

| INTERVENTION LOGIC       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | OVI                                                                                                                                                                                                                                                                                                                                                    | MOV                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ASSUMPTIONS                                                                                                                                                                                                                                                                                                                                 |
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| <b>Overall Objective</b> | To contribute to surveying and demarcating the physical parameters of the public forest reserve and conducting a comprehensive biophysical inventory/assessment and management system of forest resources to produce, inter alia, a forest resource monitoring system; obtained through ground survey, remote sensing, assessment and review of existing data that will serve as the basis for strategic sustainable planning and management of forest resources. | Changes in forest area in St Lucia<br>Area of protected forest in St Lucia<br>Enhanced public forestry service in St Lucia                                                                                                                                                                                                                             | FD reports and statistics<br>Ministry of Agriculture, Lands, Fisheries & Forestry reports and statistics<br>Feedback from natural resources sector stakeholders in St Lucia<br>International environmental organisations statistics                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                             |
| <b>Purpose</b>           | <b>Purpose 1.</b> To survey and demarcate and realign the Forests Reserves boundaries, inter alia incorporating the newly acquired crown lands, in order to facilitate better protection and management;                                                                                                                                                                                                                                                          | Forest reserve boundaries realigned, demarcated and updated                                                                                                                                                                                                                                                                                            | Baseline data<br>Programme reports<br>National forest reserve boundary lines management plans                                                                                                                                                                                                                                                                                                                                                                             | On-going Political and Administrative will and commitment to the realisation of integrated Forestry realignment, demarcation and inventory assessment initiative<br><br>Wide ranging commitment to the vision and ideal of the programme<br><br>Commitment of the requisite manpower and other resources to ensure success of the programme |
|                          | <b>Purpose 2.</b> To create an updated data base of Forest Reserve boundary line (digital and hard copy data, to reside at Forestry Department and Lands and Surveys Department) and measure the quality, quantity and distribution - inclusive of yield and volume - of timber and non-timber resources, and to compile statistics of their availability at the range, watershed and national level.                                                             | Digital and physical plans/maps, reports, data and other information on land of all forests reserves in the use of FD and other relevant authorities<br><br>Comprehensive information on the current state of forest resources with recommendations for sustainable management practices delivered for relevant authorities for use in decision making | Programme reports<br>Surveys plans, maps and digitized information<br>Technical reports on quality, quantity and distribution of timber and non-timber resources<br>Feedback from FD<br>Technical report including information on previous inventories and background sources, inventory design, and results, (area, volume, species composition), vegetation classification and composition, species list, statistical calculations, and conclusions and recommendations |                                                                                                                                                                                                                                                                                                                                             |

|                | INTERVENTION LOGIC                                                                                                                                                                                         | OVI                                                                                                                                                                                                                                                                                   | MOV                                                                                                 | ASSUMPTIONS                                                                                                                                                                                                                                |
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|                | 3. To assess the status of the forest ecosystem, assessment of biodiversity (species richness and diversity) and all existing vegetation type at the watershed, range, and national level.                 | A botanical description of forest plants<br>An upgraded and improved National Herbarium<br>An assessment of wildlife use attributes                                                                                                                                                   | Project technical reports<br>Plan for upgraded and improved National Herbarium<br>Assessment report |                                                                                                                                                                                                                                            |
|                | 4. To advise on the most optimal means/measures for the sustainable management (utilization and conservation) of forest resources                                                                          | Alternative management strategies produced for consideration by FD                                                                                                                                                                                                                    | Project report                                                                                      |                                                                                                                                                                                                                                            |
|                | 5. To recommend relevant silvicultural and utilization prescriptions necessary for planning and management of forest resources                                                                             | Recommendations for silvicultural and utilization prescriptions presented to FD                                                                                                                                                                                                       | Project reports                                                                                     |                                                                                                                                                                                                                                            |
|                | 6. To assess all existing forestry related database, and to create an updated monitoring system for producing forest resource state and change estimates                                                   | An updated and functional forest resource monitoring system in use                                                                                                                                                                                                                    | FMIS, linked to GIS                                                                                 |                                                                                                                                                                                                                                            |
|                | 7. To provide spatial and statistical data for estimating the nature, magnitude, geographical scope, in relation to Timber and NTFP yield and volume, biodiversity, carbon storage, and processes          | Statistically valid information on the nature, magnitude and geographical scope of forest resources available to FD and other stakeholders                                                                                                                                            | Project report<br>FMIS /GIS                                                                         |                                                                                                                                                                                                                                            |
|                | 8. To conduct a training programme to develop the capacity of a cadre of persons in forests resource assessment and inventory method and forests management system using, scientific and modern technology | A cadre of locally trained individuals with sufficient capacity and skills to conduct a forest inventory/assessment<br>At least 2 local persons who can manage a forest management system.                                                                                            | Feedback on trainings<br>Project reports                                                            |                                                                                                                                                                                                                                            |
|                | 9. To recommend and implement an effective, efficient and appropriate forest management system for Saint Lucia.                                                                                            | A forest management system in place and functioning in the use of FD                                                                                                                                                                                                                  | Project reports<br>Feedback from FD                                                                 |                                                                                                                                                                                                                                            |
| <b>Results</b> | Realigned, demarcated and updated forest reserve boundaries                                                                                                                                                | Existing Forest Reserves boundaries realigned and updated<br><br>117 critical forested Crown parcels (approx. 2015 acres) and the 20+ parcels of private lands earmarked for incorporation into the Forest Reserves, boundaries realigned and updated<br><br>Management plan produced | Baseline data<br>Programme reports<br>National forest reserve boundary lines management plans       | Suitably qualified survey staff recruited to project<br><br>Timely availability of resources<br>No major inaccuracies in existing registered boundaries<br><br>No significant conflict with local communities on forest reserve boundaries |

