current land use problems in the demarcated area. On the basis of the outcomes of the emerging land use issue, the planning team would review the planning objectives.

The third stage is the analysis of the land use potentials and conflicts. The activities under this stage involve an assessment of the land use potentials. Therefore, intensive consultation with the stakeholders is undertaken to identify their interests and expectations. Additionally, constraints and conflicts based on stakeholders views and expectations, resource distribution and topography are identified.

Stage four involve identification of the tangible lands use options in the area and this stage will involve identification of the land use areas requiring change, based on land resource assessment and the development scenarios. The other activities will be an evaluation of the land use options and this involves feasibility assessments. The final activity is the presentation of the proposed land units/ land use systems to the steering committee which comprises of various key informants and stakeholders.

Stage five of the planning progress, is the preparation of the land use plans for the demarcated area. This stage will involve consultation with the stakeholders where they will review, comments and recommend the presented draft land use plans.

The last stage of the planning processes is the official approval of the developed land use plans at the national and regional levels.

Implementation of the plans (land use plans and strategic plans) is undertaken by the responsible agency and the units within the agencies implement the various

components of the developed plans. Figure 2 below depicts the implementation structure within the Ministry of Governance.

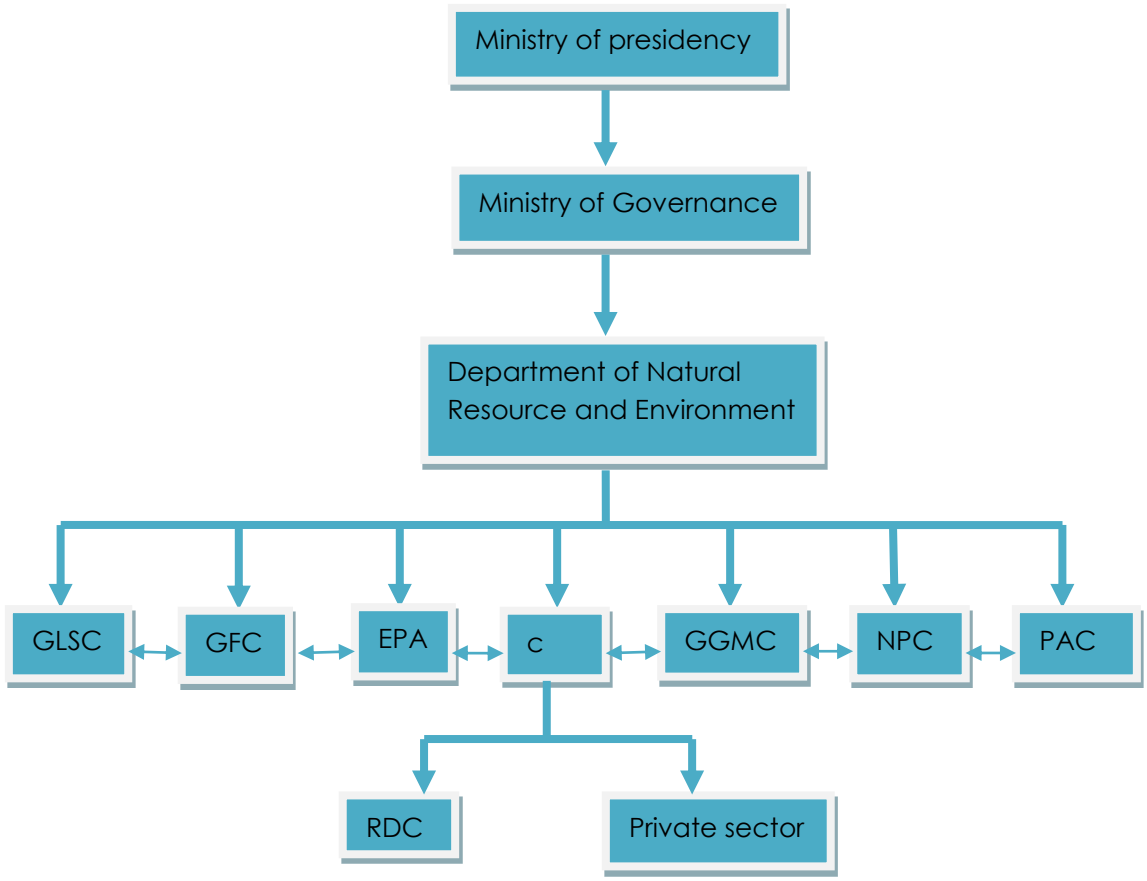

Figure 2: Implementation structure

As depicted in the figure above, the implementation is generally undertaken by the agencies/commissions. Moreover, the Regional Democratic Councils and private sector also take part in implementation of the some components of the (strategic) plans. The role of the DNRE is generally to coordinate the activities and also provide technical advice on implementation processes. Consequently, the agencies/commissions develop the strategic plans based on the national objectives and carry out implementation. As shown in the figure, land resource is cross-sectoral to the extent that implementation can be shared by the agencies and the DNRE will coordinate the implementation of the collaborated activities.

The current implementation structure is efficient in the sense that it accommodates cross-sectional implementation of the cross-cutting issues. Secondly, it is advantageous as it accommodates community participation through RDC in implementation of projects. Lastly, cross-sectoral implementation requires

