

15 LIFE ON LAND



GOAL 15

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Context

Goal 15 targets include ensuring the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services; combating desertification, restoring degraded land and soil; ensuring the conservation of mountain ecosystems (broadleaf mountain and limestone forests), including their biodiversity; taking urgent and significant action to reduce the degradation of natural habitats and halt the loss of biodiversity and prevent the extinction of threatened species.

Jamaica's VNR Report 2018 highlighted that fires and poor agricultural practices were threats to conservation and the sustainable management of forests. Other key issues identified included climate change and the proliferation of Invasive Alien Species (IAS). The report noted managing the demand for land-based resources and their health and vitality as a post-2018 priority and that improved financial and technical capacity would be critical to achieving that objective. Since 2018, Jamaica has made progress in addressing the Goal 15 targets, with many of the initiatives supporting more than one target. Table 28 presents Jamaica's status on key indicators that relate to Goal 15.

TABLE 28: SELECTED GLOBAL SDG AND PROXY INDICATORS, GOAL 15

Selected Global SDGs and Proxy Indicators	2013	2020 ¹⁵⁶
Total forest area	439 900 ha	436 600 ha
Protected forest area	122 700 ha	125 700 ha
Total land area	1 094 500 ha	1 094 500 ha
Total protected area	415 600 ha	491 000 ha
Forest area as a % of total land area	40.2%	39.9%
Protected forest area as a % of total forest area	27.9 %	28.8%
Protected forest area as a % of total land area	11.2 %	11.5%
Forest area annual net change	0.41%	-0.1%
Proportion of forest area located within legally established protected areas	30% of total protected areas	26% of total protected areas
Forest area under a long-term forest management plan ¹⁵⁷	70.54 ha	10,150.90 ha
Proportion of forest area under a long-term forest management plan	.016 %	2.325%

¹⁵⁶ The data for 2020 are estimates provided by the GIS Department of the Forestry Department and not an actual land use/cover assessment.

¹⁵⁷ A Long-Term Forest Plan (LTFP) is a 20-year strategic management plan that brings together the management objectives, the environmental, economic, and social functions and the silvicultural prescriptions into a comprehensive plan to deliver long term benefits through sustainable forest management.

The review for the period 2018-2022 summarizes key achievements, issues and challenges concerning life on land.

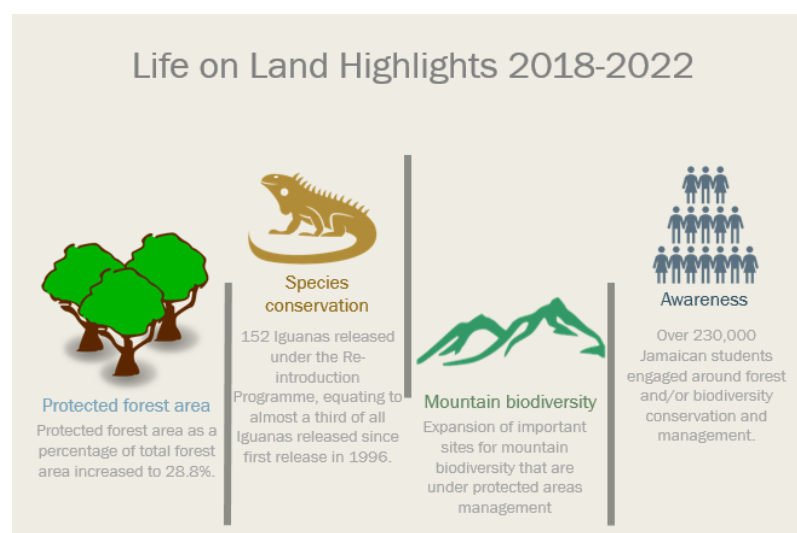


FIGURE 77: HIGHLIGHTS, LIFE ON LAND (2018–2022)

Discussion

Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

Jamaica's forests are the main repositories of biodiversity, especially of endemic flora and fauna. Data shows that Jamaica's forest cover is declining (Indicator 15.1.1). In 2013, 40.2 per cent (439,938 ha) of the island (excluding cays) was classified as forests (Land Use/Cover Change Assessment (LUCA)¹⁵⁴, 2015) (Table 28). The area under forest cover declined slightly to 39.9 per cent of the island's land use (approx. 436 600 ha) in 2020.

