

Restoration Planning and Management of Cultural Landscapes in Tengger Highland, East Java: The experimental/ lesson learned

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Cultural landscapes of east java

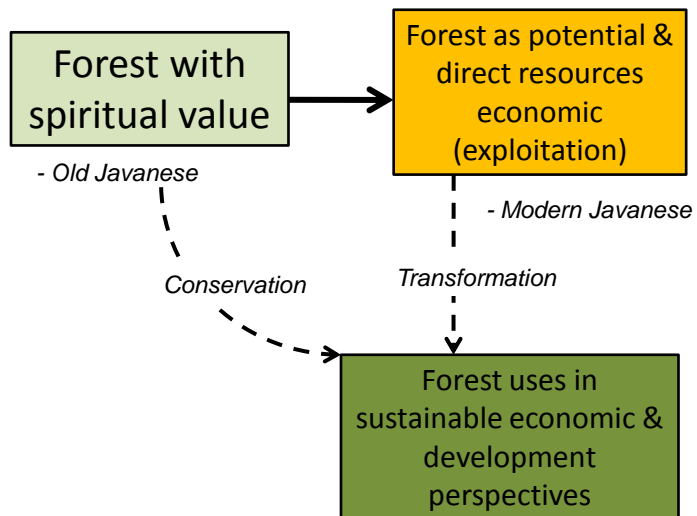
Cultural landscapes represent relationship and result of “human culture and environmental

Cultural landscapes represent:

- Human adaptation
- sustainable uses of environments
- Future of human in biosphere



FOREST: A Javanese perspectives



EAST JAVA Cultural Landscapes

Problems:

- Forest fire
- Intensive agriculture lead to landslide, lake's eutrophication, lake's sedimentation
- Invasive plants species
- Rapid population growth in limited space
- Modernization that changes traditional wisdom



Bromo - Tengger – Semeru Cultural landscapes

- Rich biodiversity
- Home of ancient/old Javanese (The Tengger Community) with its traditions
- Present amazing geological phenomena (i.e. active volcanoes, sharpest steepest agriculture, highland lakes)

Introduction

Bromo Tengger Semeru NP is the famous landscape in the world with its wide sand sea caldera and active volcanoes

The management objectives divided park into several area:

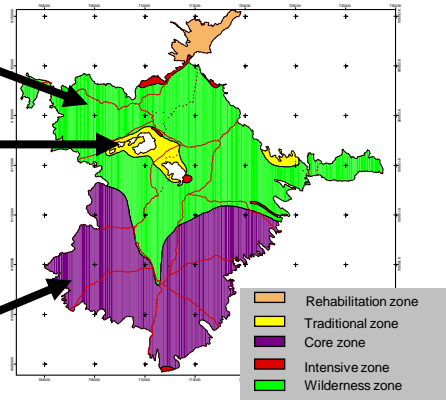


Wilderness zone is dominated by mountain forest

Traditional zones.

- Used ultimately to facilitate Tenggerese community, the small sub-groups of Hindus Javanese

Core zone is home of numerous rare and endemic plants, including orchids



Restoration

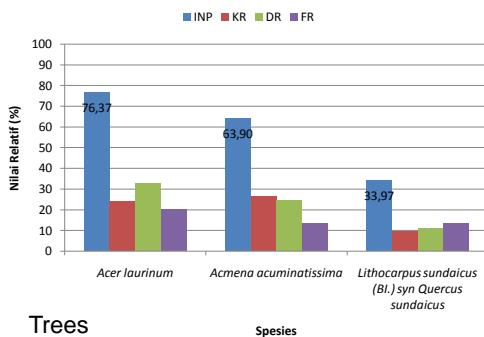
- Restoration is the process of assisting the recovery of an ecosystem that has been degraded (SER, 2002).
- Restoration of degraded cultural landscapes becomes significant issues >>> In Indonesia it is neglected

This paper reporting recent status of environmental degradation and restoration strategic planning in Ranupani and there are three sections.

