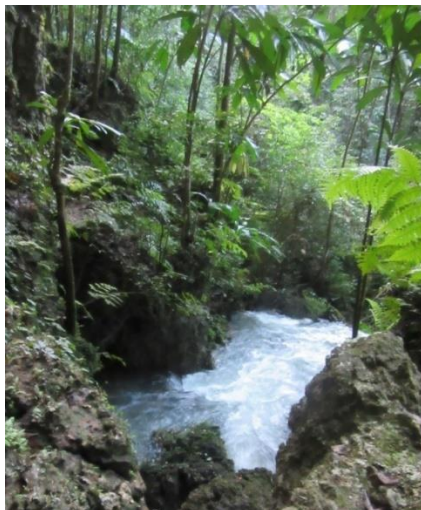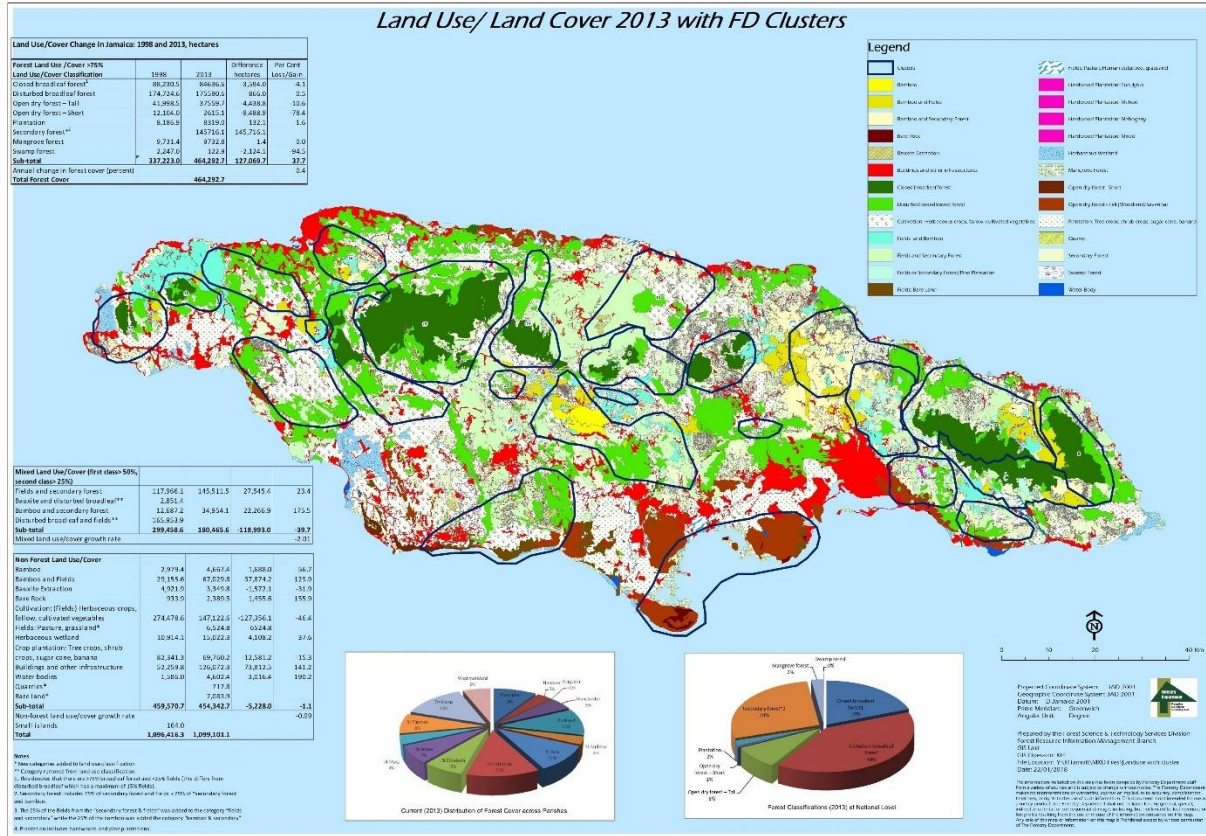## *National Forest Management and Conservation Plan (NFMCP):*

Annual Progress Report 2018-2019

and Draft Implementation Plan 2019-2020

December 2019

Jamaica: Land use and forest estates in clusters (2013).

Vision for the Forest Sector:

The NFMCP forms part of the policy tools that implements the Forest Policy 2017 and guides the work of the Forestry Department. As such its vision statement is the same as presented in the Forest Policy for Jamaica 2017:

"By 2062, Jamaica's forests and its biodiversity are sufficiently restored and sustainably managed, so once again the island can adequately be described as "the land of wood and water", capable of meeting the social, economic and ecological needs of current and future generations."

Goal and Strategic Objectives of the NFMCP:

Guided by its planning processes, the obligations under the United Nations Forest Forum (UNFF) and the Jamaica's National Development Plan-Vision 2030, the Forestry Department has articulated the goal of NFMCP as:

"Sustainably manage and utilise Jamaica's forest resources to enhance social and economic development and contribute to building the country's climate resilience."

The NFMCP seeks to achieve this goal through four Strategic Forest Management and Conservation Objectives (SOs):

SO1: Reverse forest degradation, deforestation and the loss of forest biodiversity, through conservation and sustainable forest management, as well as strengthening the legislative, policy and institutional framework of the sector.

SO2: Enhance economic, social and environmental benefits of forests through the sustainable utilisation of forest resources.

SO3: Build the capacity within the Forestry Department, its partners and forest communities to manage, protect and conserve the forest resources.

SO4: Increase public education and awareness to protect, conserve, restore and manage Jamaica's forests.

DASHBOARD ON STATUS OF THE NFMCP PER 31 MARCH 2019

Status of NFMCP Outputs (58)

28 3 8
7 12

- Started & ahead of schedule
- Started & on track
- Started & challenges
- Not started
- Scheduled Y4 onwards

Seedlings produced

Reforestation programme (Ha planted and maintained)

Planted Weeded Persons engaged
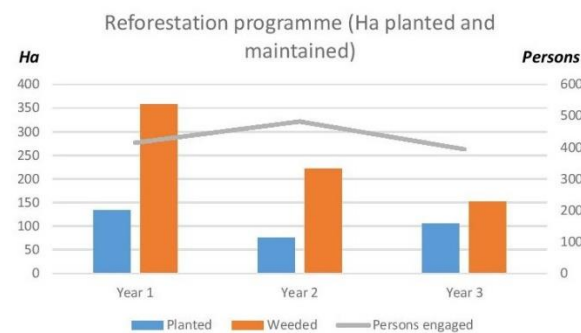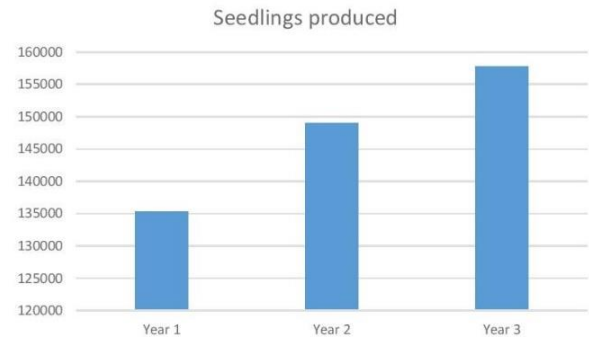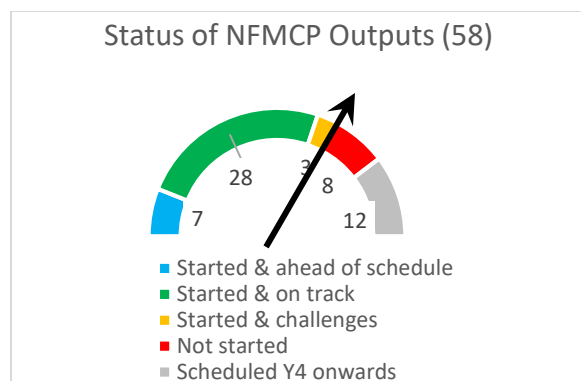
Parcels with boundaries verified

15 30 45

Year 3 Year 5 Year 7

Private Forestry Programme

New Planters Seedlings
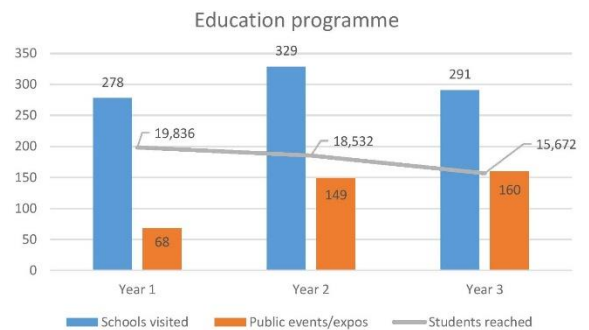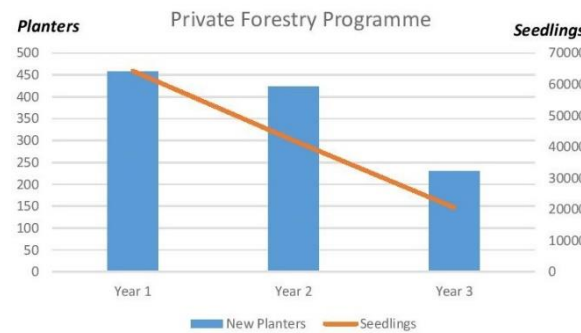
6,304: Total Number of Private Planters registered.
1,330: Parcels included in PFP ownership database – total of 15,800 Ha Closed Broadleaf Forest.

Education programme

278 329 291
19,836 18,532 15,672
68 149 160

Schools visited Public events/expos Students reached

3 – Harvesting Plans completed
3 – Forest Management Plans completed
3 - Paris Development Orders drafted/updated which prioritise forest resources
163 – Parcels (Approx. 6,625 Ha) crown land with mangroves to be transferred.
9 – Species conservation Plans
1 - Evaluation completed: Tax incentive package

Table of Contents

FOREWORD

(By Marilyn V. Headley, O.D., Conservator of Forests and CEO)

ACRONYMS AND ABBREVIATIONS

AF	Adaptation Fund	KPI	Key Performance Indicator
BSJ	Bureau of Standards Jamaica	LFMC	Local Forest Management Committee
CBO	Community-based Organisation	LUCA	Land Use Cover Assessment
CCD	Climate Change Division (MEGJC)	M&E	Monitoring and Evaluation
CDC	Community Development Committee	MC	Municipal Corporation
CMS	Centre for Marine Sciences (UWI)	MDA	Ministries, Departments and Agencies
CPC	Chief Parliamentary Council	MEGJC	Ministry of Economic Growth and Job Creation
DRR	Disaster Risk Reduction		
EFJ	Environmental Foundation of Jamaica	MGD	Mines and Geology Division (MTM)
ERMB	Environment and Risk Management Branch (MEGJC)	MICAF	Ministry of Industry, Commerce, Agriculture and Fisheries
EIA	Environmental Impact Assessment	MLGCD	Ministry of Local Government and Community Development
ESSJ	Economic and Social Survey of Jamaica		
EU	European Union	MOE	Ministry of Education
FAO	Food and Agriculture Organisation (UN)	MOFPS	Ministry of Finance and Public Service
		MOJ	Ministry of Justice
FD	Forestry Department	MOT	Ministry of Tourism
FMA	Forest Management Area	MSET	Ministry of Science and Technology
FMP	Forest Management Plan	MSJ	Meteorological Service of Jamaica
FMU	Forest Management Unit	MTF	Medium Term Socio-Economic Policy Framework of Vision 2030
FRA	Forest Resource Assessment		
FSE	Forward Spending Estimates	MTM	Ministry of Transport and Mining
FTE	Full-Time Effort	MTRBB	Medium Term Results Based Budgeting
GCF	Green Climate Fund		
GEF	Global Environment Facility	NAO	National Authorising Officer (at PIOJ)
GFFFN	Global Forest Financing Facilitation Network	NBSAP	National Biodiversity Strategy and Action Plan
GHG	Greenhouse gases	NCU	Northern Caribbean University
GIS	Geographic Information System	NEPA	National Environment and Planning Agency
GOJ	Government of Jamaica		
IFMJ	Improved Forest Management for Jamaica	NERGIS	National Emergency Response GIS
		NFFS	National Forest Finance Strategy
IOJ	Institute of Jamaica	NFMCP	National Forest Management and Conservation Plan
IUCN	International Union for Conservation of Nature		
		NGO	Non-Governmental Organisation
JAMPRO	Jamaica Promotions/ Trade and Investment Jamaica	NHT	National Housing Trust
		NLA	National Land Agency
JBDC	Jamaica Business Development Corporation	NSWMA	National Solid Waste Management Authority
JCDT	Jamaica Conservation and Development Trust	NWC	National Water Commission
		ODPEM	Office of Disaster Preparedness and Emergency Management
JCF	Jamaica Constabulary Force		
JET	Jamaica Environment Trust	PAC	Protected Areas Committee
JFB	Jamaica Fire Brigade	PASMP	Protected Areas System Master Plan
JNHT	Jamaica National Heritage Trust	PDC	Parish Development Committee
JSIF	Jamaica Social Investment Fund	PFP	Private Forestry Programme

PIE	Primary Implementing Entity	TEF	Tourism Enhancement Fund
PIOJ	Planning Institute of Jamaica	TWG	Thematic Working Group (Vision 2030)
PMER	Performance Monitoring, Evaluation and Reporting	UDC	Urban Development Corporation
PSIP	Public Sector Investment Programme	UN	United Nations
PSOJ	Private Sector Organisation of Jamaica	UNCBD	United Nations Convention on Biological Diversity
PSP	Permanent Sample Plot	UNDP	United Nations Development Programme
RADA	Rural Agricultural Development Authority	UNEP	United Nations Environment Programme
REDD	Reducing Emissions from Deforestation and Forest Degradation	UNESCO	United Nations Educational, Scientific and Cultural Organisation
SCPU	Strategic Corporate Planning Unit (Forestry Department)	UNFCCC	United Nations Framework Convention on Climate Change
SDC	Social Development Commission	UNFF	United Nations Forum on Forests
SDG	Sustainable Development Goal	USFS	United States Forest Service
SFM	Sustainable Forest Management	UTech	University of Technology
SIDS	Small Island Developing State	UWI	University of the West Indies
SRC	Scientific Research Council	UWI/CSG	UWI– Climate Studies Group
STATIN	Statistical Institute of Jamaica	UWI/DLS	UWI– Department of Life Sciences
TA	Technical Area / Technical Assistance	WRA	Water Resources Authority
TAC	NFMCP Technical Advisory Committee	WWF	World Wildlife Fund
TCF	Technical Cooperation Facility (EU)		
TPDCo	Tourism Product Development Company		

EXECUTIVE SUMMARY

This report provides an overview of the progress achieved in the development and implementation of the National Forest Management and Conservation Plan (NFMCP) 2016-2026 during its third year (Financial Year 2018-2019).   However, since this is the first comprehensive NFMCP Annual Progress Report, pertinent information relating to implementation years 1 and 2 has been included.

The implementation of the NFMCP is being led by the Forestry Department (FD) and six partner organisations, referred to as the Primary Implementing Entities (PIE). Other actors from a range of sectors also participate in the implementation of the NFMCP, including government entities, private land owners, NGOs, community groups, international development partners, private sector and research institutions.

The NFMCP comprises of fifty-eight (58) outputs with forty-six (46) were slated to commence within the first 3 years. By the end of Year 3 of the NFMCP, a total of thirty-eight (38) outputs had started and are progressing well. Only eight (8) outputs did not commence within the stipulated time period. Of the outputs which have been started, twenty-eight (28) outputs are on track, with seven (7) ahead of schedule, and three (3) experiencing challenges. It can therefore be concluded that 83% of the outputs commenced on time. The status of several indicators are presented in a dashboard.

The NFMCP is being implemented through five (5) Thematic Areas:

1. Forest Governance and Conservation (9 outputs are on track, 1 is experiencing challenges, 1 behind schedule)
2. Forest Utilisation (5 outputs are on track or ahead of schedule, 3 behind schedule)
3. Capacity for Sustainable Forest Management (11 outputs are on track or ahead of schedule, 3 behind schedule)
4. Education, Training and Awareness (3 outputs are on track, 1 is experiencing challenges)
5. Monitoring and Information Management (7 outputs are on track or ahead of schedule, 1 is experiencing challenges, 1 behind schedule).

For each of the outputs which were started during Year 1 – 3, the report presents a summary of its progress, headed by an overview of its Key Performance Indicator, its baseline, the target for Year 3, an indication of the status of the output and a graph depicting the output's progress against the indicator. Hyperlinks may be provided to other outputs, major risks and lessons learned. If applicable, an update is given on (new) partners which are collaborating in the implementation of the output.

The major results achieved in Year 3 include:

- The Technical Advisory Committee (TAC) of the NFMCP was established and had its first meeting (Output 1.1.1);
- Three Parish Development Orders, at times complimented by Local Sustainable Development Plans (LSDP) are being revised and forest resources priorities are being integrated (Output 1.1.3);
- 163 parcels of government lands with mangrove cover have been identified for the transfer of management responsibility to the FD (Output 1.1.4);
- The enforcement capacity of FD is increasing, through additional training of staff in forest law, enforcement capacity and patrolling, as well as the installation of trail cameras. Many more joint patrols with partners are also being implemented (Output 1.1.5);

- The boundary verification programme is progressing well across the island and now includes the demarcation of the area proposed for protection as the Cockpit Country (Output 1.1.7);
- Work on listing invasive species of flora and fauna was completed for Closed Broadleaf Forests, while progress is being made for other forest types (Output 1.2.1);
- Progress was made in the preparation of control plans for invasive species (Output 1.2.2) and species conservation plans (Output 1.2.3). Additionally, additional species are being identified for such conservation plans (Output 1.2.4);
- A formative evaluation of the incentives programme was partially completed (Tax incentive package for the Private Land Declaration Programme) (Output 2.1.1) as is the collection of an inventory of potential new or revised incentives for private forest land owners (Output 2.1.2);
- A major programme of engaging community residents in alternative livelihood activities was started, in collaboration with the Environmental Foundation of Jamaica (Output 2.1.4);
- Three sustainable harvesting plans were completed for timber resources within forest estates, well ahead of target (Output 2.2.2);
- A business arm for the management of recreational sites and to further expand and operationalise the Gourie Forest Management Area is being developed (Output 2.3.4);
- Replanting in denuded areas as well as the maintenance of forest plantations is steadily continuing (Output 3.1.1);
- Two Forest Management Plans (FMP) for forest estates in clusters were completed (Output 3.1.2);
- Forest restoration is being incorporated within Watershed Management Planning (Output 3.1.3);
- The tree nursery programme is steadily increasing its production and distribution of seedlings and better streamlining its operations and managing risks (Output 3.1.4);
- More communities are being engaged in the urban forestry programme (Output 3.1.7);
- A database of private forest land owners was set up in Year 2 and information is rapidly being added on the owners and pertinent parcels (Output 3.1.8 and Output 5.1.4);
- Jamaica's institutional capacity for REDD+ readiness is being strengthened through amending the vegetation assessment in biophysical inventory, to include carbon stocks estimations (Output 3.2.1);
- A project was prepared and approved for the development of a REDD+ readiness strategy (Output 3.2.2) and a draft analytical report on the drivers for deforestation/forest degradation was submitted (Output 3.2.3);
- Training was done in several communities in project development and management, targeting Local Forest Management Committees (LFMC) (Output 3.3.1);
- The effectiveness was assessed of the establishment of fire suppression teams in 11 communities and the training of a total of 303 community residents (Output 3.3.3);
- Under the school visit programme, 291 schools were visited, while 15,672 students were reached. FD participated in 160 public awareness events, including expos and exhibitions island-wide (Output 4.1.1);
- Materials were produced for public awareness campaigns on forest fire prevention and suppression (Output 4.1.2);
- Course content for NRV training was developed, focusing on forest resource valuations (Output 4.2.1), preparations were made for Silviculture training (Output 4.2.2) and Carbon stock training (Output 4.2.3);
- Up-to-date aerial imagery and drones are being procured to determine more recent disturbance levels within broadleaved category (Output 5.1.1);

- The comprehensive mapping and assessment of Mangrove and swamp forests island-wide is well underway (Output 5.1.2);
- Criteria are being developed to rank and assign index value to proposed recreation trails (Good, Fair, Not Recommended) (Output 5.1.5);
- Baseline data for growth and yield curves are being ascertained (Output 5.3.1);
- Surveys have been implemented for species targeted for conservation (Output 5.3.5);
- The necessary frameworks have been put in place for the knowledge management and strategic planning of the NFMCP, including a progress report, an internal process evaluation of NFMCP, the PMER system, coordination and governance (Output 5.3.6).

The report further presents risk levels and statements for major identified risks. Mitigation strategies for each of these are described and those outputs where the risk is most relevant are listed.

During the first three years of the NFMCP, work was done to create a solid governance and management mechanism for the plan. A Technical Advisory Committee (TAC) was established and held its first meeting in February 2019. The TAC is comprised of a core group and a wider group of stakeholders, including senior representatives from the GOJ institutions with responsibility for environmental management, social and economic development, financing, and watershed and environment management. Representation also includes private forest land owners, academia, private sector and non-governmental and community-based organisations (including Local Forest Management Committees) which represent key stakeholders of the sector.

The NFMCP Performance Monitoring, Evaluation and Reporting (PMER) system, established in Year 2, was refined during Year 3 to include results-based budgeting and reporting. Relevant training activities were carried out. The PMER consists of a strategic framework, a plan and a database. It lays a sound basis for multi-agency joint data management and guides the coordinated monitoring and reporting on activities amongst the Primary Implementing Entities.

The full costing plan for the NFMCP was drawn up during Year 3. In close collaboration with financial and technical personnel at the PIEs, the resource needs to implement each of the outputs were detailed and the timelines of funds already available or committed and funds to be raised was documented. Also during Year 3, the Government of Jamaica requested technical support from the Global Forest Financing Facilitation Network (GFFFN) in the development of a financial strategy and plan for the NFMCP. Based on information and strategic elements already developed under the NFMCP, a National Forest Financing Strategy (NFFS) is being drafted.

This report also details the implementation plan for Year 4 of the NFMCP (2019-2020). The latest updates on annual targets for the remainder of the implementation period of the NFMCP are presented.

Finally, eleven (11) lessons learned are summarized in the report, as well as the related recommendations:

1. A strong governance and collaborative mechanism is vital for the development of functional collaboration under the NFMCP. The active one-on-one communication between the PIEs is also essential for successful collaboration.
2. Communication about the NFMCP to the public has remained poor and incomplete to date. More collaboration between the institutional partners will assist building awareness about the NFMCP.

3. The NFMCP has caused an increase in the implementation of climate change mitigation measures (for instance through a number of planning initiatives; the reforestation programme).

4. The analysis of stakeholders carried out during the development of the NFMCP was incomplete and did not identify the core team of representatives of the Primary Implementing Entities (PIE). A formal NFMCP mechanism for engaging the PIEs with clearly defined roles as well as the other stakeholders involved in its implementation, was not established before the final approval of the NFMCP.

5. The full engagement of community members is critical in several forestry programmes: examples include urban forestry and fire management training.

6. There is variance between the types of incentives being sought by land owners versus what is deemed feasible by the Ministry of Finance.

7. Some terms and definitions (including criteria to be used and preferred indicators) are to be better harmonised between the partner agencies of the NFMCP.

8. A number of outputs have grown to "projects or programmes" in their own right. For these, proper project management needs to be employed to ensure timely procurement and organisation of activities.

9. Due to a lack of clear guidelines, the implementation of the school visit programme is not standardised. The programme also lacks instruments for measuring knowledge transfer, e.g. through pre and or post assessments based on the topics covered.

10. Outreach to private forest owners has been insufficiently coordinated between various FD divisions. The proper alignment of inter-divisional/Branches' work plans within FD is essential to produce data or studies needed for various outputs

11. There is a paucity of knowledge among staff of FD and other agencies to identify species (endangered, invasive or other categories of species). This causes a lack of monitoring species, information on the population distribution, the range, or the typical altitude, etc.

1. INTRODUCTION

BACKGROUND

The National Forest Management and Conservation Plan (NFMCP) runs for a 10-year period (2016-2026). It outlines the objectives and strategies of the forest sector to help ensure that Jamaica's forests are sustainably managed, protected, healthy, economically viable and socially beneficial to all.

At the heart of the Plan is the engagement of the Jamaican people in the protection, conservation and management of Jamaica's forests and its biodiversity. The NFMCP seeks the participation of all sectors of society in seeking the best benefits of forests for present and future generations. The Forestry Department (FD) together with six partner organisations, referred to as the Primary Implementing Entities (PIE) lead the implementation of the Plan. Other actors from a range of sectors also have roles and responsibilities in the implementation of the NFMCP, including government entities, private land owners, NGOs, community groups, international development partners, private sector and research institutions.

The Plan is firmly aligned to national and international strategies and policies to promote more wholesome and coherent resilient development planning in Jamaica. As such, it aims to support the good governance of forest resources within a national approach for sustainable and inclusive growth. The NFMCP was tabled and approved in both Houses of Parliament on the 6th and 8th of February 2018 respectively.

