



Bio-Protection



TROPICAL BIOLOGY ASSOCIATION

The threats of alien plants to native biodiversity in Tanzania

Darwin Project (13-033)
'Combating Invasive Alien Plants Threatening the East Usambara Mountains in Tanzania'

2005-2008



Project Background

- **Alien:** A species that is not native to a country, region or habitat.
- **Invasive:** A species whose local abundance and/or geographic distribution is increasing, often in areas where previously absent.
- Compared to other threats to biodiversity, invasive introduced species rank **second** only to habitat destruction

Background....

- **International obligations**

“each Contracting Party shall, as far as possible and appropriate, prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species”

Convention on Biological Diversity (1992)

- **As a signatory to the Biodiversity Convention, Tanzania has a commitment “to strictly control the introduction of non-indigenous species”.**

Background....

- **The extent of invasions and their environmental consequences have not been systematically quantified in Tanzania**
- East Usambara mountains
- one of 25 global biodiversity hotspots (high endemism and diversity of flora and fauna)
- Tanzania institutions:
 - monitor & manage IAPs
 - Awareness (conservation managers)



Activities 2005-2008

Training

- ▶ 3 training workshops
- ▶ 20 trainees & 2 MSc's
- ▶ 9 institutions

Research

- ▶ 2 MSc theses
- ▶ 1 PhD (additional funds)
- ▶ 9 follow-up projects

Network

- ▶ stakeholder workshop
- ▶ forging links nationally and Internationally



1. Training

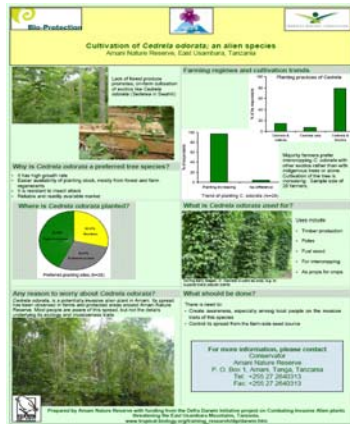
2006 workshop: ecology of invasive plants and monitoring methods

- **15 participants**
- **9 Institutions**
 - Forestry and Beekeeping Division (FBD) - Amani Nature Reserve
 - Plant Health Services, Ministry of Agriculture
 - Sokoine University of Agriculture (SUA)
 - Tanzania Forest Conservation Group (TFCG)
 - Tanzania Forestry Research Institute (TAFORI)
 - University of Dar es Salaam
 - Wildlife Conservation Society of Tanzania (WCST)
 - Tanzania Wildlife Research Institute
 - College of African Wildlife Management (MWEKA)
 - Aberdeen University
 - Tropical Biology Association, UK and Kenya
 - Centre for Ecology & Hydrology, UK
- **discussion forum on status of knowledge and action on invasives in Tanzania**



Follow-up projects: - Awareness raising (Posters)

1. Cultivation of *Cedrela odorata* - Amani Nature Reserve



2. What are invasive species (Swahili) - University of Dar es salaam



2007 Workshop: Invasion Risk Assessment

- 14 participants
- 8 Institutions
- Forestry and Beekeeping Division (FBD) – ANR
- Sokoine University of Agriculture (SUA)
- Tanzania Forestry Research Institute (TAFORI)
- University of Dar es Salaam
- Wildlife Conservation Society of Tanzania (WCST)
- College of African Wildlife Management (MWEKA)
- Tanzania Wildlife Research Institute
- Tanzania National Parks



Plant Health Services, Ministry of Agriculture
Aberdeen University
Tropical Biology Association, UK and Kenya
Centre for Ecology & Hydrology, UK
Protection Technologies, Lincoln NZ



Follow-up projects

1. Spread of *cedrele odorata* in ANR-Studies of distribution and population structure

Institution: - ANR

2. *Cedrele odorata* invasion in the Uluguru Mountains

Institutions : - TAFORI

- SUA

- UDSM

3. Risk Assessments of alien plants in Ngorongoro Conservation Area

Institutions : - TAWIRI

- WCST

- MWEKA

4. Inventories of invasive species at Saadani National Park

Institution : TANAPA



2008 workshop: towards the management of invasive plants



- **11 participants**
- **8 Institutions**
- Forestry and Beekeeping Division
 - ANR
 - Tanga Catchment Forestry
- Sokoine University of Agriculture
- Tanzania Forestry Research Institute
- University of Dar es Salaam
- Wildlife Conservation Society
- Tanzania National Parks
- Aberdeen University

