

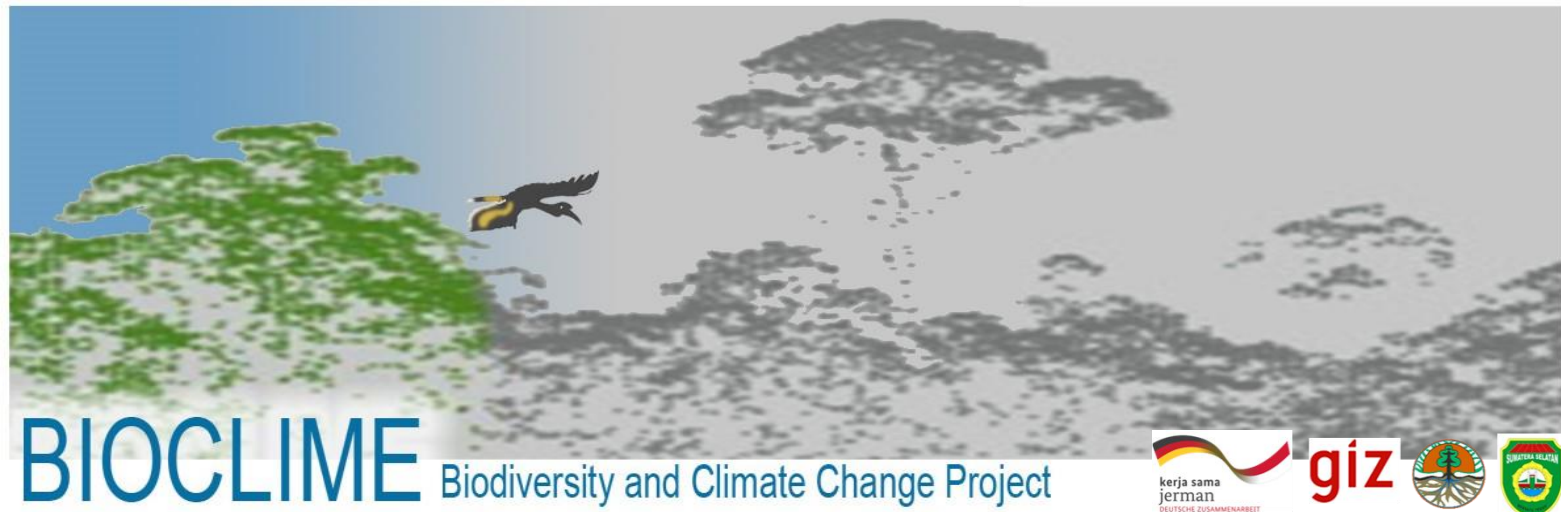


'Village Forest' Kepayang, South Sumatra – Rehabilitation of Burnt Areas and Landscape Management on Peatland

Presenter - Partners of Bioclimate Project :
Herwin Purnomo; Forestry Service South Sumatra, Indonesia

APFW 2016

Clark Freeport Zone, Pampanga, Philippines, 22-26 February 2016





South Sumatra, Indonesia

Content:

1. South Sumatra, Indonesia

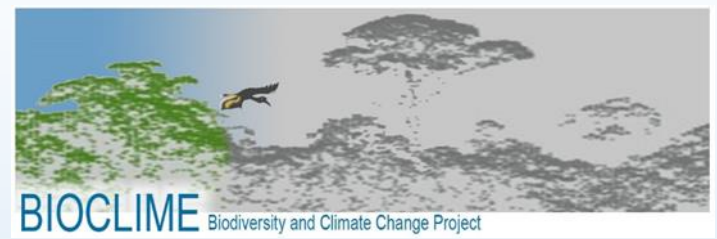
- Ecosystems
- Peatland
- Deforestation, Degradation