The NFMCP is being implemented through five (5) Thematic Areas:

1. Forest Governance and Conservation
2. Forest Utilisation
3. Capacity for Sustainable Forest Management
4. Education, Training and Awareness
5. Monitoring and Information Management

The first four Thematic Areas can be considered to be the core of the NFMCP, while Thematic Area 5 contains monitoring, data and knowledge management activities which are supportive to these four core Thematic Areas.

This report covers the progress achieved with regard to the development and implementation of the NFMCP in Year 3 (Financial Year 2018-2019). Since this is the first comprehensive NFMCP Annual Progress

Report, pertinent information relating to implementation years 1 and 2 has been included.

Pine cones, a forest product that can be marketed.

RATIONALE OF THIS REPORT

This report provides an overview of the status of the NFMCP at the end of its third year of implementation. It focuses on the outputs. In **Chapter 2**, for each of the outputs which were started during Year 1 – 3, progress is summarised headed by a block of information, highlighting the Key Performance Indicator of the output, the baseline, the target for Year 3, an indication of the status of the output and a graph depicting the output's progress against the indicator. Within the progress summary, if appropriate, hyperlinks are provided to other outputs, major risks and lessons learned. If applicable an update is given on (new) partners which are collaborating in the implementation of the output.

Chapter 3 presents the major risks that were reported by the various stakeholders, while implementing the outputs. Risk levels are indicated and the risks are described as risk statements, identifying (a) the cause, (b) the event and (c) the impact. Mitigation strategies for each of the identified risks are presented as well and those outputs where the risk is most relevant are listed.

Chapter 4 provides an overview of aspects of governance, oversight and capacity development in the scope of the NFMCP. Subsequently, **Chapter 5** provides an update on the financing available for implementing the NFMCP.

The implementation plan for Year 4 of the NFMCP is detailed in **Chapter 6**. This chapter also presents the latest updates on annual targets for the remainder of the implementation period of the NFMCP. Further, a listing is provided of new and additional sources of data for measuring the progress of outputs that have emerged in Year 3. Finally, in **Chapter 7**, the lessons learned by stakeholders engaged in NFMCP are articulated, as well as the recommendations which flow from these.

In order to enhance the accessibility of the information contained in this report, there are many internal links between related pieces of information.

A Results-based budget for the NFMCP was established during Year 3. It was intended to include in this report a results-based financial overview for Year 1-3, detailing spending for each of the outputs. However, this is not as yet possible since the various PIEs have not embarked on results-based financial reporting.

80th Anniversary of the Forestry Department: **80 years of GROWTH**

The Forestry Department celebrated its 80th anniversary during 2018 under the theme "80 years of GROWTH: Safeguarding the Future." GROWTH is an acronym standing for **G**uiding our country; **R**eforesting our landscape; **O**pportunities abound; **W**orking together with communities; **T**ransferring knowledge; **H**olistic approaches. A number of anniversary activities took place during the year, including staff awards, church anniversary services, two Forest Treks, a public forum under the theme "*Forests and Sustainable Cities",* a "Forest Heroes Awards" service (to honour private individuals, community groups, non-government organisations, media and corporate entities who continue to execute good stewardship of forests), a school mural competition targeted at secondary and tertiary students and ceremonies to mark National Tree Planting Day.

2. STATUS OF IMPLEMENTATION OF THE NFMCP

OVER-ALL STATUS

The NFMCP comprises of fifty-eight (58) outputs with forty-six (46) slated to commence within the first 3 years. By the end of the third year of implementation of the NFMCP, a total of thirty-eight (38) outputs had commenced and are progressing well. Only eight (8) outputs did not commence within the stipulated time period. Of the outputs which have been started, twenty-eight (28) outputs are on track, with seven (7) ahead of schedule. Further, three (3) outputs have taken off, but are experiencing challenges. It can therefore be concluded that 83% of the outputs commenced on time. See *Table 1* for details. For an overview, see also the dashboard.

TABLE 1: Overview of the status of implementation of the NFMCP outputs.

Output	Number of outputs	Output #			
Started and ahead of schedule	7	2.1.4　2.2.2	3.1.4　3.1.7	3.1.8　5.1.2	5.1.4
Started and on track	28	1.1.1　1.1.3　1.1.4　1.1.5　1.1.7　1.2.1　1.2.2　1.2.3	1.2.4　2.1.1　2.1.2　2.3.4　3.1.1　3.1.2　3.1.3　3.2.1	3.2.2　3.2.3　3.3.1　3.3.3　4.1.1　4.1.2　4.2.1　5.1.1	5.1.5　5.3.1　5.3.5　5.3.6
Started, but experiencing challenges	3	1.1.2	4.1.3	5.3.4	
Scheduled for commencement in Year 3 or earlier, but not started	8	1.1.6　2.2.1	2.3.3　2.3.5	3.1.5　3.1.6	3.3.2　5.2.2
Scheduled for Y4 onwards	12	2.1.3　2.3.1　2.3.2	3.2.4　3.2.5　4.2.2	4.2.3　5.1.3　5.2.1	5.2.3　5.3.2　5.3.3
Total	**58**				

The NFMCP Logic Model is presented in *Table 2*, with the status of implementation of the fifty-eight (58) outputs colour coded similarly as in Table 1. The progress of the thirty-eight (38) outputs which have started is detailed in the rest of this Chapter.

TABLE 2: Logic Model of NFMCP 2016-2026, highlighting the status of implementation of the 58 outputs by Year 3.

Alignment	UNFF SDGs **Jamaica Vision 2030**	UNFCCC **Forest Policy**	UNCBD Ramsar **Climate Change Policy Framework**	UNESCO World Heritage Sites **PASMP** **NBSAP**	
Thematic Areas	**1. Forest Governance & Conservation**	**2. Forest Utilisation**	**3. Capacity for Sustainable Forest Management**	**4. Education, Training and Awareness**	**5. Monitoring and Information Management**
Outcomes	**Outcome 1.1:** Strengthened governance, policy and legislative framework to ensure sustainable development of the forest sector. **Outcome 1.2:** Forest biodiversity protected.	**Outcome 2.1:** Innovative mechanisms established for financing sustainable forest management and obtaining benefits from forest use. **Outcome 2.2:** Sustainable harvesting and use of timber products from forests. **Outcome 2.3:** Sustainable use of non-timber products and services of forests.	**Outcome 3.1:** Improved participatory planning to manage, protect and conserve Jamaica's forests. **Outcome 3.2:** Strengthened institutional capacity for REDD+ readiness. **Outcome 3.3:** Strengthened capacity of Local Forest Management Committees and other community groups.	**Outcome 4.1:** Forest communities, the general public as well as targeted groups have increased capacity regarding sustainable forest practices. **Outcome 4.2:** Strengthened capacity for natural resource valuations, Carbon Stock Monitoring and silviculture.	**Outcome 5.1:** Improved availability of spatial data for sustainable forest management practices, promoting investment, and assessing vulnerabilities and risks in the forest sector. **Outcome 5.2:** Strengthened capacity for impact and vulnerability assessments and for management of research and knowledge systems. **Outcome 5.3:** Improved collaborative monitoring of forest resources.
Status of Implement-ation of Outputs	*Output 1.1.1: Cross sectoral mechanism established for integrating the Forest Sector into relevant national decision making processes.* *Output 1.1.2: Forest Act amended.* *Output 1.1.3: Support for the preparation of Parish Development Orders provided.*	*Output 2.1.1: Incentives programme evaluated.* *Output 2.1.2: New or revised incentives for SFM made available and promoted.* *Output 2.1.3: Programme developed for payment of ecosystem services within forested areas.*	*Output 3.1.1: Reforestation programme for forest estates developed.* *Output 3.1.2: Forest Management Plans (FMP) for forest estates in clusters developed.* *Output 3.1.3: Watershed restoration plan developed, implemented.* *Output 3.1.4: Nursery programme implemented & evaluated.*	*Output 4.1.1: Education programme developed to strengthen the public's understanding on the benefits of forests and its resources, the importance of sustainable forest management and conservation practices.*	*Output 5.1.1: Spatial representation of disturbance within broad leaf forests developed* *Output 5.1.2: Mangrove and swamp forests mapped and assessed.* *Output 5.1.3: Gap analysis conducted identifying spatial data and other information to better map the risks and vulnerabilities*

	Output 1.1.4: Crown lands transferred by Commissioner of Lands to the Forestry Department for sustainable management. **Output 1.1.5:** Enforcement capacity of FD increased. **Output 1.1.6:** Regulations developed for special recreational use permits, research permits, licence programmes. **Output 1.1.7:** Boundary verification programme implemented. **Output 1.2.1:** List of invasive plant and animal species in forested areas developed, maintained. **Output 1.2.2:** Invasive species control (management) plan designed and implemented. **Output 1.2.3:** Species (pilot) conservation plans developed. **Output 1.2.4:** Identification of target species most relevant to the forest sector for future conservation efforts.	**Output 2.1.4:** Alternative livelihoods in forest communities promoted. **Output 2.2.1:** Economic viability of wood product species assessed and appropriate timber processing methods recommended. **Output 2.2.2:** Sustainable harvesting programme developed. **Output 2.3.1:** Research programme on non-timber forest products developed. **Output 2.3.2:** Producers and consumers of non-timber products identified. **Output 2.3.3:** Economically viable non-timber market opportunities developed. **Output 2.3.4:** Recreational sites rehabilitated. **Output 2.3.5:** Guidelines for the use of cultural and heritage sites on Forest Reserves and FMAs developed.	**Output 3.1.5:** Mangrove and swamp forest management plan developed & implemented. **Output 3.1.6:** Guidelines developed for management practices for riparian forests along rivers and streams within forest estates. **Output 3.1.7:** Appropriate guidelines developed for the establishment and maintenance of trees in urban settings; for cultural, aesthetics and shade purposes. **Output 3.1.8:** Database of private forest land owners created and maintained. **Output 3.2.1:** Existing forest inventory approach reviewed and revised to support Carbon Stock Monitoring (CSM) and potential carbon trading agreements. **Output 3.2.2:** REDD+ readiness Strategy completed. **Output 3.2.3:** Analytical Report on the drivers for deforestation/forest degradation produced (REDD+ readiness). **Output 3.2.4:** National forest reference emission level established (calculated) (REDD+ readiness). **Output 3.2.5:** Safeguards information system (REDD+ readiness). **Output 3.3.1:** Strengthened capacity of LFMCs and other	**Output 4.1.2:** Forest fire-related public awareness and education programme designed, implemented. **Output 4.1.3:** Outreach programme for private forest owners developed and evaluated on an ongoing basis. **Output 4.2.1:** Training programmes for natural resource/ecosystem valuations (NRVs) for all types of forests conducted. **Output 4.2.2:** Training in silviculture conducted. **Output 4.2.3:** Training in Carbon Stock Monitoring conducted.	of forests and communities to climate change and related hazards (e.g., fire, floods, landslides). **Output 5.1.4:** Lands verified and mapped in the private lands reforestation programme. **Output 5.1.5:** Recreational, cultural and heritage sites identified and mapped. **Output 5.2.1** Working group established for research that will improve knowledge regarding the management of mangrove forests, swamp forests and short open dry limestone forests; and on the impact of climate change on all forest types. **Output 5.2.2:** Forest fire assessments conducted. **Output 5.2.3:** Impact assessment of mining and other permitted activity on forest goods, services, and values over time conducted. **Output 5.3.1:** Improved availability of data for driving the growth and investment in the forest sector (both timber & non timber). **Output 5.3.2:** REDD+ preparedness – Strengthened forest monitoring systems. **Output 5.3.3:** Weather stations placed in strategic locations within

			community groups in project development and management. **Output 3.3.2**: *Governance and decision making processes related to LFMCs strengthened.* **Output 3.3.3:** *Fire suppression teams established and trained within community groups in high priority/high risk areas.*		*forested areas to garner additional data to support sustainable forest management practices.* **Output 5.3.4:** *Forest monitoring system using Permanent Sample Plots (PSPs) established.* **Output 5.3.5:** *Targeted species (giant swallowtail, yellow-and-black-billed parrot, water mahoe and bitter wood) surveyed, mapped.* **Output 5.3.6:** *Knowledge Management and Strategic Planning of the NFMCP achieved.*
Cross-cutting issues	**Climate change**	**Coordination and harmonisation among stakeholders**		**Resource mobilisation**	

THEMATIC AREA 1: FOREST GOVERNANCE AND CONSERVATION

Although Jamaica experienced a net gain in total forest cover over the last 20 years, the area covered by quality forest has decreased. The increase in forest cover can be attributed primarily to the regeneration of secondary forest cover on land previously impacted by bauxite mining operations and abandoned agricultural areas. The loss of quality (closed broadleaf) forest cover over time can be attributed to several governance factors, including:

- A number of policy and regulatory deficiencies at the central as well as local government level;
- Lack of demarcation of Forest Estate boundaries and the resultant reduction in the effectiveness of enforcement activities;
- Encroachment and squatting on Forest Estates, especially for agriculture and housing purposes;
- Open access of forests and Illegal cutting of trees on Crown lands;
- Selective removal of valuable biodiversity including endemic tree species;
- Insufficient take up by private landowners of opportunities to declare their forested land under the Forest Act and obtain property tax incentives;
- Insufficient integration of FD's sustainable forest and landscape management approach;
- Insufficient linking to international concerns regarding well-managed forests for climate change adaptation and mitigation and for biodiversity conservation.

The NFMCP therefore states its first outcome as a strengthened governance, policy and legislative framework to ensure the sustainable development of the forest sector (**Outcome 1.1**), which covers several outputs. Since the forest sector remains underrepresented in national decision making by Ministries and Government Agencies, the NFMCP is establishing various cross-sectoral mechanisms for integrating it into relevant processes (**Output 1.1.1**). The forest sector already has several policy and legal instruments for management in place, including: (a) The Forest Act 1996; (b) The Forest Regulations 2001; and (c) The Forest Policy for Jamaica 2017. The Forest Act is to be amended and drafting instructions are being prepared (**Output 1.1.2**). Sustainable forest management is also becoming better integrated into the drafting and updating of Parish Development Orders (**Output 1.1.3**). In light of the vulnerability of mangrove forests, a significant area of Crown lands is being identified to facilitate the transfer of management responsibility by the Commissioner of Lands to the Forestry Department for sustainable management **(Output 1.1.4**).

Laws and regulations protecting forests are challenged with enforcement. **Output 1.1.5** therefore, seeks to increase the enforcement capacity of FD. Based on the amended Forest Act, new permits and licenses are to be developed and introduced, while other ones are to be updated under **Output 1.1.6 (***Regulations developed for special recreational use permits, research permits, licence programmes***).** Finally, the demarcation of forest areas under various management regimes is being undertaken and verified (**Output 1.1.7**).

Jamaica's forests are vital for conserving the country's rich biological diversity and loss of forest cover or the degradation of forests results in loss of habitats. The protection of forest biodiversity is stated as **Outcome 1.2.** The management and control of alien invasive species in forest areas is an important

component, since they may cause the decline or elimination of native species through competition, predation, or transmission of pathogens, as well as cause the disruption of local ecosystems and ecosystem functions. Under **Output 1.2.1,** a list of invasive plant and animal species in forested areas is being developed. Control, eradication or management plans are being drawn up under **Output 1.2.2.** Meanwhile under **Output 1.2.3,** conservation plans for threatened or critically endangered species are being developed. The identification of target species for future conservation efforts which are also relevant to the forest sector is being done under **Output 1.2.4.**

Outcome 1.1: Strengthened governance, policy and legislative framework to ensure sustainable development of the forest sector. In progress:

- **Output 1.1.1:** Cross sectoral mechanism established for integrating the Forest Sector into relevant national decision making processes.
- **Output 1.1.2:** Forest Act amended.
- **Output 1.1.3:** Support for the preparation of Parish Development Orders provided.
- **Output 1.1.4:** Crown lands transferred by Commissioner of Lands to the Forestry Department for sustainable management.
- **Output 1.1.5:** Enforcement capacity of FD increased.
- **Output 1.1.7:** Boundary verification programme implemented.

Output 1.1.1: Cross sectoral mechanism established for integrating the Forest Sector into relevant national decision-making processes.

KPI	(Yes/No) National multi-stakeholder coordination policy dialogue mechanism in place, to ensure that the forest sector is integrated into decision making processes.		
BASELINE	No mechanism in place.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	✓ Yes
TARGET	Dialogue mechanism commenced.		

SUMMARY OF PROGRESS: The protection of the forest will require inputs at the highest level of decision-making in national development. A key NFMCP action to be implemented, in close collaboration with the MEGJC and the Vision 2030 Jamaica structures and processes, will be the development of mechanisms for better coordination with cross-sectoral policies and programmes. These will facilitate consideration of the NFMCP in all decisions that may affect the forest sector as well as alignment between other relevant policies, programmes and plans, and the NFMCP.

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Forest reserves in the Blue Mountains, Eastern Jamaica.

The Technical Advisory Committee (TAC) was established in 2017 as the cross sectoral mechanism for integrating sustainable forest management considerations into relevant national decision making processes. Draft Terms of Reference were first developed in 2018 and finalised at the first meeting of the TAC in February 2019. In order to increase the general ownership of the NFMCP, the TAC has a broad membership and includes a variety of cross-sectoral expertise. Its responsibilities include:

1. Provide guidance for the execution of the NFMCP 2016-2026, taking into consideration the overarching objectives, sector policies and other GOJ sustainable development guidelines and legislation.
2. Facilitate effective inter-institutional coordination and collaboration, and where appropriate, engender partnership building among the various public and private sector actors directly involved in the implementation of the Plan.
3. Assess the attainment of goals, targets and strategic objectives by periodically reviewing the progress and results, in accordance with the Performance Monitoring, Evaluation and Reporting (PMER) Plan & Framework.
4. Review and approve Technical Reports/Outputs/Deliverables bi annually[1]
5. Approve the award of Grants/Projects under the EU Budget Support Programme[2] (see also **Output 2.1.4**).
6. Monitor the implementation of the NFMCP and make recommendations accordingly to achieve progress.

See **Chapter 4** (Progress relating to Governance and Oversight) for more information on the TAC.

Other cross sectoral mechanisms will be developed: two of the Vision 2030 Thematic Working Groups are important for the forest sector. These are the (multi-stakeholder) TWGs on "Environment," and Climate Change and Disaster Risk Reduction (DRR)". Further, the NFMCP should be represented in the Protected

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[1] *The TAC may establish technical working groups or other mechanisms as deemed necessary.*
[2] *As the Steering Committee for the Budget Support Programme the TAC will approve grant proposals related to the Alternate Livelihood activities.*

Areas Committee (PAC), a cross-sectoral group on issues around protected areas, with a rotating chairmanship. It is also important to note that the NFMCP serves as the National Action Plan for the UNFF.[3]

Output 1.1.2: Forest Act amended.

KPI	(Yes/No) Amended Forest Act approved and promulgated.		
BASELINE	Drafting Instructions exist to support revision of the Forest Act 1996.	STATUS ☐Not started ☒Challenges. ☒In progress. ☐Completed.	
TARGET	Consultations on draft, which was completed on 30 June 2018.		

SUMMARY OF PROGRESS: The initiative to amend the 1996 Forest Act starts with the condition that Cabinet formally approves the preparation of drafting instructions.   The Environmental Risk Management Branch (ERMB) of MEGJC prepared the Cabinet submission in this regard, basically setting out the

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justification for the amendment to the Act. This was sent to six key agencies: MOFPS, the Attorney General Chambers, NEPA, JNHT, MLGCD and CPC. Their comments are to be attached to the submission to Cabinet. However, to date, only the CPC and NEPA have responded in writing, while others are being awaited.

If Cabinet approves the preparation of drafting instructions, these would be prepared by FD with the support of MEGJC and other entities and provided to CPC in order to prepare the Bill to amend the Act.

Since the Forest Policy was approved in Year 1, as well as the NFMCP in Year 2, in order to advance the process, FD has already begun a review of the Drafting Instructions. Five (5) stakeholder consultations were conducted in this regard, held respectively on 12 September 2016 (internal), 28 February 2017, 7 & 21 March 2017 (public) and 23 March 2018 (government). A total of sixteen (16) stakeholders drawn from various MDAs were in attendance. A report on these consultations was sent to MEGJC/ERMB in March 2018. Additionally, on 12 December 2017, FD had sent a letter to MEGJC requesting placement on the Legislative Calendar for the upcoming year (Year 3). This was delayed and the drafting instructions will need to be further refined.

A meeting of NEPA, JNHT, MLGCD was organised to consider the preliminary drafting instructions. However, some areas of concern were identified by NEPA, stating that there are overlaps with existing law. Subsequently a meeting was organised by MEGJC with FD and NEPA to seek consensus and prevent duplication. Unfortunately, a few of these issues have not been resolved to date, and more meetings will be needed. More work is to be done to finalise the drafting instructions.

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[3] *The Forestry Department is Jamaica's Focal Point for the UNFF. The country in 2016 was selected as one of six pilot countries to prepare a National Action Plan (NAP) guided by the global objectives and the twenty-five national policies and measures specified in the United Nations Forest Instrument. In light of this, coupled with the GoJ's commitment to the UNFF, the development of the NFMCP followed protocols outlined by the UNFF Secretariat in order to assure alignment with the Forest Instrument.*

Output 1.1.3: Support for the preparation of Parish Development Orders provided.

KPI	Number of Parish Development Orders drafted and updated which prioritise forest resources.		
BASELINE	Four Parish Development Orders which prioritise forest resources.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y3: 0 Y3: 3 Y10: 9
TARGET	2 Development Orders prepared and updated regarding forest management priorities.		

SUMMARY OF PROGRESS: A development order is a legal document which is used by the planning authorities. It includes general over-arching policies to guide development and makes a determination of the use of land. One important land use is conservation. In the preparation of a development order, NEPA writes to stakeholders asking their advice on land use; the FD

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can send shapefiles for forest reserves or areas that are considered important for forestry purposes, even if not in the care of the FD. Within NEPA, the Ecosystems branch advises the Planning Branch on special considerations (e.g. as it relates to biodiversity or species dependency) within the development orders.

The resulting zoning maps demarcate these areas as forest reserves. However, the particular operation, management details or exact purpose is not part of the development order. It only indicates zoning and special considerations. A potential developer would need to consult and get permission from the NRCA or FD for any operation/development within such a zone; at times special oversight arrangements are indicated as well.

During the first years of the NFMCP, three development orders were revised. Two have been published as provisional (St. James and Portmore) while the preparation of a new draft Manchester Order is in process. Additionally, a reconnaissance survey was conducted and report prepared including 10 Local Planning Areas (LPAs).

The process of updating a development order takes about ten years. The four which form the baseline, were started in 2006. It takes a number of rounds of review by stakeholders; subsequently a provisional order will be gazetted and promulgated since the Town and Country Planning Act requires a development order to be in the public sphere for comments and critique. Objections need to be considered, amendments implemented, before a development order can be confirmed. The right format of spatial data enables the accurate representation of the forest reserves within the Parish Development Orders. Iterative changes are made to a draft or provisional development order and the various agencies need to be kept abreast. Management plans (e.g. for forest reserves) need to keep fitting with the draft. Also for instance in the case of Cockpit country, the preliminary boundary (which has not been signed off on) is at times amended, based on the actual demarcation, and maps and shapefiles need to be redone.

Development orders are complemented by Local Sustainable Development Plans (LSDP). They tend to be at a small-scale (such as Cross Roads and Half Way Tree in Kingston. All local authorities are now developing such LSDPs, starting in the urban centres. They address implementation issues such as "walkability", sidewalks, sewage systems, shady areas. These plans compile recommendations.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: There is ongoing consultation between NEPA and the local Municipal Corporations, Parish Development Committees and Community groups. In year 3, in particular the Manchester Municipal Corporation was engaged; three stakeholder consultations were conducted there. Many other stakeholders get involved in the preparation of Parish Development Orders, since the consultative process is wide-ranging. Amendments provided by stakeholders are discussed and incorporated until the development order is confirmed.

Output 1.1.4: Crown lands transferred by Commissioner of Lands to the Forestry Department, for sustainable management.

KPI	Area (Hectares) of mangrove and swamp forests transferred by the Commissioner of Lands for Forestry Department's management.		
BASELINE	2,267 ha of mangroves managed as forest estates.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Year 8: Transfer completed Year 5: Documentation submitted Year 3: Identification on track
TARGET	Lands for transfer of management responsibility identified and reviewed.		

SUMMARY OF PROGRESS: A total of 163 parcels (approximately 6,625 ha) of government lands with mangrove cover were identified during Year 2. Management responsibility for these areas is to be transferred.

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A total of 503 parcels with mangrove cover on private lands were also identified during Year 2. These will not be part of the intended transfers, but the information will be used during the development and implementation of the mangrove and swamp forest management plan (see **Output 3.1.5**).

During Year 3, the identification of parcels continued; valuation and the updating of information was started.

Red Mangrove Forest.

Output 1.1.5: Enforcement capacity of FD increased.

KPI	Quality and applicability of approaches for detection of offences regarding encroachment on forest estates.		
BASELINE	Mechanisms currently in place (Patrol Plans & reports from Rangers) to detect encroachment on forest estates.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Quality + Applicability → Effective enforcement approaches
TARGET	Existing approaches being improved and new approaches being developed where necessary.		

SUMMARY OF PROGRESS: In Year 3, FD stopped tracking the compliance rate. FD opted for a more institutional approach through the training of staff in forest law, enforcement capacity and patrolling. A training course on these issues was held in February and March 2019. Additionally, technology is now playing a larger role with trail cameras being installed in identified forest estates (one camera was put into use in Year 3, an additional three are to be brought into action in Year 4).

