Traditional Medicine and Plant biodiversity; a Tanzanian perspective

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Presentation outline

- Introduction/History of the Traditional Medicine Unit
- Plant diversity in Tanzania
- Research of Traditional Medicine at ITM
- Potential areas for collaboration with ITM
- Conclusion/recommendation
Established in 1974 as a Research Unit

In 1991, the TM Research Unit was upgraded into an ITM with the mandate to do research in TM, treatment and practices.

In 2002, the Traditional and Alternative Medicine Act of Parliament No. 23 was passed.

In 2005, Traditional and Alternative Health Practice Council was established.

The Act gave ITM the mandate to do research in practice and treatment in the country.
Plant diversity in Tanzania

- Tanzanian flora is within the Tropical East African Flora which comprises of about 21,650 vascular plant species

- Tanzania alone have
  - 10,650 higher plant species

- Estimated that about 2,500 plant species are indigenous

- More than 1200 plant species are endemic
Plant diversity (cont.)

- Six Major Ecological Zones of Tanzania (according to Stuart et al., 1990)
  - Lake Victoria Mosaic
  - Coastal Forest and Thickets
  - Afromontane Forest
  - Acacia-Savanna and Grasslands
  - Acacia-Commiphora Thornbush
  - Miombo forests/woodlands
## Plant diversity (cont,)

<table>
<thead>
<tr>
<th>Ecological zone</th>
<th>Quality</th>
<th>Covered areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Lake Victoria Mosaic</td>
<td>Rich in plant species, poor in endemism</td>
<td>Kagera, Mara, Mwanza</td>
</tr>
<tr>
<td>2 Coastal Forest and Thickets</td>
<td>Botanically rich, 600 endemic species</td>
<td>Coastal regions and Zanzibar</td>
</tr>
<tr>
<td>3 Afromontane Forest</td>
<td>Rich in flora and endemic plant sp.</td>
<td>Eastern arc Mts (hot spots)</td>
</tr>
<tr>
<td>4 Acacia-Savanna and Grasslands</td>
<td>Moderately rich, 2500 plant species</td>
<td>Central and northern dry lowlands,</td>
</tr>
<tr>
<td>5 Acacia-Commiphora Thornbush</td>
<td>Moderately rich, 2500 plant species</td>
<td>National parks</td>
</tr>
<tr>
<td>6 Miombo forests/woodlands</td>
<td>Very rich in flora, 8500 plant sp.</td>
<td>West to Southern highlands</td>
</tr>
</tbody>
</table>
Plant diversity (cont.)

- Every zone has characteristic flora/plants
- Uniqueness in terms of medicinal value
The Institute of Traditional Medicine

- Three departments
  - Natural Products Developments and Formulations
  - Biological testing and Preclinical studies
  - Medical Botany, Plant Breeding and Agronomy
Research activities of Traditional Medicine at ITM

During its existence (34 yrs), ITM has been able to put in place:

- A data bank of about 2,600 plant species through ethnomedical survey
- Big capacity for phytochemical analysis
- Basic capacity for pharmacological evaluation of medicinal plants
- Capacity for assessing toxicity of herbal medicines
Research activities of TM at ITM (cont.)

- Have initiated the Unit for standardization and formulation of herbal medicines from established medicinal plants
- Started Experimental farms for cultivation of Medicinal Plants
- Bioassay set up for discovery of antimalarial, larvicidal, anticonvulsants, antimicrobials, and antidiabetic compounds
Potential areas for collaboration with ITM

1. Cultivation of Medicinal Plants
   - The Institute has experimental farms at Kibaha, Lushoto, Rua Maua etc.
   - Plants cultivated, among others include:
     - *Moringa oleifera*
     - *Hibiscus sabdariffa*
     - *Artemisia annua*
     - *Aloe vera*
     - *Plantago lanceolata*, etc.
   - Collaboration in cultivation of MAP
Promoting Cultivation of Medicinal plants (Cont.)

*Moringa oleifera* at Kibaha
Promoting Cultivation of Medicinal plants (Cont.)

*Hibiscus sabdariffa* (rosella)
Potential areas for collaboration with ITM (Cont.)

2. Products development at ITM
   - Herbal products are made from established medicinal plants
   - More >10 different products/herbal formulations are in place at ITM
Products development at ITM (cont.)

Morizela Juice

Patent number: TZ/P/07/00150

- Diabetes
- Nutritional supplement
Products development at ITM (cont.)

Ravo cream

Patent number: TZ/ P/ 07/ 00151

. Skin fungal infections
. Allergic conditions
Products development at ITM (cont.)

- Prucan capsules
  - Benin Prostate Hypertrophy (BPH)
  - Source plant is now threatened for extinction

Prucan capsules

(Independently passed the clinical trial at MNH)
Products development at ITM (cont.)

Pumu Syrup

Asthmatic condition
Products development at ITM (cont.)

**BOOSTEREMS**

Immune boosters for HIV patients

Comparable to RVA’s
Potential areas for collaboration with ITM (Cont.)

3. Capacity building
   - Training programmes leading to;
     - MSc (in Traditional Medicines development), [starting in Sept 2009]
     - MSc (in Phytomedicine) by thesis [Still under review]
   - Activities for CEPD/consultancies
Conclusion/recommendations

- Conservation of the threatened plant species of medicinal importance
- Isolation and identifying active ingredients in selected medicinal plants
- Commercialization of the patented/non-patented products
Acknowledgements

- ICRAF Headquarters in Nairobi
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Thank you for your time.
(Asanteni sana)