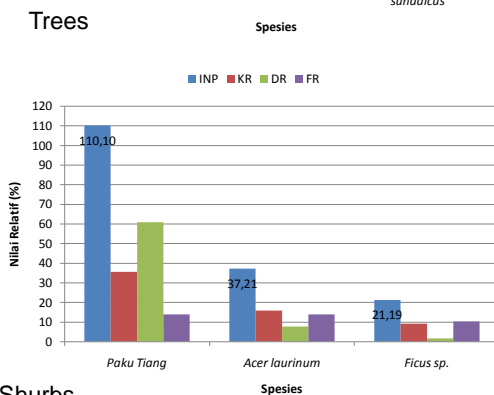
1 Firstly, we evaluate recent status of biodiversity in the target area.

2 Secondly, we discuss the threats and the opportunities for restoration project in Ranupani.

3 Finally, we summaries and design restoration planning and management schema for cultural landscapes conservation in Tengger highland



1. Plant biodiversity profile



About 32 Orchis species found in Single observation plot
in mountain forest near Ranupani

Notable Species	Remarks
<i>Appendicula imbricata</i> J.J.Sm.	Endemic.
<i>Bulbophyllum lepidum</i> (Bl.) J.J. Sm.	Common in East Java, no report in East Java
<i>Bulbophyllum longifolium</i>	not listed in Comber
<i>Bulbophyllum miniatum</i>	not listed in Comber
<i>Ceratostylis radiata</i> J.J. Sm	Common in West java, rare in East Java
<i>Coelogyne miniata</i> (Bl.)Lindl	Endemic to Java
<i>Dendrobium nitidicole</i>	not listed in Comber
<i>Dendrochilum longifolium</i> Rchb.f	Reported only in West Java
<i>Phaius indigoferus</i> Hassk.	Reported only in West Java
<i>Polidodata ventricosa</i>	not listed in Comber
<i>Sarcanthus</i> sp.	not listed in Comber