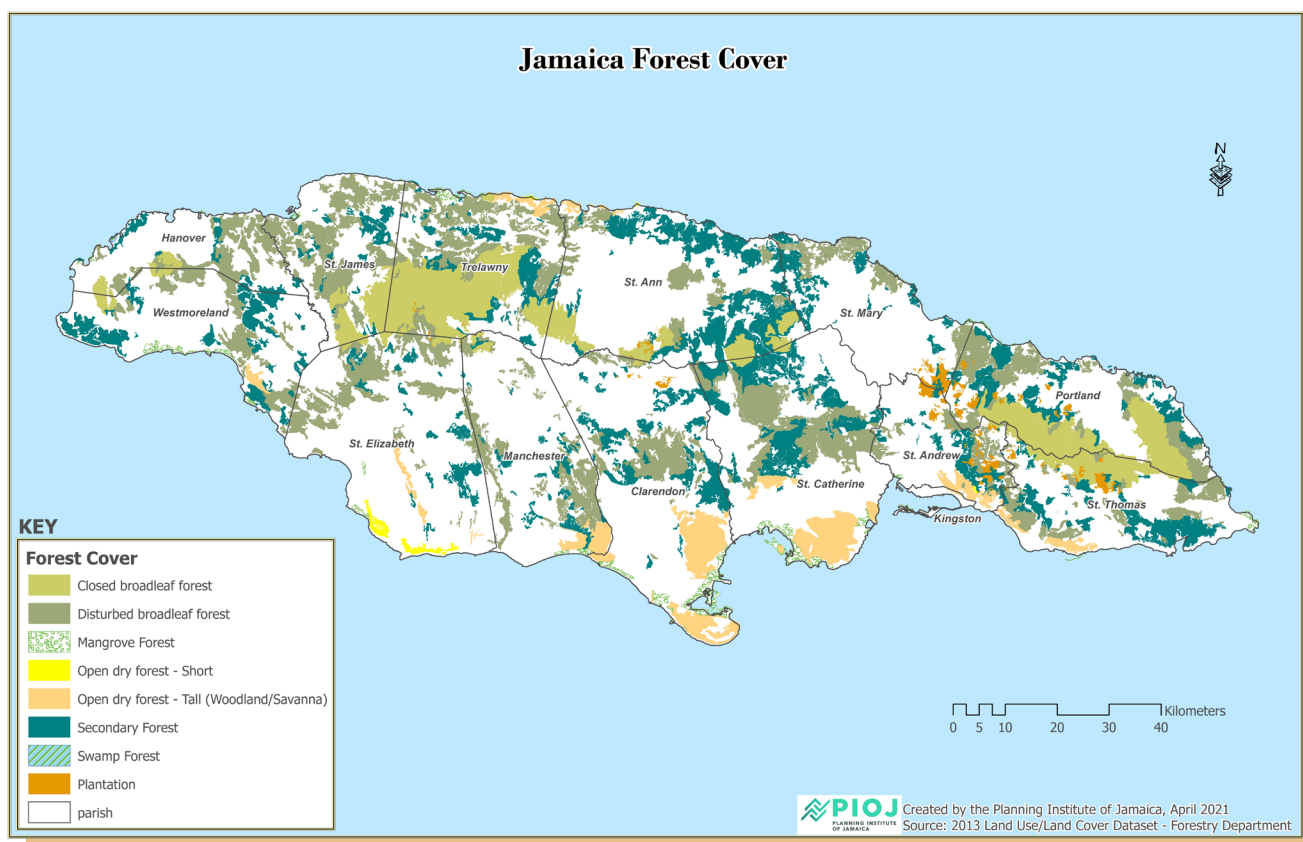


FIGURE 78: **FOREST COVER OF JAMAICA - 2013**
SOURCE: THE FORESTRY DEPARTMENT (2017)

Dry limestone forests are threatened globally. In Jamaica, deforestation is a significant challenge and most of its forests are classified as wet or dry limestone forest. During the review period, Jamaica identified areas that had been degraded or destroyed and made noteworthy progress to restore them, thereby contributing to the conservation and restoration of mountain forests (Forestry Department). While there was a net increase in forest cover overall (0.4 per cent per annum) in 2013, primary (Closed Broadleaf) forests were declining (0.2 per cent per annum) (Table 29). The annual net change of 0.4 per cent in forest cover in 2013 has since declined to -0.1 per cent per annum in 2020.

¹⁵⁴ The LUCA, completed in 2015, compared forest cover of 1998 and 2013.

TABLE 29 RATE OF PERCENTAGE CHANGE IN SELECTED FORESTS OVER THE REPORTING PERIODS.

Type of forest	Reporting Period	
	2015–2017	2018–2020
Broadleaf Forest	-0.2	-0.2
Open Dry Forest	-7.2	-7.2

SOURCE: PIOJ, 2019–2021

The introduction of the National Forest Management and Conservation Plan, 2016–2026 was highlighted in the VNR Report 2018 as an important achievement. Jamaica has made fair progress since the last report to increase the area under protection. Work was also done to complete boundary verification for ten forest estates in four parishes, representing approximately 500 hectares of land (Forestry Department, 2019; 2020). Jamaica has increased the proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected forest areas with 28.8 per cent (125 700 ha) in 2020 compared to 27.9 per cent (122 700 ha) in 2013 (Indicator 15.1.2).

A priority for the post-2018 period was the preparation of the declaration to effect the Cockpit Country protected area after completion of ground truthing activities. Jamaica having completed the ground truthing activities, boundary establishment and installation of permanent monuments for the area proposed for protection in 2021, subsequently gazetted 78 024 hectares of land in 2022 as the Cockpit Country Protected Area (CCPA) under the Natural Resources Conservation Authority (NRCA) Act (JIS, 2022a). The CCPA is now the island's largest terrestrial protected area. In addition, the declaration of the Black River Protected Area will contribute to the preservation of the natural and cultural heritage of the area, including the swamp forest, mangroves, beaches, seagrass (beds) and coral reefs. As a result of the declarations, forest area under protection will increase significantly under the next report.

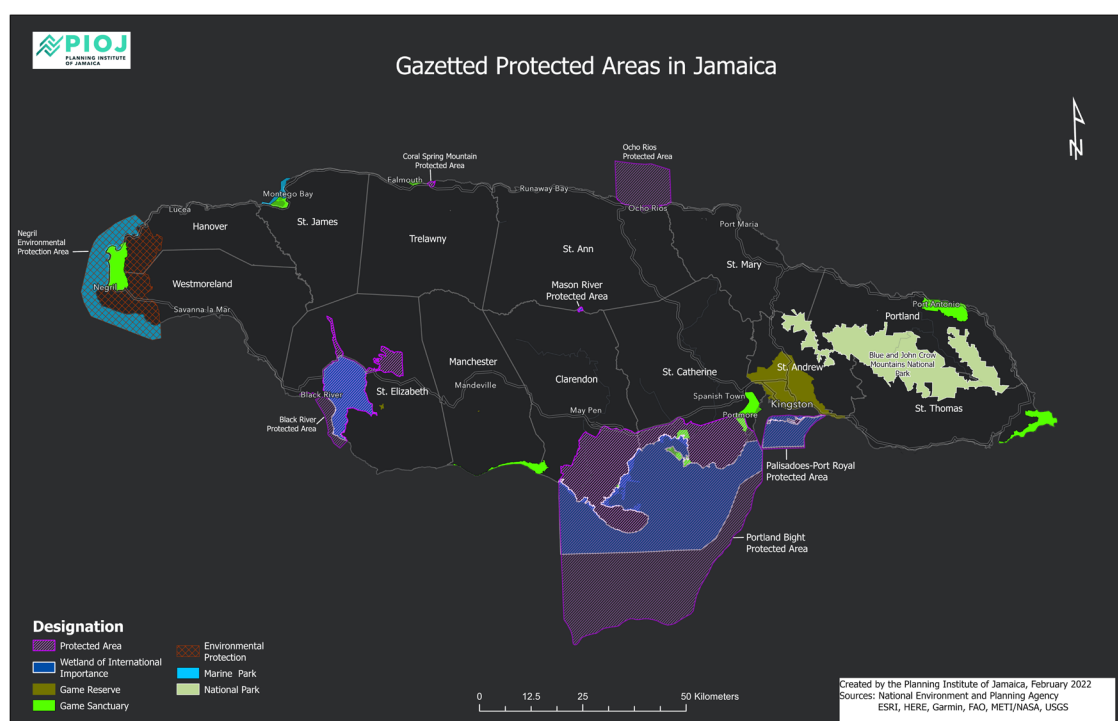


FIGURE 79: GAZETTED PROTECTED AREAS IN JAMAICA – 2022
SOURCES: NEPA, ESRI, HERE, GARMIN, FAO, METI/NASA, USGS

Target 15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

In late 2021, Jamaica signed the Glasgow Leaders' Declaration on Forests and Land Use at COP 26 to "halt and reverse forest loss and land degradation" by 2030. The restoration of degraded lands was supported by the launch of the National Tree Planting Initiative in 2019, "Three Million Trees in Three Years". Already, the Forestry Department, the lead agency for the initiative, has planted 1 000 107¹⁵⁵ seedlings as at March 17, 2022. The objective of the Initiative is to support national development in the areas of climate change and reforestation efforts to increase forest cover and establish high value urban green spaces for all Jamaicans. Complementary initiatives to sustain and manage forestry resource include the planting of fruit trees; along with timber trees (as part of agroforestry practice)¹⁵⁶.