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More patrols are now being done, often together with partners such as the NLA, JCF, JCDT (Blue and John Crow Mountains), UDC and C-CAM (Hellshire). There remains an issue with the identification of offenders and by extension the ability of FD to institute proceedings in a court of law.

	Y1	Y2	Y3
Offences detected	501	393	N/A
Number of Notices of Contravention served	57	33	N/A
Number of Notices to Quit served	0	1	N/A
Compliance rate	78%	89%	N/A

Notices of Contravention were served for offences such as: Animal trespass, Agricultural squatting, Clearing of land etc. Of the thirty-three (33) Notices of Contravention served in Year 2, all expired during the year. Of this amount twenty-nine (29) had full compliance; three (3) had partial compliance; one was withdrawn. A Notice to Quit was served on behalf of the National Land Agency (NLA). During Year 1 and 2, follow up site visits proved to be effective in increasing the compliance rate. *Court Cases:* Eight (8) court matters were attended during Year 2. Three (3) were successfully resolved and two dismissed.

Sawmill monitoring activities started in August 2016. During Year 2, the Enforcement Branch ceased the issuing of notices of contravention in light of procedural issues that required resolution. On resolution of these, FD will institute initiatives geared towards increasing compliance amongst this group. A recently started training programme is improving the capacity of the enforcement personnel within FD to conduct successful prosecutions. Success of detection is improved by conducting more structured and effective patrolling by enforcement personnel in collaboration with partner institutions. Further, the strategic use of appropriate surveillance technology could address the limited identification of offending individuals.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: FD continues to maintain valuable collaborative interventions with external public and non-governmental partners. This is evidenced by an increased number of joint patrols conducted in the four Regions. The partners include: JCF, JCDT, UDC, C-CAM and others. The enforcement capacity of FD depends on a number of factors, including the approach to patrolling, surveillance technology, governing legislation and the capacity of personnel.

Output 1.1.7: Boundary verification programme implemented.

KPI	Area (hectares) covered in the boundary verification programme.		
BASELINE	6-8 parcels per annum.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y7: 45 Y5: 30 Y3: 15
TARGET	At least 5 parcels per annum and accelerating (this relates to increase in funding).		

SUMMARY OF PROGRESS: In Year 1, fifteen parcels in the parishes of St Elizabeth and St Andrew were verified under the boundary verification programme. In Year 2 as illustrated in the text box, while no areas were declared or submitted to the Minister for declaration or gazetting, work was done on verifying boundaries and preparing legal descriptions for four forest estates and two parcels in Westmoreland, Clarendon, and St Elizabeth

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representing over 372 ha. During Year 3, boundary verification was completed for two parcels (John Anderson in Trelawny and Greenvale Forest Estate in Manchester).

Area proposed for protection as the Cockpit Country -Boundary Establishment Activity: Significant attention was paid during Year 2 and 3 to the Cockpit Country and its environs, as the Government started the process to define the boundary of the "area proposed to be protected as the Cockpit Country", which aims to ensure the protection of its rich biodiversity, fresh water resources, unique geological feature**s**

During Year 2, the following forest estates were identified for boundary verifications and the preparation of descriptions: James Hill and Pennant Douces in Cluster 2 (Clarendon); Cedar Valley and Camperdown in Cluster 3 (St. Ann), and parcels in Springvale (St. Elizabeth) & Carawina (Westmoreland). Boundary verifications were completed for all these areas as well as for Bull Head in Clarendon. Descriptions were completed for Carawina (106 ha), parcels in Springvale (20 ha), Bull Head (220 ha) and Pennant Douces (26 ha). Descriptions were not completed for Camperdown, James Hill and Cedar Valley due to boundary and land disputes that must be addressed with the National Land Agency. On submission of these descriptions to the Minister, it is anticipated that these areas will be declared forest management areas or forest reserves in the near future.

and cultural heritage. Between July and November 2017, FD was represented at several meetings and discussions, and worked closely with the Office of the Prime Minister and the Ministry of Economic Growth and Job Creation on the determination of the Cockpit Country boundary. FD was responsible for the production of numerous iterations of maps to support the identification of the area to be designated as the Cockpit Country. In November 2017, the Prime Minister announced the proposed boundary. The area to be protected is approximately 75,000 hectares (750 sq. km), including 26

forest reserves (or estates) amounting to 33,924 ha accounting for approximately 45% of the area proposed to be protected as the Cockpit Country.

Prime Minister the Most Hon. Andrew Holness (left) and Amb. Malgorzata Wasilewska, Head of the Delegation of the EU to Jamaica (right) with a GPS operator (middle) ground truthing the boundary to be set, June 2019, Trelawny.

Laying of the permanent boundary monument, June 2019, Trelawny.

The proposed boundary extends across five parishes (St. James, Trelawny, St. Elizabeth, Manchester, and St. Ann). From a hydrological perspective, the proposed boundary encloses an area of significant hydrologic importance – contributing to approximately 40 % of the water supply of western Jamaica. This area also includes 51% or the remaining Closed broadleaf forest.

The Prime Minister then tasked FD to provide a detailed legal description for gazetting this new boundary establishing the area proposed for protection as the Cockpit Country. In order to achieve this, a series of procedures had to be completed, including desk research, boundary investigation, ground-truthing and boundary survey or establishment.

Boundary of proposed Cockpit Country Protected Area:

Cockpit Country Area Proposed for Protection w/ Towns
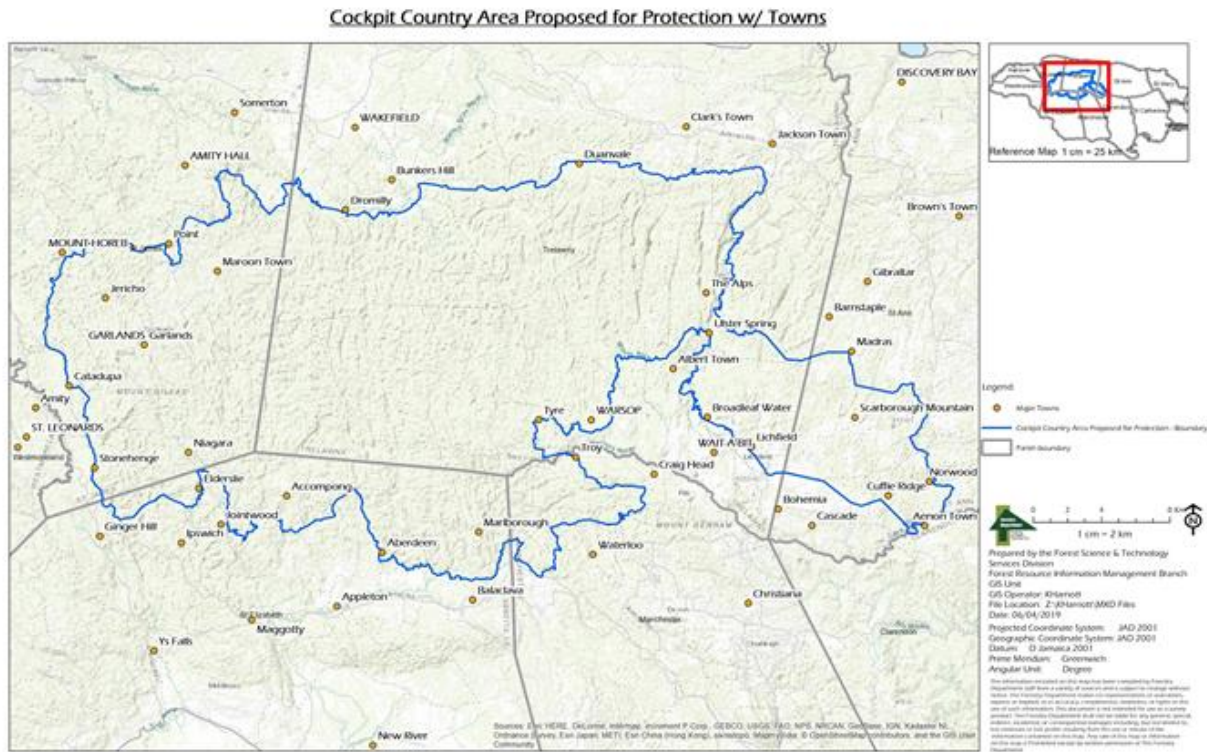
PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The National Land Agency and the Forestry Department formed a technical advisory working group to provide guidance on the survey techniques, equipment and quality checking processes to be implemented or used for the boundary establishment. NLA created a ground control network at 5km intervals around the eastern section of the area, from Jackson Town to Troy, as control/reference for the establishment of the monuments during Year 3. A draft MOU was submitted by FD to the NLA legal team for their review. This document should guide further collaborative activities in order to complete the full boundary establishment.

Outcome 1.2: Forest biodiversity protected. In progress:

- **Output 1.2.1:** List of invasive plant and animal species in forested areas developed, maintained.
- **Output 1.2.2:** Invasive species control (management) plan designed and implemented.
- **Output 1.2.3:** Species (pilot) conservation plans developed.
- **Output 1.2.4:** Identification of target species most relevant to the forest sector for future conservation efforts.

Output 1.2.1: List of invasive plant and animal species in forested areas developed, maintained.

KPI	(Yes/No) Up to date list of invasive flora and fauna species in forested areas in place.		
BASELINE	None.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	
TARGET	On the ground verification of list of invasive species by forest types; one forest type per year (for 6 types).		

SUMMARY OF PROGRESS: A general list of invasive flora and fauna species was provided to FD by the IOJ. After review, the list of invasive species in Closed Broadleaf Forests was completed. The invasive species in mangroves will be considered in Year 4; however, FD's expertise is limited to plant species and the faunal part of it is outstanding.

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FD performed a literature review, to establish and redefine criteria for determining the invasiveness of species and to propose criteria for determining forest invasive species. International criteria for invasiveness do not always apply in the Caribbean context, especially for terrestrial species. These criteria are primarily intended for categorising and listing invasive non-native plant species that are most threatening to wildlands, and list animals that are not native to the ecosystems under consideration. A report on invasiveness criteria was prepared for internal review.

FD recognises less than 5 invasive tree species, but there are invasive herbaceous shrubs and grasses (such as bamboo, wild coffee). The only real invasive tree species is the Phytosporum (wild coffee) where an ad hoc study was done. In the Blue Mountains the Guinnea Grass, Red Bush and the Hedgecomb (not trees) are prevalent and FD has experiments running on how to control these herbaceous invasives. FD is looking at Bamboo – but bamboo does not spread by itself. The vector for spreading is people.

Although the activities associated with this output commenced in a timely manner, the output was not achieved as scheduled. The stipulated timeline was unrealistic given the magnitude of work as well as insufficient human capacity; the forest ecologist/biologist is not as yet recruited but will come on board in Year 4. This person will have the skill set to also take up the listing of fauna.

Closed Broadleaf Forest, Dolphin Head, Hanover.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: NEPA and IOJ are expected to list the invasive fauna for the various types of forests. IOJ is the clearing house for references and data. UWI/DLS is to be involved for the mangrove forests. All information will be shared, but FD will maintain its own lists for the various types of forests. An important point, however, is that FD needs to get its forest ecologist on board as the point person to work with the partners and participate on behalf of FD in the invasive species working group, coordinated by NEPA.

Output 1.2.2: Invasive species control (management) plan designed and implemented.

KPI	Number of invasive flora and fauna species controlled.		
BASELINE	Information contained in Invasive species strategy and working group reports.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	- { •Control Plan Invasive species 1
TARGET	(Year 2) Management/ Monitoring Plan for the invasive Green Iguana prepared.		- { •Control Plan Invasive species 2

SUMMARY OF PROGRESS: The National Invasive Alien Species Strategy and Action Plan (NIASSAP) involves updating the national invasive species listing. This is being done by the working group and the listing of invasive species is maintained by IOJ. As mentioned under 1.2.1, there is a discussion going on regarding "invasiveness".   If a species is "Aggressive invasive," it replaces

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native species. "Potentially aggressive invasive species" are those species that have the potential to become dominant, influence forest structures, but which need a vector. Some of the species that the FD has introduced are considered invasive by NEPA (example: ornamentals).

The success of the Jamaica Iguana recovery programme is very significant; one of the more significant success stories of a species that was thought to be extinct. The success rate of re-introduction is massive. Currently NEPA is only developing control plans (operational plans) for species which are associated with the Jamaica Iguana, such as the mongoose. There are no other monitoring programmes for invasive (land) species. FD and NEPA should together determine which species are priority for control plans, in particular relating to broadleaf forests. With such a listing, the NFMCP can be made more robust and NEPA will be enabled to include these species into its operational plan.

The target for Year 2, the Control Plan for Green Iguana has not been prepared as yet. It is being discussed by the Invasive Species Working Group. The Green Iguana population has not been established so far; there are actually few sightings. Border control could be engaged through training activities, in order to increase monitoring of the species (people bring in and out plants and animals; there is also a level of hitchhiking on ships and in containers). NEPA has a response team to eradicate at port if needed.

An issue also is the possibility of hybridisation between the Jamaica and Green Iguana, in particular when Green Iguana numbers increase. Hybridisation between the Cayman and Green Iguana has already taken place in the Cayman Islands, where authorities have set up an eradication programme (hunting, paid per head). The hybridised offspring is currently being observed, to learn if they are fertile.

NEPA has started the White Tail Deer population survey. This species is very relevant to Closed Broadleaf Forests since it influences forest structure. The census (numbers and location) is in progress and a preliminary report will be completed by March 2020. This would be the first phase of a control (reducing numbers) or eradication programme.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The traditional partners include the IOJ, the repository of information on biodiversity and species. They are part of the invasive species working group. UWI/DLS is engaged in soil sampling and efforts to improve the diet of the Jamaica Iguana. With permission of FD, specific seedlings are harvested, nursed in a greenhouse and will be further tested for juvenile Iguana diets.   Other partners include the Hope Zoo, which is engaged in the Jamaica Iguana Headstart programme. Two animals were released so far this year. The Zoo has taken in 81 juveniles over Year 3 (increased from 25-30 annually) to make the population grow faster. The target is now 100 annually. MICAF is engaged in border control (airports and seaports). C-CAM is an instrumental participant on the working group. It provides the boats for some of the research; it also has active monitoring activities, some of it based on funding allocated through the working group.

Output 1.2.3: Species (pilot) conservation plans developed.

KPI	Number of species conservation plans developed.		
BASELINE	Management/ species recovery plans exist for about 7 major faunae and 1 flora: (a) Crocodile, (b) Coney, (c) West Indian Whistling Duck, (d) Black-billed Parrot, (e) Yellow-billed Parrot, (f) Jamaica Iguana, (g) Jamaica Boa; and (h) Passiflora macfadyenii.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y0: 7 Y5: 9 Y10: 11
TARGET	Inventory/ data collection for the development of conservation plans.		

SUMMARY OF PROGRESS: In addition to the 8 plans mentioned under the baseline, an orchid management plan has been completed. For a number of species, a conservation plan speaks particularly about habitat protection and is therefore aligned to forest structure. An example of focus on habitat is the work that is currently taking place to devise a conservation plan for

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the Jamaican Flower Bat. Other species that improve the forest structure include the Jamaican Boa (Yellow Snake), the Coney and the Crocodile.

A Coney survey is being done in the Blue and John Crow Mountains, through JCDT (Portland and St. Thomas). The crocodile depends on good mangrove structure and also the West Indian Whistling Duck needs good wetlands and mangrove areas. There is ongoing data collection on corals; NEPA does two annual assessments. An annual report is generated on the corals and conservation links are made with marine sanctuaries.   There is an (indirect) co-dependency between corals and mangrove forests. Assessments on other species are also done. The assessments on the Yellow-billed and Black-billed

Parrots were completed. The Jamaica Iguana enjoys an actively implemented management plan. For 2020-2021 the Bitterwood and Water Mahoe are targeted. Data collection on Bitterwood has started.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The IOJ is the clearing house on species; however, IOJ does not keep track of conservation plans. Another partner, SRC is engaged in nurseries/ headstart programmes. These programmes have worked well for some species of fauna; however, the survival rates may be low and such programmes take time. Headstart plans can be articulated for both flora and fauna. Nurseries should be established that can produce enough seedlings and juveniles to restore to natural sites. SRC has information on successful propagation and a manual is being prepared for distribution. A headstart programme is not needed for Boas – here habitat conservation is better (demarcation of sanctuaries). A headstart programme for reptilians is easy to implement. The FD operates a programme for Private Landowners with an incentive package (tax breaks). The private forest areas could be used as sanctuaries. The owners are already providing inputs in the form of planting and maintaining trees. Similarly, safe havens for fauna to be promoted

Output 1.2.4: Identification of target species most relevant to the forestry sector for future conservation efforts.

KPI	Number of target species identified for future conservation efforts.		
BASELINE	2 plant species being considered.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y10: 7 Y5: 4 Y0: 2
TARGET	5 species identified for future conservation (Turnera campaniflora, Epidendrum ramuson, Dichaea glauca, Pleurothallis laxa and Cinnamodendron corticosum).		

SUMMARY OF PROGRESS: The propagation potential of Turnera campaniflora is being researched through the SRC; it was successfully propagated through tissue culture. The plant is endemic to Jamaica and thought to be critically endangered. The five species have been identified, however the populations and their distribution may not have been

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researched as yet. Except for Turnera, the species are not as yet included in NEPA's business plan. Another indicator species for good forest structure are the Bromeliads, which host frogs and crabs. These species could be added to the list of management plans.

The final result of this output should be management plans, as described under **output 1.2.3**. In relation to this output, an indicator species could be the land crab, which uses both forests and the sea. They display the phenomena of mass migration (twice in recent times). The barriers can be many, e.g. road construction. Crocodiles rely on crab for food. A Headstart programme for the American Crocodile was recommended and is to be started. A facility has been established. The Great Morass in St. Thomas is a safe haven for crocodiles; a good place for release if properly managed.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: Specialist staff is needed at times. The Botanist of IOJ or UWI/herbarium will be engaged for assistance. Other specialist staff may be involved.

THEMATIC AREA 2: FOREST UTILISATION

The NFMCP assists stakeholders to better understand, document and monetise the sustainable use of forests. Under **Outcome 2.1** *"Innovative mechanisms for financing sustainable forest management and obtaining benefits from forest use"* should be established. The diversification of revenues and economic benefits is being researched and tested through incentive programmes. The current incentive programme is being evaluated (**Output 2.1.1**) and new or revised incentives for SFM are being made available and promoted (**Output 2.1.2).**

The ecosystem services of Jamaica's forests are without doubt massive, but payment systems have not been created as yet. The benefits derived from ecosystem services and from the social use of forest resources are to be researched and tested under the NFMCP. **Output 2.1.3** (*Programme developed for Payment of Ecosystem Services within forested areas*) is programmed for future years. Earning sustainable livelihoods in forest areas in "alternative" ways and especially engaging women, is being promoted heavily through the NFMCP. **Output 2.1.4**, (*Alternative livelihoods in forest communities promoted*) has taken off very well in Year 3 with a number of community projects selected for funding. However, the targets of promoting agroforestry still need to be set.

The traditional means of forest revenues, timber production, is also being enhanced under NFMCP through better planning for sustainable harvesting, increasing economical use of wood products and promoting best techniques for timber processing. **Outcome 2.2** addresses the *"Sustainable harvesting and use of timber products from forests."* The economic characteristics of local wood species' is not as yet readily known and therefore their economic viability is not being realised; the country lacks a central repository of data on the market price, supply, and demand for local timber. **Output 2.2.1** (*Economic viability of wood product species assessed and appropriate timber processing methods recommended*) is designed to address this gap but had not started by the end of Year 3, **Output 2.2.2** (*Sustainable harvesting programme developed)* is well-underway and ahead of target.

Similar efforts are underway regarding non-wood forest resources. Under **Outcome 2.3**, *"Sustainable use of non-timber products and services of forests,"* **Outputs 2.3.1** (*Research programme on non-timber forest products developed*), **output 2.3.2** (*Producers and consumers of non-timber forest products identified)* and **output 2.3.3** (*Economically viable non-timber market opportunities developed)* were not started by the end of Year 3. A reason for this is the overload on staff during Year 3 especially with many new activities coming on stream (including the boundary of Cockpit Country). Additionally, since this is the first time that research of this nature is being undertaken by FD, the determination of research costs and personnel to be engaged in conducting the research is challenging. A greater collaboration with Forestry Departments/Services in other countries which have pertinent experience, is being pursued.

With regard to **output 2.3.3**, the species for which the profiles are to be developed have not yet been determined. The products need to be identified, the target audiences determined and agreed upon before the development of investment profiles and market opportunities can commence. The investment profiles further need to be part of a larger programme within FD as designing the material and distributing it could easily contribute to higher level goals within the organisation.

Nevertheless, the recreational use of forests, including cultural and heritage sites is being systemised by various agencies collaborating through the NFMCP. Rehabilitation work on Gourie estate (Manchester) is steadily continuing and on Clydesdale (Saint Andrew) being prepared (**Output 2.3.4**).

Timber harvesting.

Outcome 2.1: Innovative mechanisms established for financing sustainable forest management and obtaining benefits from forest use. In progress:

- **Output 2.1.1:** Incentives programme evaluated.
- **Output 2.1.2:** New or revised incentives for SFM made available and promoted.
- **Output 2.1.4:** Alternative livelihoods in forest communities promoted.

Output 2.1.1: Incentives programme evaluated.

KPI	(Yes/No) Evaluation of the incentives programme completed.		
BASELINE	No evaluation.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	✓ Yes
TARGET	Aspects of processes evaluated.		

SUMMARY OF PROGRESS: During Year 3, FD completed a report on the review and evaluation of its Tax Incentive Package, specifically the Private Land Declaration (PLD) programme. The evaluation identifies the gaps. A Standard Operating Procedure to further strengthen the programme was drafted and included in the report. The full report is to be completed by Year 4.

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Public input was received in Year 2, including recommendations and findings to support the review of incentives for private owners of forested lands over the coming years. On 26 March 2018, FD hosted a public stakeholder consultation in St. Andrew to get insight from private forestland owners on additional possible incentives which they would like to see offered by the State. Approximately twenty (20) private land owners from across the parishes of St. Ann, Manchester, St. Mary, St. Catherine, St. Elizabeth and St. James were in attendance. Representatives from the National Land Agency also participated.

This output was initially slated to be completed within one year. However, the output was revised and a full report on potential feasible incentives is to be completed by Year 4, 2019-2020.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The Ministry of Finance needs to be engaged before the incentive package can be finalised.

Output 2.1.2*: New or revised incentives for SFM made available and promoted.*

KPI	Number of incentives (new or revised) available to private landowners.		
BASELINE	Three incentives: Technical assistance, free seedlings under PFP & Land Declaration Programme.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	**+1**
TARGET	(Year 2) NRV studies conducted to determine incentives to be developed or revised.		

SUMMARY OF PROGRESS: During Year 3, FD received three Expressions of Interest (EoI) from land owners regarding declaring their assets under the Forest Act. There had not been such EoIs before.

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Current incentives include the provision of seedlings (see also **output 3.1.1**), technical transfer sessions (see **output 4.1.3**) and tax relief (see **output 2.1.1**).

Under the Private Forestry Programme, during Year 2, 42,038 seedlings were distributed free of cost to 451 programme participants. Of this amount 21,873 seedlings were distributed to 284 first time or new planters, which were mostly registered in recent years. Additionally, a total of 1006 site/monitoring visits were conducted during the year: 404 visits to new planters on receipt of their seedlings, and 602 visits to existing planters who previously received seedlings. These visits aim to provide technical assistance on care and maintenance of seedlings, and to ensure proper adherence to the conditions of the programme.

Under the same aim, a technical transfer session was held by FD in November 2017. The session targeted registered members of the programme from FD's South West Region, which includes the parishes of: Westmoreland, St. Elizabeth, Manchester and southern Trelawny. In preparation for the session, a survey was administered to one hundred and twenty-seven (127) registered planters from these parishes. The questionnaires were completed and returned over a three-month period with a 100% response rate. The initial findings, from the questionnaires revealed that the main areas of interest were:

- • Matching species to sites;
- • Land preparation;
- • Weed control;
- • Pest identification;
- • Pruning and thinning;
- • The basics of calculating Growth & Yield.

Natural Resource Valuation (NRV) could also provide incentives for sustainable forest management. During the period FD worked with the United Nations Development Programme (UNDP) in the development of a project for the GEF 6. The project concept, which was approved during the period, will see FD completing one NRV in the Stephney -John's Vale Forest Reserve in St Ann under Output 4.1.3.

Beekeeping at Constitution Hill, St. Andrew.

Output 2.1.4*: Alternative livelihoods in forest communities promoted.*

KPI	Number of alternative livelihood projects supported.		
BASELINE	16 LFMCs with livelihood projects.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y7: 40 Y6: 20 Y0: 16
TARGET	Consultancies implemented to test approaches (agroforestry, SES Dolphin Head).		