2. Concept “Village Forest” Indonesia

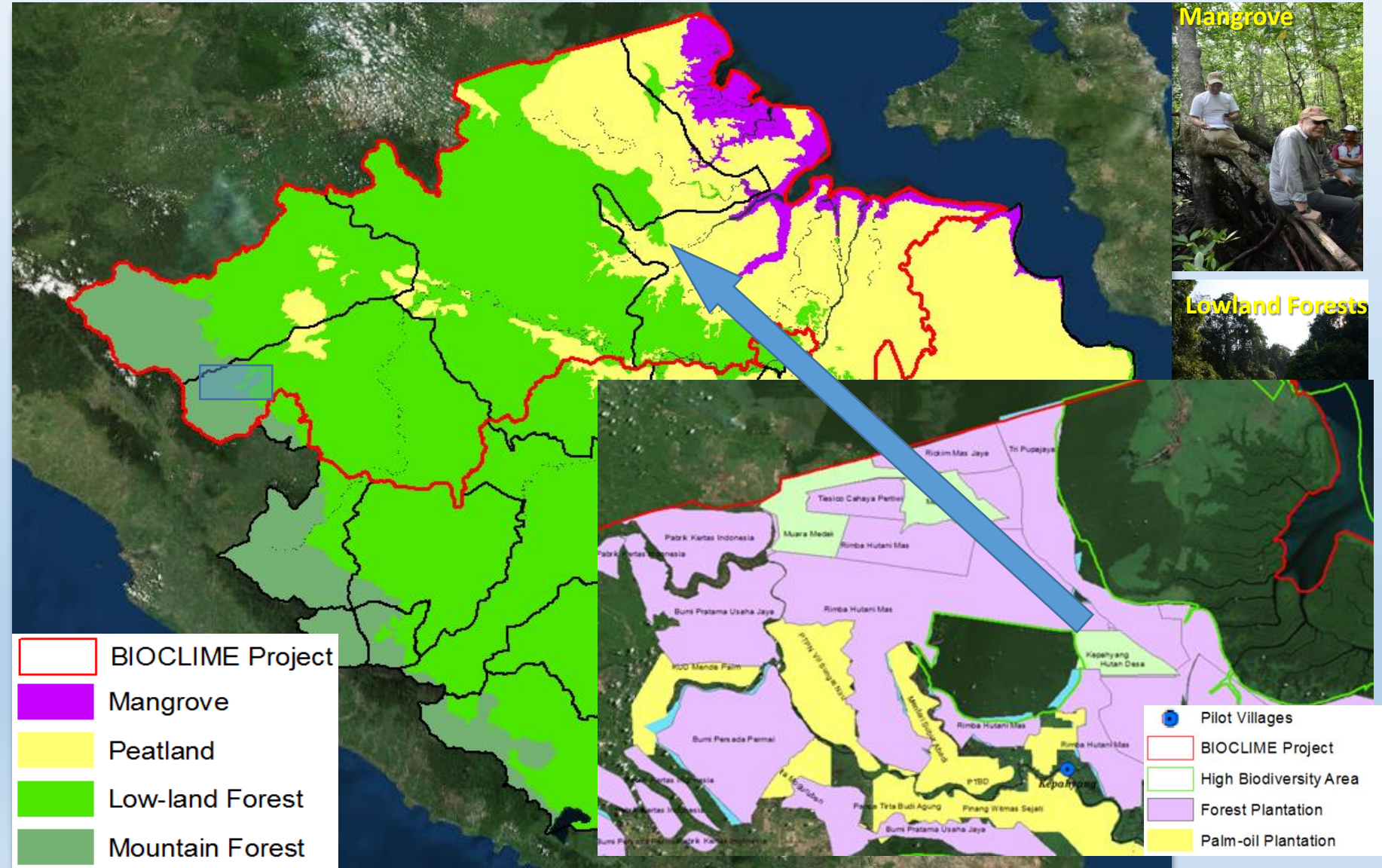
- “Village Forest” Kepayang.