The Forestry Department also launched the Urban Trees Product Line Project in 2021 which saw residents in urban communities receiving potted fruit trees and ornamental plants. Similarly, the National Fruit Tree Planting Programme, established by the MO in May 2019 aims to plant five million fruit trees in five years. Similarly, 15 hectares of forest were planted in Pennants (Upper Rio Minho Watershed), as well as the implementation of watershed management initiatives under the Adaptation Programme and Financing Mechanisms for the PPCR project. Effort was also made towards expanding urban forestry in Jamaica through the drafting of guidelines to support urban forestry initiatives.

The Sawmill Licensing Registration Programme is an important initiative for regulating the production, trade or storage of local lumber. Since the last reporting period, the approval rate declined, with 64.5 per cent of applications received between 2018 and 2020 approved compared to approximately 70.0 per cent between 2015 and 2017 as data in Table 30 shows (PIOJ, 2020; 2021).

TABLE 30 APPROVED LICENCES UNDER THE SAWMILL LICENSING REGISTRATION PROGRAMME

Sawmill Licensing Registration Programme	Reporting Period	
	2015-2017	2018-2020
Applications	209	121
Approved Licences	185	78
SOURCE: PIOJ, 2016-2021		

Additionally, the Incentives to Support the Implementation of Sustainable Forest Management in Jamaica Report was finalised in September 2020; it outlines possible new incentives, some of which are tax-based, to offer to private forest landowners. This initiative will help Jamaica to finance and incentivize sustainable forest management and contribute to the achievement of Target 15.B.

The development of a National Mangrove Forest Management Plan was a planned priority action for 2018-2021. As of

155 <https://www.forestry.gov.jm/NTPI>

156 In March 2022, the Forestry Department launched the "876Tress" mobile app to track the number of seedlings being planted.

March 2021, 13 627.35 hectares¹⁵⁷ of mangrove and swamp forests have been assessed and mapped since 2018 to serve as a baseline data to support the formulation of the plan (Stakeholder Consultation for VNR Preparation). The European Union-funded Budget Support Programme for the Forest Sector (2018-2022), was instrumental to advancing this activity. The National Mangrove Forest Management Plan, expected to be completed in June 2022, will strengthen Jamaica's efforts to conserve and restore its terrestrial and freshwater ecosystems (Target 15.1) and protect biodiversity and natural habitats (Target 15.5). Also, under the World Bank funded Program on Forest (PROFOR), the Mangrove Monitoring and Evaluation Manual-Jamaica and the Forces of Nature: Assessment and Economic Valuation of Coastal Protection Services Provided by Mangroves in Jamaica were completed. The Program highlighted the growing interest within the development agenda to include nature-based solutions for disaster risk management (DRM), which are provided by mangrove forests.

Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world¹⁵⁸

The 1999 classification of Watershed Management Units (WMU) remain the same despite the implementation of localized projects/initiatives. The Rio Minho, Wag Water River, Hope River and Yallahs River WMUs are classified as severely degraded. The Integrated Management of the Yallahs River and Hope River Watershed Management Areas Project improved the conservation and management of biodiversity and the provision of ecosystem services in the respective Watershed Management Units. The project, a pilot model for watershed management, resulted in a reduction in the levels of sedimentation within rivers, improved agricultural practices in six communities and strengthened community members' capacity in areas such as fire management and land husbandry, and reforested over 500 hectares of land. Ongoing implementation of best practices will continue to improve the degraded state of the Yallahs River and Hope River Watersheds.

Jamaica's progress towards achieving land degradation-neutrality was supported by the EU-funded 4.9 million Euro "A Jamaican Path from Hills to Ocean" Project. The project aims to support increased climate resilience and protect livelihoods through the use of integrated Sustainable Landscape Management in selected WMUs - Wag Water, Rio Nuevo and Rio Bueno/White River. Under the GOJ/ Adaptation Fund Programme, an agro-forestry programme is being undertaken to plant 30 000 trees. Tree planting has taken place in St Mary and St Catherine and as at the end of 2021 approximately 70.0 per cent of the 30 000 target was achieved.

Additionally, the EU-funded Budget Support Programme, 2018–2022, aimed at reforesting 150 hectares of denuded lands annually¹⁵⁹ is a significant thrust towards advancing the achievement of Goal 15. Between the years 2018-2021,¹⁶⁰ the Forestry Department reforested 535.25 hectares, surpassing the annual target of 150 hectares in 2020 and 2021 (Figure 80). Given the high costs associated with reforestation, particularly the Forestry Department's approach to "grow trees—a three-year commitment—not just plant trees", the funding support accelerated Jamaica's planned reforestation initiatives. The Forestry Department achieved high levels of engagement with the communities in the reforested areas—an important element to ensuring that the reforested areas are maintained particularly where agriculture is the driver of deforestation. The areas of dialogue and cooperation between the Forestry Department and the communities

157 Report from the Forestry Department, May 2022.

158 There is no data to measure indicator 15.3.1 relating to the proportion of land that is degraded over total land area.

159 In keeping with the Forestry Department's target.

160 Data for 2021 not yet available.

include the value of maintaining forests, integrating agroforestry techniques, eliminating *slash and burn* and forest fire management (Stakeholder Consultation for VNR Preparation).



FIGURE 80 : **DENUDED LANDS REFORESTED (HA)**
SOURCE: PIOJ 2016-2021

Implementation of school and public awareness programmes remain a vital strategy for ensuring conservation at the local level. Over the reporting period, the Forestry Department and other stakeholders engaged over 230 000 Jamaican students through hundreds of school visits and public awareness events (Forestry Department, 2020; 2021). The Student Watershed Action Group (SWAG) was also launched by NEPA in 2019 to critically examine environmental issues, creatively address associated challenges; and build sustainable and resilient communities (PIOJ, 2020).

Target 15.4: By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

In 2017, Jamaica's Mountain Green Cover Index (MGCI), score was 85.58, which was greater than the world's score of 75.8 but less than the score for the Caribbean, 96.3¹⁶¹. The MGCI¹⁶² is defined as the ratio of the mountain green cover area to the total mountain area. It measures the changes of the green vegetation (forest, shrubs, trees, pasture land, crop land, etc.) in mountain areas (to monitor progress on the mountain target). Mountain key biodiversity areas completely covered by protected areas stood at 28.9 per cent in 2019¹⁶³.

161 <https://geglive.unepgrid.ch/index.php>

162 Information relating to the index is on an open data platform which is being maintained by the Food and Agriculture Organization (FAO).