❖ background concepts in weed management

❖ guidance in control techniques



Follow-up projects....on going

1. Management and control of *Azadirachta indica* in Saadani National Park, Tanzania.

Institutions:

- Saadani National Park
- Sokoine University (SUA)



....on going



2. Management and control options for *Cedrele odorata*, a potential invasive woody species in Kimboza Forest Reserve, Morogoro, Tanzania.

Institution:

- TAFORI
- Sokoine University (SUA)
- Regional Catchment Office



2. Research: MSc projects

1. The role of disturbance and fragmentation in the invasion of *Castilla elastica* in Amani Nature Reserve.

John Richard - TAFORI



2. The abundance and regeneration potential of *Cordia alliodora* in Amani Nature Reserve.

Ezekiel Edward - SUA



Research: PhD project

3. What determines species invasiveness? Testing traits with tropical trees.

Wayne Dawson - UK



Final workshop 2008

The growing threat of alien plants in Tanzania: Lessons from the Eastern Arc and beyond



- Presenting *results to managers
and decision makers*



Participating institutions

❖ **30 participants from 13 institutions, 4 with apologies:**

- Community Conservation Films Project
- Division of Environment, VP's Office, TZ
- Eastern Arc Mountains Conservation Endowment Fund
- Forestry and Beekeeping Division (FBD)
 - Amani Nature Reserve
 - Tanga Catchment Forestry
- Plant Health Services, Ministry of Agriculture
- Sokoine University of Agriculture (SUA)

Participating institutions....

- Tanzania Forest Conservation Group
- Tanzania Forestry Research Institute
- Tanzania National Parks
- University of Dar es Salaam
- Wildlife Conservation Society of Tanzania
- World Wide Fund for Nature – Tanzania
- Aberdeen University
- National Centre for Advanced Bio-Protection Technologies, University of Lincoln New Zealand
- Tropical Biology Association, UK and Kenya

3. Project legacy



1. **NET WORK** - trained conservation managers
 - Awareness (management plans)
 - Eastern Arc Mountains Strategy

> 12 institutions
2. **MSc (2) & 1 PhD Theses and Publications**
3. **Website (database of Usambara alien wood plants)**

www.tropical-biology.org/training_research/dip/darwin.htm





USAMBARA INVASIVE PLANTS Species Descriptions

The following list is an output from the Darwin Initiative Project "Combating Invasive Alien Plants Threatening the East Usambara Mountains, Tanzania". It contains links to descriptions of non-native plant species found in the Usambaras. If you have any additional information on any of the species listed or would like to suggest additional plant species not listed below, please [contact us](#).

	Species (scientific name)	Family	Common name (English)	Life form
Darwin Initiative Project	<i>Acer oblongum</i>	Aceraceae	Flying moth maple	Tree
	<i>Aiphanes horrida</i>	Arecaceae	Coyure palm	Palm
East Usambaras	<i>Albizia chinensis</i>	Fabaceae	Chinese albizia	Tree
	<i>Areca catechu</i>	Arecaceae	Betel nut palm	Palm
Amani Nature Reserve	<i>Arenga pinnata</i>	Arecaceae	Sugar palm	Palm
Participants	<i>Artocarpus heterophyllus</i>	Moraceae	Jackfruit	Tree
	<i>Bambusa arundinacea</i>	Poaceae	Thorny bamboo	Bamboo
Research	<i>Brugmansia suaveolens</i>	Solanaceae	Angel's trumpet	Herb/sub-shrub
Training				




Project legacy...

4. Good partnership:

- ❖ UK partners (TBA and CEH) &
- ❖ Tz partners (ANR, SUA and FBD)

➤ **Collaborative activities in Tz:**

- i.e. - the Ngorongoro risk assessment
- the Kimboza project and
- Saadani National Park .etc







Acknowledgement

- Darwin initiative –Funding



- Dr. Rosie Trevelyan - Director TBA – logistics



- Prof. Philip E. Hulme – Key Resource Person



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Thank you for listening