SUMMARY OF PROGRESS: The FD includes in its mandate to "Promote agroforestry and social forestry programmes for the benefit of farmers, schools and any other interested persons or groups of persons." Therefore, under its Private Forestry Programme (PFP), FD encourages and works with owners of private lands to plant forest trees on their properties (including farms) in support of sustainable land management. See also **output 2.1.2** and **output 4.1.3**. During Years 1, 2 and 3, FD registered 1,113 new planters and distributed for free, 126,895 tree seedlings as follows:

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- 2016/2017-458 new planters registered. 64,309 seedlings distributed.
- 2017/2018-424 planters registered. 42,038 seedlings distributed.
- 2018/2019-231 planters registered. 20,548 seedlings distributed

2018/2019 also marked the first year of the European Union Budget Support Programme (EU/BSP) and saw the engagement of the Environmental Foundation of Jamaica (EFJ) to execute a Call for Proposals which was sent out on 13 February 2019. It closed on 29 March 2019. Under the EU BSP, 40 alternative livelihood grants will be given to eligible groups over a two-year period. From the first period, 93 projects were short-listed after the first call; 27 of these projects were selected for funding. It was decided to

organise a second call, to run from 22 July – 30 August 2019. This is expected to result in another 13 projects to be funded. (This work was done during the first quarter of Y4). The work is progressing ahead of the targets set.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: EFJ was brought on board to help with execution of grants under EU BSP. Work continued with our LFMCs, PFP, Social Forestry and school programmes. SDC was expected to carry out the Socio-Economic study for Dolphin Head; however, this did not happen. The SES for Dolphin Head will be done by the FD's rural sociologist by March 2020.

Outcome 2.2: Sustainable harvesting and use of timber products from forests. In progress:

- **Output 2.2.2**: Sustainable harvesting programme developed.

Output 2.2.2: Sustainable harvesting programme developed.

KPI	Number of harvesting plans developed.		
BASELINE	None.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y10: 16 Y6: 8 Y0: 0
TARGET	First harvest plan completed.		

SUMMARY OF PROGRESS: This output is well-ahead of target.   Three prescriptive plans for the sustainable harvest of timber resources within forest estate clusters managed by FD were completed during Year 2 and 3, representing a significant step for the sector towards the development of yield and growth curves (see also **output 5.3.1**). These are:

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1. Harvesting Plan for forest estates within Cluster 5 (Orchards & Environs) which spans the parishes of St. Thomas and St. Andrew and encompasses sixteen (16) forest estates between the Yallahs River valley to the east, and the Hope River watershed to the west (completed in Year 2).
2. Harvesting Plan for forest estates in Cluster 4 (Western Blue Mountains), also completed in Year 2. The boundaries of Cluster 4 span the parishes of St. Mary, Portland and St. Andrew. It encompasses thirty (30) forest estates, many of which are fragmented.
3. Harvesting Plan for Cluster 2 was drafted/ completed during Year 3.

Work was planned for drafting the Harvesting Plan for Cluster 3. However, this is not as yet completed due to a lag in the field assessment of volume data (which are expected from FRIM). Work on Cluster 6 has also started.

A limiting factor is that harvesting plans tend to be based on partial samples. Usually only limited tree stand data can be researched as opposed to the preferred complete plantation information.

> **Outcome 2.3:** *Sustainable use of non-timber products and services of forests.* In progress:
>
> - **Output 2.3.4:** Recreational sites rehabilitated.

Output 2.3.4*: Recreational sites rehabilitated.*

KPI	Number of recreational sites rehabilitated.		
BASELINE	None.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Feasibility study 3rd site Clydesdale Gourie
TARGET	No target for Year 3.		

SUMMARY OF PROGRESS: Work was done on developing the necessary guidelines & frameworks to support operationalisation of the Gourie Forest Management Area recreational site. Rehabilitation took place during Year 1

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and also in the months just before the NFMCP took off in April 2016. The following renovations were completed according to industry standards by May 2016: (a) Public bathrooms; (b) main gazebo; and (c) two cabins.

During Year 3, FD started developing a business arm for the management of recreational sites and to further expand and operationalise the product. A study tour was made in October/November 2018 to Scotland, to look at developing this business area (CEO, LED & Finance participated). Items could include the development of trails, café/resource centre, special components for adults and children, sportive elements such as ZIP lines, charges for parking, tours and various concessions (Café, etc.). A consultant will be hired in Year 4 to support the development of this business arm (funded by EU/BSP). This would use Gourie as one point of focus resulting in its operationalisation.

More work needs to be done on gathering statistics of visitors. There is no information on trends regarding use of recreational sites.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: JCDT partners successfully for the Blue Mountains sites. TPDCo is a partner in the business development of recreational forest sites. It has reported on Gourie and provided recommendations. JNHT identifies areas to be declared as heritage sites. They request input for those located in forested areas.

Cabin at Gourie Forest Management Area, Manchester.

THEMATIC AREA 3: CAPACITY FOR SUSTAINABLE FOREST MANAGEMENT

The NFMCP recognises that planning for the management and conservation of Jamaica's forests should involve the widest range of stakeholders possible. Building collaborative partnerships and participatory planning for producing and implementing the various plans, programmes or guidelines will set the stage for sustainable forest management. It will take a combination of facilitation tools along with a significant investment in time to achieve the needed close working relationships between government agencies, private land owners, investors, farmers, charcoal producers, local forest communities and the wider public. Therefore, organisational strengthening, appropriate techniques for the adequate and timely engagement of all actors in the planning cycle, as well as sufficient communication will play essential roles in the implementation of the outputs in Thematic Area 3.

A central output in the NFMCP's activities is the development of a formal reforestation programme for forest estates (**Output 3.1.1**) which will identify lands that could be suitable for planting trees and will determine agreed annual targets. At the same time, through **Output 3.1.2** the FD aims to standardise its Forest Management Plans (FMP) around forest estates in 25 clusters or Forest Management Units (FMU). Within the watershed management plans being developed by NEPA, specific elements for the restoration of forests will be included (**Output 3.1.3**). FD implements a nursery programme (**Output 3.1.4**) to produce the seedlings needed for reforestation, urban forestry, special events (labour day and national tree planting day) and various projects. The urban forestry programme took off in Kingston but aims to expand to other cities (**Output 3.1.7**). A database of private forest landowners was created (**Output 3.1.8**).

Two outputs under **Outcome 3.1** had not started as yet by the end of Year 3: **Output 3.1.5** *(Mangrove and swamp forest management plan developed & implemented)* and **Output 3.1.6** *(Guidelines developed for management practices for riparian forests along rivers and streams within forest estates).*

Additionally, the country's systems for measuring and verifying deforestation and forest degradation, as well as reporting it effectively nationally and internationally, is being strengthened. Over the course of the NFMCP, Jamaica will embark on Phase 1 of the UNREDD+ readiness programme. The review and revision of the existing forest inventory approach to support Carbon Stock Monitoring (CSM) and potential carbon trading agreements (**Output 3.2.1**) under this phase has started**.** The Jamaica REDD+ Readiness Strategy is also being completed (**Output 3.2.2**). An analytical report on the drivers for deforestation and forest degradation is being produced (**Output 3.2.3**). At the time of the mid-term review of the NFMCP, future actions will be determined.

Two outputs did not commence as yet. **Output 3.2.4** aims to calculate the National forest reference emission level. The completion of the revision of the inventory manual which is to incorporate carbon stock monitoring needs to be done before this output can proceed. Also, a Safeguards information system is to be established (**Output 3.2.5**).

The capacity of Community-based organisations, such as Local Forest Management Committees (LFMC) is also vital for sustainable forest management. **Output 3.3.1** strengthens their institutional capacity for project development and management. LFMCs are also critical in forest fire control and fire suppression teams are being established and trained under **Output 3.3.3**. Successful forest fire prevention and containment will preserve forest cover, while simultaneously protecting biodiversity, protecting stocks of timber and other forest products and reduce the release of CO_2 into the atmosphere. **Output 3.3.2** focusing on the strengthening of decision-making and governance processes in LFMCs, has not started to date.

Outcome 3.1: Improved participatory planning to manage, protect and conserve Jamaica's forests. In progress:

- **Output 3.1.1:** Reforestation programme for forest estates developed.
- **Output 3.1.2:** Forest Management Plans (FMP) for forest estates in clusters developed.
- **Output 3.1.3:** Watershed restoration plan developed, implemented.
- **Output 3.1.4:** Nursery programme implemented & evaluated.
- **Output 3.1.7:** Appropriate guidelines developed for the establishment and maintenance of trees in urban settings; for cultural, aesthetics and shade purposes.
- **Output 3.1.8:** Database of private forest land owners created and maintained.

Output 3.1.1: Reforestation programme for forest estates developed.

KPI	Area (hectares) planted under the Reforestation programme.		
BASELINE	100 ha planted; 328 ha maintained.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	
TARGET	100 ha planted in Year (300 in Y1-Y3). Additional 326 ha maintained.		

SUMMARY OF PROGRESS: A formalised comprehensive reforestation programme will be completed by the end of Y4 for approval by the CEO. There is currently a draft programme document. Additionally, a guideline for reforestation is being developed.

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The FD completed planting of a total of 106 ha in denuded areas across the island in Year 3. For the Years 1, 2 and 3, FD reforested a total of 313 ha of denuded lands providing employment for persons living and working close to forested areas:

- 2016/2017-133ha planted. 415 persons were engaged/employed: 350 males and 65 females
- 2017/2018- 74.54 ha 482 persons were engaged/employed: 412 males, 72 females**.**
- 2018/2019- 106 ha 394 persons engaged/employed: 330 males, 64 females.

358 ha of plantations were weeded during Year 3. This represents a 61% increase over the performance of Year 2 when approximately 222 ha of plantations were weeded/maintained. Year 2 presented a 46% increase over Year 1, when 152 ha of plantations were weeded/maintained.

The creation of fire lines and boundaries to protect newly planted sites continued during the period as well, to strengthen forest establishment and management practices. Performance for other maintenance activities are detailed as follows:

- Firelines and Boundaries: Planned 59 km; Actual: 33 km.
- Roads and Trails: Planned 56 km; Actual: 66 km.

Cumulatively, the planting targets for the first three-years of the plan were achieved. Also, both the maintenance and planting targets for Year 3 were met despite several challenges which affected the planned schedule.

Reforestation at an Estate in the Blue Mountains, Eastern Jamaica.

Output 3.1.2: Forest Management Plans (FMP) for forest estates in clusters developed.

KPI	Number of FMPs developed for forest estates in clusters.		
BASELINE	As at March 2017, FD had a total of nine (9) forest management plans (7 for forest estates and 2 for private areas) representing approximately 55,931 ha.	STATUS ☐Not started ☐Challenges. ☒In progress/on track. ☐Completed.	Y0: 0 Y3: 3 Y10: 9
TARGET	One FMP revised or developed per year: Dolphin Head FMP revised, and first draft of Stephney John's Vale completed.		

SUMMARY OF PROGRESS: The purpose of a Forest Management Plan is to implement sustainable forest management and conservation practices by a combination of strategies and actions, focusing on the main issues affecting the plan area. It is intended under the NFMCP to move towards one FMP per

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cluster, also called Forest Management Unit (FMU), by integrating existing plans and information. As such, FMPs eventually should be standardised for the 25 FMUs across the island. FMPs are to be updated every 5 years.

Two forest management plans for clusters along with two draft FMPs were completed at the end of Year 3. A total of three FMPs for FMUs have been completed to date:

- Forest Management Plan for forest estates in Cluster 6 (Windsor Castle) was approved by the Minister of MEGJC on 6 April 2017.
- Forest Management Plan for forest estates in Cluster 5 (Orchard and Environs) which consists of 80% forest cover, was completed in March 2018 and approved in April 2018. A participatory approach was used, with consultations among various stakeholders. The total area of the Plan Area that is forested is 3,058.83 hectares and there are approximately 32 surrounding communities.
- Forest Management Plan for Forest Management Unit # 18 (Dolphin Head) was revised in June 2019 and submitted for approval. This FMU expands over 1639.23 ha and has approximately 98% forest cover. The Plan Area hosts 606 plant species, of which, 171 species are endemic to Jamaica and 25 of these species are restricted to the Dolphin Head area. Once the Minister with portfolio responsibility approves the plan, implementation will begin.

A Draft FMP for the Stephney John's Vale Forest Management Unit (FMU #3) was submitted in March 2019. The final document is slated to be completed at the end of Year 4. The Stephney John's Vale FMU expands over 7979.77 ha of which approximately 51% is forested. This FMU is divided into five forest estates.

Within the FMUs, specific estates can be gazette as "Forest Reserves" or "Forest Management Areas" under the Forest Act. 114 areas are designated as forest reserves, with objectives to conserve natural forests and biodiversity. Forest Management Areas (FMA) may be utilised for economic purposes. There are 13 FMAs: Hanover/Westmoreland: (1) Jerusalem and Belleisle. Hanover: (2) Retirement. Westmoreland: (3) Retrieve and Drummond Mountain. St. James: (4) Tangle River; (5) Mocho; (6) New Canaan; (7) Georges Valley Mountain. Trelawny: (8) Litchfield. Manchester: (9) Gourie. St. Catherine: (10) Hampton; (11) Tulloch Estate. Portland: (12) Shentamee; (13) Fish Brook.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: Community members, Local Forest Management Committees (LFMC) and other implementing partners provided effective inputs in the design of the FMPs. Such collaboration aims to pre-empt formal consultations (which would only be possible late in the process).

Output 3.1.3: Watershed Restoration Plan developed, implemented.

KPI	Number of watershed restoration plans implemented.		
BASELINE	2 base documents for management plans developed: Rio Cobre Draft Strategic Action Plan and Rio Grande Draft Strategic Action Plan.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	
TARGET	2 WMUs with watershed management plans, which include restoration plans.		

SUMMARY OF PROGRESS: There are 26 Watershed Management Units (WMU) in the island. The draft Strategic Action Plans for the Rio Cobre and the Rio Grande have been drafted as Watershed Management Plans, and are currently being reviewed. The draft for the Rio Grande was prepared under the Ridge to Reef Programme. It is expected that the draft Rio Cobre Watershed Management plan will be finalised in Year 4. NEPA is currently also working on the draft White River Watershed Management Plan. The one for the Rio Grande plan is slated to be completed after that and also Drivers River is in the pipeline. However, external consultations have not taken place as yet; finalising the plans will take more time.

NEPA implements Watershed Management Plans and at time restorative work is done. The NFMCP is interested in restoration plans for specific forest areas within a WMU. These specific restoration plans (for small areas, usually under 1.5 ha) are to be incorporated within the larger watershed management plans. The target may have to be revised to the number of restoration plans incorporated in the watershed management plans.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The MEGJC/ERMB is responsible for the review of the drafts. ODPEM, WRA, Local Planning Authorities, RADA and NGOs will be stakeholders engaged in the review process. The timeline for the development of a watershed management plan is long. Staff from a variety of expertise backgrounds need to be engaged during drafting and the review process involves many stakeholders. Sufficient baselines should be collected at the beginning of the exercise. These need to be reviewed prior to the presentation of the document to a public forum in order to build early buy-in by stakeholders. When the first draft watershed management plan appears, one can see where the gaps are. There was in the past a watershed oversight committee that guided expert input and the stakeholder process; this mechanism may need to be re-introduced.

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Output 3.1.4: Nursery programme implemented and evaluated.

KPI	Number of seedlings produced and cost per seedling.		
BASELINE	135,383 seedlings produced (2017). Baseline for cost per seedling not there.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	
TARGET	135,000 seedlings per annum.		

SUMMARY OF PROGRESS: For Year 1, 2 and 3, a total of 442,147 seedlings were produced (157,725 in Year 3). The clients are the Private Land Owners, Projects and the public (seedlings provided are disaggregated by events: national tree planting day, labour day, recurrent -sale).

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The nursery has been achieving its yearly targets, as set. However, it was unable to meet the demands for the respective programmes within the timelines specified. It may be argued that the production is not

Tree nursery at FD Head Office, St. Andrew.

in sync with the demands of relevant programmes. Based on this a sowing schedule was developed covering the period up to Year 5, to help deliver the required seedlings. The year-round schedule includes the phases for (a) sowing, (b) nursery production and (c) distribution.

Labour Day 2017: For Labour Day 2017, FD continued its initiative to distribute forest/ timber trees free of cost to the public with ornamental and a few fruit trees on sale for a small cost. Distribution ran for the period 8 May – 2 June and members of the public who had Labour Day Projects were given free seedlings to plant. A total of 17,772 seedlings were distributed during this period. In 2018, a total of 11,148 seedlings were distributed for Labour Day.

National Tree Planting Day 2017: A total of twenty thousand seven hundred (20,700) seedlings were distributed during the period 25 September – 13 October 2017.

An evaluation of the nursery programme was started, but has not as yet been completed. During Year 1, time and motion exercises were done to determine levels of cost for the production of various types of seedlings. However, no thorough evaluation was done for the nursery's operation. In Year 2, the target was changed due to varying demands and work programmes. In year 3, a sowing schedule was developed to help streamline production with demand of the various programmes. Also several risks materialised which affected the scope, quality and schedule as initially planned. *"We can meet the targets, but not always when needed!"*

The nursery experienced high incidences of pest infestation. There was a beetle outbreak which resulted in a loss of 11,964 seedlings in Year 2. The quality of the seedlings was also affected.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: Clients: Public (national tree planting day, labour day, sales); private forest planters; projects.

Output 3.1.7: Appropriate guidelines developed for the establishment and maintenance of trees in urban settings; for cultural, aesthetics and shade purposes.

KPI	(Yes/No) Guidelines developed for the establishment and maintenance of trees in urban settings and for use in culture, aesthetics and shade purposes.		
BASELINE	None.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	✓ Yes
TARGET	(No target for Year 1-3).		

SUMMARY OF PROGRESS: This output was started a year before target, during Year 3, because it was determined that urban forestry is going to be an essential part of the FD mandate. For years, FD has given seeds and seedlings to community groups, church groups, civic groups, schools etc. However, this is not a true urban forestry programme (where trees

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sustainably benefit the urban communities and there is community engagement) and now an effort is being made to build that.

Sites proposed for urban forestry interventions at Rockfort (left) and Denham Town (right), St. Andrew, May 2018.

FD scouted for groups to jumpstart the programme. Groups in the following communities were identified in the Kingston area to start this output off: Rockfort, Cockburn Gardens, Seaview Gardens, Majestic Gardens. Further, conversations have been initiated with the Three-mile Community Development Committee. A total of ten (10) communities are to be engaged. Through a first meeting on 18 April 2018 combining the groups, the challenges the groups face were identified and ways to proceed. These areas are mostly void of trees and the suitability of planting ornamentals, fruit trees and timber trees was discussed. Site visits were done (27 April 2018) to Majestic Gardens and Cockburn Gardens to look at potential areas for urban forestry activities. The communities are to be engaged further to decide what type of trees are to be planted and where.

In Rockfort, USAID/COMET requested the intervention of FD. First meeting on 9 May 2018 and series of meetings and site visits after that. There is an issue of drainage and water run-off from the hills and discussions centred around the most suitable trees to plant on community lands. However, community interest faded and no pilot was started.

The discussions in Cockburn Gardens and Seaview gardens are progressing well now; there is much community interest and there is a lot of space for forestry activities. The Three-mile CDC covers these areas and the president of this CDC is engaged.

The guidelines for urban forestry are to be written in Year 4 or 5 after conducting pilot experiences. This will be done together with the Silviculture Manager. International best practices are to be collected as well for the preparation of these guidelines.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: During this preliminary phase, the needed partnerships with national agencies were not as yet established. But it is planned for Year 4. MLGCD – No links as yet. However, there are strong relationships through the 6-miles CDC. Development area committee (DAC) for

3-miles was involved. NSWMA is to be contacted for a nursery at the National Heroes Circle, guidelines for landscaping. MICAF is also engaged in that effort (Parks Division). PSOJ is still to be involved.

Output 3.1.8: Database of private forest land owners created and maintained.

KPI	Number of identified private forests landowners whose profiles are included in the database.		
BASELINE	No database.	STATUS	
TARGET	Year 2: 200 parcels with ownership information updated to National Forest Database (NFD) Year 3: 1000 parcels with ownership information updated to NFD database	☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y1: 0% Y5: 50% Y10: 100%

SUMMARY OF PROGRESS: The database was created in Year 2 and is currently being expanded and maintained. Ownership information has been retrieved for 1,330 parcels by end of Year 3 (283 parcels by end of Year 2). The activities associated with this output have been progressing well and progress achieved

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corresponds to what was initially planned. Information gaps were identified in datasets, which were researched at the NLA. Further collaboration should result in a more streamlined approach to access data and resolve the identified gaps.

A backup file database for private land owner database was also created to mitigate any data corruption and ICT network connection issues.

Maps showing extract of Private Parcels with CBL for South Western and North Western Regions:
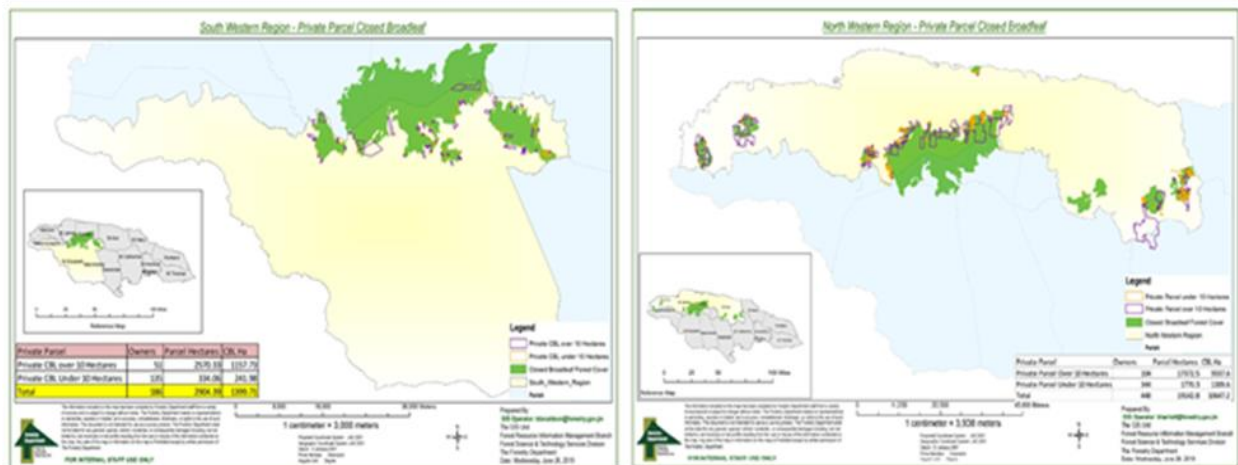
Ownership Information along with other cadastral data was purchased from NLA for parcels with Closed Broadleaf, Disturbed Broadleaf and Mangrove Forest. These parcels are privately owned or government owned but not managed by FD. NLA was supplied with parcel information (Valuation #, Volume and Folio number) extracted from NLA IMAP web application. This data formed the basis on which parcel ownership information was from selected and invoiced to FD. The NLA provided this data at a 40% discount along with the signing of a Data User Agreement by the CEO & Conservator of Forests.

Outcome 3.2: Strengthened institutional capacity for REDD+ readiness. In progress:

- **Output 3.2.1:** Existing forest inventory approach reviewed and revised to support Carbon Stock Monitoring (CSM) and potential carbon trading agreements.
- **Output 3.2.2:** REDD+ readiness Strategy completed.
- **Output 3.2.3:** Analytical Report on the drivers for deforestation/forest degradation produced (REDD+ readiness).

Output 3.2.1: Existing forest inventory approach reviewed and revised to support Carbon Stock Monitoring (CSM) and potential carbon trading agreements.

KPI	(Yes/No) Forest inventory approach revised.		
BASELINE	Current forest inventory approach.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	✓Yes/No
TARGET	(no target for Y3).		

SUMMARY OF PROGRESS: Biophysical inventories (BPI) help to determine the value of the forest assets, whether these are plantations within the clusters, or more generally assets across all forest types.

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The Government of Jamaica is committed to maintaining a 'no net-loss' of forest cover as part of the country's long-term strategy to reduce Greenhouse Gas (GHG) emissions while enhancing carbon stocks. Biophysical Inventory data have become of more significance as FD starts carbon stock monitoring and accounting under REDD+ and other international accounting obligations. The vegetation assessment in BPI National Inventory Manual is to be amended to include carbon stocks estimations. Working sessions have been held with the USFS since November 2018 to update the methodological part of the current inventory manual. Follow up workshops on this issue are planned for Puerto Rico in July 2019 and Jamaica in September 2019.

In Year 2, BPIs (including ecological profiles) and volume assessments were completed for forest estates in Cluster 2 (Bull Head) and Cluster 3 (Stephney John's Vale). Cluster 2 is situated close to the Clarendon / St. Ann border, northwest of the town of Kellits, and consist of three reserves.   Cluster 3 consist of three

relatively large forest reserves and two smaller ones, and is located between northwest St. Catherine and southcentral St. Ann.

FD will also include issues around permits in the Manual and provide overviews of 9 estates to be inventoried over the coming 3 years. The FD plans to launch its first pilot study in Year 4, after relevant training has been implemented (planned for October/November 2019, to be implemented by CATIE, output **4.2.3**). The completion of the revised forest inventory manual will allow for measuring how the forest cover changes over time; component of the strengthened forest monitoring system (**output 5.3.2**). Also **Output 3.2.4** will be dependent on this output, since the revised Inventory Manual will enable the calculation of the emission reference level.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The US Forest Service has become a key partner, regarding the integration of CSM in the revised inventory manual. Additionally, the Forest Resource Assessment Officer and the Senior Research Officer received training in CSM, June/July 2018 (Year 3) at the University of Minnesota, in collaboration with the USFS.