163 https://geglive.unepgrid.ch/country_profile.php?selectedCountry=%20388&selectedTheme=1

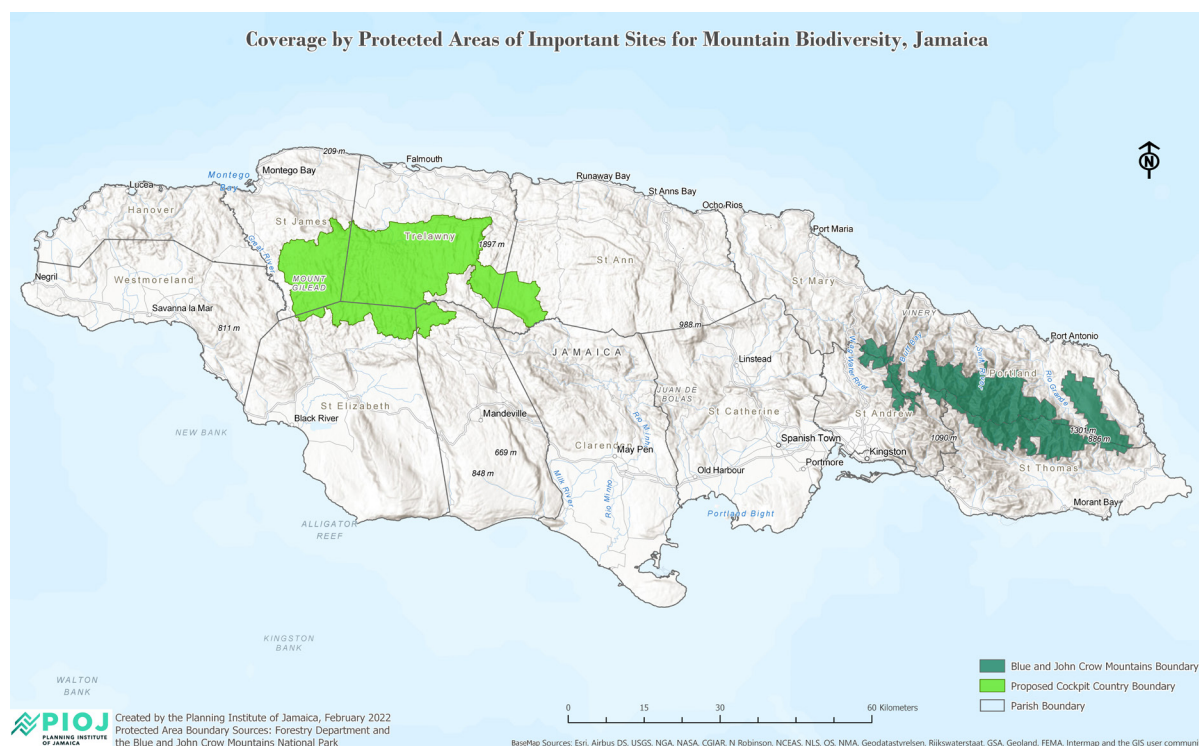


FIGURE 81: COVERAGE BY PROTECTED AREAS OF IMPORTANT SITES FOR MOUNTAIN BIODIVERSITY
SOURCE: THE FORESTRY DEPARTMENT

Localized forest management plans support conservation efforts in Jamaican communities, especially those in mountain ecosystems. Since the last VNR more important sites for mountain biodiversity are now under protected areas management (Indicator 15.4.1). As of March 2021, Jamaica approved 3 new forest management plans increasing the area under management to 60 756 hectares (Forestry Department, 2021). Under the previous review period Jamaica had nine forest management plans, representing approximately 55 931 hectares.

TABLE 31: NUMBER OF FOREST MANAGEMENT PLANS APPROVED

Approved Forest Management Plans	Reporting Period	
	2015-2017	2018-2021
Forest estates	7	8
Watershed	-	1
Private Areas	2	3
Total Number of Approved Forest Management Plans	9	12
SOURCE: THE FORESTRY DEPARTMENT (2021)		

To date, 94 of the island's 228 forest estates, approximately 41.0 per cent, have a forest management plan (Forestry Department, 2021). An important aspect of local level conservation is the establishment and engagement of Local Forest Management Committee (LFMC) to enable the participation of the communities in the co-management of forested areas (specifically those managed by the Forestry Department).

Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

The National Strategy and Action Plan for Biological Diversity in Jamaica 2016-2021 (NBSAP) included biodiversity conservation which are aligned to the Convention on Biological Diversity Aichi Targets. The post-2020 Global Biodiversity Framework will build on the Strategic Plan for Biodiversity 2011-2020. Biodiversity is a critical asset for the Jamaican people and ensuring long term and sustainable economic activities are key to promoting the importance of biodiversity conservation across all economic sectors through partnerships (NEPA, 2016). The main threats to biodiversity in Jamaica are habitat loss, climate change, resource over-exploitation, invasive alien species and pollution.

In 2015, Jamaica's score on the International Union for Conservation of Nature (IUCN) Red List Index (RLI)¹⁶⁴ was 0.673. It declined to 0.668 in 2018 and further to 0.665 in 2020 (Indicator 15.5.1). The declining trend suggests that the rate of biodiversity loss should be of concern. The IUCN Red List 2021 shows that 342 species were threatened (inclusive of 213 plant species and 48 fish species under threat), compared to 298 in 2014; noticeable increases were observed among fishes and reptiles (Figure 82).

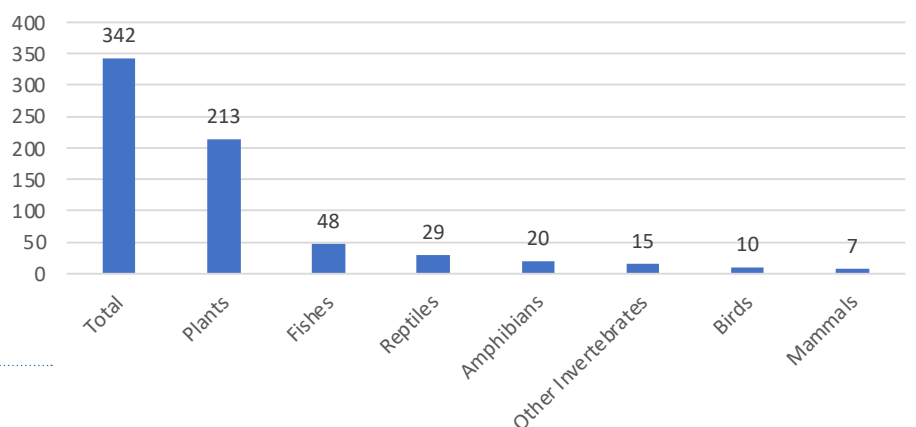


FIGURE 82: NUMBER OF THREATENED SPECIES IN JAMAICA
SOURCE: IUCN RED LIST 2021¹

¹ <https://www.iucnredlist.org/statistics>

Of the threatened species that are endemics, an estimated 25.6 per cent were *vulnerable*, 23.1 per cent were critically endangered and 51.3 per cent were *endangered*.

