Papua New Guinea

Permanent Forest Sample Plots

United Nations Framework Convention
12th Conference of the Parties
9 November, 2006

FOREST RESEARCH INSTITUTE
Papua New Guinea

Overview

- PNG Forests
- PNGFRI
- Procedures
- Locations
- Sample Results
- Future
- Relevance
- Summary

Papua New Guinea

PNG Forests

- PNG land area: **46 mil. ha – 70% forest cover – (32 mil. Ha.)**
- Diversity: **Various forest types – Coastal to Alpine.**
- Biodiversity: **Host to 7.5 % of world's plant biodiversity & considered floristically rich in the world. (15-20,000 higher plant spp), 2000 are trees & 400 are known economic use.**
- Key Role: **Forests support 80% population through subsistence.**

PNG Forest Research Inst.

Established: 1989 in Lae.

Mission: Provide the scientific basis for the management of the country's forest resources.

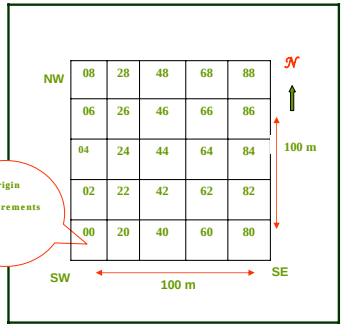
Research: Prime responsibility is to conduct research into all aspects of forest management. PNGFRI to establish and maintain the capacity to conduct research, undertake research, and interpret and communicate the research results to its clients.

Permanent Sample Plot

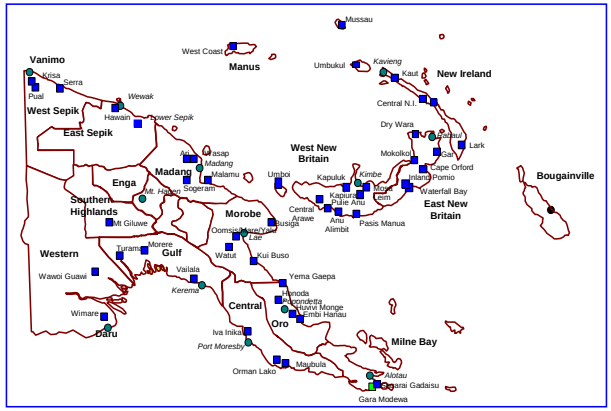
- **Objective:** ***"monitor growth & yield, forest dynamics, and recovery of the forests following commercial harvesting".***
- **ITTO:** **International Tropical Timber Organisation funded Research Project on the *growth and yield of tropical lowland rain forests of PNG commenced in 1992.***
- **National Coverage:** **135 plots now (13 control plots in pristine forests). Covers major forest types & widely distributed throughout the country.**
- **Data:** **Data compatible with International Standards. Manuals & computer database & a growth model have been developed.**

Establishment Procedures

- **Plot Design: 100m x 100m, 25 quadrants (20 m x 20m)**
- **Measurement: All plants > 10 cm dbh measured, dbh, height, crown (diameter, position, quality), tree location, spp identification, BA count & plot description (soils, topography, aspect, history).**
- **Tagging: Trees permanently tagged & numbered.**
- **Data Set: entered, stored & analyzed**
- **Monitoring: Biannual, 5 years intervals**



Plot Locations



Sample Results

Average Stand table of selected plots (Stems > 10 cm dbh/ha)

Plot Name	Density stems/ha	Species (#)	BA (m^2/ha)	Vol. (m^3ha)
Disturbed	Disturbed	Disturbed	Disturbed	Disturbed
GARAM01	436	77	22	121
Wc01 Manus	203	31	8	46
Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed
SAGAR03	411	58	33	227
WC05 Manus	465	50	31.5	211

Relevance Of PSP Data In Monitoring Forest Cover Change

A useful tool in aiding Forest Management.

- **Determination of cutting cycles**
- **Silvicultural treatment regimes.**
- **Determination of recruitment & mortality patterns of commercial tree spp.**
- **Bases for estimation carbon stock**
- **Classification of site productivity using indicator tree species**

Future

- **Continue with current plot management including establishment of new plots in sites not represented & in Pristine forests.**
- **Insert useful parameters necessary for estimating carbon stock (biomass measures) .**
- **PSPs will become the focal point in quantifying carbon stock in PNG.**

Key Messages

- **PNG PSPs were initiated prior to carbon storage and estimation.**
- **Confident of the database will serve various uses.**
- **Single reporting system**