Output 3.2.2: REDD+ readiness Strategy completed.

KPI	(Yes/No) REDD+ readiness Strategy approved.		
BASELINE	No REDD+ readiness Sector Plan.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	✓Yes/No
TARGET	(No target Y1-3).		

SUMMARY OF PROGRESS: The FD, as the focal point for REDD+, sought a readiness grant from the Green Climate Fund (GCF) to undertake a series of REDD+ readiness activities, designed to create the basis for Jamaica to access and engage with future systems of financial incentives for REDD+.   Already in

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FY 2015/2016, FD through the Climate Change Division (CCD) of the Ministry of Economic Growth and Job Creation - the National Designated Authority of Jamaica (NDA), had begun working with UN Environment to draft a "Project Preparation Facility Application" to the Global Climate Fund (GCF) for funding to execute several activities to support the REDD+ readiness activities. A climate finance specialist was provided by CCD to FD.

The activities in the project proposal include the execution of technical studies and social and environmental impact assessments, development of a National REDD+ Strategy aligned with international requirements under the Warsaw Framework for REDD+, and setting up REDD+ national management arrangements (an Action Plan), in ways that are inclusive of the key national stakeholders and forest-dependent communities. The completed proposal was submitted to GCF in May 2018 at a value of USD $613,000 with a project duration of 28 months.

Jamaica received a favourable response on the proposal submitted. The REDD+ readiness project was officially launched in July 2019 with the Minister without Portfolio of MEGJC present.   A project coordinator was hired by FD in the same month to help with the deliverables under REDD+. Further, a working group on REDD+ has been established.

Output 3.2.3: Analytical Report on the drivers for deforestation/forest degradation produced (REDD+ readiness).

KPI	(Yes/No) Analytical Report produced and disseminated.		
BASELINE	No Analytical Report on the drivers for deforestation/forest degradation.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	✓Yes/No
TARGET	Analytical report produced in Year 2.		

SUMMARY OF PROGRESS: The UNFCCC negotiations (UNFCCC 2009, 2010) have encouraged developing countries to identify land use, land use change and forestry activities, in particular those that are linked to the drivers of deforestation and forest degradation, and to assess their potential contribution to the mitigation of climate change. In Year 2, FD conducted research on the direct and indirect drivers of deforestation and forest degradation. The report sought to: 1) Derive and, as far as possible, quantify deforestation and degradation drivers using existing national land use datasets; 2) Assess the relative importance of different deforestation and forest degradation drivers, approximately for the period 2000–2010, in order to study driver variability in space (by parish) and time.

Although there was a lack of data for analysis, which affected the scope and schedule of the activity, in Year 2, the draft report was completed and submitted for review. The analysis will contribute to the REDD+ readiness strategies for the country. During Year 5 and Year 6 a new Land Use Change Assessment (LUCA) report will be done, and an update of the analytical report will be aligned with this during Year 7. Under output 5.3.2 image files are being procured for delivery in Jan-March 2020.

Forest fire management training in Clifton Mount, St. Andrew.

> **Outcome 3.3:** Strengthened capacity of Local Forest Management Committees and other community groups. In progress:
>
> - **Output 3.3.1:** Strengthened capacity of LFMCs and other community groups in project development and management.
> - **Output 3.3.3:** Fire suppression teams established and trained within community groups in high priority/high risk areas.

Output 3.3.1: Strengthened Capacity of LFMCs and other community groups in project development and management.

KPI	Number of community groups trained.		
BASELINE	No formal targeted training in this area completed by FD. EFJ conducts this with eligible groups.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y1: 0 Y5: 30 Y10: 45
TARGET	Training programme started.		

SUMMARY OF PROGRESS: A training programme was established and sensitisation activities started off. More opportunities for capacity development are being created for LFMCs which would improve the LFMC group's ability to attract funding. Since grants geared towards livelihood

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projects have been provided, targeted training relating to these up to 2022 are being planned. Four proposal writing workshops were already executed across the island in February and March 2019.

During Year 2, training was conducted in the following communities and areas: Spring Dunrobin, Westphalia, Northern, Rio Minho, Buff Bay & Pencar; Constitution Hill. During Year 3, two socio-economic surveys were carried out (started in November 2018), for clusters 18 and 4, with plans underway for the execution of a survey for cluster 2 in the FY 2019/2020. Of note that some of the LFMCs are currently inactive.

Output 3.3.2 (Governance and decision making processes related to LFMCs strengthened) which is related to this output has been cancelled. It has been difficult to get the consultant which was hired to commit to set deadlines. A preliminary report was submitted on 26 September 2016, entitled "The Status of the Local Forest Management Committees, Jamaica - Findings from a Snapshot Survey." The report had been due from FY 2015/2016, but it was still incomplete and a number of gaps were identified. Subsequently, a preliminary draft of a final report was submitted in January 2017. There was no traction on this matter for Year 3. The FD has decided to terminate the consultant and take a different approach in regards to this output (provide strengthening of governance and decision making, but without the study).

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: EFJ was brought on in Year 3 to assist with the issuing and execution of 40 grants for Sustainable Livelihood projects under the EU/BSP.

Output 3.3.3: Fire suppression teams established and trained within community groups in high priority/high risk areas.

KPI	Number of community groups trained in Forest Fire Management.		
BASELINE	3 community groups in high risk areas trained in forest fire management.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y10: TBD Y5: 15 Y1: 3
TARGET	5 groups more in Year 2 and 5 groups more in Year 3.		

SUMMARY OF PROGRESS: Since beginning the forest fire management training in Year 1, the FD has completed a total of eleven (11) sessions involving three hundred and three (303) persons. During Year 3, FD assessed the effectiveness of these training sessions and whether there can be seen a reduction in the incidences of forest fires around communities which have received training. It was concluded that there is indeed less incidence of fire and that the programme brings good results. Further, the Forest Fire Management Training Manual was completed and copied. They are left with each trainee in the communities.

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Forest damaged by fire, Flamstead, St. Andrew.

Forest Fire Management Training Sessions: During Year 3, FD continued the execution of training sessions in forest fire management in communities located close to forested areas and prone to forest fires. The one-day training sessions, done in collaboration with the Jamaica Fire Brigade (JFB), consist of three modules: (1) Basic Concept of Forest Fires, (2) Forest Fire Prevention, and (3) Forest Fire Suppression, with a practical simulation exercise conducted in the field under the supervision of the JFB. The FD distributes a Forest Fire Management Training Manual to participants as part of the sessions.

A total of two hundred and forty-four (244) participants from eight (8) communities in the Eastern part of the island participated in these training sessions during Year 2. The eight communities involved were: *St Andrew & St Thomas:* Bloxburgh (17 July 2017), Flamstead (26 July 2017), Content Gap (14 August 2017), Westphalia (24 August 2017), Windsor Forest (30 August 2017), Penlyne Castle (13 September 2017), Windsor Castle (19 September 2017). *Portland:* Bellevue (19 July 2017). Five (5) of these training sessions were completed with funding provided by the "Integrated Management of the Yallahs & Hope Rivers Watershed Management Areas Project" funded by IDB/ GEF. Additionally, FD participated in two (2) 'anti-burning' roadshows which were organised by the project, held in Mavis Bank, St. Andrew on 9 February 2018 and on Papine Square on 16 February 2018.

Output 5.2.2 on conducting Forest fires assessments, has not started. The vulnerability assessments could not commence due to lack of technical capacity. The source of this capacity is yet to be identified. The associated targets have been revised and expected to be completed by 2021. However, one component of that output has been explored: fire damage assessments have been conducted within the forest reserves.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The partnership with JFB is fruitful. The FD procured part of the current stock of fire management equipment through the GEF/IDB Hope River Yallahs River project. Additional tools were more recently purchased with funds from the EU/BSP. These items are used for demonstration purposes during the training sessions in the communities.

Forest Trek 2013, Cockpit Country.

THEMATIC AREA 4: EDUCATION, TRAINING AND AWARENESS

The sustainable management of the island's forest resources is dependent on all the direct and indirect stakeholders becoming involved in its protection, conservation, sustainable use and restoration. The NFMCP needs to nurture continuously the knowledge and awareness of all parts of Jamaican society of the value of forests and trees as part of Jamaica's cultural, economic and ecological heritage as well as the importance of forests to climate resilience. **Outcome 4.1**, therefore, aims *to increase the capacity of forest communities, the general public as well as targeted groups regarding sustainable forest practices*.

In Year 1 and 2, FD concluded an island-wide Public Awareness and Perception survey (published July 2017), which assessed the proportion of the population reporting increased understanding of the importance of the forest sector and its benefits, including climate resilience. The findings showed an 8% increase in the awareness of the general public on forests and FD with perception moving from 48% in 2013 to 56% in 2017. The FD had contracted Market Research Services Limited to conduct this National Public Awareness/Perception Survey, which is in principle done every three years.

Although the National Schools curriculum already includes information on forestry and forests, access to pertinent information and options for participation by all school children is inadequate. Therefore, NFMCP implements through **Output 4.1.1** (*Education programme developed to strengthen the public's understanding on the benefits of forests and its resources, the importance of sustainable forest management and conservation practices*) an expanded public educational programme, carried out at schools, through community meetings and through appropriate expos/events.

AWARENESS ON WORK BY THE FORESTRY DEPARTMENT AND THE FOREST SECTOR

During Year 2, FD executed its second island wide *Public Perception & Awareness Survey*. The survey was executed to measure a pre-NFMCP key performance indicator which speaks to a 15% increase in awareness amongst members of the public (over a baseline established in 2013). Key findings:

- Awareness of the Forestry Department has grown among members of the general public from (48%) to (56%), as well as among trade and institutions from (87%) to (94%);
- The media remains the primary source of information about the FD for most stakeholders. School is the top information source for students. All stakeholders are not getting information about the FD currently, and that trend is growing;
- The extent of knowledge about the FD by the trade and institutions group, has improved since 2013. However, the it revealed that the general public and students know very little to nothing about the activities of the FD;
- The tree planting programme remains the activity of which all stakeholder groups are most aware.

The survey was conducted by the Market Research Services Limited (MRSL). The next public perception survey is scheduled for execution in 2020.

A specific programme for education and awareness on forest fires has also been designed and is being implemented through **Output 4.1.2** (*Forest fire-related public awareness and education programme designed, implemented*). Further, an important target group is the private sector interests that own or manage forested areas. Forest owners tends to be insufficiently committed to the preservation or sustainable management of their forest areas. **Output 4.1.3** (*Outreach programme for private forest*

owners developed and evaluated on an ongoing basis) aims to inform these key stakeholders on the importance of the services provided by forests to the social, ecological and economic fabric of Jamaica.

Under **Outcome 4.2**, NFMCP aims to specifically *strengthen the capacity for natural resource valuations, carbon stock monitoring and silviculture* among staff of FD as well as partners. The cadre of professionals in Jamaica trained to carry out Natural Resource Valuations (NRV) or Carbon Stock Monitoring is too small for the task at hand. There is also a lack of capacity at FD of staff sufficiently trained in silviculture and forest ecology. Therefore, various training programmes for targeted professionals will be conducted over the life of NFMCP. **Output 4.2.1** (*Training programmes for natural resource/ecosystem valuations (NRVs) for all types of forests conducted*), **Output 4.2.2** (*Training in silviculture conducted)* and **Output 4.2.3** *(Training in Carbon Stock Monitoring conducted*) are all actively being prepared for implementation during Year 4.

Outcome 4.1: Forest communities, the general public as well as targeted groups have increased capacity regarding sustainable forest practices*.* In progress:

- **Output 4.1.1:** Education programme developed to strengthen the public's understanding on the benefits of forests and its resources, the importance of sustainable forest management and conservation practices.
- **Output 4.1.2**: Forest fire-related public awareness and education programme designed, implemented.
- **Output 4.1.3**: Outreach programme for private forest owners developed and evaluated on an ongoing basis.

Output 4.1.1: Education programme developed to strengthen the public's understanding on the benefits of forests and its resources, the importance of sustainable forest management and conservation practices.

KPI	Number of public education/awareness and school awareness sessions delivered (disaggregated by Parish, schools and age of children).		
BASELINE	Baselines: School visits: 278 across 14 parishes. 19,836 students engaged. Expos: 63. Community meetings- 12 (8 general and 4 around forest fire awareness).	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y10: 4,275 Y5: 2,075 Y1: 346
TARGET	Public education materials prepared.		

SUMMARY OF PROGRESS: Over the three years, the FD's *school visit programme* continued to be a major part of FD's public awareness and education programme that utilises presentations and activities to interact with students and teachers in raising awareness on the role and responsibilities of the Forestry Department, the importance of forests and

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climate change. The programme focuses on students from early childhood to tertiary level institutions. A target of visiting 310 schools was set for Year 2, increasing from the target of 281 set in the previous year. In that year, 329 school visits were conducted, engaging 18,532 students island wide. In Year 3, the target was 290 schools and 291 schools were visited, while 15,672 students were reached.

Feedback forms utilised after each school visit continue to indicate that teachers and students alike find these visits educational, useful and informative. The importance of the forest is the main theme on the reporting forms for basic and primary schools while careers in forestry is the main area requested for presentations at the secondary schools.

During Year 2, FD completed its review of the Early childhood & Primary levels curricula. The review highlighted the areas of opportunity for inclusion or amendment of forestry related information into the Early Childhood and Primary levels curricula. Meetings were held with representatives from the MOE and the report was submitted to the CEO & Conservator of Forests on 28 March 2018. The report includes recommendations for topics to include in the curriculum at different levels.

The revision of the education programme was also completed in Year 2. A Brand and Communication Strategy was done which details how to increase awareness and education about the Forestry Department and distribute specific messages on forestry. In addition, FD completed a Teaching Guide to aid forest technicians in delivering various topics for the schools programme; FD finalised activity sheets to accompany this guide and is developing the mechanism for evaluating school visits. The guide is to be reviewed to ensure that gender issues are appropriately represented in the document.

In addition to these continuing activities, in Year 3, FD staged a school mural competition for the secondary and tertiary level. There were three entrants in each category.

Public Awareness Events & Public Consultations: In Year 2, FD included expos and exhibitions in one hundred and forty-nine (149) public awareness events island-wide. This is up from sixty-eight (68) during Year 1. In Year 3, the target was 150 public awareness events and FD participated in 160 events including expos and exhibitions island-wide.

The FD further staged 16 community meetings where more than 800 persons were sensitised about the sustainable livelihoods and sustainable forest management. There were also four sensitisation sessions held in communities across the Cockpit Country to inform persons about the ground truthing exercise which was being conducted by the Forestry Department in those communities. The ground truthing is being done to confirm the boundary declared by the Prime Minister in November 2017 in Parliament.

For the Labour Days in 2017 and 2018, FD continued its initiative to distribute forest/ timber trees free of cost to the public with ornamental and a few fruit trees on sale for a small cost. The FD utilised media outlets as well as its stakeholders to encourage persons to collect and plant trees.

Further, the 15th staging of the National Tree Planting Day (NTPD) was celebrated on 6 October 2017 by FD and seedlings were distributed. See **output 3.1.4** for details on seedling distribution. The main ceremony was held at Calabar High School in St Andrew (with an outside Broadcast on Power 106 FM

from 10 a.m. -2 p.m. during the main ceremony), with other ceremonies and initiatives held island wide at the following locations:

     o Newell High School, St. Elizabeth;
     o St. Hilda's Diocesan High School, St. Ann;
     o Buff Bay Vocational Training Centre, Portland;
     o Adopt-a-Hillside Planting with JPS at British Forest Estate in Clarendon;
     o Office of the Contractor General (OCG) at the Vauxhall High School;
     o Early Childhood Commission at 20 schools island wide.

In Year 3, the activities for NTPD 2018 were done as part of FD's 80th Anniversary activities. The main ceremony for this year was held at Donald Quarrie High School with additional smaller ceremonies being held at Oracabessa High School, Moneague Primary and Grange Hill Primary School.

The FD also participated in the Denbigh Agricultural Show from 4-6 August 2018 in May Pen Clarendon which attracted more than 10,000 patrons. A Forest Heroes Awards function was held where 13 entities and individuals were recognised and awarded for their outstanding contributions to the forest sector.

Forest Trek: During each year, an Annual Forest Trek has been held: in March 2017 to Gourie (Manchester), in March 2018 to Cambridge Backlands (Portland) and in March 2019 to Mount Airy (St. Andrew). In 2018, an additional hike was organised to the Bogue Forest Reserve (St. Ann). For each trek 400-500 hikers registered. FD continues to get strong interest from the public for the Forest Trek event.

The schools' curricula at the primary level were updated in light of the introduction of the Primary Exit Profile (PEP) at that level. This resulted in more forestry related information being incorporated into the curricula. However, the information added by the Ministry of Education included various topics related to forests and climate change; this addition was not known to the Forestry Department prior to being introduced. This made it difficult for FD to immediately respond to the increased demand for presentations about these topics.

Children participating in environmental education activities, focused on forests.

Output 4.1.2: Forest fire-related public awareness and education programme designed, implemented.

KPI	Number of fire awareness and education programmes conducted (and number of participants).		
BASELINE	Baseline never done.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	*Y5: 1 campaign*
TARGET	Signage, advertisements and educational materials produced.		

SUMMARY OF PROGRESS: A public awareness campaign for forest fire prevention and suppression was designed in Year 1. A new brochure about Forest Fire Prevention & Suppression was designed in year 2. Printing and distribution was planned for Year 3, however there were additions made to the brochure and this process was pushed to the next year (Year 4). The new brochure will provide a new avenue to disseminate information on forest fires to members of the public.

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The entire forest fire public awareness campaign has not been fully implemented due to challenges with resources. However, forest fire management training was completed with three communities in Year 1, four in Year 2 and seven in year 3. In addition, advertising slots to promote fire prevention messages have been secured and utilised across popular radio stations. An additional educational video and radio drama are being explored for development in Year 4.

The full public awareness campaign for forest fire prevention has been gradually implemented in Year 1 and 2 due to limited resources. However, with the resources made available in Year 3 under the EU Budget Support Programme, implementation has sped up and more public awareness campaigns are expected to be implemented in the year ahead.

Forest fire management training in Grants Mountain, St. Ann.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: The Jamaica Fire Brigade has been an effective partner in the execution of the training sessions held annually. It provides officers to deliver one module (Forest Fire Suppression) of the training.

Output 4.1.3: Outreach programme for private forest owners developed and evaluated on an ongoing basis.

KPI	Number of private forest land owners participating in outreach programme.		
BASELINE	Baseline exists, based on Technical transfer meeting with private farmers held in Year 1. Approximately 30 persons trained. Baseline of total registered farmers in private forestry programme as at FY 2016: just under 6,000 persons registered.	STATUS ☐Not started ☒Challenges. ☒In progress. ☐Completed.	Y1: 30 Y5: 150 Y10: TBD
TARGET	Training and Technical Transfer workshops started.		

SUMMARY OF PROGRESS: The programme sought through annual technical transfer workshops to share technical knowledge to private planters to enable them to sustainably manage the land and trees. A first Technical Transfer Session with planters in the North East Region was held on 24 January 2017 at the RADA Office, Folly, Portland. Twenty (20) private planters were in attendance. A second Technical Transfer Meeting took

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place on 28 November 2017 at the Litchfield Regional Office with fourteen (14) private planters. A third technical transfer session was held on 30 January 2019 where 18 persons participated.

As at 31 March 2019 a total of 6,304 persons have been registered under the programme since it was re-launched in 1998. FD also worked during the period with the IDB/GEF Yallahs Hope rivers project and its key stakeholders (including RADA), to promote Climate Smart Agricultural techniques (including land husbandry and forest fire management) to over 100 farmers using the Farmer Field School mechanism within the project communities. See further **Output 2.1.4**. As part of the Education and Public Awareness programme, a stakeholder consultation with owners of private lands regarding the Private Forestry and the land declaration programme was held on 28 March 2018 at the Terra Nova Hotel in Kingston.

A programme document has not been developed and the targeted reach has not been achieved. Several challenges such as hosting the meeting at a convenient time for planters and availability of trainers affected implementation. Based on current trends, the corresponding targets may not be achieved.

Outcome 4.2: Strengthened capacity for natural resource valuations, carbon stock monitoring and silviculture. In progress:

- **Output 4.2.1:** Training programmes for natural resource/ecosystem valuations (NRVs) for all types of forests conducted.

Output 4.2.1: Training programmes for natural resource/ecosystem valuations (NRVs) for all types of forests conducted.

KPI	Number of individuals trained in NRV within the Forestry Department.		
BASELINE	None.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	**+ 15**
TARGET	Not for Year 1-3.		

SUMMARY OF PROGRESS: During Year 3, course content for NRV training was developed and a training course of 2 weeks (7 hours per day) will be held in January 2020. The course focuses on forest resource valuations. It is targeted that (up to) 15 staff will participate. One or two representatives of stakeholders will also be included.

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Similarly, during Year 3, preparations were made for Silviculture training (**Output 4.2.2**) and Carbon stock training (**Output 4.2.3).** The focus of the silviculture course will be "phytoculture training." The CSM training course will take place in November 2019.

All training courses will be implemented and certified by CATIE, based in Turrialba, Costa Rica. The International Institute for Tropical Forestry in Puerto Rico will also have a role. This will provide a link to the forestry inventory assessment methodology that is being revised in support of REDD+ (see **Output 3.2.1**).

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: CATIE is the resource institution for the course and will be conducting the training. There is dialogue with the State University of New York (SUNY) to support training as well, in particular regarding forest growth modeling.

The stakeholders NEPA, PIOJ, Utech, UWI were less involved during Year 3. Although staff of UWI has expertise in NRV and is involved in the IDB project, its work is focused on resource valuation. This does not meet de need of NFMCP which needs a focus on forest resources.
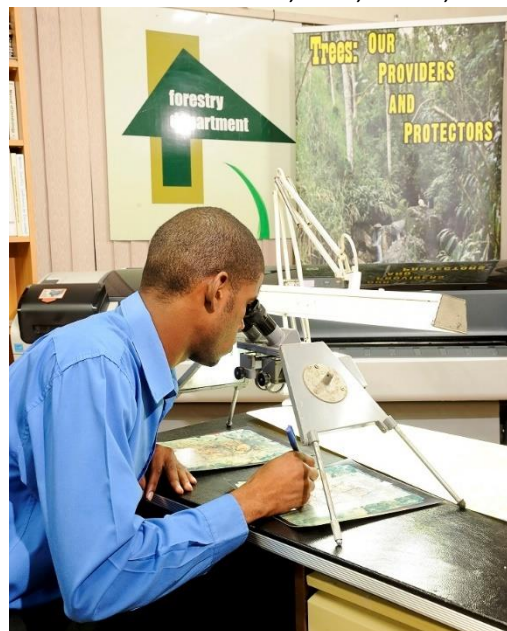
Costing NRV training (January 2020) is US$40,000. This training course will be supported by the EU/BSP. FD is still seeking funding sources for expanding this activity. Of note is that within the REDD to REEF Landscape Management project proposal to the GCF, a major activity is the development of capacity to conduct valuation of forest ecosystem services and cost-benefit analyses. The Carbon Stock Monitoring training scheduled for October to November 2019 will be $34,100 USD.

Reading maps at the Forestry Department, Head Office, St. Andrew.

THEMATIC AREA 5: MONITORING AND INFORMATION MANAGEMENT

To ensure the sustainable management of Jamaica's forests, decision making must be informed by evidence. Currently, scientific knowledge is insufficiently used to inform decision making by policymakers, practitioners, and other stakeholders. In light of this, NFMCP emphasises the ready availability of data and pertinent information and promotes institutional capacity for adequate monitoring, impact assessments and research.

Spatial data in particular are vital for assessing and communicating issues around forest management. A number of mapping initiatives are supported by the NFMCP, including those related to forest estates, mangroves and swamps forest, risks and vulnerabilities towards climate hazards and recreational use. In order to integrate spatial data into maps and provide monitoring data which contribute to measuring the overall impact of the NFMCP (e.g. the status of the island's forest-inventory, changes in forest cover or deforestation, forest carbon content, percentage of GDP, changes in public perceptions), repositories of discrete sets of data are to be coordinated and brought together. **Outcome 5.1** covers the *improved availability of spatial data for sustainable forest management practices, promoting investment, and assessing vulnerabilities and risks in the forest sector*. All outputs under this outcome have started.

Aerial images are being procured and the data collection and analysis methodology has been developed to implement **Output 5.1.1** (*Spatial representation of disturbance within Broad Leaf forests developed*). With the evident need to understand and manage these forest cover classes, the EU Budget Support Programme (EU BSP) allows the Forestry Department (FD) to facilitate the requisite activities needed to produce a Mangrove and Swamp Forest Management plan (see **Output 3.1.5**). This plan should provide a detailed document on the distribution, assessment, management and analysis of these forest cover classes to ensure their longevity and maintenance. Furthermore, the NFMCP indicates that the high vulnerability of mangrove and swamp forests will allow FD to pursue the transfer of management responsibility of Government-owned mangrove and swamp forest parcels outside of FD management from the National Land Agency (NLA), see also **Output 1.1.4**. These combined actions will facilitate the creation of a framework geared towards the management and conservation of these vulnerable areas. In keeping with this new push towards the holistic management of mangroves and swamp forests, the necessity to undertake an island wide assessment of these specific forest covers is legitimised. The assessment and mapping of mangroves and swamp forests (**Output 5.1.2),** is well-underway.

