CASE STUDY: **HOODIA GORDONII**

By

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INTRODUCTION

- *Hoodia gordonii* (Apocynaceae, 14 species)
- Perennial succulent
- Finger-like stems branching at ground level
- Biological information, population trends and resource availability estimates lack
HOODIA GORDONII

- 15-20 year life span
- 3-6 years before flower
- Protracted flowering
- 250 seeds / follicle
- Weedy character
- Natural die-back events
HOODIA GORDONII

- Southern African distribution range
- Diverse habitats
- Patchy spatial distribution
- Role in ecosystem is unknown
- Appetite suppressant (P57)
TRADE

- Export dry material / extracts / seeds / seedlings (no live exports outside natural range)
- Cultivated & wild crafted material traded
- Wild crafted include dead material collected (52.4% dead)
- Export primarily within South Africa (UK, Spain)
- Illegal harvesting (15.7t)
- Decline in wild demand
NDF ASSESSMENTS

• Literature, anecdotal information (experts, industry, etc.), RAMR information

• RAMR
  – Demographic information via quadrant method
    • Health
  – Density information via line transect method
    • Quota

HOODIA GORDONII

GUIDELINES FOR HARVESTING
100 m

Hoodia populations (clusters) on the farm

Farm boundary

Demographic information
<table>
<thead>
<tr>
<th>Rating: 0 (healthy plant)</th>
<th>Rating: 2 (infested plant)</th>
<th>Rating: 3 (dying plant)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Healthy Plant" /></td>
<td><img src="image2" alt="Infested Plant" /></td>
<td><img src="image3" alt="Dying Plant" /></td>
</tr>
</tbody>
</table>

- **Visual health rating**
- **L : D ratio**
- **Adult : Juvenile/seedling**
Density information

Hoodia populations on the farm

250 m long line transects

Farm boundary
NDF guidelines

- Landowner harvest own property
- Property having excess of 2500 plants of optimum size, good health
- Size >40cm diameter
- Harvest every 2\textsuperscript{nd} to 4\textsuperscript{th} plant (5cm above ground level)
- 25% of canopy (fingers) / 20% of seed harvest
- Southern side (down wind)
NDF guidelines

• Disinfect cutting blade after each plant (3% chlorine, Jik)
• Lime sulphur powder on scars
• Harvest when not in flower (April – August, summer rainfall areas)
• Record wet mass vs dry mass
NDF CRITERIA / PARAMETERS

- Applications evaluated individually
- Surface area surveyed in relation to farm size / clusters occurrence on property (1%)
- Population health
  - D:L, infections, seedling: adult, associated environmental threats, health ratings (guide)
NDF CRITERIA / PARAMETERS

- Extrapolate population size (plants/ha for quota)
  - 4 x 250m / 1km line transect (optimum potential resource)
  - Line transect vs plot data (should be comparative)
- Harvesting history
  - No harvesting same site / rested / re-evaluation
- Harvesting method prescribed
- Precautionary principle
  - Quality of data
DATA QUANTITY / QUALITY

• Data = site specific, extrapolated
• Granted for 1.34% of potential distribution area in NC (SA), **not** cluster distribution
• Non-destructive harvesting
• **Concern**: harvesting concentrated in S ranges (alter distribution pattern)
DATA QUANTITY / QUALITY

• Guideline booklets – constant methods, but surveyors implemented differently
• **Concern**: parallel line transect method overestimation
• RAMR enable basic resource assessment
• Provincial resource lack, thus no comparison can be made
• Regeneration and survival info lack, limiting predictive impacts of harvests – infer protracted seed production would ensure resettlement
DATA QUANTITY / QUALITY

• Tolerance to harvesting unknown - inferred as it is browsed
• Conversion estimates (wet:dry ratio etc.) not quantified and scientifically verified
• 2002 - March 2008 harvested wild material relates to ca. 0.25 mil. plants
  – conversions lack statistical analysis (variation)
KEY LESSONS

• A review on species by person who attend to NDF
• RAMR & harvesting facilitated obtainment of information
• RAMR information should be augmented by research and provincial (global) resource assessments
• Client cooperation is vital
• Spatial analysis of area being harvested vs distribution might be useful
KEY LESSONS

• Training videos if clients need to do surveys / consultant

• Initially thought wild harvesting to be an interim arrangement (thereafter Moratorium) – impact on community applications?

• Authority cooperation in permit monitoring

• Checklists / guidelines to calculate quotas could address personnel turnover

• No management on internet trade
THANK YOU