3. Challenges of forest rehabilitation on peatlands after land and forest fires

- Rehabilitation on peatland – technical aspects
- Governance and tenure arrangements for effective forest rehabilitation and sustainable management
- FMU approach in forest landscape restoration
- Community engagement in forest rehabilitation
- Sustainable use of NTFPs



Pilot Project Area - South Sumatra



- BIOCLIME Project
- Mangrove
- Peatland
- Low-land Forest
- Mountain Forest

- Pilot Villages
- BIOCLIME Project
- High Biodiversity Area
- Forest Plantation
- Palm-oil Plantation

Peatland after land and forest fires:

Burnt roots and peat area

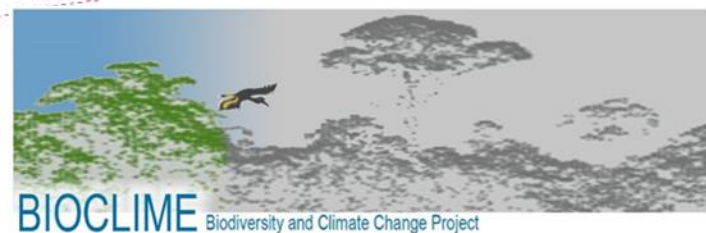


Potential of natural revegetation



- 1. Video: Drone monitoring after peat and forest fires**
(Link : 1 minute)





2. CBFM: “Village Forests” in Indonesia

State of the Art :

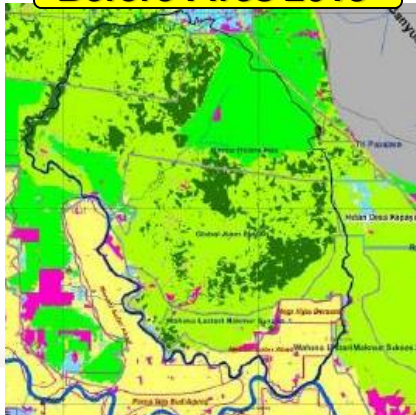
- Forests in Indonesia are under state control. Based on the main function the forest areas are divided in conservation-, protection- and production forests.
- ‘Village Forest’ licences are issued over open access state-owned forests and can be for both ‘protection’ and ‘production’ forest categories. They are managed by village institutions based on a license/permission for 35 years. The area remains state-owned forest;
- Village forest management aims to preserve forest functions and improve community welfare and is part of the efforts on ‘Land Conflict Resolution’.
- In the village forest area, the communities are allowed to collect non-timber forest products (NTFPs). The community may be granted a license of restricted timber utilization in areas with ‘production forest’ status.
- Management of the village forest is based on a business plan. A forest inventory has to be done prior to implementation of the business plan.

3. Challenges of forest rehabilitation on peatland after land and forest fires :

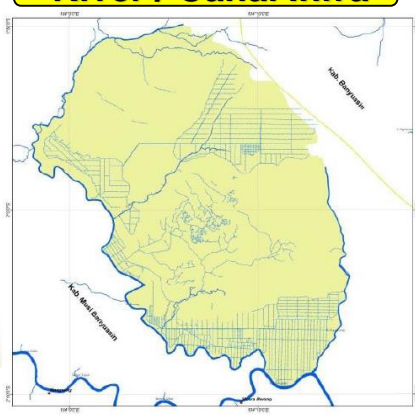
Eco-hydrology and Water Management :

- Redesigning Peat Hydrological Units: restoration in the protection zone (peat dome), and rehabilitation in the utilization zone and buffer zone;
- Canal blocking for rewetting of peat and controlling of water level;
- Areas with root - and deep peat fires, almost no natural revegetation, must be kept irrigated with a high water level during dry season;
- Water management (eco-hydrology) and tenure arrangements for effective peat and forest rehabilitation and sustainable management in the Peat Hydrology Unit.

