

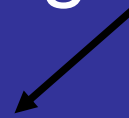
# Resource assessment methods for medicinal and aromatic plants: Designing sound inventories

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# Inventory

1. A *list* of items such as goods in stock
2. The *quantity* or stock of goods



Plants, product, commodity...

# Assessment

Evaluation, estimation; an estimate of worth, extent..

An evaluation to determine sustainability

## EXAMPLE

- *Inventory* tells us that the stocking of a MAP is 0.25 stems ha<sup>-1</sup>
- *Assessment* will say whether this is too much or little to support current levels of harvesting

In order to assess sustainable yields it is often contended that a sound inventory is essential

- Of a solid, substantial, or thorough nature
- Of advice, judgement, a course of action, etc.: in full accord with fact or reason, based on well-grounded principles; sensible, judicious; valid, correct.

# Therefore the *soundness* of an inventory depends upon a value system and judgement

Which system?

Statistics

Cultural

Who judges?

Peers

Opinion-leaders

Who cares?

Authorities

Communities

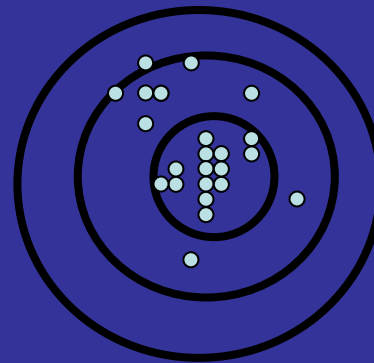
Does it make a difference?

Depends...

Depends...

# Statistical soundness

- Sampling
- Objective – rule based, independence
- Quantitative estimates
- Replicable
  
- Accuracy
- Precision



# Forest inventory

- a set of objective sampling methods designed to quantify the spatial distribution, composition and rates of change of forest parameters within specified levels of precision for the purpose of management
- the listing of data from such a survey

Are statistical methods always required ?

No

Whether you need them depends on:

Objectives

> Type and significance of decisions to be informed by the results

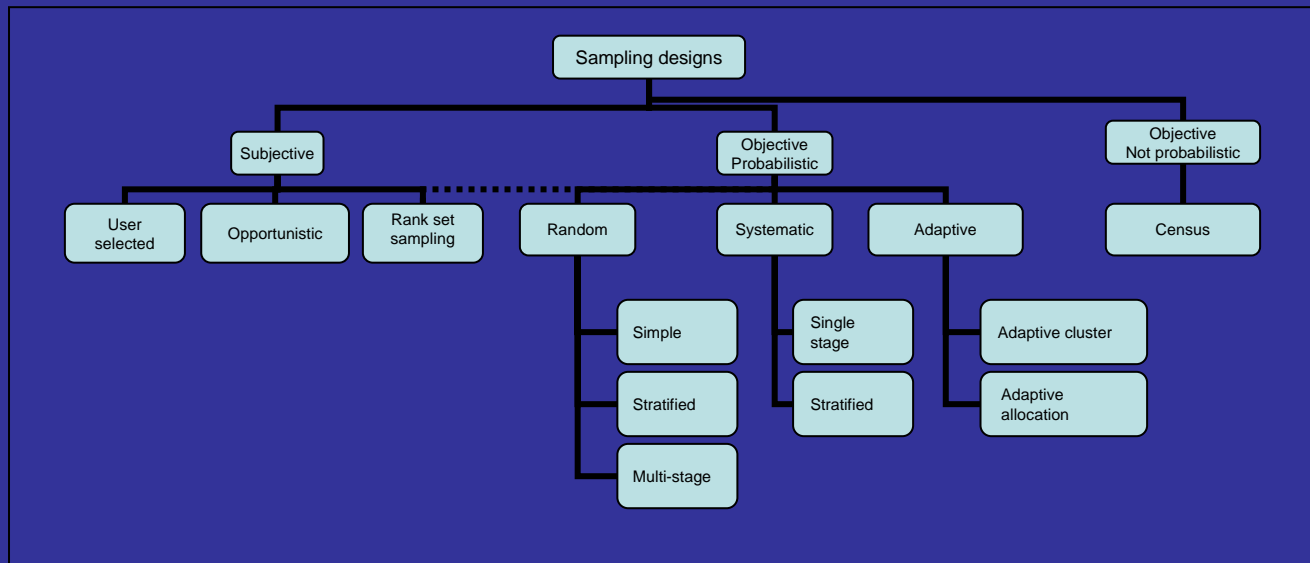
## Decision table for determining required level of rigour

Factor	Rigour required	
	Higher	Lower
Number of objectives	Many	Few
Type of objectives	Broad	Narrow
User group understanding	Critical	Not critical
Scientific defensibility	Yes	No
Political defensibility	Yes	No
Need for continuity i.e. data suitable for use in monitoring	Critical	Not critical

# What to do if statistical sampling *is* required?

A simple to use, cheap standard protocol applicable for all MAP !!

