



Quantification of Baseline Data of Iwokrama's Wilderness Preserve, Guyana, South America

An EU-ACP Forest Research Network (FORENET) Project



Introduction and Background

The Iwokrama International Centre for Rain Forest Conservation and Development (IIC) is an autonomous non-profit institution established by Guyana and the Commonwealth. Through the dedication of approximately 371,000 hectares of intact tropical rainforest by the Government and People of Guyana to the International Community, the IIC aims to show how tropical forests can be conserved and sustainably used for ecological, social and economic benefits to local, national and international communities.

IIC has collaborative management agreements in place with the sixteen (16) local indigenous communities that are contiguous to and within the Iwokrama Forest.



Project description

Fundamental to the work of the Centre is the geographical zoning of the Iwokrama Forest into two spatially equal zones: a Sustainable Use Area (SUA) and a Wilderness Preserve (WP).

The SUA is available for multiple resource use to yield benefits to present generations while maintaining the potential to meet the needs of future generations. The SUA is managed by the Centre and the local communities and in particular Fair View Village, located within the Iwokrama forest

The WP is a protection forest and serves as a reference area for studying the impacts of human activity through comparison with uses in the SUA, and to maintain a pool of genetic resources in an intact state.

Project Context

In 2003, IIC carried out a comprehensive management level forest inventory of the Net Operable Area (NOA) of the SUA – approximately 110,000 hectares. This inventory covered the four major commercial forest types and excluded special reserve areas, steep slopes, areas subjected to severe seasonal flooding and watercourse buffers.

One of Iwokrama's core activities is monitoring the impact of our development activities on the Iwokrama Forest and to inform the management of these resources. However, the forest resources of the WP have never been adequately quantified which restricts Iwokrama's ability to use the WP as a control area for monitoring the impact of commercial activities in the SUA. Baseline resource data is also required to adequately quantify the revenue generation potential of the Forest as a whole, particularly with regard to eco-system services and carbon stocks

