

# Workshop 2 Report

## Research issues in Preservation and Management of Biodiversity in Land Ecosystems

**Chairman: B. REYNAUD CIRAD**

**Deputy chairmans: D. STRASBERG UR**

**S. RIBES MHN Réunion et J. P. CHOISIS INRA**

**Key note Speakers : Ph. FELDMANN, M. ROUGET,  
J. SCOTT, O. PRUVOST, L.-M. RABOIN**

26/11/2003

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## At the global scale

- **Only 2M species described among an estimated 10 to 30 M**
- **Rain forests represent more than half of the living species**
- **Deforestation rate 10 M ha/yr to clear areas mostly for agriculture**
- **Acceleration of biodiversity loss with consequences at the ecosystem level**



J.M. Sarauho Cirad



## At the global scale

- **800 M people suffer from malnutrition**
- **The global population will increase by 3 Billion by 2050**
- **Agricultural production must increase especially in developing countries**



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## General context

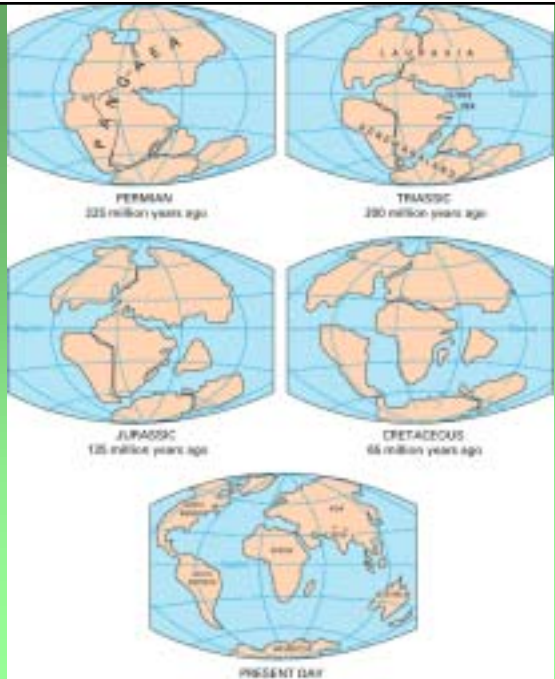
- **Biodiversity conservation,**
- **the fight against poverty**
- **Intensification of agriculture are closely linked.**



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# Regional approach

- **Commun origin : Gondwanaland**
- **Recent Human migrations**
- **Connected biogeographic areas with small islands and large continental countries**



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# Regional approach

## Richness of Indian Ocean Biodiversity



**6 biodiversity hotspots out of 25 recorded in the world (Meyer et al, 2000)**

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# Regional approach

- **More than 25% of added value in GDP of major countries comes from agriculture**
- **Rural populations in these countries represent more than 50% of the total population**
- **Crops (rice, sugar cane, vanilla...) and cattle (zebu) of regional interest**
- **Common pests and diseases**

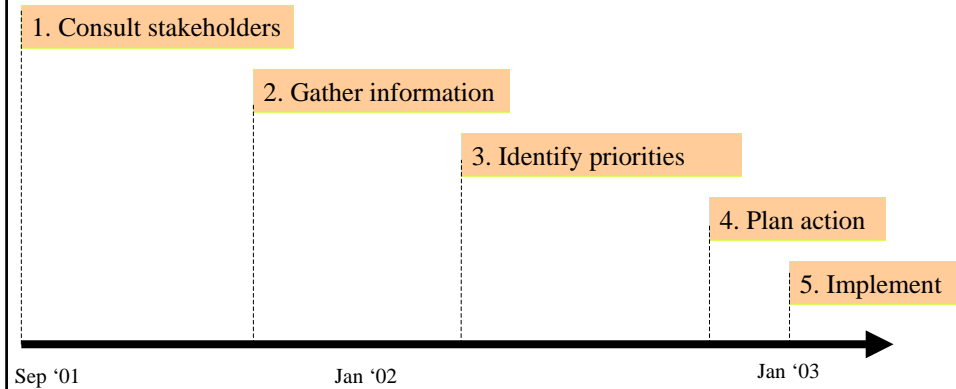
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## Conservation planning in the Indian Ocean Region Example of implementation of collaboration between 2 countries of Indian Ocean