The verification and mapping of lands registered under the private lands reforestation programme has been started (**Output 5.1.4**) and recreational, cultural and heritage sites are being identified and mapped (**Output 5.1.5**).

Output 5.1.3 (*Gap analysis conducted identifying spatial data and other information to better map the risks and vulnerabilities of forests and communities to climate change and related hazards (e.g., fire, floods, landslides*) has not started as yet. Under **Outcome 5.2** (*Strengthened capacity for impact and vulnerability assessments and for management of research and knowledge systems*), all three outputs have not been started as yet: **Output 5.2.1** *(Working group established for research that will improve knowledge regarding the management of mangrove forests, swamp forests and short open dry limestone forests; and on the impact of climate change on all forest types),* **Output 5.2.2** *(Forest fire assessments conducted) and* **Output 5.2.3** (Impact assessment of mining and other permitted activity on forest goods, services, and values over time conducted) are all still to take off.

NFMCP also helps to strengthen joint forest research capability through various alliances. An inter-institutional approach is essential for generating the data and applied knowledge for policy making which decision makers need. This is the focus of **Outcome 5.3** (*Improved collaborative monitoring of forest resources*). Two of its outputs have not been started by the end of Year 3: **Output 5.3.2** (*REDD+ preparedness – Strengthened forest monitoring systems*) and **Output 5.3.3** (*Weather stations placed in strategic locations within forested areas to garner additional data to support sustainable forest management practices*).

However, a number of inter-institutional joint forest monitoring and biodiversity initiatives are taking place. **Output 5.3.1** focuses on the improved availability of data for driving the growth and investment in the forest sector (both timber & non timber). The forest monitoring system using Permanent Sample Plots (PSPs) is being expanded (**Output 5.3.4**). Biodiversity in forests is being surveyed and mapped under **Output 5.3.5** for targeted species (giant swallowtail, yellow-and-black-billed parrot, water mahoe and bitter wood). Finally, the entire management of knowledge for the entire NFMCP is being tracked through **Output 5.3.6** (Knowledge Management and Strategic Planning of the NFMCP achieved).

Outcome 5.1: Improved availability of spatial data for sustainable forest management practices, promoting investment and assessing vulnerabilities and risks in the forest sector. In progress:

- **Output 5.1.1:** Spatial representation of disturbance within Broad Leaf forests developed.
- **Output 5.1.2:** Mangrove and swamp forests mapped and assessed.
- **Output 5.1.3:** Gap analysis conducted identifying spatial data and other information to better map the risks and vulnerabilities of forests and communities to climate change and related hazards (e.g., fire, floods, landslides).
- **Output 5.1.4:** Lands verified and mapped in the private lands reforestation programme.
- **Output 5.1.5:** Recreational, cultural and heritage sites identified and mapped.

Output 5.1.1: Spatial representation of disturbance within broad leaf forests developed.

KPI	Level of disturbance in spatial representation of disturbed broadleaf used to develop protection efforts.		
BASELINE	Aggregated spatial representations.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Disaggregation (5-15%)
TARGET	Satellite imaginary and data files for terrestrial resources obtained.		Assessment of disturbance Spatial analysis

SUMMARY OF PROGRESS: In Year 2, geospatial analysis was conducted to quantify changes between 1998 and 2013 land use / land cover data at parish level. The comparison was completed, focused on broadleaved cover classes. The draft methodology report was also completed.

Outdated imagery and lack of adequate technology were reported as challenges. Further, up-to-date aerial imagery is required to determine more recent disturbance levels within broadleaved category. The output is behind schedule as there is a delay in the procurement of aerial imagery and a full drone solution for the better mapping of terrestrial resources. Procurement of drones and new 25cm aerial imagery for the island should be completed by 2020.

Swamp Forest, Westmoreland.

Output 5.1.2: Mangrove and swamp forests mapped and assessed.

KPI	Area (Hectares) of mangrove and swamp forests assessed/mapped.		
BASELINE	122.9 ha of Swamp Forest and 9732.8 ha of Mangrove Forest were identified from FD LU/LC assessment. Zero stratification maps exist (including level of disturbance and mangrove gradient etc.).	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y9: 9000 Y5: 3000 Y1: 0
TARGET	**No target for Y1 – Y2.** **2,000 hectares for Year 3.**		

SUMMARY OF PROGRESS: Discussions began with UWI/DLS on the methodology for assessment. The FD 2013 Land Use/Land Cover Assessment Report identified 122.9 ha of swamp Forest and 9732.8 ha of mangrove Forest. However, the report also showed that losses for each forest surface was relatively high when the 1998 and 2013 change assessment figures were compared. These forest classes cumulatively lost 2,123 ha, between 1998 and 2013. Only in St. James and Hanover the said forest cover classes increased slightly.

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FAO (2005) specifies that mangroves and swamp forests in Jamaica can be classified as lagoonal, estuarine and fringing. The largest percentages of coastal mangroves are found in the southeastern section of the island, mainly in Clarendon and St. Catherine in bays, estuaries, and inlets. The spatial mapping software employed by FD identifies and represents an area as being mangroves and swamp forests if over 75% has such forest cover. Therefore, one other benefit of this assessment is to update our representation of the mangroves and swamp forests island wide.

EU BSP Mangrove Assessment: This garners a comprehensive understanding of the mangrove and swamp ecosystems island wide as well as guides the protection and longevity of these vulnerable ecosystems within Jamaica. It is intended to incorporate mangrove and swamp forest within FD's management programme. As indicated by the EU BSP initiative, the objectives for the first year are:

- To identify through spatial analysis and extraction, a combined total of 2,000 hectares of identified mangrove and swamp forest island wide;
- To assess the biophysical condition of these identified areas;
- To assess the health status of these identified areas;
- To identify and indicate the stresses affecting these micro-environs.

Maps showing Year 3 (EU BSP Year1) Assessment locations:

Mangrove Assessment - Year 1

Sub Block	Name	Hectares
A	Ireland Pen	68.99
B	Mt. Pleasant	44.18
C	Green Island	7.27
D	Reading	17.71
E	Bogue	54.58
F	Iberostar	14.83
G	Greenwood	18.57
H	Salt Marsh 1	61.96
I	Falmouth	381.24
J	Duke Street	24.00
K	Rock	192.00
L	Coopers Pen	20.50
M	Albion	101.06
N	Bowden Pen	53.15
O	Morant Point	971.62
		2031.66
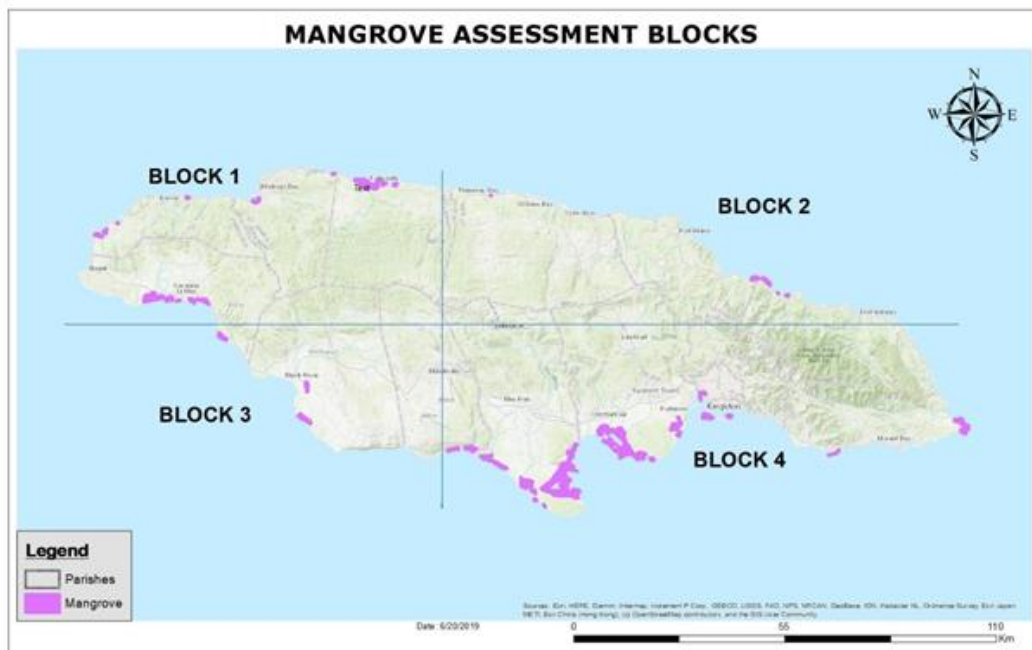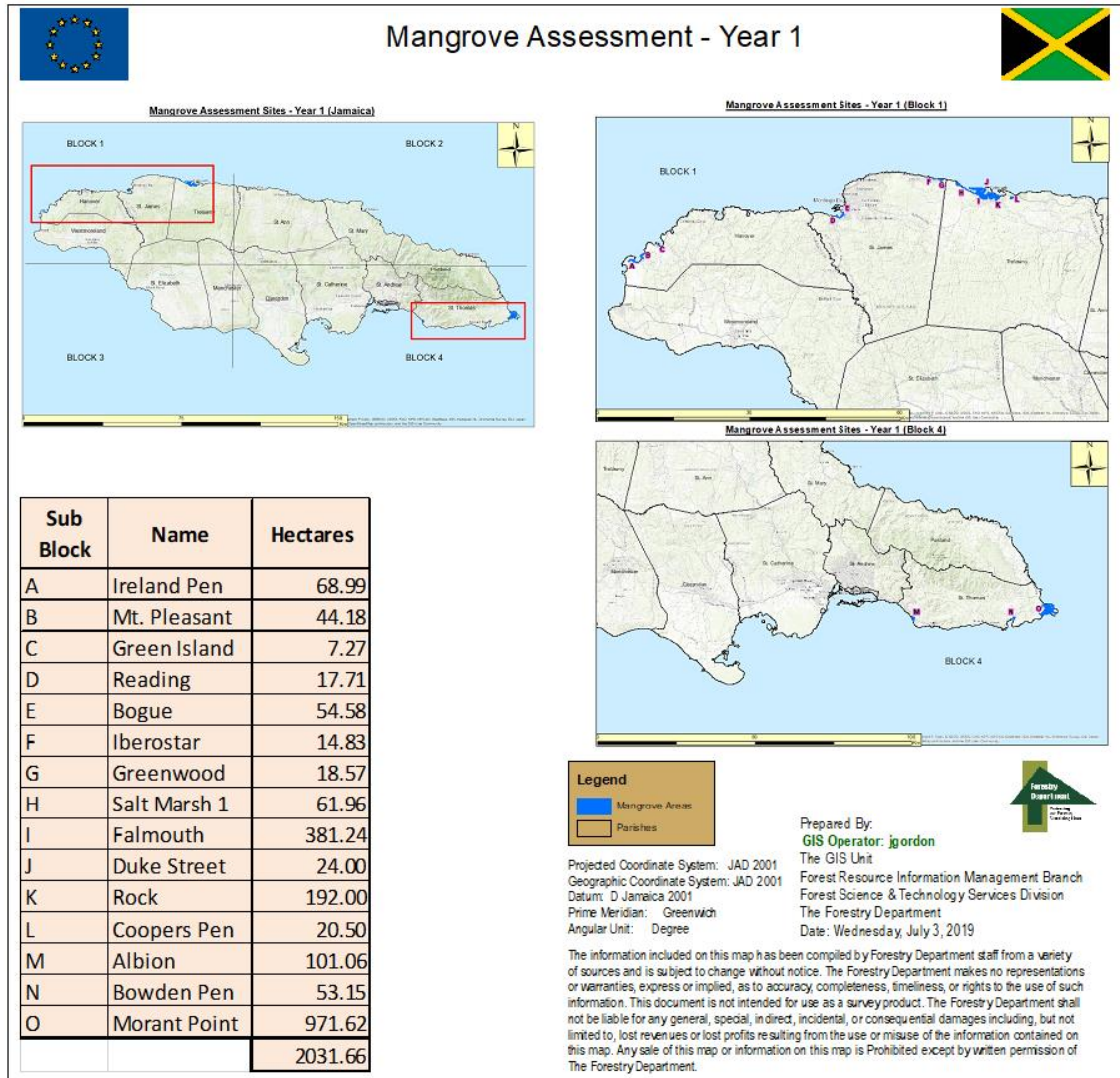
PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: UWI/DLS provided valuable input and review of created methodology to capture on-ground assessment of mangrove areas in designated sub- blocks. The UWI/DLS team also provided resource contacts of fishermen and other boat owners to access and assess remote off-shore areas.

Other critical stakeholders such as NEPA were not fully engaged in Year 3. NEPA was only in contact in quarter 4 of Year 3 to conduct a 'croc-wise' sensitisation session to educate field team members in the necessary physical response and safety measures that should be employed when entering the natural habitat of these animals.

Output 5.1.4: Lands verified and mapped in the private lands reforestation programme.

KPI	Area (Hectares/parcels) of private CBL forest lands identified, verified and mapped and ownership information collected.		
BASELINE	At FY 2016/2017, 111 parcels (equivalent to 44,414 hectares) identified & ownership information collected.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y5: 3000 Y3: 1000 Y1: 111
TARGET	Year 2: 200 parcels with ownership information updated to PFL database. Year 3: 1000 parcels with ownership information updated to PFL database.		

SUMMARY OF PROGRESS: The database was created and is currently being maintained. Ownership information has been retrieved for **1,330 parcels**. The activities associated with this output have been progressing well and progress achieved corresponds to what was initially planned. However, drones should be used in some areas which are difficult to access. Drones could easier map gaps or any bare areas in forest estates than field teams.

Ownership information of CBL forest privately owned totalling 15,800 ha (divided in under 10 ha and over 10 ha).   Activity linked to Output 3.1.8. See also **Output 3.1.8**.
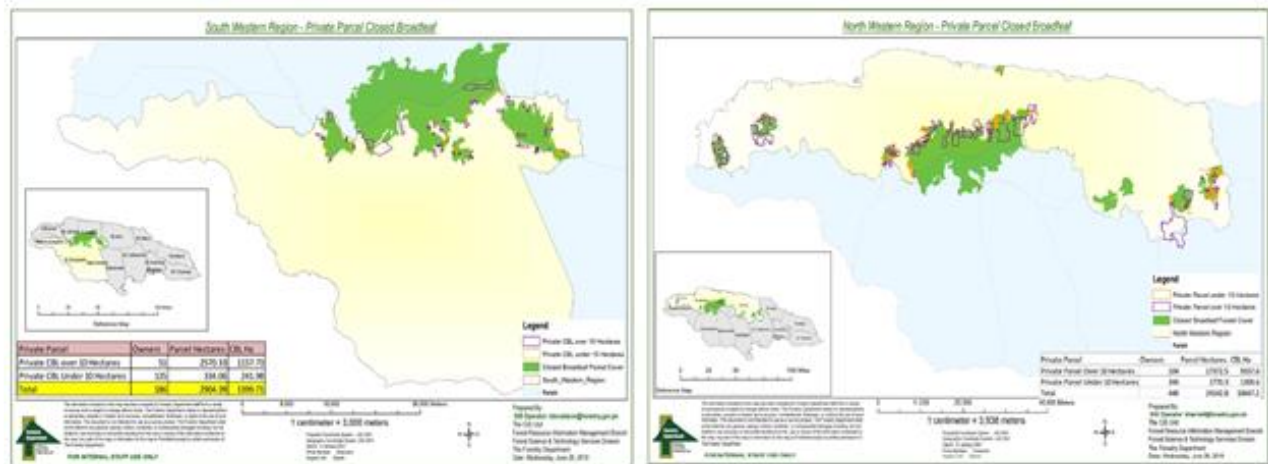
Ownership Information along with other cadastral data was purchased from NLA for Parcels with Closed Broadleaf, Disturbed Broadleaf and Mangrove Forest. These said parcels are privately owned or government owned but not managed by FD. A Data User Agreement was signed between the NLA and the CEO & Conservator of Forests.

Output 5.1.5: Recreational, cultural and heritage sites identified and mapped.

KPI	Number of new trails/sites on forest reserves and FMAs identified and mapped (disaggregate by type – recreational, cultural and heritage).		
BASELINE	JCDT (2008); FD (2015); JNHT.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y5: 5 Y3: 3 Y1: 0
TARGET	No target for Y1 Year 2: 2 Trails Year 3: 3 Trails.		

SUMMARY OF PROGRESS: In Year 2, 2 trails identified for recreational purposes: (a) Bogue 2 Trek trail ~ 10km; (b) Mount Airy Trek Trail ~14km.

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FD is currently developing criteria to rank and assign index value to proposed recreation trails (Good, Fair, Not Recommended). JNHT and other stakeholders are engaged in creating the recreational trail selection criteria. This output has been progressing well; the progress achieved corresponds to the targets initially planned.

Maps showing Bogue Recreational Trail surveyed in 2018:
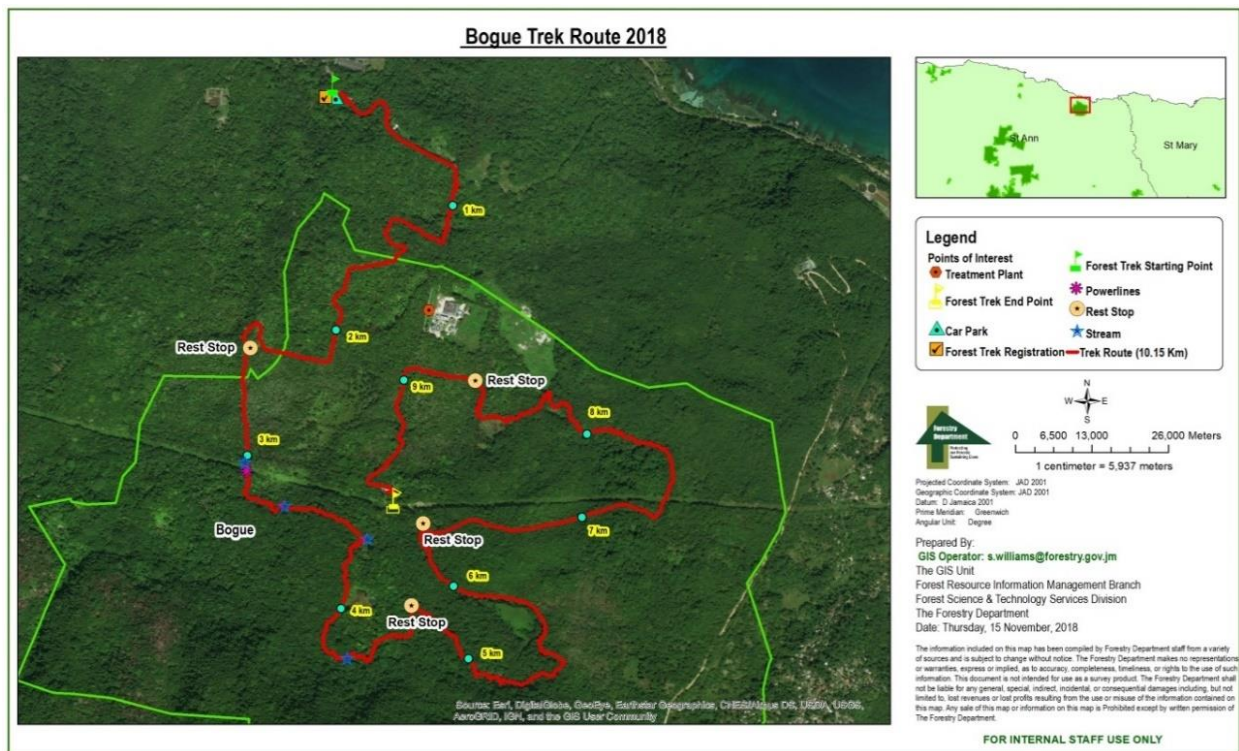
Outcome 5.3: Improved collaborative monitoring of forest resources. In progress:

- **Output 5.3.1**: Improved availability of data for driving the growth and investment in the forest sector (both timber & non timber).
- **Output 5.3.4:** Forest monitoring system using Permanent Sample Plots (PSPs) established.
- **Output 5.3.5**: Targeted species (giant swallowtail, yellow-and-black-billed parrot, water mahoe and bitter wood) surveyed, mapped.
- **Output 5.3.6**: Knowledge Management and Strategic Planning of the NFMCP achieved

Output 5.3.1: Improved availability of data for driving the growth and investment in the forest sector (both timber and non-timber).

KPI	Number of Growth & Yield curves for primary commercial species developed.		
BASELINE	Growth & Investment data for 2 species (Caribbean Pine & Blue Mahoe) exist.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	•Y10: 6 Y0: 2
TARGET	No target for Y1 – Y3.		

SUMMARY OF PROGRESS: The purpose of this output is to encourage that standard forests should be recognised as economic, social and environmental assets. FD completed its first set of four Harvest Plan by Year 3. This is a significant step towards the development of yield and growth curves.

The baseline tables for Caribbean Pine and Blue Mahoe exist. Currently, baseline data are being ascertained for other species by way of sampling for height and girth during routine field assessments for verification; no new work on non-timber.

Output 5.3.4: Forest monitoring system using Permanent Sample Plots (PSPs) established.

KPI	(Yes/No) PSPs in place to investigate and determine climate change impacts.		
BASELINE	FD (2015)	STATUS ☐Not started ☒Challenges. ☒In progress. ☐Completed.	✓Yes/No
TARGET	No target for Y1 – Y3.		

SUMMARY OF PROGRESS: Permanent Sample Plots (PSP) are very useful sampling methods for tracking forest changes over time. However, the assessment activity is demanding and resource intensive. The Forest Inventory Manual is being revised in consultation with the USFS (see **Output 3.2.1**). It will incorporate a new sampling method that utilises PSPs in a grid system. It is yet to be determined if these

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PSPs will be assessed in both forested and non-forested areas and how they will be intensified in forested areas.

Currently FD has PSPs located in Cockpit country, Blue Mountain and southern St. Thomas. A PSP assessment has not been conducted since 2016 (Y1).

Output 5.3.5: Targeted species (giant swallowtail, yellow-and-black-billed parrot, water mahoe, and bitter wood) surveyed, mapped.

KPI	Number of Populations of targeted flora and fauna species mapped by type.		
BASELINE	Not yet established but for flora, FD could generate baseline. Target 2016-17: 1. Questionnaires developed to map tree fern species; 2. Orchid species population surveys conducted; 3. Surveys conducted to map Mountain Cinnamon.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y1: ? Y5: 4 Y10: 8
TARGET	Questionnaires adapted, updated and tested. Survey instruments established. Sites and species selected.		

SUMMARY OF PROGRESS: Surveys have been done for the yellow and black billed parrot, as well as orchid species populations in Year 3. A survey of Bitterwood has commenced. Further, a GIS Survey is in progress for the Tree Fern. The mapping is done at the NEPA GIS Unit, which produces the shape files.

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Regarding the Giant Swallow-Tail butterfly, research is being done by the entomology section of UWI/DLS. It is hoped that UWI will prepare a management plan for this species, which is very forest dependent. It needs one particular tree to support its life cycle, the Water Mahoe.

Five orchid species were selected for propagation. However, the greenhouse used was not able to maintain a stable condition and most orchids did not survive. The propagation will be retried in 2020-21. Illegal harvesting of orchids from forest reserves is a continuing issue; the rangers are few and the reserves are large. NEPA has started to develop questionnaires in order to document practices.

Output 5.3.6: Knowledge Management and Strategic Planning of the NFMCP achieved.

KPI	Number of evaluations, planning documents and annual reports produced.		
BASELINE	NFMCP 2017 document.	STATUS ☐Not started ☐Challenges. ☒In progress. ☐Completed.	Y1: 1 Y5: 4 Y10: 11
TARGET	First progress report produced (2017-18).		

SUMMARY OF PROGRESS: A preliminary progress report for the period 2016-2018 was completed and submitted in 2018 to the PIOJ. This report was a condition under the European Union budget support programme; it focused on the development of the necessary plan and frameworks (PMER) to support implementation of the NFMCP as well as general progress by Thematic Areas.

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An internal process evaluation during the first two years of the NFMCP (2016-2018) was carried out during Year 3 by FD. FD's Senior Management Team had determined that this evaluation be conducted only on the actions of the Forestry Department, since it is the lead agency for the plan. In April 2019, the report was submitted to Senior Management for review. The next process evaluation, to be done in Year 5, will engage more stakeholders.

In December 2018, the Financing Agreement for a €16.5 million four-year (2018-2022) budget support action was officially signed, providing financing for an identified 15 outputs of the NFMCP.

On 5 February 2019, the first NFMCP Technical Advisory Committee meeting was held.

Overall, FD is making good progress in ensuring that necessary frameworks are put in place for the knowledge management & strategic planning of the NFMCP, which is a significant improvement from the previous NFMCP. The development of the PMER Plan & Strategic Framework, the establishment of the TAC, hosting of PMER workshops are all significant steps. Additionally, acting on the recommendations from the participants at the May 2018 PMER workshop, FD began the process in 2018 to engage a M&E company to design a results-based online monitoring system for the NFMCP. This should be completed in Year 4 and should strengthen coordination of monitoring & reporting.

PARTNER / STAKEHOLDER RELATIONSHIP UPDATE: During Year 3, one stakeholder workshop was held with the Primary Implementing Entities on 7 May 2018. This workshop was a take-off point for the sensitisation and training on the PMER. Between May and September, consultations were held through consultant Jan Voordouw and his team. Representatives from FD attended some of these consultations (with NLA, MTM, ODPEM & MSJ) in an effort to further strengthen stakeholder relationships.