Bulbophyllum miniatum

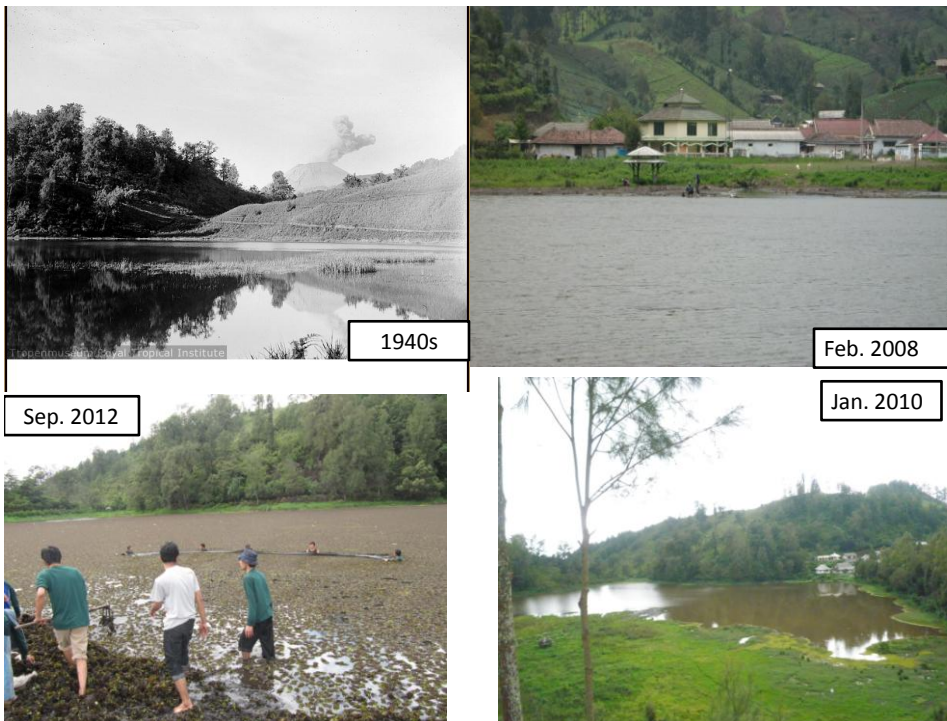


Eria lamonganensis

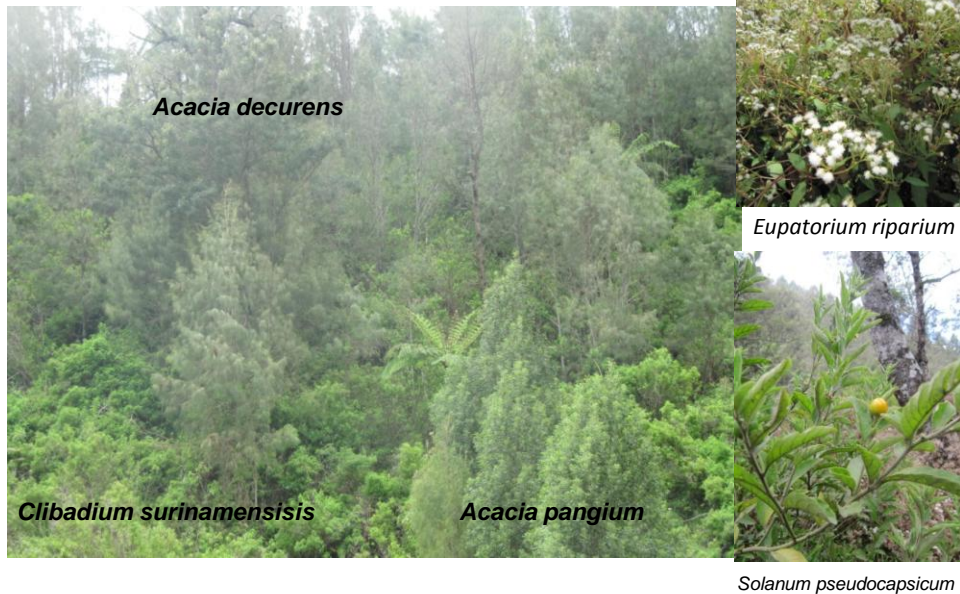
2. Threats to highland lakes and surrounding area

Emerging issues

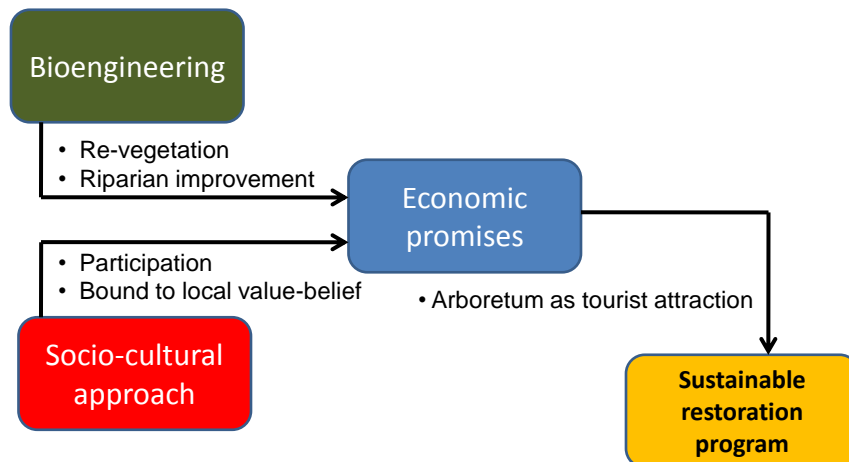
- *Lakes eutrophication*
- *Lakes sedimentation*
- *Exotic species invasion to lakes*
- *Loss of riparian ecosystem*