comprehensive coordination and this is embedded within the current structure as DNRE oversees coordination amongst the agencies which falls under the Ministry of Governance. Consequently, the inherent advantages of the current implementation step-up make it the appropriate model for implementing the NAP activities. In order to ensure that the NAP activities are implemented under the recommended implementation model, there is a need to categorise the activities between the agencies. Table 15 depicts the NAP activities and the suitable agencies/commission to implement.

Table 15: Proposed implementation responsibility for the NAP activities

NAP activity	Appropriate agency	Strategy/plans to mainstreaming
Rationalising the planning and management of the land resources	GL&SC	Land use plan
Rationalising the legislative overlaps	DNRE	
Promoting effective coordination and information exchange	DNRE	NBSAP
Establishing institutional synergies	DNRE	
Securing financial resources and establishing financial mechanism	EPA	NBSAP and through ETF
Promoting public education and awareness	EPA and MOA	NBSAP
Undertaking training and capacity building	Training Institutes E.G. Guyana Training Institute, Critchlow Labour College, Kuru Kuru Training College	NBSAP
Addressing issues of food security, management of agriculture and sustainable development	MOA	NSA
Sustainably manage drainage basins and watersheds	NDIA	NSA
Developing early warning systems and	CDC	NDRM

emergency plans to mitigate drought		
Utilising traditional knowledge	EPA	NBSAP
Promoting regional aspects of preventing land degradation	EPA	NBSAP

5.0. ASSESSMENT OF INSTITUTIONAL CAPACITY AND GAPS TO SUPPORT LONG TERM MONITORING AND DATA MANAGEMENT TO COMBAT DESERTIFICATION

5.1. INTRODUCTION

This section assesses the institutional capacities of the agencies/commissions to support long term monitoring and data management to combat desertification in the country. Assessment of the institutional capacity was based on the developed scorecard which was employed to the selected agencies/commissions mandated to management land resources. The scorecard constituted four (4) main components that determine institutional capacity being Human Resource Development; Planning, Implementation, M&E; Knowledge and Data management; and, Community Engagement Capacity. Based on the scores attained by the interviewed institutions conclusions were made on the institutional capacity to support long term monitoring and data management to combat land degradation. Subsequently, gaps and areas of improvements were identified from the results of the survey.