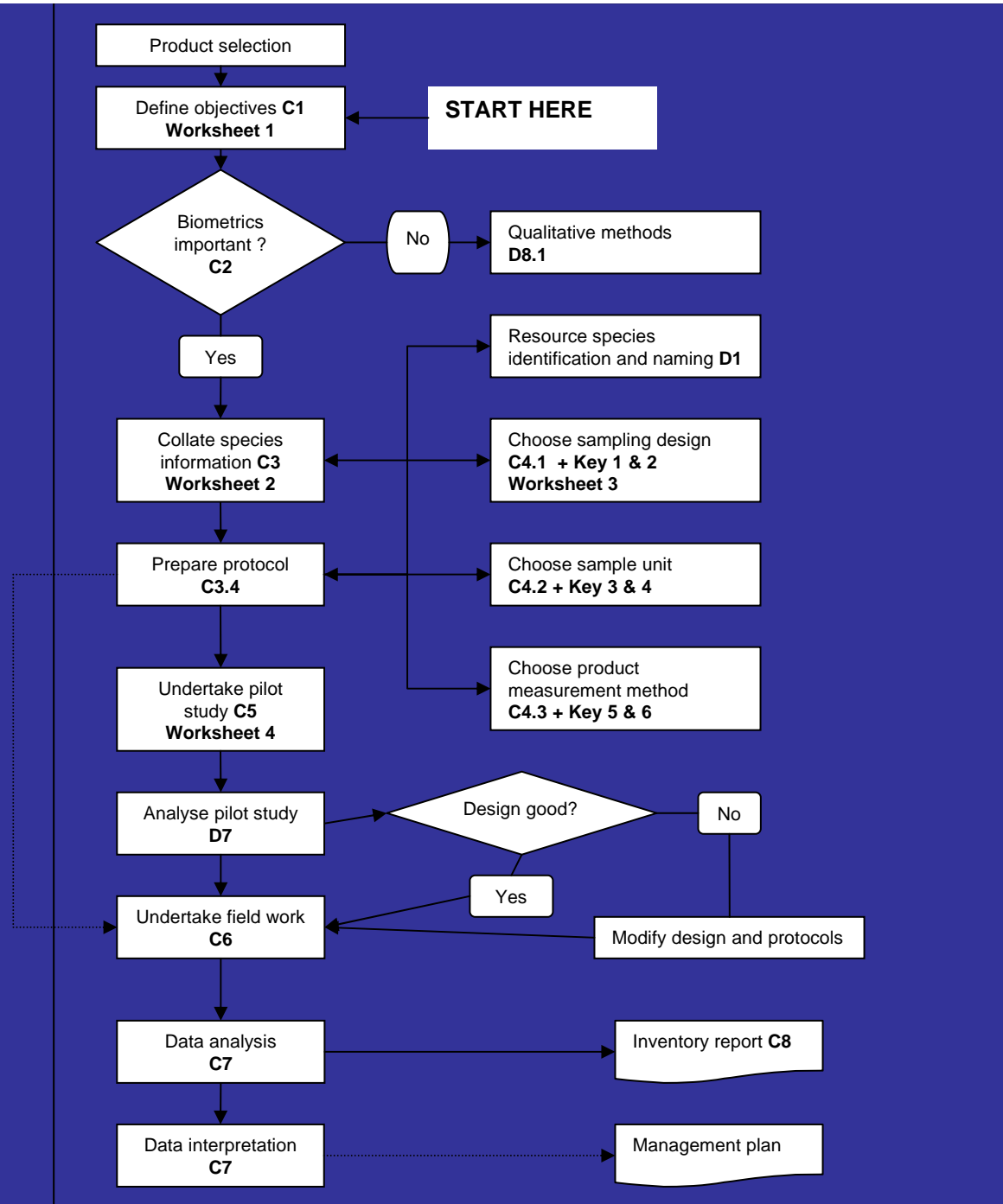
But for many species (especially rarer ones) this will give low precision...



# Tailoring protocols

- Sampling design requires consideration of population density and distribution
- Plot layout requires consideration of life-form and size of target species
- Measurements made need to consider the which part of the plant is harvested
- Estimation of stock requires the spatial extent of the species

# FAO NWFP Assessment Guidelines



# Systematic research for product groups

- Tree bark
- Tree & shrub roots
- Bulbs
- ....

# Developing new methods

- Streamlining
- Adaptive designs
- Rank set sampling
- ..... ?

# Issues for workshop

- Guidance for when statistical methods are required
- Research needs for MAP inventory