Actions geared towards biodiversity conservation included the monitoring of five key endangered terrestrial species: Jamaican Iguana (*Cyclura collei*), the Homerus (Giant) Swallowtail Butterfly (*Pterourus homerus*), the Yellow-billed Parrot (*Amazona collaria*), the Jamaican Boa (*Epicrates subflavus*) and the Jamaican Hutia (*Geocapromys brownii*), as well as game bird species and nesting sea turtle. Also, Jamaica completed its Management Plan for the American Crocodile.

¹⁶⁴ The RLI shows trends in overall extinction risk for species, and is used by governments to track their progress towards targets for reducing biodiversity loss.

The Jamaican Iguana is an endemic species classified as “critically endangered” by the IUCN. To date, Jamaica has released 534 iguanas under the Iguana Head Start and Re-introduction Programme since the first release in 1996; almost a third (152 iguanas) were released in this reporting period alone. The programme released 112 iguanas between 2015 and 2017; almost as many were released between 2018 and 2020, with a noticeable decline in 2020 due to the COVID-19 pandemic as Figure 83 shows (PIO), 2019–2021). This thrust has included an initiative under the UNDP GEF Small Grants Programme which supported the release of iguanas.

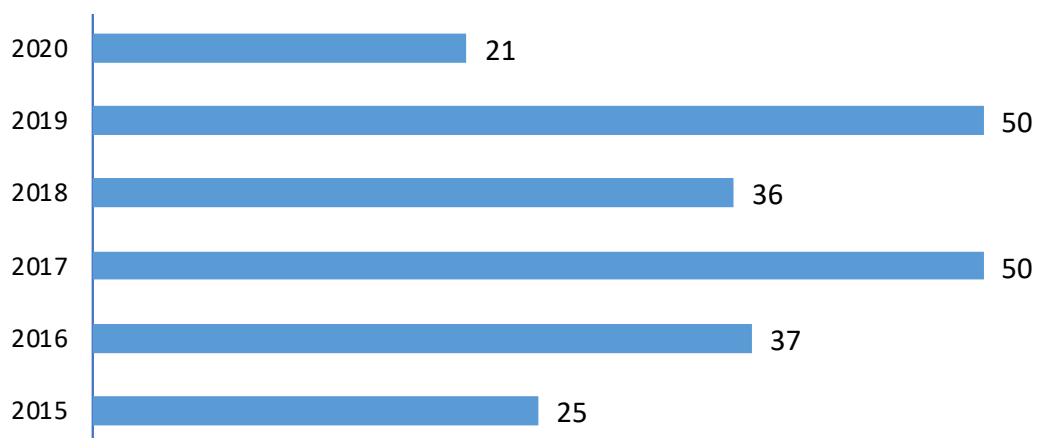


FIGURE 83 NUMBER OF IGUANAS RELEASED UNDER THE IGUANA RE-INTRODUCTION PROGRAMME
SOURCE: PIO/ 2016–2021

Target 15.6: Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

Regarding the adoption of legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits (Indicator 15.6.1), Jamaica is a signatory to, but has not yet ratified the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS). The NEPA and the Ministry of Economic Growth and Job Creation (MEGJC) are collaborating to prepare legislation that will facilitate ratification. If successful, this will ensure that local people, can benefit from the transfer of knowledge on genetic resources that lead to the commercialization of products.

Target 15.7: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products¹⁶⁵

Actions geared at eliminating poaching and trafficking of protected species (Target 15.7) and combatting global poaching and trafficking (Target 15.C) included ‘Croc-Wise, an educational outreach initiative targeting communities and schools around crocodile habitats, designed to develop an appreciation for the reptile. Based on current capacities within key organizations, it is difficult to track activities relating to the trafficking of protected/endemic/endangered species. According to NEPA, the American Crocodile has suffered from increased poaching and habitat loss over the review period (JIS 2018).

165 Jamaica doesn’t currently monitor the proportion of traded wildlife that was poached or illicitly trafficked (Indicator 15.71).

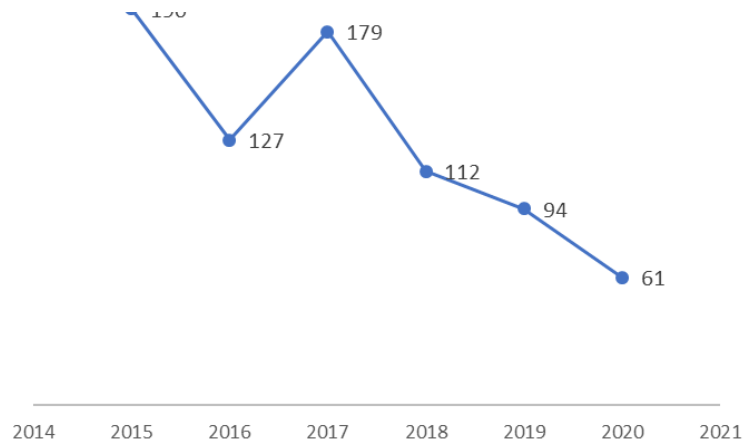


FIGURE 84: CITES PERMITS AND CERTIFICATES ISSUED BY NEPA
SOURCE: PIOJ 2016–2021

Regarding the regulation of import and export of flora and fauna under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), there was a steady decline in the number of permits and certificates issued by NEPA since 2018. Jamaica granted 496 between 2015–2017 permits and certificates compared to 267 over the period 2018–2020 (Figure 84).

However, outside of the permits and certificates for Queen Conch and orchids, majority of the others are to facilitate the export of samples for testing or associated with research and are not to enable trading.

Target 15.8: By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species

Jamaica made efforts to strengthen and establish legal and institutional frameworks to enable the effective prevention, eradication, and control of IAS at regional, national, and local (site-specific) levels (indicator 15.8.1). Jamaica enacted the Ballast Water Management Act in 2019; it aims to protect Jamaica's marine environment through the implementation of measures to prevent ships entering Jamaica's waters from introducing foreign aquatic species and diseases into the country. Also, the proposed amendments to the Wildlife Protection Act will specifically address invasive alien species (IAS).

The implementation of the National Invasive Alien Species Strategy and Action Plan (2014–2020) also contributed to the prevention, control or eradicate the priority species. The VNR 2018 for Jamaica report noted that the launch of the Jamaica Invasive Species Database (JISD) would be important for addressing the threats that IAS pose to biodiversity. An operational IAS database is an example of best practice for addressing the issue of invasive alien species on land and in water ecosystems. In 2022, the JISD hosted 86 of over 120 recorded invasive alien species, including plants, animals and other organisms. The effort to populate the database and update current records is ongoing. The IAS Working Group, an advisory committee and coordinating mechanism on issues relating to IAS, mobilized efforts to populate the IAS database and continues to sensitize the public on IAS.