5.2. STRUCTURE OF THE SCORECARD

A scorecard is a tool for planning, managing and tracking the entity's performance to set targets and objectives (Bovarnick et al., 2010). There are various types of scorecards ranging from Financial Scorecard, Institutional Capacity Scorecard, Balanced Scorecard and Quality Assurance Scorecard. In this exercise, an institutional scorecard was developed to assess institutional capacity to implement, monitor and evaluate NAP activities. Additionally, the scorecard was used to assess the institutional capacity to management information and data in combating land degradation in the country. The developed institutional scorecard has four (4) components being:

- Human Resources and development: this was deemed an important components as it determines the extent to which staff is trained and retained to implement activities and monitor those activities
- Planning, implementation and M&E: the objective of this component was to assess the institutions' capacity to plan, implement, monitor and evaluate the effectiveness of NAP activities.

- Knowledge and data management: Knowledge and data management is important in combating land degradation as it is used to track and monitor the effectiveness of the implemented activities. Therefore, aspects of this component included data sharing mechanisms in place, collaborated research and sharing of information. These aspects were considered important as they enable institutions to jointly M&E their efforts in combating land degradation.
- Community Engagement Capacity: this component attempted to assess measures in place to engage and mobilise the community to actively participate in activities to combat land degradation in the country. Though the assignment's specific objective was on monitoring and data management, this component was nevertheless included with the aim of identifying gaps and areas for improvement as community participation is an important aspect in combating land degradation in the country.

5.3. FINDINGS FROM THE SCORECARD

A total of seven agencies including the Ministry of Agriculture were evaluated in terms of their capacity to implement and M&E the NAP activities over time. Below is the discussion of the results on the various components of the institutional scorecard.

Human resource development

The institutions attained a score ranging from 2 to 4 implying that some institutions were adequately staffed to deal with issues of land management while some were poorly staffed. Within the HR development aspects that were investigated include availability of trained staff, ability to retain staff and comprehensive training plans in place to capacitate their staff. The average score attained by the investigated agencies was calculated at 57% which implies that on average agencies/ commissions in the country that deal with natural resources have adequate staff with adequate knowledge and experience on issues of land management and planning. GL&SC which is the main implementer of NAP, performance on Human resource development was assessed to be average with a score of 60 per cent. Consequently, even though the total average score for the agencies were estimated at 57 which are classified as satisfactory, there is still room for improvement. Areas of emphasis should be placed on the following:

- Frequency of sending staff for refresher courses on emerging land management techniques;
- Comprehensive training on emerging land management techniques; and,
- Allocation of resources for training staff.

Planning, Implementation, Monitoring and Evaluation

This is another area where institutions were assessed in terms of planning, implementation, monitoring and evaluation of the institutions on land management issues. The results obtained under this component of the scorecard were consistent

with the Human Resource development score derived at 57%. Thus, the institutions under investigation score satisfactorily in term of planning, implementation, M&E. For almost all the institutions investigated, they have a fully functional M&E and hence an average score. Aspect of the planning, implementation and M&E with the highest score was functional M&E unit with an average score of 60% across the agencies followed by existence of planning programme evaluated to determine their effectiveness and existence of coordinated framework amongst the institutions.

The following aspects obtained relatively low scores and would benefit from improved allocation of resource to enhance improvement:

- Dynamic, long-term programmes and project planning mechanism that respond to land degradation
- Allocate more resource to the planning unit within the agencies
- Resources allocation for improving coordination

Therefore, it is critical that agencies implement dynamic long term programmes and project planning mechanisms that respond to land degradation in the country. Importantly, it is also essential that budgeting processes and cycles starts to consider allocating sufficient financial resources to the planning units and for improving coordination of land resource management and planning in the country. Inevitably, land is a cross-sectional and will therefore require comprehensive coordination structure for both planning and implementation processes.