|  | INTERVENTION LOGIC                                                                                                                                                                | OVI                                                                                                                                                                                                                                                                                                                                                                                                                        | MOV                                                                                                                                                                                                          | ASSUMPTIONS                                                 |
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|  | 3: A comprehensive report on the current state of forest resources (Timber, Non-Timber, biodiversity, wild fauna etc), with recommendations for sustainable management practices. | Information on current state of forest resources, as follows:<br>a. Background information;<br>b. Previous inventories;<br>c. Inventory Design;<br>d. Inventory results, including area, volume, species composition;<br>e. Accuracy of inventory results;<br>f. Island wide vegetation classification and composition;<br>g. Species richness and diversity;<br>h. Summary of statistical calculations;<br>i. Conclusions | Technical reports on quality, quantity and distribution of timber and non-timber resources<br><br>Technical inventory results<br>FMIS produced<br>GIS maps<br>volume tables<br>permanent sample plots (PSPs) | Previous inventory data available in suitable for inclusion |
|  | 4: A botanical description of forest plants including an island wide specimen collection and identification. An upgraded and improved National Herbarium                          | Flora assessment and classification produced including identification of critical habitats<br><br>Upgraded National Herbarium                                                                                                                                                                                                                                                                                              | Project technical report on flora<br><br>Plan for upgraded and improved National Herbarium<br><br>Assessment report                                                                                          |                                                             |
|  | 5: An assessment of wildlife use attributes identifying critical habitats and recommendation for sustaining habitats of important, rare or endangered animal species              | Fauna assessment and classification & critical habitats identification produced                                                                                                                                                                                                                                                                                                                                            | Project technical report on fauna & critical habitats                                                                                                                                                        |                                                             |
|  | 6. A report on most suitable and alternative management strategies                                                                                                                | Alternative management objectives developed on the basis of FMIS in the use of FD                                                                                                                                                                                                                                                                                                                                          | Report including alternatives                                                                                                                                                                                |                                                             |
|  | 7. A report on silvicultural and utilization prescriptions                                                                                                                        | Alternative silvicultural prescriptions evaluated and information delivered to the FD                                                                                                                                                                                                                                                                                                                                      | Project report                                                                                                                                                                                               |                                                             |
|  | 8. An updated and functional forest resource monitoring system                                                                                                                    | FMIS linked to GIS, including inventory data, boundary data, and bio-resource data.<br><br>Produce maps<br><br>Improved capacity of FD in the use of FMIS                                                                                                                                                                                                                                                                  | FMIS<br>Maps produced<br>Project reports                                                                                                                                                                     |                                                             |

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|  | 9. A comprehensive report on the nature, magnitude and geographical scope of forest resources (Timber and Non-Timber yield and volume, biodiversity, carbon storage and processes).                               | Forest inventory data in use and processed                                                                                                                                                                                                                                                                                                                                              | Project report                                                                                                             |                                                       |
|  | 10. A cadre of locally trained individuals with sufficient capacity and skills to function in a forest inventory / assessment environment and at least 2 local persons who can manage a forest management system. | <p>Trained staff according to training needs assessment</p> <p>Training workshops implemented for a cadre of local persons, including forestry officers, which will form part of the biophysical inventory and forest boundary line surveying team,</p> <p>Selected local persons with field work experience and trained on-the-job</p> <p>Selected FD staff trained in use of FMIS</p> | <p>Training needs analysis report</p> <p>Training related reports</p> <p>Feedback from trainees</p> <p>Project reports</p> | Suitably qualified individuals available for training |
|  | 11. A forest management information system in place and functioning                                                                                                                                               | <p>FMIS integrating GIS in use</p> <p>FMIS used by FD to prepare management plans</p>                                                                                                                                                                                                                                                                                                   | <p>FMIS</p> <p>Project reports</p>                                                                                         |                                                       |

| Activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Means                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p><b>Activities, result 1:</b></p> <ul style="list-style-type: none"> <li>1.1 Ascertain, demarcate, and maintain/restore all existing forest reserve boundaries.</li> <li>1.2 Realign and update forest reserve boundaries to incorporate recent land acquisitions and the incorporation of 117 critical forested Crown parcels (approx. 2015 acres) and the 20+ parcels of private lands earmarked for incorporation into the Forest Reserves</li> <li>1.3 Submit to the Forestry Department two copies of the lodged boundary survey plans and digitized information of the above-mentioned surveys (the survey data format/ programme AutoCAD 2005 k; compatible with the ongoing efforts at digitisation of spatial data in St. Lucia</li> <li>1.4 Demarcate the limit of all forest reserves boundaries</li> <li>1.5 To develop a national forest reserve boundary line management plan</li> </ul> | <p>Key Expert 1: Internationally recruited Project Leader – 15 working months over a 18 calendar month period as a long term expert.</p> <p>Key Expert 2: Locally recruited Principal Surveyor – 14 working months over a 18 calendar month period as a long term expert.</p> <p>Key Expert 3: Internationally recruited Conservation Biologist – 7 working months over a 18 calendar month period as a long term expert.</p> <p>Key Expert 4: Internationally recruited GIS and Data Management Specialist – 6 working months over a 18 calendar month period as a long term expert.</p> <p>Non-key Expert, Surveyor Technician: 10 months working months over a 18 calendar month period as a long term expert.</p> <p>Non-key Expert, Surveyor Draftsman: 10 months working months over a 18 calendar month period as a long term expert.</p> <p>Short Term International experts: altogether 2 working months over the 18 month period.</p> <p>Short Term local/regional experts: altogether 13 working months over the 18 month period.</p> <p>Ongoing support from consultant's Headquarters (HQ)</p> <p>1 backstopping mission from HQ.</p> <p>International travel, per diems and luggage for consultants</p> <p>Operating costs recruited project secretary according to project needs</p> |
| <p><b>Activities, Result 2:</b></p> <ul style="list-style-type: none"> <li>2.1 Digitize all information from forest reserve boundary survey</li> <li>2.2 Production of plans, maps and reports on the basis of digitized information</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>Activities, Result 3:</b></p> <ul style="list-style-type: none"> <li>3.1 Plan forest inventory</li> <li>3.2 Conduct forest inventory</li> <li>3.3 Establish permanent sample plots</li> <li>3.4 Prepare/select volume tables</li> <li>3.5 Prepare GIS maps</li> <li>3.6 Prepare FMIS</li> <li>3.7 Prepare inventory results</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>Activities, Result 4:</b></p> <ul style="list-style-type: none"> <li>4.1 Planning</li> <li>4.2 Consultation with MAFF and other stakeholders.</li> <li>4.3 Flora assessment and classification</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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| 4.4 Report preparation                                                                                                                                                                                                                                                                                                                                                        |              |
| 4.5 Upgrading National Herbarium                                                                                                                                                                                                                                                                                                                                              |              |
| <b>Activities</b>                                                                                                                                                                                                                                                                                                                                                             | <b>Means</b> |
| <b>Activities, Result 5:</b><br>5.1 Planning<br>5.2 Consultation with MAFF and other stakeholders.<br>5.3 Fauna assessment and classification, critical habitats identification<br>5.4 Report preparation                                                                                                                                                                     |              |
| <b>Activities, Result 6:</b><br>6.1 Use FMIS to develop a series of alternative management objectives<br>6.2 Evaluate alternatives<br>6.3 Prepare the report                                                                                                                                                                                                                  |              |
| <b>Activities, Result 7:</b><br>7.1 Prepare alternative silvicultural prescriptions<br>7.2 Prepare alternative utilization prescriptions<br>7.3 Evaluate alternatives<br>7.4 Produce report                                                                                                                                                                                   |              |
| <b>Activities, Result 8:</b><br>8.1 Obtain all existing previous inventory data<br>8.2 Obtain all existing volume functions etc<br>8.3 Update GIS to include boundary data, bio-resource data.<br>8.4 Prepare FMIS linked to GIS<br>8.5 Enter all suitable previous inventory data into FMIS<br>8.6 Produce maps<br>8.7 Provide training in use of FMIS<br>8.8 Implement FMIS |              |
| <b>Activities, Result 9:</b><br>9.1 Conduct forest inventory to collect data<br>9.2 Data processing<br>9.3 Preparing a report                                                                                                                                                                                                                                                 |              |

| Activities                                                                                                                                                                                                                                                                                                                                                                                                                                 | Means |
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| <p><b>Activities, Result 10:</b></p> <p>10.1 Conduct training needs analysis</p> <p>10.2 Conduct training workshops for a cadre of local persons, including forestry officers, which will form part of the biophysical inventory and forest boundary line surveying team,</p> <p>10.3 Provide field work experience and on-the-job training to selected local persons</p> <p>10.4 Provide training in use of FMIS to selected FD staff</p> |       |
| <p><b>Activities, Result 11:</b></p> <p>11.1 Prepare FMIS integrating GIS, inclusion of inventory data, PSPs, and yield control</p> <p>11.2 Use FMIS to prepare management plans which can be modified to include effect of inventory data which may be collected at a later date</p>                                                                                                                                                      |       |