

# Creating a national crop wild relative Checklist

**N. Maxted, J. Magos Brehm, S. Kell +  
Colleagues**

**University of Birmingham, UK**

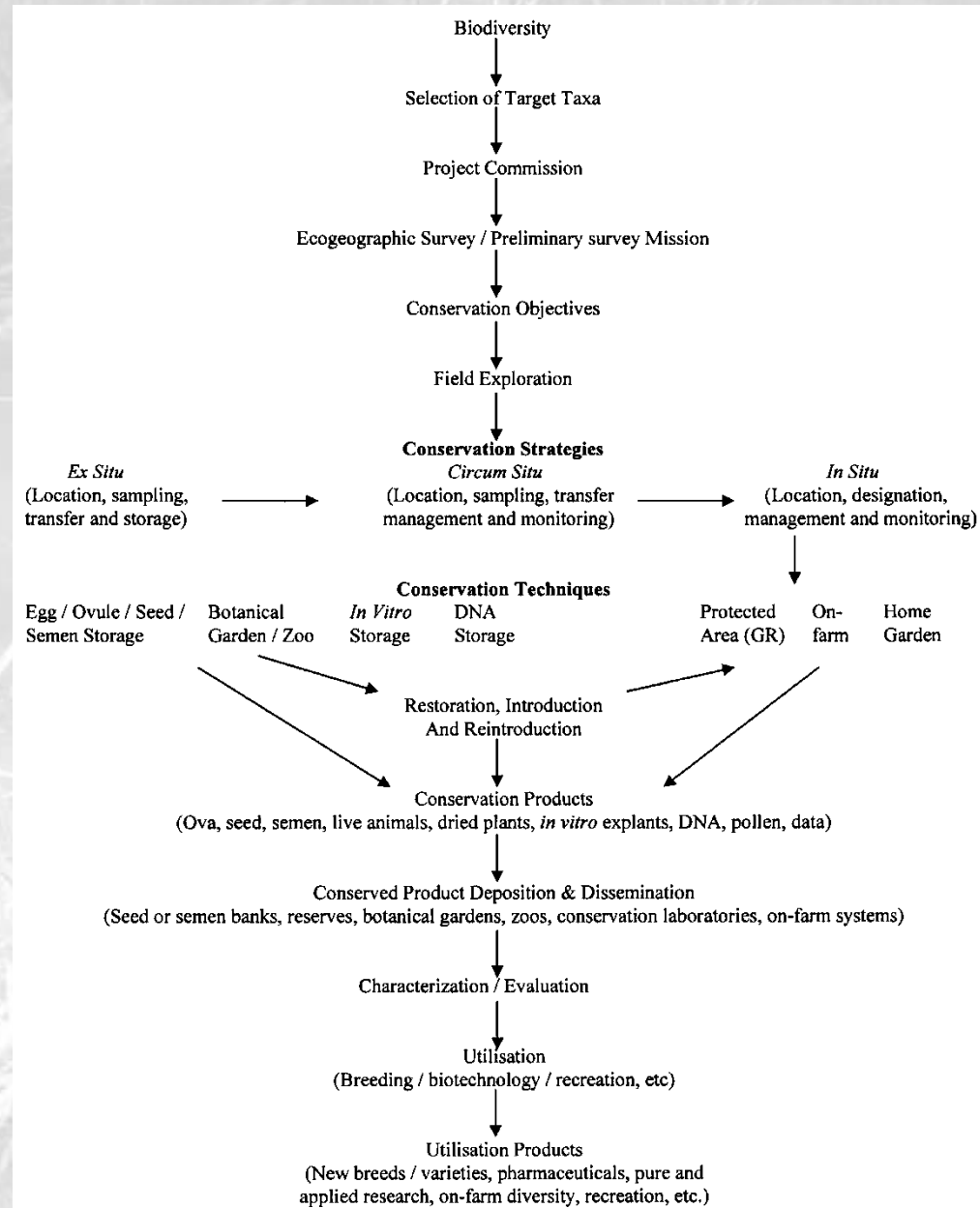
**SADC Crop Wild Relatives Regional training workshop**

*'In situ* conservation of CWR including diversity assessment techniques'

Le Meridien Ile Maurice, Mauritius 10<sup>th</sup> – 13<sup>th</sup> November 2014