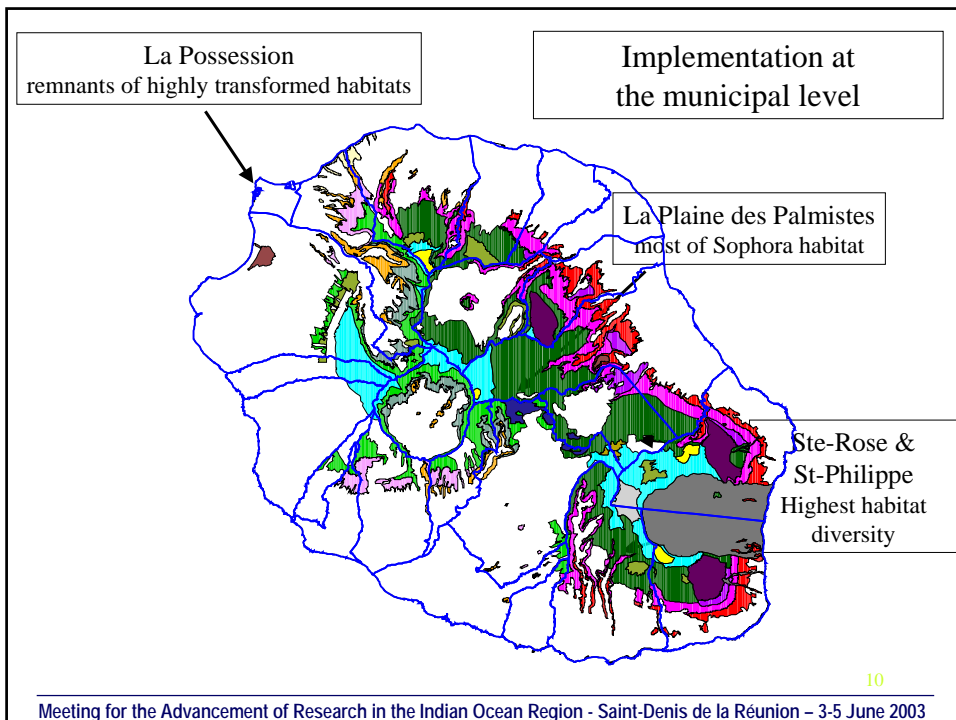
# Framework for conservation planning

E.g. the Succulent Karoo Ecosystem Program



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# Weed threats to biodiversity

Biological invaders, strategies,  
solutions and Indian Ocean countries



John K. Scott  
CSIRO Entomology  
Australia

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## Common themes – invasive spp.

- **National audits/stocktake the initial step.**
- **Establish objectives, priorities/strategies (10 yr plans).**
- **Act now to reduce threat to biodiversity (eg weed risk assessment).**
- **Research must show clearly the impact and value of control of invasive species (ecosystem services).**
- **Communication and engagement of the public (political support).**

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## Towards a more sustainable plant protection in the Indian Ocean region: a need for more science

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## 2006: plant protection on a regional basis

- **Defining a list of major threats for regional agricultural systems**
  - Based on commercial exchanges
  - Emerging pathogens
  - Pathogens for which control is difficult to achieve
  - Harmful pathogens of perennial hosts...
- **Improving pest risk analyses**
  - Efficient diagnostic techniques
  - Biology and epidemiology of pathogens
  - Molecular epidemio-monitoring

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# Research on Plant genome

## Biodiversity evaluation of genetic resources

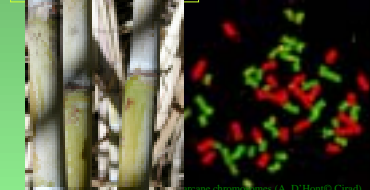
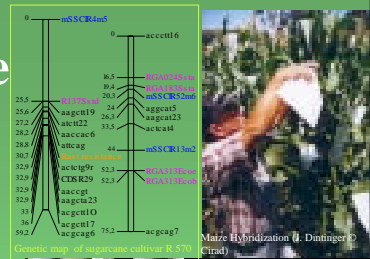
⇒ Management and conservation of genetic resources