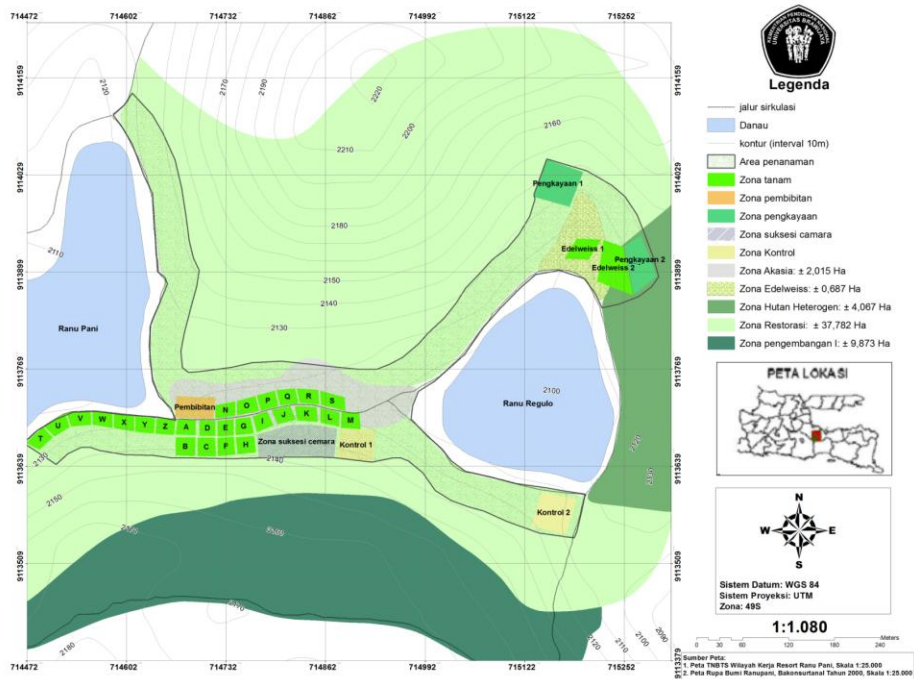
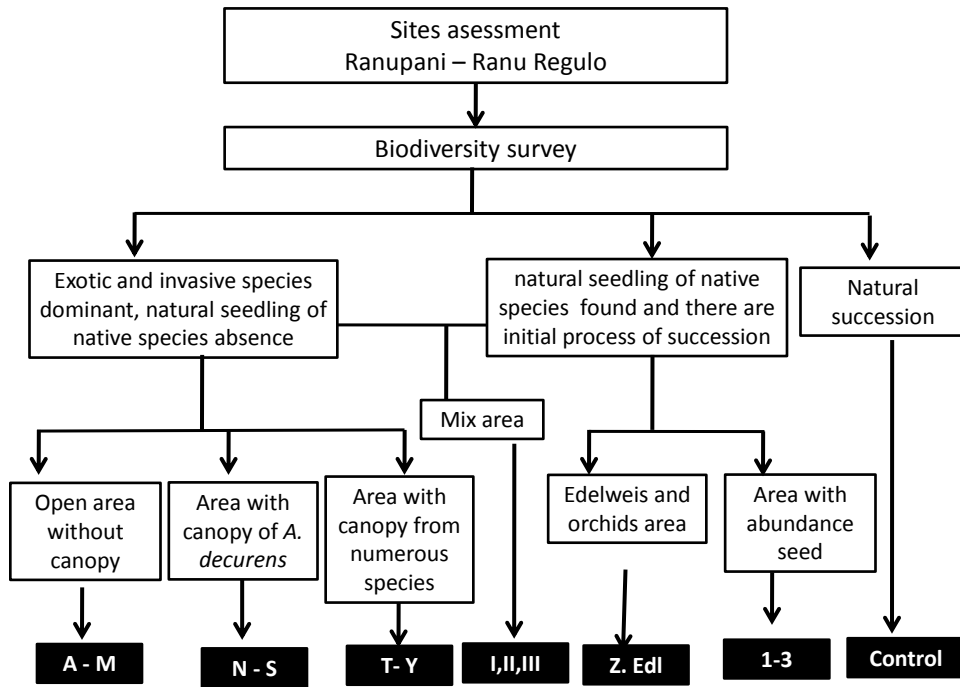