# Model of Genetic Conservation

- Model needs to be easy to apply, applicable in tropics and temperate world, and appropriate for fauna and flora



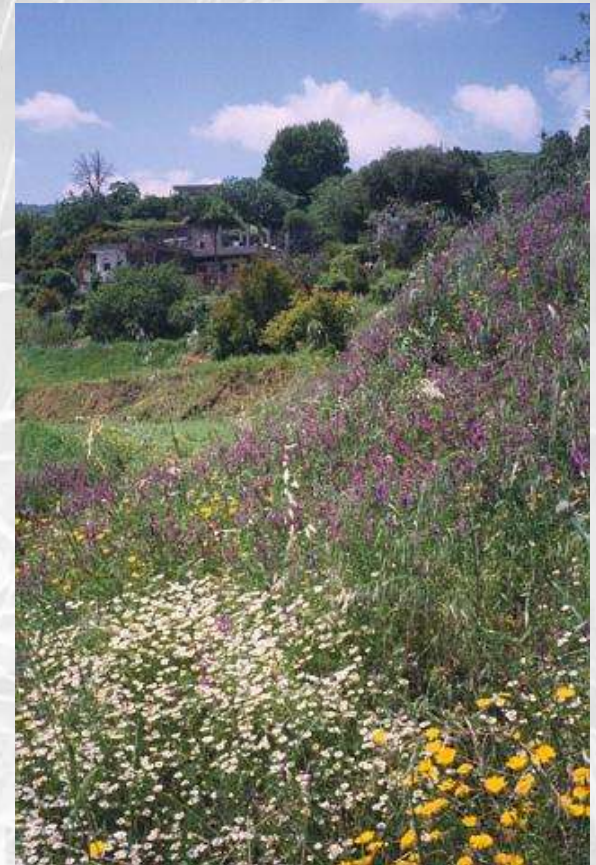
# Approaches to CWR *in situ* networks

- Numerous diverse approaches that result in CWR conserved in (and outside) genetic reserves
- Three basic approaches:
  - Individual
  - National
  - Global
- Each concludes with CWR diversity being **actively conserved *in situ*** in genetic reserves or informal conservation sites



# National CWR Strategies for a SADC country

- CWR are a unique national resource – SADC countries have unique CWR resources
- CWR are threatened
- Legislative requirement to conserve
- CWR by their nature require an integrated *in situ* / *ex situ* approach, best implemented via a National CWR Strategy
- No single method of generation



# National CWR Strategy generation



- Focus on national CWR flora, objective to maximise taxonomic and genetic diversity of the country's CWR conserved
- National *in situ / ex situ* priorities
- Inside and outside of national PA network
- Genetic reserves established within existing national PA at priority sites

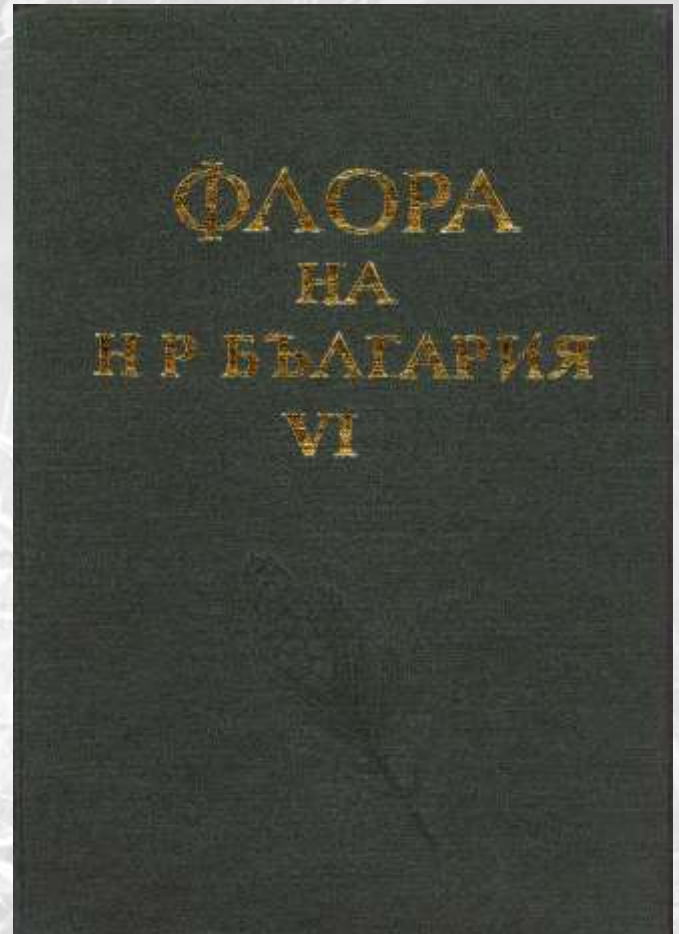
# Identification of important areas for CWR and conservation gaps: methodology