Knowledge and data management

Data management is an essential and critical component of land resource planning and management. It enables optimal land use decision making on land resources and hence contributes to rationalising land resource planning and management. However, in order for data to contribute to decision making, it must be properly managed and accessible to the relevant agencies. In stark contrast to the other components of the scorecard, knowledge and data management attained a highest score of 76%. Thus, it can be concluded that the agencies has robust systems in place for generating and managing data from research. For instance, on average the agencies scored 85% on the aspects of data and information management in place. The only aspect of knowledge and data management that was found to be lacking to a less extent is coordinated research with other agencies on land management issues. The high score attained by the knowledge and data management component could be influenced by the presence of GIS policy which mandates agencies and commissions to share data. Additionally, discussion with the relevant stakeholders revealed that trials are at an advanced stage on centrally shared database for environmental resources (land resource). Therefore, the derived scores are consistent with programmes on ground in terms of data management.

Community engagement capacity

This is the last component of the institutional scorecard and it involve an assessment of the extent to which the existing environmental related agencies engage the stakeholders in management and planning of land resources. The role of community involvement in land resources cannot be overemphasised as they are the custodians of the land resources and interact with land resources on daily basis. The overall average score for the community engagement of the agencies was calculated at 78%. Therefore, based on the score attained by the agencies under investigation it can be concluded that the various agencies have systems in place to engage and involve communities on land resource management and planning.

5.4. IMPLICATIONS OF RESULTS

The total average score for the institutional capacity of the agencies under investigation is estimated at approximately 66%. Components that the agencies/commission scored low were on Human Resource Development and Planning, Implementation and M&E. For these aspects of the institutional capacity the agencies had a combined average score of 57%. On the other hand, agencies performed exceptionally well on knowledge and data management, and community involvement. It is therefore important that efforts be geared towards the following aspects:

- Budgeting for staff training on emerging technology on land management techniques mainly Remote Sensing, GIS, Multi Criteria Decision Analysis and Information Management/Technology. These are important techniques that could contribute immensely towards rationalising land resource planning and management
- Additionally, the institutions should also develop comprehensive training programmes for their staff. In this area, most of the agencies performed average and hence lacked training programmes
- With the exception of GFC, most of the agencies do not regularly send their staff for short courses and refresher courses on land resource management. GFC performed exceptionally well in this area due to linkages between rainforests and climate change. On the other hand, other agencies displayed a sombre lack of resource to frequently send their staff for training.
- There is also conspicuous lack of dynamic, long term programmes and project planning mechanism in place that respond to land degradation in the country
- Institute has a planning unit which are not fully resourced. This is one of the areas that was identified as lacking within the agencies and thus need improvement
- Resources allocated for improving coordination: environmental resources are cross-sectional and thus require comprehensive coordination between agencies in planning and implementation of the environmental projects. It is therefore important that resources are increased to improve coordination.

Results indicate that it is fundamental that measures are put in place to improve performance of agencies on the above listed areas. Priority should be given to remote sensing, GIS and information management. Remote Sensing is particularly important as it can be used to track land degradation over time and also M&E the effectiveness of the implemented projects. Though, agencies showed robust performance on data management, the results indicated that there is no evidence of trained staff on information management system in the various agencies under investigation. It is therefore critical that staff is trained in these areas.

6.0. IMPLEMENTATION PLAN FOR NAP

6.1. INTRODUCTION

The NAP report has adequately outlined the implementation plan; however, as the purpose of the assignment is to align the NAP with the existing strategies, it is fundamental that a new implementation plan for the aligned NAP be developed. Crucially, it is also rational that the developed aligned NAP implementation plan coincides with the implementation plans of the existing strategies and national plans which the aligned NAP has been mainstreamed into. This section therefore highlights the implementation plans of the aligned NAP. The implementation plan comprises of the following aspects:

- NAP issues
- Activities to be implemented
- Time frame or duration of activity implementation.

Table 16 depicts the implementation plan for the aligned NAP to combat land degradation and desertification in the country.