Invasions of exotic species



3. Restoration and management schema





Community involvement in restoration project

FGD, training, etc

Material preparation

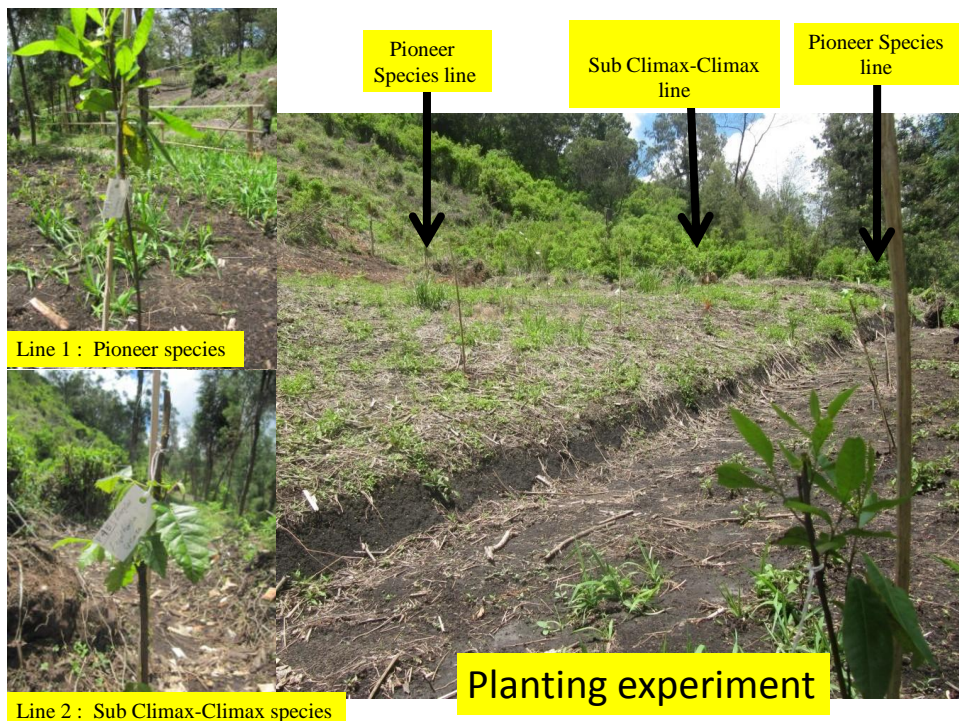
Action

Countermeasure
sedimentation by
physical and biol.
approach



Plants species for restoration program

- *Mangletia glauca* (Barus)
- *Trema orientalis* (Angrung)
- *Litsea* sp. (Nyampuh)
- Tunjung (*Homolanthus giganteus*)
- Pasang, Pasang telasih (*Quescus* spp.)
- Danglu/Kukrup (*Engelhardia spicata*)
- Durenan (*Castanopsis javanica*)
- Jamuju (*Podocarpus javanicus*)
- Irengan (*Myrsine* sp.)
- Putih dada (*Acer laurinum*)
- *Astronia spectabilis*
- *Turpinia sphaerocarpa*
- *Helicia* sp.
- *Saurauria pendula*
- *Acmena acuminatissima*



Conclusions

- The value of cultural landscapes of Ranupani, both social-ecological value, has significant value and therefore should be conserve integratively
- Focus should be paid to lakes degradation countermeasure by improving riparian areas through revegetation of native plants species
- Community and stakeholder participation has been promoted in restoration program and its contribution has been observed significant