The Mason River Protected Area (MRPA) is a bird sanctuary and Ramsar site, protected area and natural heritage site. The site is a rare example of an upland peat bog and scrub savannah, with approx. 430 species (11 per cent endemism and some listed in the IUCN Red List). Within the MRPA, the Natural History Museum (NHM) of Jamaica continues to lead

efforts to halt the spread of the invasive plant species, the vampire fern (*Dicranopteris pectinata*). The invasive vampire fern species is harmful to other plants and is being removed, and the area restored with native species.

Leading/implementing MDAs prepared strategies and protocols to manage other invasive alien species. Of note are the strategies for bamboo including the National Bamboo Development Plan, the Bamboo Straws Standard and the Draft Jamaican Standard Code of Practice for Bamboo Plantation and the Draft Invasive Alien Species Programme for the control of Australian Red Claw Crayfish and Suckermouth Catfish for Black River. Jamaica's 29 endemic/native Jamaican frog species are threatened by the Cuban Tree Frog (*Osteopilus septentrionalis*) that competes with them for habitats and resources. The NEPA continues its efforts to protect the endemic/native frog species through public education and the removal of the Cuban Tree Frog from affected areas.

Target 15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

Jamaica submitted its established national targets in 2016 in accordance with Aichi Biodiversity Targets and in keeping with the National Strategy and Action Plan on Biological Diversity (2016-2021) (indicator 15.9.1(a)). The 20 targets were adopted with minor modifications as national targets, and respectively assigned outputs/results, national indicators, baselines, prioritized activities and parties responsible for implementation to each target¹⁶⁶. These targets are underpinned by the global 2030 SDGs, and especially promotes mainstreaming as the most effective means for achieving the national targets, which can be accomplished through consideration of biodiversity in strategic plans, such as the Vision 2030 Jamaica—National Development Plan and its supporting MTFs, national poverty reduction strategies, and activities carried out in key production sectors (i.e. forestry, fisheries, mining, tourism and agriculture). Also, the integration of forestry considerations in local development orders (i.e., Parish Development Orders) is supporting the integration of ecosystem and biodiversity into governmental planning at the local planning level.

According to STATIN (2021), Jamaica has not yet started the development of the System of Environmental Economic Accounting (Indicator 15.9.1(b)). One of the key challenges relates to the availability of related data. However, preliminary work had commenced before the reporting period with technical assistance from United Nations Economic Commission for Latin America and the Caribbean (UNECLAC). Of note, the "triple bottom line" accounting framework is supported by the Environment Management Systems (EMS) Policy (2019).

Target 15.A/B: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems as well as to finance sustainable forest management and provide adequate incentives to advance such management

Through ODA Jamaica received US \$23.2 million towards conservation and sustainable use of biodiversity for 2015-2018¹⁶⁷. Overall, the ODA was consistent with the other areas highlighted for additional support such as the environment, climate change resilience; disaster risk management; governance; agriculture and social protection to advance the GOJ's strategic objectives and priorities articulated through the MTF 2018–2021.

Of note, the Global Environment Facility Small Grants Programme (GEF SGP) and the Environmental Foundation of Jamaica (EFJ) disbursed over US \$4.6 million in capacity building grants to NGOs between 2018 and 2021 (PIOJ, 2019-

166 <https://www.cbd.int/nbsap/about/latest/#jm>

167 <https://unstats-undesa.opendata.arcgis.com/>

2021 and Forestry Department, 2020; 2021). The grantees implemented projects to combat deforestation, conserve biodiversity, build resilience to climate change, enhance conservation mechanisms of the marine ecosystems and to facilitate the establishment of alternative livelihoods. These financial resources aided in the conservation of ecosystems and biodiversity and was made possible through the partnerships established and sustained with local entities, private sector interests, and international partners.

Jamaica did not generate revenue and/or mobilize finance from biodiversity-relevant economic instruments (Indicator 15.a/b.1(b)). However, as Figure 85 shows, the GOJ's investments in environmental management and forestry programming steadily increased from 2015/16 FY to 2019/20 FY, with allocations in 2019/20 FY being approximately 63.5 per cent more than the 2015/16 FY. The allocations decreased in 2020-21 FY; declines in Recurrent and Capital Funds due to reprogramming because of the COVID-19 pandemic was a factor. Additionally, the GOJ allocated approximately 32 per cent more funds to support environmental management and forestry related programmes more during the 2018/19 to 2020/21 FY (US \$64.9 million) than the 2015/16 to 2017/18 FY (US \$49 million) (PIOJ, 2016-2021).

Additionally, the National Conservation Trust Fund of Jamaica (NCTFJ) is now operational and is providing grants for community-level management of protected areas, among others.



FIGURE 85: **COMBINED FORESTRY AND ENVIRONMENTAL PROTECTION AND CONSERVATION BUDGETARY ALLOCATION (IN USD MILLION)**
SOURCE: PIOJ 2016-2021.

6 Environmental Protection and Conservation reflects allocations to the National Environment and Planning Agency, and environmental management and meteorological services under the Ministry of Economic Growth and Job Creation, Ministry of Housing, Urban Renewal, Environment and Climate Change, Ministry of Industry, Commerce, Agriculture and Fisheries and the Ministry of Local Government and Rural Development

7 Conversion rate is US\$1 to JMD \$155.

Target 15.C: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities¹⁶⁸

The NEPA received protection and control assistance through partnerships with entities such as Jamaica Customs Agency and the International Criminal Police Organization (INTERPOL) in Jamaica in reducing poaching and the international sale of wildlife¹⁶⁹.

¹⁶⁸ Jamaica doesn't currently monitor the proportion of traded wildlife that was poached or illicitly trafficked (Indicator 15.c.1.).

¹⁶⁹ <https://jis.gov.jm/features/nepa-protects-countrys-wildlife/>

Policies, strategies, legislative instruments and provisions that have contributed to progress.

Efforts to develop and maintain a comprehensive governance framework for the forest sector and protect and strengthen forest biodiversity leveraged the achievements that were noted in the VNR 2018 Report. For example, Jamaica advanced amendments to the Forest Act 1996, building on the preliminary work done before 2018. In 2018, key amendments were made to the Wildlife Protection Act; efforts since then have also advanced. The Forest Act and the Wildlife Protection Act are now being targeted for promulgation. The amendment to the Wildlife Protection Act is particularly important because it will facilitate Jamaica's ratification of the Specially Protected Areas and Wildlife (SPA) Protocol to the Cartagena Convention.

