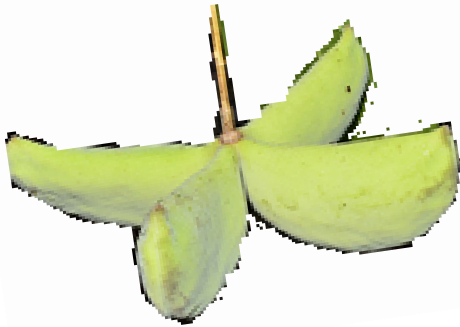


BOTANICAL SAMPLING METHODS IN NFI



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OUTLINE OF PRESENTATION

- ▶ 1 Introduction
- ▶ 2 Discussion (two types of botanical collections)
- ▶ 3 Procedure for tree species identification in NFI
- ▶ 4 Capacity development
- ▶ 5 Collaboration opportunities
- ▶ 6. Conclusion
- ▶ 7. Acknowledgement

INTRODUCTION

Botanical sampling is done in two different ways. One can be known as *general botanical collection* of plant species in any given area. This is done specifically to assess the **presence** of species in any given area.

The other way is *Ecological collections* to assess the density, diversity, structure, dominance, abundance etc..

Both samplings involve collection of plant samples and identifying or give botanical names to them. Botanical names are given in Latin and only botanist are the experts in Latin names.

Objective:

1. How botanical sampling or collection are done
2. Highlight PNGFA's capability in plant species identification during NFI

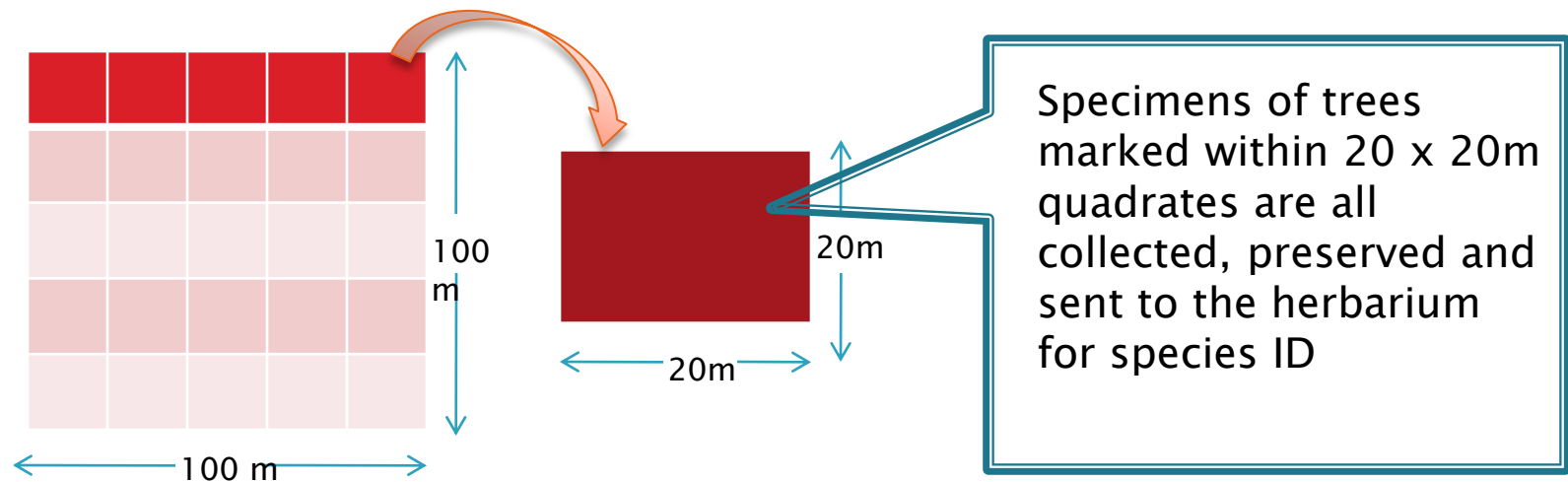
Discussion (two types of botanical samplings)

I. General Botanical collections

- ▶ The objective of this type of collection is to assess the presence of species in any given area.

II. Ecological collections

- ▶ Plant specimens collected in a defined or demarcated area (plots, quadrates and transects).