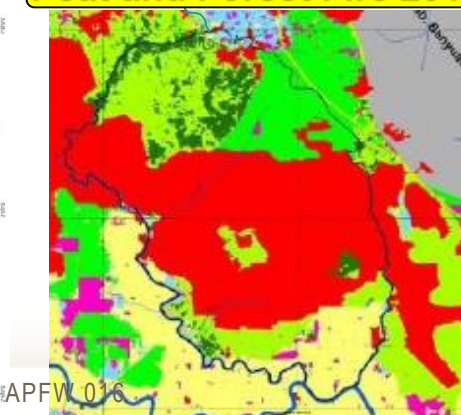
Before Fires 2015



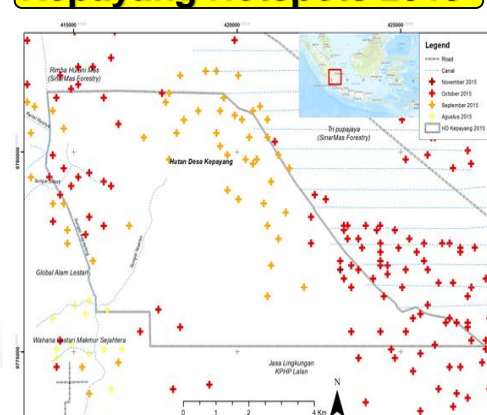
River / Canal Infra



Peat and Forest Fire 2015



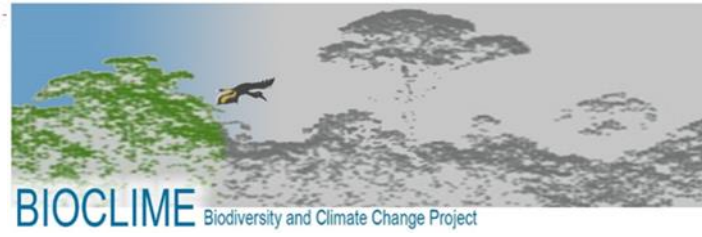
Kepayang Hotspots 2015



Challenges of forest rehabilitation on peatland after land and forest fires : Rehabilitation on peatland – technical aspects :

- Selection of endemic and local species, and forest rehabilitation technique at higher water level with paludiculture system;
- Selection of adaptive and high economic values species, and forest rehabilitation technique at wet peat land with agroforestry system;
- How to introduce: 1) techniques on spreading of seeds (germinated, small and lightweight, fast growing local species and pioneer but not invasive species, adaptive to water), 2) using drones (octocopter) due to minimum accessibility;
- Definition of criteria and indicators for performance and success of peat ecosystem restoration and forest rehabilitation.



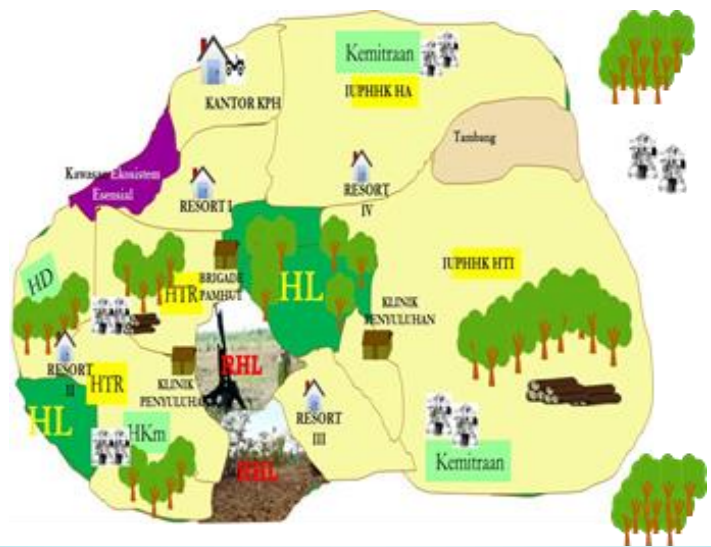


FMUs (Forest Management Units)

are representing the local government. Their role in CBFM is to provide technical assistance for the management of the licenses. The objective is to conserve forests, protect watersheds and peat land, and to improve forest productivity.

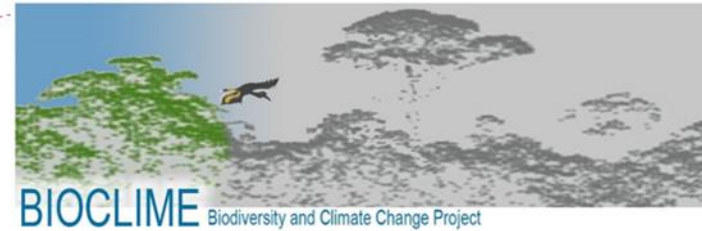
Community Engagement in Forest Rehabilitation :

1. Villagers need to be rewarded for their efforts and engaged in the co-benefit arrangements (payment based on the number of trees, planted and growing).
2. Technical support in rehabilitation and management of NTFPs, including production and marketing.
3. Support of extension workers and NGOs is required to ensure the success.