The GOJ implemented the Trade (Plastic Packaging Materials Prohibition) Order (2018) and the Natural Resources Conservation Authority (Plastic Packaging Materials Prohibition) Order (2018) to ban the importation, distribution, manufacture and commercial use of certain types of single use plastics in phases as of January 1, 2019 (NEPA, 2020). A Deposit Refund Scheme (DRS) for the recycling/return of plastic bottles has been implemented (JIS, 2021). In addition, the implementation of the Plastic Waste Minimization Project strengthened policy and enhanced legal frameworks to reduce and manage plastic waste from land-based sources. Also, a mobile app was developed by the NSWMA to facilitate easier collection, reporting of non-collection of solid waste and illegal dumping.

The Cabinet approved the Environment Management Systems (EMS) Policy¹⁷⁰ in 2019; it is aligned to SDG 15 and will support Jamaica in realizing improvements in sustainable management and use of environmental and natural resources in economic sectors. A key feature of the policy is the Green Business Jamaica Initiative, launched in 2018, to promote good environmental practices to sustain natural resources. Other policies approved by the Cabinet include the Biosafety Policy for Jamaica¹⁷¹, the National Policy for the Environmentally Sound Management of Hazardous Wastes¹⁷² and the Water Sector Policy and Strategy¹⁷³.

Additionally for this review period, approval was received for three Green Papers¹⁷⁴: The revised Beach Access and Management Policy¹⁷⁵, the Emissions Policy Framework for Jamaica¹⁷⁶ and the revised Climate Change Policy Framework.¹⁷⁷ Also, Jamaica initiated the policy development process to manage squatting, with the drafting of the National Squatter Management Policy¹⁷⁸.

170 As a White Paper, the official Policy document.

171 Aims to protect local species from genetically modified organisms (GMOs).

172 Focuses on the environmentally sound management of hazardous wastes in Jamaica in keeping with international and regional best practices, to ensure the protection of human health and the environment.

173 To facilitate the population having universal access to potable water and adequate sanitation.

174 Initial document that facilitates public discussion and input on the policy issue.

175 To govern all beaches in Jamaica whether owned by the State or by private interests and covers public access to beaches as well as their management and regulation.

176 Aims to reduce emissions from key pollutant sources in order to maintain good air quality.

177 To support sustained growth and prosperity through enhanced resilience and capacity to adapt to the impacts and to mitigate the causes of climate change.

178 To provide a strategic direction for addressing squatting by cauterising the practice and fostering orderly development of land resources.

Relevant international conventions/ agreements

Jamaica continued to pursue its relevant obligations under the international multilateral agreements to which it is a party or signatory. A summary of selected activities or achievements is noted in Table 32.

TABLE 32: JAMAICA'S PARTICIPATION IN UNITED NATIONS ENVIRONMENTAL PROTECTION PROGRAMMES, CONVENTIONS AND FORA

UN Convention on Biodiversity <ul style="list-style-type: none"> • 6th National Report • Adoption of the Kunming Declaration for the implementation of a more effective post-2020 global biodiversity framework to halt and reverse biodiversity loss.
UN Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) <ul style="list-style-type: none"> • Continued processing of permits and licences for trade in endangered flora and fauna (2018-2021)
UN Convention to Combat Desertification (CCD) <ul style="list-style-type: none"> • Submission of National Voluntary Land Degradation Neutrality (LDN) targets (2020). • National Target - LDN is achieved by 2030 as compared to 2015 and an additional 10% of degraded lands of the national territory are improved.
UN Forum on Forests (UNFF) <ul style="list-style-type: none"> • Submission of Global Forest Goals (2019) • Global Forest Goals Report (2021)
UN-REDD Programme <ul style="list-style-type: none"> • Ongoing work to become "REDD+ Ready"
UN Framework Convention on Climate Change <ul style="list-style-type: none"> • Jamaica signed the Glasgow Leaders' Declaration on Forests and Land Use at COP 26 to "halt and reverse forest loss and land degradation" by 2030. • Adoption of the Glasgow Climate Pact.

Crosscutting issues and interlinkages with other SDGs

Climate Action

Information from risk mapping and vulnerability assessments are available as key inputs for forest sector stakeholders to better respond to climate change. More importantly, the inclusion of forest sector in Jamaica's Nationally Determined Contribution (NDC) is a notable milestone and it supports the development of a National REDD+ Readiness Strategy, preparing Jamaica to mobilize foreign exchange in the form of carbon finance. Also, to support REDD+ Readiness Preparation, Jamaica completed the gap analysis of the legislative, policy and institutional frameworks governing sectors relevant to reducing emissions from deforestation and forest degradation. The National Tree Planting Initiative will also aid in the expansion of carbon sinks. These initiatives will support the integration of terrestrial ecosystem and biodiversity management into governmental planning. See Goal 13 on Climate Action.

Pollution

Managing pollution remains key to the conservation and restoration of Jamaica's terrestrial and freshwater ecosystems (Target 15.1) and the protection of its biodiversity and natural habitats (Target 15.5). Air quality, oil spills and sewage discharge accounted for most of the reported pollution between 2015 and 2020. There were 213 reported incidences between 2015 and 2017 which decreased to 113 for the period 2018-2020, (PIOJ 2016-2021). Noticeable decline in the number of reported incidents can be attributed to increased awareness and enhanced environmental management or a reduction in reporting. Other pollution incidents included improper waste disposal, spills from other chemicals, molasses and other general substances; fish kill, algal bloom, water pollution/fire control runoff; noise and sewage odour.

The COVID-19 Pandemic

Overall, the COVID-19 pandemic impacted the execution of projects and programmes. Reduced government revenues, budget reformulations and the various containment measures that restricted daily life are some examples of the factors that affected implementation. However, there was increased utilization of technology to facilitate implementation and coordination for example virtual meetings, trainings and awareness sessions which provided cost saving opportunities (e.g. event venues, meals and transportation).

Lessons Learnt and Best Practice

Stakeholders identified the Thematic Working Groups (TWGs), a coordination mechanism under Vision 2030 Jamaica—National Development Plan, as a useful platform for facilitating dialogue and coordination across SDG implementing partners. Additionally, co-management arrangements with NGOs and CBOs are mutually beneficial for government and local partners in the management of protected areas and beaches.

Poor coordination (e.g., duplication of activities) limits implementation progress. Agreements among ministries, departments and agencies (e.g., MOUs) are a useful approach to overcome it. Examples include the MOU between the Scientific Research Council (SRC) and NEPA to protect the country's rich biodiversity.

Funding and staffing shortfalls also affected the pace of implementation and scope of monitoring and enforcement efforts in areas such as IAS removal and poaching of endangered species. Training and technical assistance from regional and international partners helped to address some gaps. Issues remain with limited technical capacity within implementing MDAs for example to conduct ecosystem and natural resource valuations, loss and damage assessments of forests and carbon accounting. This impacts Jamaica's ability to leverage funds to sustainably manage forest resources. Similarly, successful forest fire prevention and containment initiatives preserve forest cover, protect biodiversity and other forest products as well as reduce the release of CO₂ into the atmosphere. However, these initiatives are usually underfunded or delayed due to limited fiscal space. Additionally, the nature of the terrain may affect reforestation and removal of invasive alien species activities.