Table 16: Aligned NAP implementation plans

NAP ISSUES AND ACTIONS			YR1				Y2				Y3				Y4				Y5			
		Agency	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Rationalising planning and management of land resources																					
	a. Continuously update National Land Use Map	GL&SC																				
	b. Provide information on biodiversity hotspots, groundwater and include the land use map	EPA																				
	c. Promote soil conservation through sustainable agricultural practises IP	MOA																				
	d. Set-up centrally shared database on spatial and non-spatial data	GL&SC																				
	e. Train staff on GIS and remote sensing	UG																				
2	Rationalising legislative overlaps																					
	a. review and update existing legislation in relation to natural resource (including land resource) planning and management at the national and regional and local levels	MOA,																				

	NAP ISSUES AND ACTIONS		YR1				YR2				YR3				YR4				YR5			
		Agency	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3	Promoting effective coordination and information exchange																					
	a. review and improve institutional arrangement on land planning and management	DNRE																				
	b. improve data sharing mechanism through creation of central shared database on land resource planning and management	GL&SC																				
	c. promote GIS policy to encourage data and information sharing	DNRE																				
	d. encourage joint research and implementation of project on desertification, land degradation and drought	DNRE																				
4	Establish institutional synergies																					
	a. establish and strengthen focal points between agencies and encourage joint research and programme implementation on desertification, land degradation and drought	DNRE																				
	b. develop inter-agency research team	DNRE																				
	c. strengthen conference, seminars and workshop and publication of proceedings on SLM practises and findings on the drivers of desertification, land degradation and drought	GL&SC																				
5	Securing financial resources and establishing financial mechanisms																					
	a. promote in-kind contributions from NGOs to implement some of the activities such as training and campaigns	GL&SC																				
	b. collaborate with EPA to improve function of ETF	GL&SC																				
	c. identification of the appropriate PES schemes	EPA																				
	d. make proposal to parliament to access ETF funds	EPA																				

	NAP ISSUES AND ACTIVITIES		YR1				YR2				YR3				YR4				YR5			
		Agency	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
6	Promote public education and awareness																					
	a. review the NBSAP and EPA awareness strategy and communication channels and integrate land planning, management and SLM practises	GL&SC																				
	b. collaborate with training institutions and integrate land management practises and land degradation courses	GL&SC																				
	c. build on existing environmental awareness campaigns to gain momentum to increase public awareness	GL&SC																				
7	Undertake training and capacity building																					
	a. develop training programmes for staff for short courses, Degrees and post graduate	UG																				
	b. collaborate with training institutes (UG, FTCI) and incorporate SLM practises in curriculum including to undertaking ecological appropriate land restoration	GL&SC																				
	c. collaborate with international funding institutes for funding opportunities	DNRE																				

	NAP ISSUES AND ACTIVITIES		YR1				YR2				YR3				YR4				YR5			
		Agency	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
8	Addressing issues of food security, management of agriculture and sustainable development																					
	a. diversification of the livestock and crop production sectors	MOA																				
	b. train farmers on soil health techniques with emphasis on IPM and use of organic fertilisers	MOA																				
	c. identification and increase investment in low carbon sector	Office of Climate change																				
	d. increase climate-smart agriculture initiatives	MOA																				
9	Sustainably manage drainage basins and watershed																					
	a. map all wetland and groundwater resources	GL&SC																				
	b. develop guidelines for sustainable drainage of the basins	NDIA																				
	c. Implement Integrated Water Resource Management	NDIA																				

	NAP ISSUES AND ACTIVITIES		Y1				YR2				YR3				YR4				YR5			
		Agency	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
10	Developing early warning systems and emergency plans to mitigate drought																					
	a. Develop national and regional drought index	CDC																				
	b. Strengthen communication channel on drought	CDC																				
	c. Strengthen traditional knowledge on drought predictions	CDC																				
	d. increase climate-smart agriculture initiatives	MOA																				
	e. incorporate drought in existing hydrometeorology and weather forecasting	CDC																				
11	Utilising traditional knowledge																					
	a. compile traditional knowledge best practises on land planning and management and soil health management	EPA																				
	b. assess the relevancy and effectiveness of traditional knowledge and traditional best practises	EPA																				
	c. train farmers, planners and land resources management on traditional knowledge and best practices	MOA																				