1. Generation of CWR Checklist
2. Selection of priority crop gene pools
3. Ecogeographic and gap analysis to select target sites
4. Recommendations for *in situ* / *ex situ* conservation action
5. Implement *in situ* / *ex situ* conservation action in and outside of existing PA

# 1. National / Regional Botanical Diversity

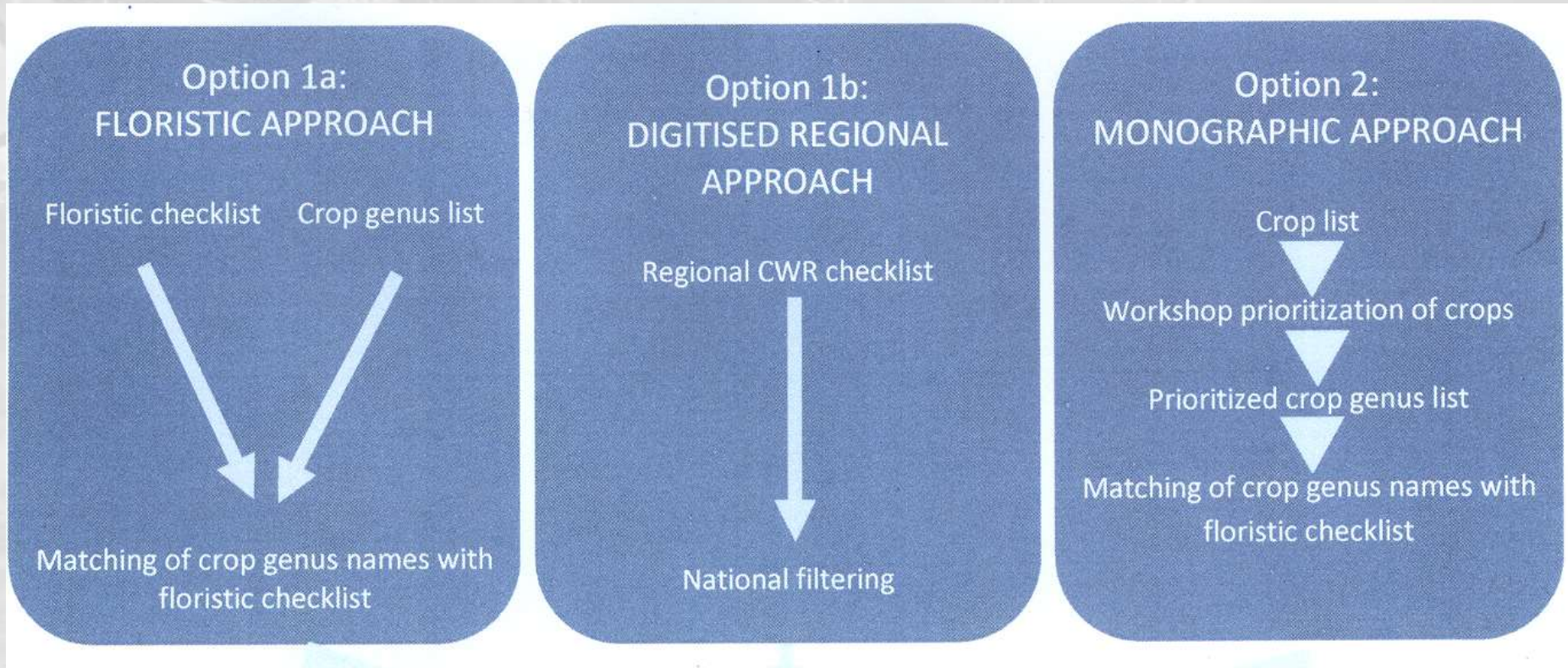
- Floristic checklists
  - Listed in Davis *et al.* (1986) and Frodin (2001)
  - Neighbouring country
  - Broader region (e.g **Flora Zambesiaca**)
- Taxonomic checklist of country taxa
  - For the UK – 2,300 species
  - For SADC countries – ?????? species