Work also began in 2018 on the establishment of the Technical Advisory Committee for the NFMCP with the drafting of its Terms of Reference and convening its first meeting, which took place in February 2019 (see **Chapter 4**).

Consultancy services are critical inputs to this output as with the current capacity for this area of the SCPU and FD in general, external support will be needed to complete the relevant planning documents, progress reports and evaluations.

3. RISK MANAGEMENT

A project or programme risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives or processes, such as scope, schedule, cost, and quality. A risk may have one or more causes and, if it materialises, one or more impacts. Risks should not be confused with problems: a problem is a materialised risk, i.e., an event that is certain, has already happened, and is negatively affecting the achievement of the project or programme.

In February 2018, the revised "Agency Enterprise Risk Management Plan and Framework" were approved and formal risk management principles became part of FD's corporate governance processes. The level of risk awareness has been enhanced through risk management trainings for staff at different levels of the organisation. The principles assist the risk management process for the NFMCP.

FD maintains a risk register which currently is inadequate for the NFMCP (i.e. while risks are identified for most activities, risk analysis is incomplete and the control measures are lacking.).   A risk assessment for the NFMCP was done during its internal process evaluation, in order to gain an understanding of the potential impact of risks on outputs. The assessment revealed that the major risks were related to resource and institutional/operational issues and have a medium to high chance of occurring.

During the preparation of this report, some risks were identified and grouped under ten major risk categories. *Table 3* below serves as an initial tool to review and monitor these for the outputs being coordinated by various PIEs.

TABLE 3: Statements for the ten major Identified risks and mitigation strategies

Identified Risk Statement	Output #	Risk Level	Risk Mitigation Strategy
STAFF TURN-OVER: Due to staff turn-over and re-allocation of staff within various agencies (to take up new tasks), the capacity of individuals working on specialised outputs (such as the list of invasive plant and animal species) is compromised, which decreases the quality of the output.	1.1.2 1.2.1	High	Timely recruitment of specialised staff. Training of a sufficient number of staff in specialised fields.
STAKEHOLDER BUY-IN: If several members of the broad group of stakeholders involved in the TAC re-prioritise their interest to other fields or structures, the NFMCP may lose its momentum and become less effective as a joint management and planning instrument and generator of substantive results. If existing environmental entities and collaborative structures do not promote that the forest sector is going into new areas that need support, such as urban forestry or	1.1.1 1.1.3 2.1.4 3.1.7 4.1.2 5.1.3	Low	Ensure that the participation in the TAC is useful day-to-day work in the institutions. Establish efficient structures for sharing information. When appropriate, ensure buy in from stakeholders in day-to-day management planning and the inclusion of

Identified Risk Statement	Output #	Risk Level	Risk Mitigation Strategy
mangrove management, the NFMCP may lose relevance. Low commitment and/or capacity, particularly of community groups, to take on project funding reduces opportunities for improved alternate livelihoods.			these new forest sector areas in development orders. Address training needs.
UNAVAILABILITY OF REQUIRED SPECIES/ SEEDS: At times there are limited variety of seeds available, which results in the nursery being unable to meet the production demands for all species requested. If the nursery programme is not expanded, FD may experience the unavailability of seedlings to meet demands. Due to weaknesses in nursery infrastructure and capacity (urgent repairs are needed), pest infestations may occur, which severely impact seedling quality, production and distribution.	3.1.4 3.1.1	Medium	FD has reinstituted the collection of wildings. Several strategies were implemented to mitigate the risks, such as weekly updates of the inventory, weekly inspection of seedlings and culling of infested seedlings. Nonetheless, the risks has a medium (41%-60%) chance of recurrence. Regular pesticide spraying.
UNAVAILABILITY OF SUITABLE LANDS FOR REFORESTATION EFFORTS: If lands are inaccessible, the output cannot be implemented.	3.1.1	Medium	Early search for appropriate (denuded) private lands.
MISSION CREEP WITHIN OUTPUTS: The scope of some outputs have grown tremendously over the first years of NFMCP, however the outputs have not been transformed into proper projects, causing great risk to their successful completion.	1.1.7 3.1.1 3.1.2	Low	Prioritise procurement. Organise all inputs and resources timely. Appoint a coordinator for each of these outputs, with day-to-day management responsibilities.
LONG LAG TIMES TO GET WORK UNDERWAY: Long lag time in getting work underway may jeopardize the proper implementation of outputs, causing a less than expected quality outcome.	General 5.3.6	High	Regular monitoring of progress by the agencies and TAC. Early mobilisation of inputs and resources.
POOR DATA MANAGEMENT: Due to lack of staff capacity, outputs could suffer from poor	2.2.2 3.1.3 3.1.4	High	Synergies within the agencies at divisional levels needed, as

Identified Risk Statement	Output #	Risk Level	Risk Mitigation Strategy
data management, which would jeopardize their usefulness within NFMCP.	3.2.1 3.2.2 3.3.3		well as synergies between PIEs maximised. Regular training and capacity development for information management.
INSECURITY OF FINANCIAL RESOURCES: For outputs where significant financing is needed for their implementation, fund sourcing is essential, since the output is at risk if funding is not identified.	1.1.5 2.3.4 3.3.1 4.1.3	Low	A number of specific outputs can be a focus for fundraising, including (for 2.3.4) because of its social value. When support sourced for the output is not sufficient, the output will need to be redesigned, to assess useful elements which can be delivered cheaper.
MISSING SKILLS SETS IN TECHNICAL AREAS: Because several PIEs have scarcities or gaps in staff skills, for instance in species identification, silviculture or certain ecosystem management areas, in case of the turn-over of qualified and specialised staff, much work is in jeopardy.	1.2.1 1.2.2 1.2.3 1.2.4 4.2.1 5.3.2 5.3.4 5.3.5	High	Training should be done in specialised areas, resulting in other personnel gaining solid knowledge of silviculture.
INACCESSIBILITY OF SOME SITES: A number of mangrove and swamp forests may pose inability of access issues, due to difficulty in sourcing fishermen with boats to visit remote off-shore areas, crocodile nesting, or lack of permission to access private mangrove and swamp areas. These will halt or delay the conduct of the assessment.	1.1.4 5.1.2	Low	Reconnaissance trips should be made. Specific difficulties can be discussed with partner organisations, to seek solutions.

4. PROGRESS RELATING TO GOVERNANCE AND OVERSIGHT

During the first three years of the NFMCP, work was done to create a solid governance and management mechanism for the plan (see also **Output 1.1.1**). A **Technical Advisory Committee (TAC)** was established and held its first meeting in February 2019. This meeting adopted the Terms of Reference of the TAC. The mandate of the TAC is "*to provide independent and objective advice to the CEO & Conservator of Forests in support of the implementation of the NFMCP 2016-2026. This will be achieved through the collective expertise of its members to identify risk management, policy-related and adaptive management issues and strategies in order to develop workable solutions. The TAC will also act as a Steering Committee to guide the four-year budget support programme …*".

The TAC is comprised of senior representatives from the GOJ institutions with responsibility for environmental management, social and economic development, financing, and watershed and environment management. Representation also includes private forest land owners, academia, private sector and non-governmental and community-based organisations (including Local Forest Management Committees) which represent key stakeholders of the sector.

TABLE 4: Members of the Technical Advisory Committee of the NFMCP.

Primary (CORE) *	Other Stakeholders
1. **Chair:** Ministry of Economic Growth and Job Creation (MEGJC - or Ministry with responsibility for the Forest Sector) ** 2. **Co-Chair:** Planning Institute of Jamaica (PIOJ) ** 3. Forestry Department (FD) 4. National Land Agency (NLA) 5. National Environment & Planning Agency (NEPA) 6. Rural Agricultural Development Authority (RADA) 7. Social Development Commission (SDC) 8. Bureau of Gender Affairs (BGA) 9. Ministry of Finance and the Public Service (MOFPS) 10. Private Forest Land Owner 11. Environmental NGO – Caribbean Coastal Area Management Foundation (C-CAM) *For the duration of the Budget Support Programme (2018 – 2022) the Delegation of the European Union (EU) shall have Observer status.* *** Provisionally, the position of Chair is assumed by PIOJ and Co-Chair by MEGJC.*	12. Jamaica National Heritage Trust (JNHT) 13. Office of Disaster Planning and Emergency Management (ODPEM) 14. Meteorological Service of Jamaica (MSJ) 15. Bureau of Standards 16. Jamaica Fire Brigade (JFB) 17. Ministry of Industry, Commerce, Agriculture and Fisheries (MICAF) 18. Ministry of Education, Youth and Information (MOEYI) 19. Tourism Product Development Company (TPDC) 20. National Solid Waste Management Authority (NSWMA) 21. Urban Development Corporation (UDC) 22. National Spatial Data Management Division 23. Scientific Research Council (SRC) 24. Academia (UWI, UTECH, NCU, CASE etc.) 25. Jamaica Constabulary Force (JCF) 26. Jamaica Defence Force (JDF) 27. NGOs – C-CAM, JCDT, WRC etc. (On a rotational basis) 28. Private Forest Land Owners (on a rotational basis) 29. Cabinet Office 30. Jamaica Business Development Corporation (JBDC) 31. Ministry of Transport and Mining – Mines and Geology (MTM/MGD) and Jamaica Bauxite Institute (JBI) 32. Institute of Jamaica (IOJ) 33. Local Forest Management Committees (LFMCs) 34. Jamaica Chamber of Commerce (JCC) 35. Water Resources Authority (WRA) 36. University of West Indies/Dept. of Life Sciences (UWI/DLS)

The TAC consists of a core group and a wider group of stakeholders as presented in **Table 4**. The core group includes representatives of agencies for the life of the NFMCP, as well as, on a rotational basis, private forest land owners and NGOs. The TAC should meet at least three times per year.

During Year 2, the **NFMCP Performance Monitoring, Evaluation and Reporting (PMER)** system was approved, consisting of a strategic framework, plan and database. It lays a sound basis for multi-agency joint data management and guides the coordinated monitoring and reporting on activities amongst the seven (7) Primary Implementing Entities. It is designed to assess the extent of progress made towards the implementation of the NFMCP 2016-2026 and importantly, measure the sustainable transformation of the forest sector towards climate resilience. In designing the system, emphasis was placed on utilising existing M&E frameworks, so as to not add additional reporting burdens to the Agencies involved. Therefore, the capital, financial and human M&E resources and systems within the agencies were assessed as these relate to providing data for measuring progress of the NFMCP. An overview of the M&E systems in use is provided in **Table 5**.

During Year 2, FD also explored the introduction of an online M&E system for data collection and management, based on feed-back from key stakeholders. The existing Excel database does not allow immediate update and sharing; various versions of data may be produced, which are challenging to integrate.

TABLE 5: M&E Systems in use in the Primary Implementing Entities (PIE), mid 2018.[4]

Agency	Proprietary M&E system?	Comments
FD	Activity and results-based	FD uses the government approved Performance Monitoring and Evaluation System (PMES) which follows results based management (RBM) principles. PMES calls for the implementation of a common structure to support systematic collection of data on sector-specific indicators and on the status of government plans and programmes. As a first step, FD usually does a needs assessment on which basis the M&E planning is done, baselines are established and monitoring activities designed. FD implements also stakeholder assessments at this point. Further, the M&E plans are aligned to national & international frameworks and agreements.
JNHT	Activity-based	JNHT does its data gathering through occasional archaeological field walks and community meetings. This monitoring does not have a regular timetable.
MSJ	Activity and results-based	MSJ collects huge amounts of data on weather, both manually and electronically. For manual data, this is done hourly or daily. In the case of electronic data, it depends on an individual client's needs and can be at high frequency (for instance 2-minute intervals). For instance, the weather station at the airport uses 6-hours intervals for climate data, hourly for weather data and 2-minutes intervals for aviation data. Additionally, MSJ uses the Performance Management and Appraisal System (PMAS), to determine how each officer is achieving targets as outlined in a work plan and which contribute to MSJ meeting its Corporate Plan. This is both activity and results based.

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[4] *Based on Assessment Report – Phase 1, Provision of Training Services for Key Stakeholders involved in the NFMCP 2016-2026.*

Agency	Proprietary M&E system?	Comments
MEGJC	Activity- and Results-based	The M&E system of the Environment and Risk Management Branch (ERMB) of MEGJC is both results and activity based. One of the weaknesses in the system is the lack of a platform for 'real time' feedback from a wider Jamaican stakeholder group. These partners could assist in improving the indicators and related targets, where necessary.
NEPA	Activity- and Results-based	NEPA has a mixture of activity based and results based M&E systems. All the externally funded projects (activities) are monitored. These projects are mid- to long-term and the parent Ministry requires these monitoring reports, on a quarterly basis. The other activities of NEPA are covered by the business plan, which is results based. NEPA's annual business plans are based on a 5-year Strategic Action Plan (SAP); the current one runs from April 2014 – March 2019. The overall M&E system is organisation-wide. There are 12 KPIs for NEPA.
NLA	EMS – Aumentum Registry	The National Land Agency has 8 divisions. Each of these has a unique M&E approach. The Estate Management Division is the focal point for NFMCP. It uses an Estate Management System (EMS), captured in a software package called Aumentum Registry. The package was written and is maintained by Thompson Reuters. The system essentially transforms the physical database of crown land records to electronic records. Inspections produces individual reports, according to a standardised format. Land valuation uses the information from these reports for their purposes. There is an enforcement unit at NLA, which keeps a spreadsheet of all properties where squatting occurs.
UWI/DLS	Activity-based	The Centre for Marine Sciences (CMS) at UWI/DLS collects mostly primary data for mangrove forests. These include for instance: Tree-type and distribution (along a transect or in a 10x10 or 5X5 meter plot as appropriate); DBH (biomass); Canopy height; seedlings/density; root types and density, % cover; productivity (litter production); physicochemical and soil characteristics; signs of anthropogenic impacts (litter/tree removal/charcoal burning). Currently, CMS is limited in collecting detailed soil data. It also has limited ability to collect measurements for peat depth and below-ground biomass for mangrove forests, as well as carbon sequestration and storage ability of forests.

During Year 3, FD carried out a series of training and sensitisation activities regarding the NFMCP/PMER with the Primary Implementing Entities and updated the database and plan. A one-day training workshop for M&E officers, data managers as well as management representatives was held on 7 May 2018 with 30 participants. Further, the various agencies were visited and in-house sensitisation on NFMCP/PMER was carried out. FD completed its reporting to MEGJC for Year 1, 2 and 3 of the NFMCP as required under its statutory obligations as it continues to monitor and evaluate its programmes on an annual basis. FD also attended performance review meetings, including for NFMCP, held by the MEGJC throughout the year.

For FD, the entire staff is considered dedicated to the implementation of the NFMCP. On 31 March 2019, the FD staff consisted of 241 FTEs and 19 part-timers, bringing the total to 260 staff. It is expected that for the other PIEs the numbers of FTEs dedicated to the NFMCP can be reported in future years, resulting in a complete workload report for the NFMCP.

5. UPDATE ON FINANCING THE NFMCP

The full costing plan of the NFMCP was drawn up during Year 3. In close collaboration with financial and technical personnel at the PIEs, the resource needs to implement each of the outputs were detailed through a standardised costing format. These were brought together under each of the 13 outcomes, as well as under the five Thematic Areas of the NFMCP. The resulting costing plan also includes the timelines of funds already available or committed and funds to be raised. As such, the particular financial needs at a point in time (the cash flow) were specified to implement the over-all NFMCP along the implementation timeline up to 2026.

Over the 10-year period 2016-2026, the NFMCP is expected to cost just over J$13 billion, with nearly J$11 billion covered by the Consolidated Fund and just over J$2 billion to be committed from external sources or still to be raised. The overview is presented in **Table 6.**

TABLE 6: Costing of the NFMCP.

COSTING OF THE NFMCP	TOTAL 10 YEARS: 2016-17 to 2025-26		
Results	Total costs (in J$'000)	Consolid. fund	Other sources
Thematic Area 1: Forest Governance and Conservation	1,721,163	1,599,921	121,242
Thematic Area 2: Forest Utilisation	3,004,176	2,202,592	801,584
Thematic Area 3: Capacity for Sustainable Forest Management	4,174,613	3,813,704	360,909
Thematic Area 4: Education, Training and Awareness	718,531	695,541	22,990
Thematic Area 5: Monitoring and Information Management	3,395,661	2,626,867	768,794
GRAND TOTAL	**13,014,144**	**10,938,625**	**2,075,519[5]**

Over J$11 billion or 84.7% of the funding required to implement the entire NFMCP has already been identified. These funds were available during Year 1-3 or are to be made available from the upcoming financial year (Year 4) onwards. The funds still to be raised to finance the NFMCP amount to J$1,985 million or approximately US$15.9 million. The ratio of funds secured (84.7%) versus funds to be raised (15.3%) is very beneficial. It offers clear advantages for additional donors to come on board, since the risk that the NFMCP will not be implemented is very small. Current contributors include (see also **Table 7**):

- Government of Jamaica;
- European Union - (€14 million or J$2.1 billion through its Budget Support Programme under an Action agreement entitled "Addressing Environmental and Climate Change Challenges through Improved Forest Management in Jamaica (IFMJ)." IFMJ aims to support 15 outputs[6] of the NFMCP for a period of 4 years (2018 - 2023), implemented by FD, MEGJC, NLA and NEPA;
- Green Climate Fund (GCF) – US$613,000 related to REDD+ readiness. **Outputs 3.2.1 – 3.2.5**;

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[5] *J$90,027,000 committed and J$1,985,492,000 to be raised.*
[6] *These are: 1.1.2, 1.1.4, 1.1.5, 1.1.7, 2.1.4, 3.1.1, 3.1.2, 3.1.5, 3.1.8, 3.2.1, 3.3.1, 4.1.1, 4.1.2, 4.1.3, 5.1.2.*

- Global Environment Facility (GEF-6) – US$36,640 related to Natural Resource Valuation (NRV) in the Stephney -John's Vale Forest Reserve in St Ann. **Output 4.1.3;**
- University of the West Indies Dept. of Life Sciences (UWI/DLS) – In-kind contributions valued at J$10.6 million relating to the mapping and assessment of mangroves and knowledge management, **Outputs 5.1.2 and 5.2.1**.

TABLE 7: Financing for the implementation of the NFMCP contributed or committed.

Source	Amount (in J$'000)	Percentage of total requirement	Timeline
Consolidated Fund, including EU/BSP contribution	J$10,938,625 (EU/BSP direct contribution to Outputs: J$1,068,016)	84.1%	Year 1-10. For EU/BSP Year 4-7.
Green Climate Fund	J$74,827	0.6%	Year 4 and 5.
Global Environment Facility GEF- 6	J$4,580	0.035%	Year 4.
UWI/Core	J$10,620	0.08%	Year 4-10
TOTAL FINANCED	**J$11,028,652**	**84.7%**	
FINANCING REQUIRED	**J$1,985,492**	**15.3%**	

There are 30 outputs with an additional (unmet) resource need above J$10 million. During year 4 however, it would make much sense to use a fundraising strategy centred around Thematic Areas 2 (which is in need of J$802 million) and 5 (in need of J$758 million). The rehabilitation of recreational sites at Gourie and Clydesdale (**Output 2.3.4**) could be a particular focus since this output has a deficit of J$660 million and has important links to both local and international tourism as well as revenue generation.

During Year 3, the Government of Jamaica requested technical support from the Global Forest Financing Facilitation Network (GFFFN)[7] in the development of a financial strategy and plan for the NFMCP. Based on information and strategic elements already developed under the NFMCP, a National Forest Financing Strategy (NFFS) was drafted. Further, during Year 1-3 of the NFMCP, several initiatives were funded externally which provide input for the NFMCP. These include the Hope/Yallahs River Watershed Management Project (financed by the GEF/IDB)[8]; Ecosystem based adaptation (EBA) for 6 hectares; and strengthening of the LFMCs. New financing discussions are also taking place between FD and utilities (in particular NWC) in the scope of paying for ecosystem services.

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[7] *Established by the United Nations Forum on Forests (UNFF) to assist countries in designing national forest financing strategies in support of sustainable forest management. It also facilitates access to existing and emerging financing mechanisms.*

[8] *The Integrated Management of the Yallahs and Hope River Watershed Management Areas (Yallahs-Hope) Project is being implemented by NEPA. It is a five-year programme, which started in October 2014. Grant funding totalling US$3,909,441 was provided by the GEF through the Inter-American Development Bank (IDB). The GoJ has also provided co-financing of US$ 8,872,357. The project aims to improve the conservation and management of biodiversity and the provision of ecosystem services within the Yallahs River and Hope River WMUs by implementing sustainable agriculture, forestry, land management and livelihood practices within targeted communities.*

6. IMPLEMENTATION OF NFMCP IN YEAR 4: 2019-2020

TABLE 8 below presents the main results to be achieved in Year 4 (second column). Based on the work done during Year 1-3, through participatory sessions with the stakeholders, the targets for the remaining years were revised (third – eighth column).

TABLE 8: Draft NFMCP Implementation Plan for 2019-2020 and targets for remaining years

Output		2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
1.1.1	Consolidation of TAC as the actively leading and coordinating structure of the NFMCP. Interlinkages and synergies of TAC with relevant Committees and working groups promoted.	At least one more cross-sectoral mechanism developed.			Additional working relationships between the TAC and other coordinating bodies.			Full integration of the forest sector in relevant national decision making processes.
1.1.2	Submission of request by MEGJC to approve the preparation of drafting instructions to Cabinet. Drafting instructions finalised for submission to the CPC	Forest Act amended. Completed			Promulgation implemented.			
1.1.3	Draft background study paper to be completed. Land use data entry. Preparation of existing digital land use map for Local Planning Area (LPA), draft zoning map, draft density map.	4 Development Orders prepared and updated regarding forest management priorities.			6 Development Orders prepared and updated regarding forest management priorities.		8 Dev. Orders prepared and updated regarding forest management priorities.	9 Development Orders prepared and updated regarding forest management priorities. Completed.
1.1.4	Series of workshops has been started for mangrove owners and users, and is to be implemented by FD.	Documents submitted to NLA.				Transfer of Management		

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
	The identification of parcels continues, followed by the inspection of those properties; amend the valuation and information; have the property spatially represented.	Update NLA property inventory. If possible, seek ministerial. approval to hand-over management of parcels. If approval is received, prepare handover letters.			Responsibility Completed. Update NLA Property inventory.		
1.1.5	Implement and monitor approaches for effectiveness of enforcement. Community consultations done. The training course on forest law enforcement in 2020 should include practical exercises, regarding how effective patrolling is done.	New protection and enforcement approaches in place to support enforcement activities.					
1.1.6	START IMPLEMENTATION OF OUTPUT Process to review Special Use Permits to commence.	Special regulation starts.	Media promotions of regulations.	Media promotions of regulations.	Completed.		
1.1.7	PR and stakeholder meetings implemented. At least 5 parcels per annum verified. Process to establish Cockpit country boundary well organised.	30 parcels	EU BSP. 219 km boundary for Cockpit Country completed.	45 parcels			
1.2.1	Listing of invasive plant species in mangrove forest types completed.	Updated list for 4 forest types for plant species (open dry	On the ground verification and	Ensuring the inclusion of	Complete document on forest invasive plant	.	

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
		forest -short & tall- added).	Updated list for 4 forest types.	fauna in the listings.	species for all 6 forest types (added are Disturbed Broadleaf & Sec. forest).		
1.2.2	NEPA and FD to determine list of agreed invasive species for the preparation of monitoring and control plans. NEPA to actively pursue inclusion forest aspects in their M&E of biodiversity activities for areas outside of the forest reserves (FD operates mainly within the forest reserves). Report Jamaica Iguana Headstart programme prepared. Monitoring of live predator traps completed (April-June 2019). 30 Jamaica Iguanas released between Jan-March 2020.	At least 2 invasive species controlled in/within CBL forest cover class.	Completed. Reports produced.				.
1.2.3	Process evaluation on pilot species conservation plans done. Recommendation to establish a headstart programme for the American Crocodile. Species for the future conservation plans to be identified (Year 7 and Year 10).	Conservation Plan for 2 species developed (Bitterwood as possible commercial species and water mahoe)		Additional species conservation plan produced.			4 species conservation plans produced.
1.2.4	Finalise target species list and develop conservation approach.	Conservation approach developed for 2 new species.			Conservation approach develop for 2		5 new species for conservation identified and conservation

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
					additional new species.		approach developed.
2.1.1	Evaluation of programme of potential feasible incentives completed by 2020.						
2.1.2	Consultation on new and revised incentives.	One new incentive created and promoted.					
2.1.3	START IMPLEMENTATION OF OUTPUT Ecosystem services to be potentially utilised included in the research programme. Consideration of Yallahs/Hope project for water as ecosystem service. Potential development of volunteer programme with NWC. NRV training (output 4.2.1) will provide an input.		Consultancy on incentives for PES pilot programme implemented. Link it to the business model for FD.	Programme development started.	Pilot project operational.		Pilot project conducted and completed.
2.1.4	Sensitisation carried out. Training developed and implemented. SES Dolphin Head completed by FD Rural Sociologist. Registration of planters continues. Distribution of seedlings continues.	By June 2020, 40 livelihood projects should have been selected and awarded.	By June 2021, 20 projects must be completed. Registration of planters & distribution of seedlings continues.	By June 2022, all 40 must be completed.			
2.2.1	START IMPLEMENTATION OF OUTPUT Consultancy social surveys timber products.	Consultancies wood technology. Assessment started	List of identified wood species.		50 % of list completed.		Assessment and recommendations completed.

