THE BAHAMAS POST HURRICANE DORIAN RECONSTRUCTION

ENVIRONMENT

MINISTRY OF THE ENVIRONMENT AND HOUSING
Forestry Unit

Strengthening Natural Forest Ecosystems Through Sustainable Management

1. BACKGROUND

Field observations and rapid forest impact assessments revealed severe to catastrophic damages (i.e. range from 30% to 50% of pine stems broken, multiple trees blown down, and trees bent more than 45 degrees) to the pine forest ecosystem in the Crown Land Forest Reserves, across every diameter class of pine forest (Pinus caribaea var. bahamensis). Natural pine forests, broadleaved under-storey and mangrove wetlands, once densely populated, healthy and productive were essentially destroyed. The destructive impact of high storm surge, salt water intrusion and strong winds decimated the tidal creeks and mangrove wetlands ecosystems, which accounted for some 20% of total forest cover on the affected Islands. Images show widespread loss of canopy to mangrove wetlands, loss of pine understory broadleaves, pine stem and branch breakage, uprooted and overthrown pine trees. The remaining standing pine trees are essentially defoliated with mortality expected to be in the high range.

Approximate area impacted 33,516 acres (13,563 hectares) of productive pine forest and mangrove wetlands on Abaco Island and 70,289 acres (28,445 hectares) of productive pine forest and mangrove wetlands on Grand Bahama Island, totalling in excess of 100,000 acres. Observations reveal 60% and higher of the growing stock to be severely to catastrophically damaged and potentially salvageable.

2. VISION FOR A RESILIENT FOREST ECOSYSTEM

It is the Ministry of the Environment and Housing short-term objective to remediate and restore the impacted forest ecosystems of Grand Bahama and Abaco in the aftermath of Hurricane Dorian. Moreover, it is the Ministry's medium to long-term aspiration to develop resilient reforestation programs that build the country's awareness and capacity to maintain green islands while ensuring there is a habitat for wild life capable of withstanding future environmental shocks**.** To fulfil this, the project cycle is a minimum of four (4) years. Some projects are longer term and would require sustained recurrent government expenditure beyond the initial four-year seed funding period.

PROJECT 1: A NATIONAL REFORESTATION PROGRAM
AMOUNT: US$5 Million

- Establish a national forest nursery, comprising seedlings of pine trees, the four (4) indigenous mangrove species, and native hardwood species, in collaboration with Department of Agriculture, BAMSI, Bahamas Public Parks & Public Beaches Authority;
- Create a national seedbank to house seeds and plant specimens (in situ conservation) to provide material to the nursery, in collaboration with the University of the Bahamas;

- Plan and execute a comprehensive program of forest site preparation for natural pine and mangrove ecosystem regeneration, in the introduction of control burning activities;
- Pine forest and mangrove ecosystem re-afforestation program (tree planting program) to rehabilitate and restore hurricane impacted forest and wetland areas on affected islands;

PROJECT 2: MANAGING AND MONITORING FOREST ECOSYSTEMS AND CLIMATE CHANGE IMPACTS
AMOUNT: US$10 Million

- Design and Establish Green Forest Monitoring Stations (Offices) on Abaco and Grand Bahama Islands;
- Develop forest management plans for Forest Reserves and Conservation forests areas on affected islands;
- Conduct Forest Inventory and a monitoring system for natural forest areas (Permanent Sample Plots - PSP), utilizing GIS and remote sensing technologies;
- Develop a long-term forest fire management plan and strategies for Abaco and Grand Bahama Islands;
- Develop and implement an Invasive Plant Species Strategy for removals from forest ecosystems on Abaco and Grand Bahama Islands.

PROJECT 3: CAPACITY BUILDING AND PUBLIC AWARENESS
AMOUNT: US$1 Million

- Design and implement public education strategy to sensitize populace on forestry management matters;
- Upscaling existing 365 School Education Program
- Staff training in the implementation of forest management, fire management, remote sensing techniques and forest monitoring plans;
- Establish a Forestry Cadet Program, in conjunction with the Ministry of Education and Bahamas Association of Science Educators – BASE;
- Recruitment of short-term Consultancies in capacity building and knowledge transfer to locals in wildland fire management, nursery management and forest monitoring.

PROJECT 4. SMALL SCALE FOREST INDUSTRY/ECONOMIC STIMULUS FOR ISLAND COMMUNITIES
AMOUNT: US$4 Million

- Procurement of portable sawmills to demonstrate utilization of pine and other wood species and support sustainable livelihoods in Island communities;
- Develop program to promote potential forest industries on affected islands (e.g.: sawmilling for constructional lumber production, pine resin/rosin production, wood carving, straw and handicraft industry, and wood charcoal).
- Recruitment of short-term workers (minimum of 30 persons) from affected communities (15/Island), to train in various facets of forest utilization, thus stimulating interest in the sector for small scaled business opportunities.

TOTAL BUDGET OF FOUR (4) COMPONENTS US$20 Million