# 1. National CWR checklist

'Floristic route' = Flora to crops to CWR inventory (semi-automated)

'Monographic route' = Crops to flora to CWR inventory (via workshop)

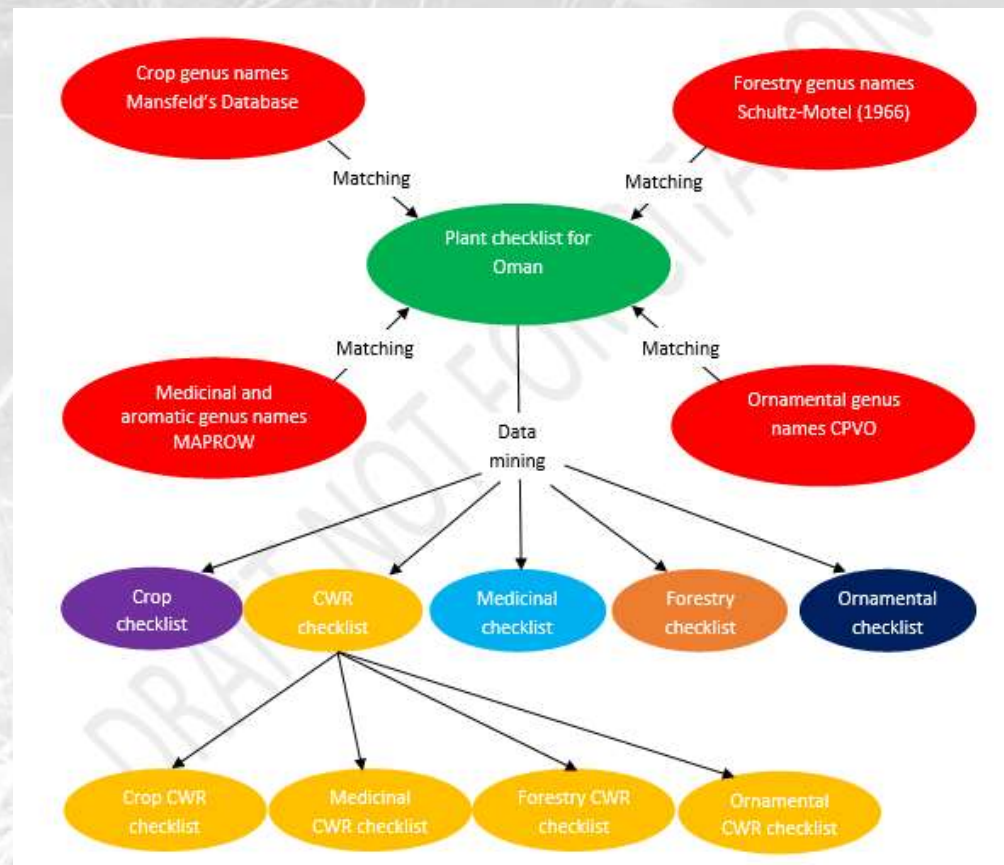


Is the digitised Flora of SADC countries available?



# 1. National CWR checklist

- PGR Forum methodology (Kell *et al.*, 1995)
  - National floristic / taxonomic checklist
  - National crop checklist
  - Matching of genera
  - Extraction (data mining) of CWR taxa
- Uses generic definition of CWR



## 2. Selection of priority crop gene pools

- Broad CWR definition with generic limit = relative large number of taxa (81% of Flora)
- Limited resources so need to focus on priority CWRs
  - current conservation status, socio-economic use, threat of genetic erosion, genetic distinctiveness, ecogeographic distribution, biological importance, cultural importance, cost, sustainability, legislation, ethical and aesthetic considerations, and priorities of the conservation agency
  - **economic value** (Mansfeld use categories)
  - **relative threat assessment** (IUCN Red List Criteria)