Output		2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
2.2.2	Cluster 3 harvesting Plan scheduled for Y4.			Eight harvesting plans completed.		Twelve harvesting plans completed.		Sixteen (16) harvesting plans completed, for 16 of the 26 clusters.
2.3.1	START IMPLEMENTATION OF OUTPUT The research programme is to partly based on the results of the social survey non-timber products to be done under output 2.3.2.	Feed in by market research, output 2.3.2. Based on this info, it will be decided which inventories to carry out.	Research programme developed.					
2.3.2	START IMPLEMENTATION OF OUTPUT Potential researchers identified. Budget for the social survey non-timber products ($8m) specified, as well as research output, identifying the potential non-wood forest products and secondly relevant demands in society. (Different parts of the trees serve different purposes and this is to be assessed first on economic viability. Example: pine cones of a certain size and weight.)	Market research survey conducted.	Public education materials prepared.					
2.3.3	START IMPLEMENTATION OF OUTPUT The species for which the profiles are to developed, are to be determined. The products need to be identified and agreed. Target audiences for these investment profiles to be identified as well. The profiles further need to be part of a larger PRCC programme.	Feasibility study for the identified products conducted.	Two Investment profiles completed and promoted.	Inventories implemented.				To be determined.

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
2.3.4	Feasibility study on access and attractiveness of sites (to see why people would go to Gourie, instead of e.g. Blue Mountains.) Development of fundraising strategy for this output.	Gourie rehabilitated and at least one business strategy implemented.			Clydesdale rehablitated.		Feasibiliy study for third site done.
2.3.5	START IMPLEMENTATION OF OUTPUT Request shape files of forest reserves and FMAs. Identify the cultural sites within the Forest Reserves and FMAs: - Desk-based assessment conducted; - Field survey conducted; - GPS Coordinates for cultural sites. - Create data base and info management system. - Enter data into data base. - Submit info to FD.	At least 2 additional guidelines developed.		Completed. Promotional activities on trails and sites.			
3.1.1	150 ha planted. Additional 426 ha maintained. Reforestation programme finalised and adopted. Search for plantable lands to be done in previous year before commencement of planting activity.	600 ha for 2016-2021 planted. 526 ha maintained. Search for plantable lands to be done for next year.	100 ha planted additionally Search for plantable lands to be done for next year.	100 ha planted additionally / 788 ha maintained. Search for plantable lands to be done for next year.	100 ha planted additionally. Search for plantable lands to be done for next year.	100 ha planted additionally. Search for plantable lands to be done for next year.	Total 1,100 hectares planted. 1,200 ha maintained.
3.1.2	Stephaney John's Vale FMP revised.	Cluster 4 FMP (St. Andrew) developed.	Cluster 2 FMP (St. Andrew) revised.	Cluster 17 FMP (Hanover) developed.	Buff Bay Pencar country FMP revised.	.	One FMP revised or developed per year.

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
3.1.3	Draft Watershed Management Plans prepared for Rio Cobre and White River, which include restoration plans.	3 (Rio Minho or Rio Grande added)		Another watershed management plan added, which includes restoration plans.			5 watershed management plans completed, which include restoration plans.
3.1.4	Evaluation completed. 205,000 seedlings produced.	205,000 seedlings. Costing info baseline established per species per seedling.	205,000 seedlings produced.	120,000 seedlings produced.	120,000 seedlings produced.	120,000 seedlings produced.	Completed: 1,540,000 seedlings accumulated
3.1.5	START IMPLEMENTATION OF OUTPUT Coordinator recruited for implementing swamp and mangrove management plans.	Mangrove Management Plan developed (NEPA to be consulted).	Implementation of Plans started		Plans implemented by 25%		Plans implemented 50%.
3.1.6	START IMPLEMENTATION OF OUTPUT Approach to be developed and riparian zone to be defined.	Research Plan for inventory of species composition (using remote sensing) in 20m bands from water.	40% Implementation of research and collection management practices.	80% Implementation of research and collection best practices.	Guidelines for best management practices published.		
3.1.7	Community engagement and public education. Identify new communities, including in the Western Zone. Planting started and first draft guidelines.	Collect lessons learned. More planting done in more communities.	More planting done and lessons learned collected.	More planting done and lessons learned collected	Review and revise guidelines.	More planting done and lessons learned collected	Guidelines Completed.

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
3.1.8	Database expanded and maintained.	Half of private forest land owners included					All forest land owners included and updated
3.2.1	Forest inventory approach revised to include carbon estimates. First pilot study launched. Workshop to be held (see output 4.2.3)	Carbon stock monitoring implemented. Forest monitoring strengthened (see Output 5.3.2)	Carbon stock monitoring implemented	Carbon stock inventory completed.			
3.2.2	Approved national strategy and action plan. Working group on REDD+ established.	Promotion and communication of strategy & action plan.					
3.2.3	Social Safeguards and Gender operational-ised. Satellite imagery expected to be procured by FY 2019/2020.	Consultations, training sessions, workshops.	Land use revision completed; a new analytical report of the drivers of deforestation and forest degradation done. Consultations, training sessions, workshops.	New analytical report completed. The conclusion of each land use study is followed by the analytical report to understand the changes being observed.			

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
3.2.4	START IMPLEMENTATION OF OUTPUT Based on the BPI Manual produced, ability established to calculate the National Forest Reference Emission level.	Training done and Calculation performed.					Forest emission level calculated.
3.2.5	START IMPLEMENTATION OF OUTPUT RSC Meetings held. Inter-sessional meeting held. Consultancy to develop the Safeguards Information System.	7 Cancun principles integrated into PIOJ safeguards information system.	Financial audits performed.				All 7 Cancun principles adhered to.
3.3.1	Two SES completed and finalised.	Minimum of 30 groups trained / 250 persons sensitised.					Minimum of 45 groups trained / 375 persons sensitised.
3.3.2	START IMPLEMENTATION OF OUTPUT Study has been dropped. Internally, recommendations were articulated and FD will go ahead with those to set up the training programme (output will be maintained), to be adopted by end of Year 4.	Training on governance and decision-making started.	Continuation training programme.	Continuation training programme.	Continuation training programme.	Continuation training programme.	Continuation training programme.
3.3.3	5 additional community groups established and trained.	Minimum of 15 community groups trained.	5 additional groups trained.				To be determined.
4.1.1	KAP study done. Public education materials prepared. FD will introduce strategies to standardise the programme's implementation across all schools targeted or engaged. The programme will be given more structure to	Cumulatively, 1,400 schools (in 14 parishes) visited and 675 public education/ awareness sessions implemented.	290 school visits, 150 public awareness events.	290 school visits, 150 public awareness events. Public awareness and	290 school visits, 150 public awareness events.	290 school visits, 150 public awareness events.	Cumulatively, 2,850 school visits (in 14 parishes) and 1,425 public awareness

Output		2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
	allow for greater ease in evaluating its effectiveness. This will include guidelines for the programme's implementation and the development of pre and post testing tools to demonstrate knowledge transfer. Forest Trek implemented.	Forest Trek implemented.	Website upgraded. Forest Trek implemented.	perception survey implemented. Forest Trek implemented.	Forest Trek implemented.	Forest Trek implemented.	events implemented.
4.1.2	Publishing of new brochure. Additional educational video and radio drama developed. Training of 15 additional communities.	One forest fire public awareness campaign executed.					To be determined
4.1.3	A structured outreach programme will be developed and put in place.	150 persons registered under the private forestry programme, participating in technical transfer meetings.			Registration of planters continues.		Full registration of planters.
4.2.1	Training programme on NRV of forest ecosystems conducted for 15 staff of FD and stakeholders.	Course evaluated.					To be determined.
4.2.2	START IMPLEMENTATION OF OUTPUT Regional technical meeting on Forestry training conducted. Training course implemented for at least 6 individuals.	Course evaluated.					To be determined.

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
4.2.3	START IMPLEMENTATION OF OUTPUT Workshop in Puerto Rico for selected staff members of FD, July 2019. A consultant from CATIE in Costa Rico is expected to arrive in October/November 2019 to training a larger selection of FD technical staff in CSM.	Course evaluated.					To be determined.
5.1.1.	Procurement of drones and new 25cm aerial imagery collection for the island. Training of employees in spatial analysis implemented.	Research implemented on spatial representation of disturbance.	Assessment of level of disturbance in spatial representation of disturbed broadleaf forests.				Use of Dis-aggregated spatial representation (defined levels of disturbance between 5% and 15%).
5.1.2	Project manager & temporary staff recruited. Sites selected and access organised. Equipment purchased.	Minimum of 3,000 ha of Mangrove/ swamp forest formations assessed/ mapped.		Minimum of 7,000 ha of Mangrove/ swamp forest formations assessed/ mapped.		9,000 ha assessed and mapped.	
5.1.3		Stakeholder meetings started off.	First risks and vulnerability maps produced and validated.				Completed.
5.1.4	1,000 additional parcels (CBL forests) identified and verified	1,000 additional parcels identified and verified					To be determined

Output		2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
5.1.5	Trail info from various sources to be merged. Full review of developed index.	5 or more trails mapped in Forest Reserves.						To be determined
5.2.1	START IMPLEMENTATION OF OUTPUT Working group established.	8 research outputs						To be determined
5.2.2	START IMPLEMENTATION OF OUTPUT Series established of forest fire assessments (by type) to be conducted	Two forest fire assessments conducted.						To be determined
5.2.3	START IMPLEMENTATION OF OUTPUT An agreement on how to handle impacts assessments of mining activities in forest areas need to be drawn up between FD, NEPA and MTM/MGD. Sample sites selected.	At least one forest impact assessment conducted.		Report produced on Impact of mining and quarrying on forest goods, services and values.				To be determined
5.3.1	Specific data capture programme started. Methodology developed.	To be determined						Growth & Investment data for 6 species (Cedar, Spanish Elm, Santa Maria Teak, British Honduras Mahogany and WI Mahogany completed.

Output	2019-2020 YEAR 4	2020-2021 YEAR 5	2021-2022 YEAR 6	2022-2023 YEAR 7	2023-2024 YEAR 8	2024-2025 YEAR 9	2025-2026 YEAR 10
5.3.2	START IMPLEMENTATION OF OUTPUT Training session on forest monitoring conducted.	Initiatives to develop forest monitoring systems harmonised.			Forest monitoring systems strengthened.		To be determined
5.3.3	START IMPLEMENTATION OF OUTPUT - Identify the type of weather stations. - Identify the type of computer & server for data collection. - Identify the locations for stations to be installed. - Purchase 6 weather stations. - Station installation and security.	Minimum of 6 weather stations installed in forest areas.	Data collection and analysis.	Data collection and analysis.	Data collection and analysis.	Data collection and analysis.	Data collection and analysis supporting sustainable forest management practices.
5.3.4	Development of new methodology (use of grid). First series of PSPs to be established identified.	90 PSPs established (30 series of 3).	Additional 18 series of 3 PSPs.	Additional 18 series of 3 PSPs.	Additional 18 series of 3 PSPs.	Additional 18 series of 3 PSPs.	360 PSPs established.
5.3.5	Review if orchid species are on the list of protected species/trade in endangered species in order to develop legislation.	4 species surveyed and mapped.	Artificial propagation and reintroduction.	Artificial propagation and reintroduction.	Artificial propagation and reintroduction.	Artificial propagation and reintroduction.	8 species surveyed and mapped. Artificial propagation and reintroduction.
5.3.6	Progress report Financial Year 2018-2019; M&E / Knowledge Management Database developed.	Progress report 2020	Progress report 2021; Mid-Term Review. Reg. Conference on SFM & Conservation.	Progress report 2022	Progress report 2023. Update Knowledge Management Database.	Progress report 2024. Development of next NFMCP (stakeholder workshops)	Progress report 2025. Final Evaluation. Next NFMCP finalised.

During a Stakeholder Workshop on the progress of the NFMCP (12 June 2019), the data sources for measuring the outputs of the NFMCP were reviewed. The resulting list of proposed additional and new sources of data is presented in *TABLE 9*. These are to be added to the PMER plan.

TABLE 9: New and additional sources of data that have emerged in Year 3.

Expected Result	Existing	New/additional
1.1.3	Progress reports of Parish Development Committee.	Recommended to explore: Reports of the Town and Country Planning Authority (TCPA – now part of NEPA) and reports of the Parish Municipal Authorities.
1.1.5	Reports from key entities: Strategic and operational plans.	Add: Site visit reports and patrol plans and schedules.
2.1.4	Performance Reports from key entities: FD Annual reports & reports from Rural Sociologist, SDC, EFJ.	Add: Project proposals received; field visits to project sites; pictures.
2.2.1	Performance Reports from key entities: STATIN.	Saw-millers (testimonies). Database on FD plantation outputs.
2.3	Performance Reports FD.	Add Non-GOJ entities (eg. JCDT reports)
2.3.3	Feasibility assessment Reports, Investment profiles, JAMPRO investment reports.	Add JBDC re small business creation regarding this area.
2.3.4	Progress Reports from key entities: FD, TPDCo, TEF, JSIF.	NGO sources to be added.
2.3.5	Progress Reports from key entities: FD, TPDCo, TEF, JSIF, NEPA.	Add JNHT and NGOs.
3.1.1	Performance Reports FD. FD verification report.	Add Reports from JCDT (Blue and John Crow Mountains National Park) and NEPA (Portland Ridge – Portland Bight Prot. Area)
3.1.2	Silviculture reports, socio-economic studies, divisional reports, Bio-physical reports, Forest Health Assessment, community consultations	SDC
3.1.3	Performance Reports from key entities.	Watershed restoration plans. Monitoring reports. Remove UWI/DLS.
3.1.5	Reports from RAMSAR Committee (monthly). NEPA Annual Reports to RAMSAR secretariat.	UDC Monitoring and Management Plans for key areas.
3.1.7	Performance Reports from key entities.	Add Municipal Corporations, NHT, HAJ.

Expected Result	Existing	New/additional
3.2.1	Bio-physical inventory manual, international standards to establish National Forest Inventory (NFI).	USFS (FIA Manual)
4.1.b	Socioeconomic survey from PIOJ produced every three years, STATIN Census/Reports.	National KAP study for Forest Dependent Communities. Feedback forms from school visits and community meetings. FD socio-economic surveys. Bi-annual Assessment (LFMC) of groups in the forest dependent areas.
4.1.1	FD Annual Performance Reports, PR&CC Branch Reports (Monthly & quarterly), Interagency reports on PR activities, Survey report NEPA Public Education Branch, JET Annual Report.	SDC Community Priority Plans
4.1.2	Reports from key entities: FD, JFB, NEPA, Mines & Geology, Jamaica Bauxite Institute.	Preliminary Assessment in target areas. KAP study (Forest fire management)
4.1.3	Performance Reports FD, Report of private forest owners Programme, Satisfaction survey reports on programme provided by FD.	PFP Coordinator's monthly reports / records.
5.1	PIOJ, MSJ, NEPA, FD.	MGD, RADA, MGI (These entities will have data within their jurisdiction to complement the progress measurement).
5.3.2	REDD+ readiness project report, REDD+ readiness project stakeholders' reports.	Add the Analytical Report on the drivers of deforestation.

7. LESSONS LEARNED AND RECOMMENDATIONS

With three years of the NFMCP executed, lessons have been learned and continue to be learned from the challenges, experiences and gaps encountered. The lessons listed below are the main ones articulated at this time.

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NFMCP GENERAL

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LESSON LEARNED # 1: A strong governance and collaborative mechanism is vital for the development of functional collaboration under the NFMCP. The active one-on-one communication between the PIEs is also essential for successful collaboration.

The establishment of the Technical Advisory Committee (TAC) strengthened synergy and coordination, in first instance, particularly between FD and JNHT and NEPA. Information exchange through the TAC promotes programme alignment, resulting in mutual endorsement of activities and learning.

The partners were not always aware of the details of their engagement in the NFMCP, since ambiguity arose about some outputs. At times, conflicting information with regard of outputs was received from different sections of FD. This resulted in PIEs not incorporating the NFMCP into their Operational Plans and budgets, and poor coordination of work.

> RECOMMENDATIONS: Hold an annual interagency retreat/planning session with the PIEs around the time that Corporate and Operational Plans and budgets are being developed to co-ordinate roles/responsibilities and ensure that the agreed NFMCP activities are integrated in these.

LESSON LEARNED # 2: Communication about the NFMCP to the public has remained poor and incomplete to date. More collaboration between the institutional partners will assist building awareness about the NFMCP.

There is a lack of ownership of the NFMCP by the partner institutions. Moreover, although some funds have been available from the onset of the NFMCP, additional funding is required to complete most of the activities.

> RECOMMENDATIONS: Involve partners early in the planning process for public education and training activities; pursue the development of a stakeholder communication plan. Further, establish a working group for the effective monitoring and evaluation of communication activities.

LESSON LEARNED # 3: The NFMCP has caused an increase in the implementation of climate change mitigation measures (for instance through a number of planning initiatives; the reforestation programme).

Through the NFMCP, a great number of planning activities, production of guidelines, as well as the reforestation programme is well underway. However, across the institutions, there is a lack of human resources, capital, technical resources and equipment. With regard to reforestation, the budget was insufficient to complete both the planned target and manage the associated risks. The low pay scale leads to the inability in attracting able casual labour. Finally, there may be conflicts with landowners due to unclear boundaries and issues around existing lease agreements.

> RECOMMENDATIONS: A formal comprehensive reforestation programme needs to be developed, through the consultative production of a programme document. Search for plantable lands at least in previous quarter before commencement of planting activity. In order to mobilise labour, undertake a continued community awareness programme in the areas to be planted prior to execution of activities.

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STAKEHOLDERS

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LESSON LEARNED # 4: The analysis of stakeholders carried out during the development of the NFMCP was incomplete and did not identify the core team of representatives of the Primary Implementing Entities (PIE). A formal NFMCP mechanism for engaging the PIEs with clearly defined roles as well as the other stakeholders involved in its implementation, was not established before the final approval of the NFMCP.

The early adoption of the Performance Monitoring, Evaluation & Reporting (PMER) Plan and Framework as well as the supporting database, and sensitisation with key implementing partners in its use, was a significant improvement on the former NFMCP (2010). Persons in a core team of representatives would be expected to lead/champion the incorporation of NFMCP outputs into the operations of their respective entities and ensure that activities make their way into their implementation plans.   However, point persons were not identified from the outset. A formal collaborative planning and monitoring mechanism has been established with the PMER database. However, this system is not online, so the integration of information is not automatic and the same set of information is not easily provided to all the stakeholders.

> RECOMMENDATIONS: Establish a core group within each PIE as soon as possible to drive/steer implementation of the NFMCP. Each entity should have an NFMCP point person who all requests could be routed through to support coordination. These requests should be documented to avoid duplication of effort. Detailed budgeting and costing information for components within their activities/outputs is to be done by each entity to ensure functional collaboration. Establish PMER On-line.

LESSON LEARNED # 5: The full engagement of community members is critical in several forestry programmes: examples include urban forestry and fire management training.

Mobilising people can be difficult, because for training, participants usually have to come for a full day. With regard to forest fire management, equipment is also needed, which should be used during training sessions and be left in the community. Fundraising for urban forestry is a collaborative effort of FD with community members, unless funding is already provided from external sources. The CDCs are well established and in many areas can assist in engaging the communities.

> RECOMMENDATIONS: The interest of community members is to be maintained, activities are to be designed together and joint mobilisation should be done for the necessary resources (seedlings, equipment, funding).

LESSON LEARNED # 6: There is variance between the types of incentives being sought by land owners versus what is deemed feasible by the Ministry of Finance.

Halting the loss of forest cover on privately owned land and effective maintenance of privately managed forests, could be encouraged by more attractive incentives by national and local authorities. However, key GoJ stakeholders are unwilling to commit to incentives that could directly affect the country's the tax base or other revenue. As a result, private landowners suggest that the incentive programme is not based on a true consultation.

> RECOMMENDATIONS: Decision makers are to be sensitised through the presentation of economic data regarding the value that the maintenance of forest cover has on the country's bottom-line. Arguments generated through output 2.1.3 (payment of eco-system services) may be useful.

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DEFINITIONS

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LESSON LEARNED # 7: Some terms and definitions (including criteria to be used and preferred indicators) are to be better harmonised between the partner agencies of the NFMCP.

With regard to forest fires, terms are not standardised between JFB, the chief agency responsible for fire management and prevention, and FD. Results will be strengthened if JFB is enabled to collect pertinent data through the NFMCP partners and be facilitated to build public awareness about forest fires through its existing programmes and activities. Also, there is a lack of intra-governmental technical exchange of scientific information. Invasiveness is an important aspect of the NFMCP and we need to know the risk of invasiveness to our ecology and decide on approaches (economic use or not). Indicators for invasiveness are to be better harmonised between the agencies participating in the invasive species working group.

> RECOMMENDATIONS: As a country, Jamaica needs to develop a consensus on terms and definitions used in the NFMCP, including indicators for invasiveness and a common platform for sharing and exchanging information for national as well as international lists; a standardisation of the term "forest fire" and criteria for trails.

PROJECT MANAGEMENT

LESSON LEARNED # 8: A number of outputs have grown to "projects or programmes" in their own right. For these, proper project management needs to be employed to ensure timely procurement and organisation of activities.

The boundary verification programme has grown tremendously in scope with the work for the proposed Cockpit Country Protected Area. The same can be said with regard to the private land database/ reforestation programme, as well as the forest assessments (in particular mangroves and swamp forests). There tend to be significant delays due to inadequate "project" management of these outputs, which present themselves as major delays in procurement, a slow uptake of casual workers to assist in field work, delayed securing of accommodation, and inadequate estimation of required time and resource input.

> RECOMMENDATIONS: The management should be enhanced of the "project cycle" for these outputs. Procurement should be started within last quarter of preceding year. Accommodation rental should be initiated even earlier, in third quarter of preceding year and accommodation lease agreements should be confirmed in last quarter of preceding FY. Outsourcing drone imagery data collection and imagery analysis should be considered. Further, an earlier payment schedule to collect ownership data from NLA is to be developed.

LESSON LEARNED # 9: Due to a lack of clear guidelines, the implementation of the school visit programme is not standardised. The programme also lacks instruments for measuring knowledge transfer, e.g. through pre and or post assessments based on the topics covered.

Many variations in the implementation of the school visit programme were observed. It is therefore difficult to assess programme outcomes.

> RECOMMENDATIONS: Establish clear standards for the implementation of the school visit programme and introduce instruments for measuring knowledge transfer, e.g. through pre and or post assessments based on the topics covered.

LESSON LEARNED # 10: Outreach to private forest owners has been insufficiently coordinated between various FD divisions. The proper alignment of inter-divisional/Branches' work plans within FD is essential to produce data or studies needed for various outputs.

Collaboration between FO and FSTS has notably improved the implementation of training sessions for private forest owners. Increased intra-agency collaboration could lead to even more effective sessions in the years ahead, as well as the more efficient production of FMPs. Targets for the registration numbers of planters and the distribution of seedlings need to be refined for future years. There tends to be insufficient inter-divisional support to provide the needed data for FMPs. In order to meet the timeline for developing a FMP, the relevant reports (especially ones that require intense data collection for empirical inferences) should be prepared at least one year prior to the development of the plan.

RECOMMENDATIONS: A more creative approach should be taken by FD in conducting outreach activities for the Private Forestry Programme as private planters are not readily available to participate in an all-day training session. They may benefit from information shared to aid in managing their lands. Follow up with supporting divisions to ensure their required tasks are completed to provide data for FMP.

HUMAN RESOURCES (HR)

LESSON LEARNED # 11: There is a paucity of knowledge among staff of FD and other agencies to identify species (endangered, invasive or other categories of species). This causes a lack of monitoring species, information on the population distribution, the range, or the typical altitude, etc.

For many species the challenges include data collection on distribution (mapping). There are too few people skilled in recognising species and training in identification is required. The rangers and foresters have the basic technical competency – but determining a plant that one does not know is important for those doing the forest assessment. Information dissemination to the wider public can be very helpful (amateur naturalists can provide invaluable support). The establishment and communication of watch lists provides feedback and information from the public.

RECOMMENDATIONS: To alleviate the paucity of dendrology and other species knowledge, it is key to strengthen the interinstitutional collaboration (UWI, IOJ, FD, NEPA). Dendrology training with other FD staff is also needed on a continuous basis; they need to be in a position to identify tree species. Establishing wider feedback mechanisms and networks should also be a focus. This needs to include RADA; they are on the ground every day in a wider scope than FD. With training on identification, RADA officers could play a key role in flagging the alien species which we have on a watch list.

Index of technical terms

	5.1.5, 5.3.5		4.2.1
Species conservation	1.2.3, 1.2.4	Tree Fern	5.3.5
Sustainable Forest Management	2.1.2	Turnera campaniflora	1.2.4
Swamp forest	1.1.4, 5.1.2	Urban	3.1.7
Technical transfer	4.1.3	Yellow-and-black-billed parrot	5.3.5
Timber harvesting	5.3.1	Water mahoe	5.3.5
Trail	5.1.5	Watershed restoration plan	3.1.3
Training	3.3.1, 3.3.3, 4.1.3,		