Main Objective

To quantify baseline forest resource data for the Wilderness Preserve

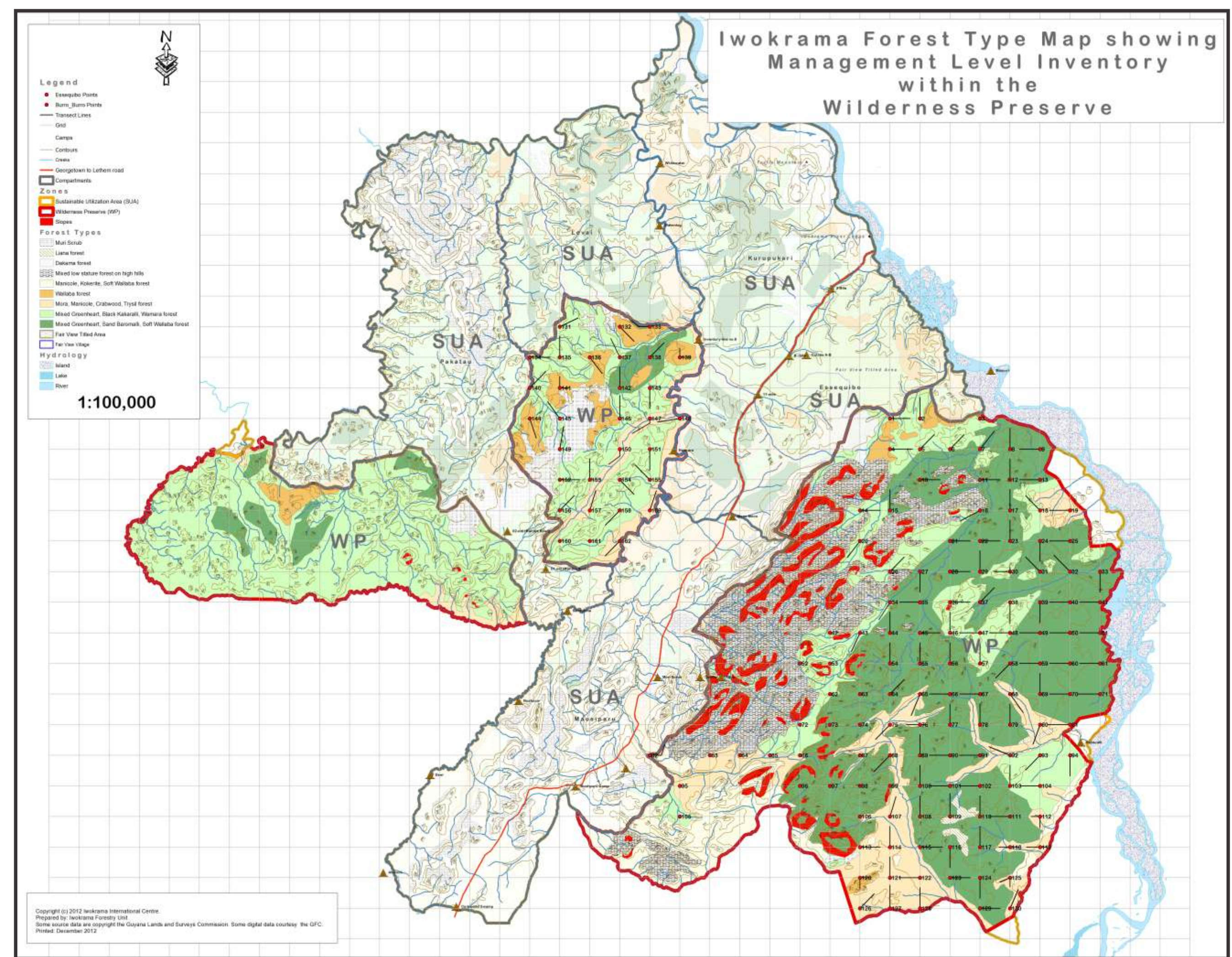
Specific Objectives

- To fill information gaps on IIC's forest resources;
- To improve forest impact monitoring capacity;
- To improve capacity to quantify revenue generation potential from eco-system services and carbon storage;
- To build capacity in local communities through training and technology transfer;

Methodology

An identical management level inventory was undertaken in the WP as was done in the SUA in order to permit a direct comparison between the two areas. The theoretical NOA of the same four commercial forest types was determined for the WP and the inventory was conducted using the same methodology as was used in the SUA. The resulting forest resource data was compiled and summarized following the same procedures used for the SUA.

The inventory used a stratified, probability proportional to size sampling design that uses stands (forest type polygons) as the Primary Sampling Unit (PSU), using probability proportional to size (pps) sample selection. The Secondary Sampling



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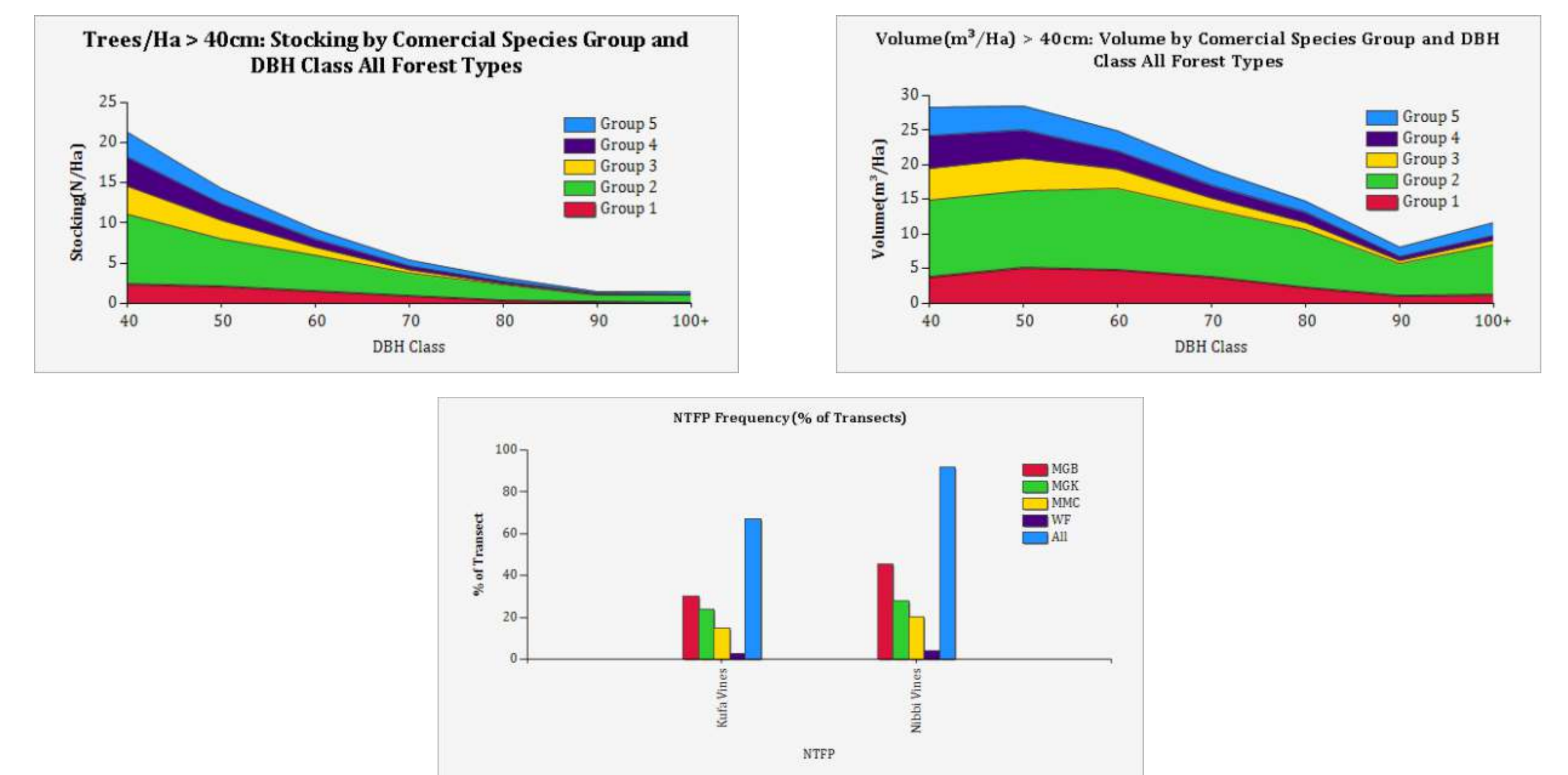
Results