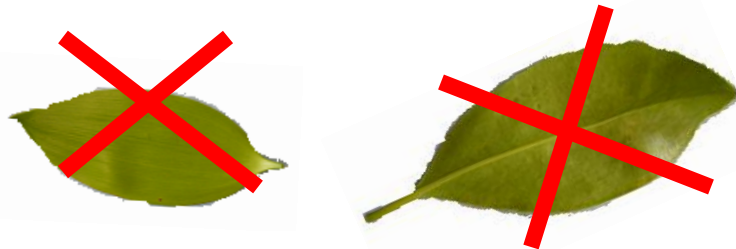


Botanical samples



- ▶ Specimens collected must be according to the Herbarium specifications. The specifications include specimens must be fertile (Flower / fruit present), the size of the specimen must fit into size of the daily news paper pages. When brought back to the herbarium and after processing the specimen should fit onto a herbarium sheet (43 x 28 cm).

BOTANICAL SAMPLES ARE NOT SINGLE LEAVES



Procedure for tree species identification

1. Common procedure

i. *Tree species spot ID:*

–Bark characters (outer/inner bark) combining with Leaves/ flower or fruit.

ii. *Commonly known tree species and other known species:*

– Full name (Family /Genus/ Species) will be given or at least genus and species can be given on the spot.

iii. *Lesser known or unknown species :*

Specimens will be collected, preserved and sent to the herbarium for confirmation by the botanists.



Tools and equipments : Binoculars, slingshots (locally made) , pruners ,bush knife and climbers

Procedure for tree species identification in NFI

- ▶ 2. Level of identification to be conducted in the field
- ▶ Current Lae Herbarium staff can identify 90 % of all tree species to a generic level and 90 – 95 % of all plant species to the family name.
- ▶ Identifications done in the field:
Any names given (Family /Genus /species) and recorded ,must later be confirmed by botanists in the Herbarium

Advice:

All plant species marked in the NFI plots must have vouchers and be sent the National Herbarium in Lae for confirmation by the botanists.

3. Capacity development

i. Reliable number of botanist per Institution

INSTITUTION	POSSIBLE NUMBER OF BOTANIST ON AVERAGE	REMARKS (ON ABILITY TO ID)
PNGFRI	4	95 – 100% Family 90 – 95 % Genera 60 – 70 % species
UNITECH	2	?
UPNG	2	?
NFA	1	?
NGO (IBR,WWF, WCS)	????	?
TOTAL	9	

3. Capacity development

ii. Further training ?

Further training is necessary to refresh the dendrology knowledge of the NFA foresters on:

- a. Known commercial species & Lesser known species
- b. Introduction to the lower plant species (other plant groups)
 - Palms , pandanus, ferns, zingers, bananas, vines etc.
- C. Plant collection and preservation techniques for herbarium specimens

3. Capacity development cont...

- ▶ Training manual outline

- ▶ PART A

- ▶ Introduction to tree species Identification techniques
- ▶ Introduction to basic terminology to plant species identifications
- ▶ Introduction to common tree species spot characters and unique features

- ▶ PART B

- ▶ Plant collection and preservation techniques for herbarium specimens

Field components include viewing and identification of live trees and lower plants species

Collaboration opportunities

i. Information on tree species project and identification aids

- Availability of PNG Tree species project (Tree species website: (<http://www.pngplants.org/PNGTrees>)).
- PNG plant data base (100,000 records available) (<http://www.pngplants.org>). – PNGPlant database
- Membership to JSTOR Global Plants website: <http://plants.jstor.org>
View type specimens
- *Literatures available*: Handbook of Flora of New Guinea (3 volumes), Manual of Legumes of New Guinea, Manual of Grasses of New Guinea, Manual of Weeds of New Guinea, Flora of Bismarck Archipelago, Palms of New Guinea book etc.

ii. Possibilities of collaboration to generate synergies

- Collaboration partners (NSW, Canberra, Kew, Leiden, Bishops Museum etc.)

CONCLUSION

- ▶ Training on dendrology refresher is a must since the number of qualified botanist is inadequate.
- ▶ Identification tools (books, leaflets, CDs, internet accessibility etc.) must be provided to assist botanist during NFI
- ▶ Watchout for common mistakes – giving different names to a same species encountered in different plots
- ▶ All species encountered in the NFI plots must be sampled, numbered in the field and sent to the National Herbarium in Lae for confirmation.



THANK YOU all.