⇒ Valorisation of genetic resources

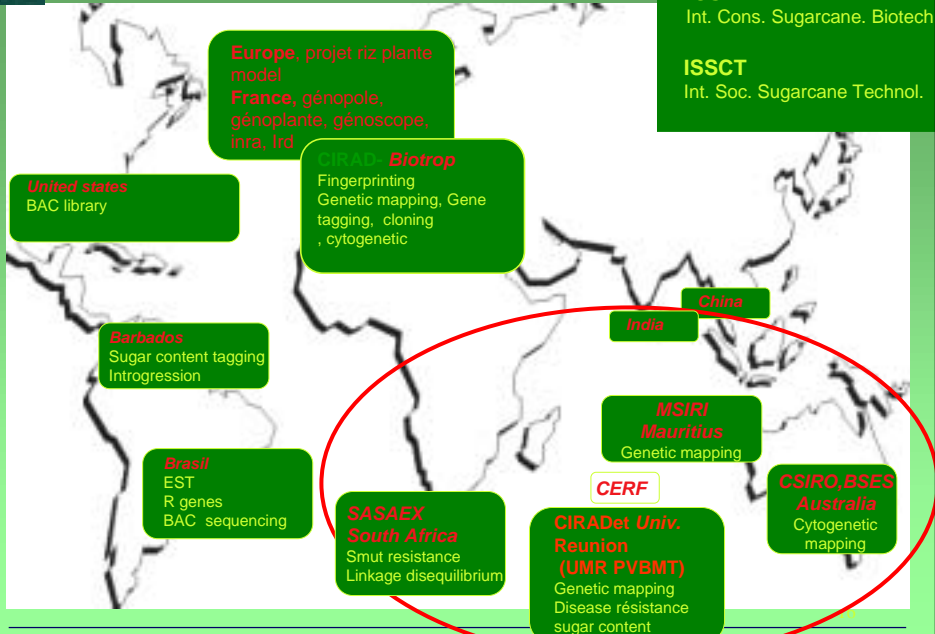
## Plant breeding

⇒ New methods (MAS, GMOs...)

⇒ Plant variety protection (UPOV)



## Example of the collaborative network of CIRAD sugarcane genome analysis project





## Discussion

- **More than 80 persons**
- **50 oral inputs**
- **20 written proposals**

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## Priority issues

- **Increasing knowledge of land biodiversity (multilevel approach)**
- **Understanding changes in tropical ecosystems**
- **Developing methods for sustainable agrosystem management and forest landscape restoration**
- **Promoting biotechnologies for major crops and new speculations**
- **Integrating geographical, historical and social dimensions**

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## Current situation

- **Biodiversity issues are important for the future of humans in IO Region**
- **Lack of accessibility of biodiversity information**
  - data,
  - competences,
  - tools
  - priorities
  - regulations

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## Short term proposals

- **Assesment on Indian Ocean biodiversity**
  - Species and Ecosystems
  - Human interactions
- **Network implementation (data bases, GIS, tools, skills and expertises) and reinforcement**
  - I. e. red lists, invasive species, biosafety,...

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# Long term proposals

- **Education, information and communication**
  - Technical training on biodiversity
  - Co-supervision of University degree
  - Decision makers information
- **Biodiversity monitoring**
  - Geographic information resources center on human-ecosystems interactions
  - Network of permanent biodiversity monitoring stations
- **Biological resources management and sustainable use**
  - *In situ* and *ex situ* regional conservatories
  - Genetic consortium for species of regional interest

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Now !

- **Invasive species  
COI strategy  
meeting: oct 2003**
- **Biodiversity  
Workshop to  
define precise  
common research  
objectives**
- **Use of possibilities  
offered by E.C. for:**
  - exchange of  
scientists
  - Network ERA-net  
(management and  
use of tropical  
biodiversity)

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Thank you



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