There are also challenges with land accessibility for reforestation, unavailability of seedlings to meet demands, low survival rate and low growth rate of newly planted seedlings. As such, search for land now commences at least a year ahead of scheduled planting activities and communities engaged prior to execution. Effort is being made to develop of a comprehensive reforestation programme to build on the successes of past programmes and to engage more persons under the Forestry Department's Private Planters Programme. In addition, forest management plans were not incorporated as part of the Forestry Department's planning process and as such experienced implementation challenges, these plans are now being included in the agency's overall planning process.

Way Forward

There is need to further strengthen the legislative framework to support the management of all forests and to safeguard biodiversity, especially as the majority of the forests are privately owned. A legislative structure to allow for sustainable forest management is also needed. Also, the management of forests is fragmented, the Forestry Department manages those on crown lands and other forests are managed by the Urban Development Cooperation (UDC) and NEPA. Additionally, there is no significant legislation¹⁷⁹ in Jamaica that protects plant species, especially those outside protected areas. This is a concern given that plants are the most threatened species in Jamaica. The revision of legislation and the National REDD+ Readiness Strategy will help with this challenge.

Improper farming techniques and livelihood activities of forest dependent communities continue to affect forest resources. Further research should be conducted to determine suitable alternative livelihood options. Community involvement, capacity building/training and stakeholder engagement are critical towards adopting sustainable practices. As such, enhanced awareness and capacity building programmes have engaged community members to assist with the management of forest resources, thereby leading to more projects and initiatives being successful. Alternative livelihood opportunities and agroforestry programmes are being established within forest dependent communities to reduce the pressures on the forest. Based on the success of community involvement and alternative livelihood opportunities, these initiatives should be expanded.

Climate change and natural and man-made hazards are major threats to forest management and biodiversity conservation and are likely to exacerbate existing issues. Changes in temperature and precipitation will affect the frequency and extent of forest fires (SOJC 2015). Additional research is needed to combat climate change and maintain sustainable forests such as the identification and propagation of drought resilient species, mitigating against the increase in forest fires due to drier temperatures and research on species that can adapt to fires. This is necessary to halt deforestation.

Actions geared at eliminating poaching and trafficking of protected species (15.7) and combatting global poaching and trafficking (15.C) were minimal. It is expected that the amendments to the primary legislation, the Wildlife Protection Act (1945), will deter poaching through increased fines and penalties.

Competing uses for land-based natural resources should be managed to safeguard the health and vitality of these resources. Efforts to further strengthen the legislative and policy frameworks and implement effective programmes and initiatives will be important for building the resilience of these ecosystems. Some priorities/plans/programmes being recommended are:

1. Finalize and implement key legislative frameworks including the Draft Forest Bill and the Natural Resources Conservation Authority Bill along with the Environmental Impact Assessment (EIA)
2. Prepare/update 6 Development Orders to include forest management priorities
3. Develop the National Mangrove Forest Management Plan, complete 12 harvesting plans for forest clusters, completion of boundary verification and descriptions for eight forest estates, develop best management practices and Special Regulations for Riparian Forests

¹⁷⁹ Amendments presently being undertaken for the Wild Life Protection Act will include protected plants.

4. Complete the National REDD+ Strategy and Action Plan, develop the Pilot National Forest Inventory (NFI) Utilising Manual, undertake Carbon Stock Assessments (CSMs) in five (5) Forest Estates and complete the analysis of the National Forest Emission Level (NFEL)
5. Ratify the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS)
6. Reforest over 150 hectares of denuded land annually to increase forest cover, implement sustained planting initiatives to ensure the survival of seedlings and reduce impact of forest fires and land clearing to halt deforestation. The Forestry Department should increase control and access of the 73.6 per cent of forests that are privately owned in order to regulate the activities on these lands.
7. Strengthen stakeholder engagement at the national and local levels of implementation.
8. Develop or adopt relevant indicators and track annual progress such as those submitted to the Global Forest Goals.
9. Establish partnerships with local MDAs, NGOs, communities and international partners to address resources gaps (e.g., financial and technical capacities).

Resource requirements

Implementation of the SDGs is complex and requires investments from and coordination among the public and private sectors, international development partners and civil society. Further progress towards conserving and sustainably using biodiversity and ecosystems will require financial resources and strengthened technical capacities (Figure 86). In addition, up-to-date aerial imagery is required to determine more recent disturbance levels within forested areas.

This is necessary to track annual changes in the forest cover and should be accessible to MDAs and the public to facilitate informed decision-making. Also, there is need to build capacity to determine the National Forest Emission Levels (NFELs).

Existing partnerships should be strengthened and new ones forged to leverage resources and accelerate implementation in areas such as mapping forested areas, increasing seedling production and engaging local communities to sustain planting initiatives.

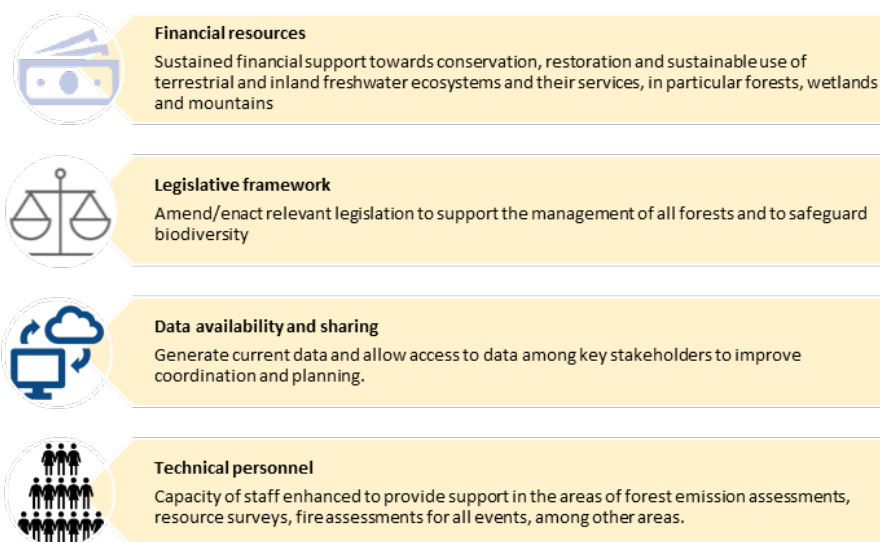


FIGURE 86: RESOURCE REQUIREMENTS TO ENHANCE THE MANAGEMENT OF ECOSYSTEM SERVICES IN JAMAICA