	NAP ISSUES AND ACTIVITIES		YR1				YR2				YR3				YR4				YR5			
		Agency	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
12	Promote regional aspects of preventing land degradation																					
	a. participate in regional projects and programmes on combating land degradation in the region	DNRE																				
	b. Strengthen regional research on land planning, management and monitoring systems	DNRE																				
	c. Participation in a regional initiative for Early warning systems and information Network for land management	DNRE																				

7.0. SUMMARY OF FINDINGS

The following is the summary of findings on mainstreaming and integrating NAP activities into existing national strategies and National Plans:

- There exist ample strategies and national plans that are currently on-going which have similar activities and actions plans as the NAP where mainstreaming can occur. It is therefore critical that the NAP be aligned to these strategies.
- Land resource planning and management is cross-sectorial and correspondingly, implementation of the NAP activities would require participation of all the agencies and commissions under the Ministry of Governance. The DNRE will be responsible for coordinating the activities.
- Institutions in the country have sufficient capacity in terms of planning and implementing the NAP activities
- There exist adequate institutional coordination and synergies in the country to implement NAP activities which in many instances would require coordination and synergies.

8.0. RECOMMENDATIONS

Based on the findings of this assignment, the following recommendations were made:

- Mainstreaming and integration is a good implementation approach which aims at reducing duplication of activities and action plans at the national level. However, the approach has its shortcomings. The main one being failure of the identified strategy for mainstreaming would inevitably results in failure of the second strategy. It is therefore recommended that an assessment of the strategies which have been identified for mainstreaming the NAP activities into, be conducted in terms of their implementation status and progress. Where it is deemed that the strategy implementation has failed, it is recommended that another strategy for possible mainstreaming be identified.
- Findings of the institutional capacity of the agencies indicated that agencies do not have enough resources allocated for improved coordination and collaboration. This finding has significant implications on implementation of the aligned NAP as it will require strengthened coordination and collaboration mechanism for effective aligned NAP implementation. Therefore, it is recommended that resources be put in place to enhance coordination and collaboration as this will ensure successful implementation of the NAP activities.

- Staff training is one of the aspects that agencies have scored low relative to other aspects. It is therefore recommended that more resources be allocated for training particularly in the following areas of specialisation:
  a. Remote sensing
  b. GIS
  c. Multi Criteria Decision Analysis
  d. Information management systems/information technology

- Land resources management is cross-sectorial and inevitably would require comprehensive and robust coordination. It is thus recommended that more resource be allocated to improve coordination. Evidently, results from the scorecard revealed that there is weak coordination amongst the agencies in implementing programmes and research in the land management and planning area.

9.0. REFERENCES

Green, E. (Undated). National Integrated Disaster Risk Management Plan and Implementation Strategy for Guyana. Civil Defence Commission, Georgetown, Guyana

GoG (2013). Guyana National Land Use Plan. Guyana Lands and Surveys Commissions, Ministry of Natural Resources and Environment. Georgetown, Guyana

GoG (2013). The Guyana Poverty Reduction Strategy paper. Georgetown, Guyana.

GoG (2014) Guyana's National Biodiversity Strategy and Action Plan (2012-2020). Ministry of Natural Resource and Environment, EPA. Georgetown, Guyana.

GoG (2012). Rio+20 National Report: A Green Economy and Institutional Framework for Sustainable Development: Guyana Context. Georgetown, Guyana.

GoG (2009). Forests Act 2009. Georgetown, Guyana

GoG (2002). Water and Sewerage Act Chapter 30:01-Laws of Guyana, Georgetown Guyana

GoG (1998) Land Registry Act-Chapter 5:02. Laws of Guyana, Georgetown, Guyana

GoG (1998). Town and Country Planning Act. Chapter 20:01 Laws of Guyana , Georgetown, Guyana

GoG (1998) Drainage and Irrigation Act- Laws of Guyana, Georgetown, Guyana

GoG (1998). Education Act Chapter 39:01 Laws of Guyana, Georgetown, Guyana.