Sustainable use of NTFPs:
How to implement sustainable rubber production?
Other NTFPs.
Examples:

- Jelutung (*Dyera polyphylla*), Gemor (*Alseodaphne* sp.), Perupuk (*Lophopetalum* sp.), Suntai (*Palaquium burckii*), Rotan (*Calamus* sp.), Nyatoh (*Palaquium xanthochimum*).



Sekian dan Terimakasih

As a federal enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices, Bonn and Eschborn, Germany

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Spatial planning characteristics of Peat Hydrological Unit

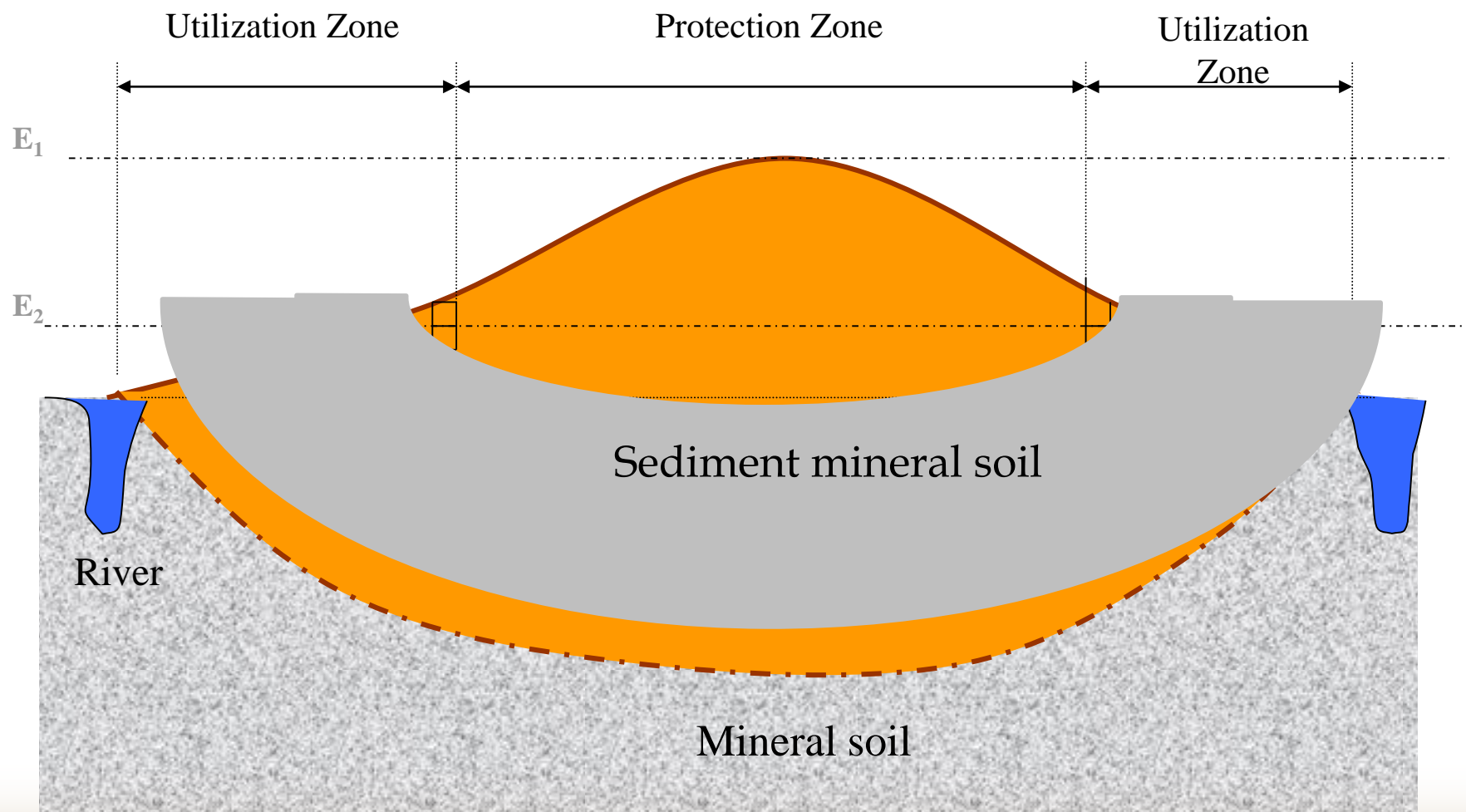




Table A: The key findings of the five presented papers on ecological tolerance to extreme environmental conditions and the conditions required for optimal growth conditions