- Comprehensive baseline forest resource data for the WP, compatible with the SUA data, and improved forest impact monitoring capacity;
- Forest biodiversity and forest structure documented;
- Improved capacity to quantify revenue generation potential from eco-system services and carbon storage;
- Residents from local communities trained in forest inventory procedures;

Iwokrama WP Inventory				
Transect and Plot Summaries				
Final Transect Summary by Forest Type				
Forest Type	Location	Grand Total		
Forest Type	Burro-Burro	Esequibo	Grand Total	
MBG	28	622	650	
MGK	16	23	39	
MMC	6	22	28	
WF	6	1	7	
Grand Total	30	109	139	

Iwokrama WP Inventory Stand and Stock Tables								
Trees/ha >40cm DBH by Diameter Class								
Sum of Trees/ha	40	50	60	70	80	90	100+	Grand Total
Group 1	2,509	2,214	1,595	0,955	0,455	0,152	0,152	8,052
Group 2	9,105	6,187	4,670	2,881	1,933	0,878	0,857	26,513
Group 3	3,671	2,381	1,016	0,470	0,191	0,076	0,068	7,688
Group 4	3,647	2,123	0,963	0,465	0,273	0,096	0,083	7,686
Group 5	3,108	1,850	1,107	0,584	0,334	0,190	0,190	7,666
Grand Total	22,047	14,754	9,346	5,383	3,192	1,425	1,350	57,491

Net Volume/ha >40cm DBH by Diameter Class								
Sum of m ³ /ha	40	50	60	70	80	90	100+	Grand Total
Group 1	3,915	5,144	4,927	3,885	2,38	1,066	1,254	22,571
Group 2	10,98	11,173	11,582	9,579	8,204	4,588	7,248	63,454
Group 3	4,588	4,636	2,894	1,741	1,005	0,462	0,842	15,888
Group 4	4,729	4,062	2,6	1,802	1,428	0,642	0,688	15,948
Group 5	4,077	3,494	2,904	3,306	1,643	1,233	1,748	17,415
Grand Total	28,298	28,509	24,887	19,313	14,74	8,921	11,578	135,347



Conclusion

One of the benefits of this project is the increased knowledge of the forest structure in the WP as this is also of value to Iwokrama's other scientific activities such as providing accurate ground-based data for verifying remote-sensing images for the purpose of tracking changes in the forest through time, for understanding the hydrological regime of these areas and for understanding how forest-types and distributions affect bio-diversity.

A second phase of this project is contemplated which will extend the baseline data coverage to include all as yet unsampled forest types in both the SUA and the WP; and to estimate and analyze the opportunity cost of the foregone benefits of using the Preserve for commercial benefit.