GoG (1998). Environmental Protection Act: Chapter 20:05. Georgetown, Guyana

GoG (1998). Guyana Forestry Commission Act-Laws of Guyana, Georgetown, Guyana

GoG (1998). Guyana Lands and Surveys Commission Act-Chapter 59:05. Laws of Guyana, Georgetown, Guyana.

GoG (1998). Mahaica-Mahaicony-Abary Agricultural Development Authority Act – Laws of Guyana, Georgetown Guyana

GoG (1957). Acquisition of Land (Land Settlement Act) Cap. 62:06. Laws of Guyana, Georgetown, Guyana

Guyana Forestry Commission (2011). National Forest Plan, Georgetown, Guyana

Guyana Forestry Commission (2011). National Forestry Policy Statement, Georgetown, Guyana.

Guyana Lands and Surveys Commission (2012) Guyana National Land Use Plan. Ministry of Natural Resources and Environment, Georgetown, Guyana

Guyana Land and Surveys Commission (2006). Guyana National Action Programme to combat land degradation, Georgetown, Guyana.

MOA (2013). A national Strategy for Agriculture in Guyana 2013-2020. Ministry of Agriculture, Georgetoen, Guyana.

MOA (2011). Food and Nutrition Security Strategy for Guyana. Government of Guyana, Georgetown Guyana

UNDP (2013) Disaster Risk Management Policy, Georgetown Guyana

Weerasinghe, R.P.M (2013). Managing Arid Areas and Sand Dunes in Sri Lanka in Heshmati A.G. and Squires R.V (eds). Combating desertification in Asia, Africa and the Middle East: Proven Practice. Springer Dordrecht Heidelbergy, New York, London

Annex 1: Score attained by the agencies under investigation

Agency	Human Resource Development	Planning, Implementation, Monitoring and Evaluation	Knowledge and data Management	Community Engagement Capacity
MOA	0.5	0.5	0.8	0.5
GFC	0.85	0.88	0.8	1
EPA	0.42	0.25	0.8	0.93
MOIP	0.25	0.69		
GGMC	0.64	0.5	0.75	0.69
ACHP	0.57	0.6	0.63	0.75
average Score	0.54	0.57	0.76	0.77

Annex 2: List of stakeholders consulted

No.	Organisation Name	Interviewee
1	United Nations Development Programme	Programme Analyst- Dr. Patrick Chesney
2	Guyana Lands and Surveys Commission	Commissioner of Lands and Surveys- Mr. Doorga Persaud, SLUP- Ms. Andrea Mahammad
3	Environmental Protection Agency	Tashana Redmon, Environmental Officer
4	Guyana Geology and Mines Commission	Janice Bollers- Senior Environmental Officer
5	Civil Defense Commission	Colonel Ramsarup, Director General / Colonel Abraham, Deputy Director General
6	Guyana Water Incorporated	Mr. Nigel Niles, CEO
7	Guyana Lands and Surveys Commission	Ms. Andrea Mahammad- Senior Land Use Planner
8	Ministry of Natural Resources and Environment	Veetal Rajkumar

9	Ministry of Communities	Gereme Stewart, Head of Monitoring and Planning Unit
	National Drainage and Irrigation Authority	Ms.Crystal Conway, Engineer
10	Ministry of Amerindian Affairs	Vivette Wellington- Management Development Officer
11	Ministry of Agriculture	Permanent Secretary-Mr. George Jarvis
12	Office of Climate Change	Head-Ms. Gitanjili Chanderpal
	Guyana Forestry Commission	Pradeepa Boldanauth-head-planning and development division
	Ministry of Education	Mr. Patrick Chinedu- Deputy Chief Education Officer
14	Debriefing with UNDP	Dr. Patrick Chesney
15	Debriefing with GL&SC	Commissioner of Lands and Surveys- Mr. Doorga Persaud,Oleta Williams, Andrea Mahammad, Asib Mohamed