No.	Species (local name)	Drought tolerance	Light strategy	Flood tolerance	Optimal nutrient requirements	Preferred mycorrhiza	Recommended for reforestation?
1	<i>Aglaia rubignosa</i> (Kajalaki)	Good			All macro nutrients		Yes—limited data
2	<i>Alstonia spatulata</i> (Pulai rawa)	Good	Generalist	Acceptable	N, Mg, Ca		Yes
3	<i>Baccaurea bracteata</i> (Jajantik)	Acceptable	Generalist	Poor	Mg, Ca	None found	In areas without flooding
4	<i>Calophyllum hosei</i> (Bintangur)	Poor	Shade-tolerant		None	None found	More suited to enrichment planting
5	<i>Calophyllum sclerophyllum</i> (Kapurnaga)	Poor	Shade-tolerant	Acceptable	None	Enthrophospora sp.	More suited to enrichment planting
6	<i>Combretocarpus rotundatus</i> (Perepat)	Acceptable			None	None found	Limited data
7	<i>Cotylelobium</i> sp. (Resak)	Acceptable	Shade-tolerant	Poor	None	None found	More suited to enrichment planting
8	<i>Cratoxylum glaucum</i> (Gerunggang)	Poor	Shade-tolerant		None	None found	More suited to enrichment planting
9	<i>Dacrydium pectinatum</i> (Alau)			Acceptable			Limited data
10	<i>Disopyros bantamensis</i> (Mahirangan)	Acceptable	Shade-tolerant	Acceptable	None	None found	In shaded areas
11	<i>Knema mandarahan</i> (Mandarahan)	Good	Generalist	Poor	P		In areas without flooding
12	<i>Koompassia malaccensis</i>		Generalist				Limited data
13	<i>Licania splendens</i> (Bintan)	Good			None	None found	Yes—limited data
14	<i>Lithocarpus</i> sp. (Pampaning)	Poor		Poor	N, Mg, Ca		More suited to enrichment planting
15	<i>Lophopetalum javanicum</i> (Perupuk)	Poor	Shade-tolerant	Excellent	N, Ka	Glomus clarum	In flooded areas
16	<i>Mangifera</i> sp. (Mangga-mangga)	Good	Sun-loving	Poor	None		In areas without flooding
17	<i>Melaleuca leucadendra</i> (Galam)	Poor	Shade-tolerant		N, Ka, Mg, Ca		More suited to enrichment planting
18	<i>Palaquium</i> sp. (Nyatoh)	Poor	Shade-tolerant	Poor	None	None found	More suited to enrichment planting
19	<i>Parartocarpus venenosus</i> (Lilin-lilin)	Good	Generalist	Poor	N, Ka	Enthrophospora sp.	In areas without flooding
20	<i>Sandoricum beccanarium</i> (Papung)	Acceptable	Sun-loving	Poor	Ka		In areas without flooding
21	<i>Shorea</i> sp. (Meranti daun kecil)	Poor	Shade-tolerant	Poor			More suited to enrichment planting
22	<i>Shorea</i> sp. (Meranti daun lebar)	Poor	Generalist		None		More suited to enrichment planting
23	<i>Stemonurus scorpioides</i> (Medang telur)	Poor	Sun-loving	Acceptable	None	None found	In areas without drought
24	<i>Syzygium</i> sp. 1/pakan (Pakan)			No tolerance	None	Glomus clarum and Enthrophospora sp.	Limited data
25	<i>Syzygium</i> sp. (Jambu burung kecil)					None found	Limited data
26	<i>Syzygium</i> sp. 2 (Mahaliis)		Sun-loving	Poor	None	Glomus clarum	In areas without flooding