CHALLENGES AND PROSPECTS IN CONTEXTUALIZING FMNR IN TIMOR-LESTE

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FMNR IN TIMOR LESTE

1. **WHAT** IS FMNR
2. **WHO** IS DOING FMNR
3. **WHY** COMMUNITIES DO NEED TO DO FMNR
4. **HOW** TO DO FMNR

FARMER MANAGED NATURAL REGENERATION

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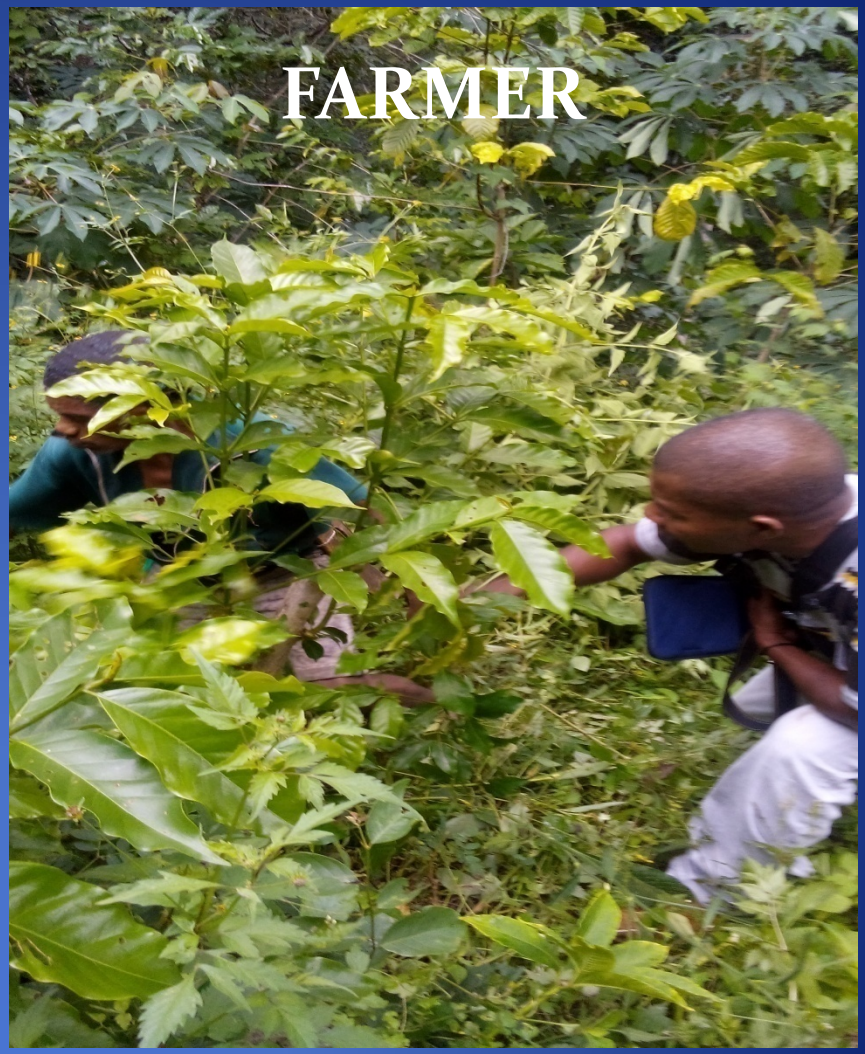
WHAT (is regenerating)

WHO (is managing)



WHY COMMUNITIES DO NEED TO DO FMNR

ECONOMIC BENEFITS

- Food
- Fuel
- Clothing
- Construction
- Medicine
- Cash

ENVIRONMENTAL BENFITS

- Ecosystem services
  - Climate regulation
  - Carbon sequestration
  - Nutrient recycling
  - Clean water
- Erosion control
- Restoring ecology
- Enhance biodiversity

HOW TO DO FMNR

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1 – PROTECTION (from)

- Fire
- Cutting/slashing
- Livestock

2 – TREE MANAGEMENT

- Thinning (reducing competition)
- Coppicing
- Pruning
- Lopping
- Pollarding

COPPICING

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(for high biomass – fuel, fodder, green manure)

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THINING
reducing coppices
(for better timber & fruit production)

COFFEE PRUNING

(for better Coffee production)

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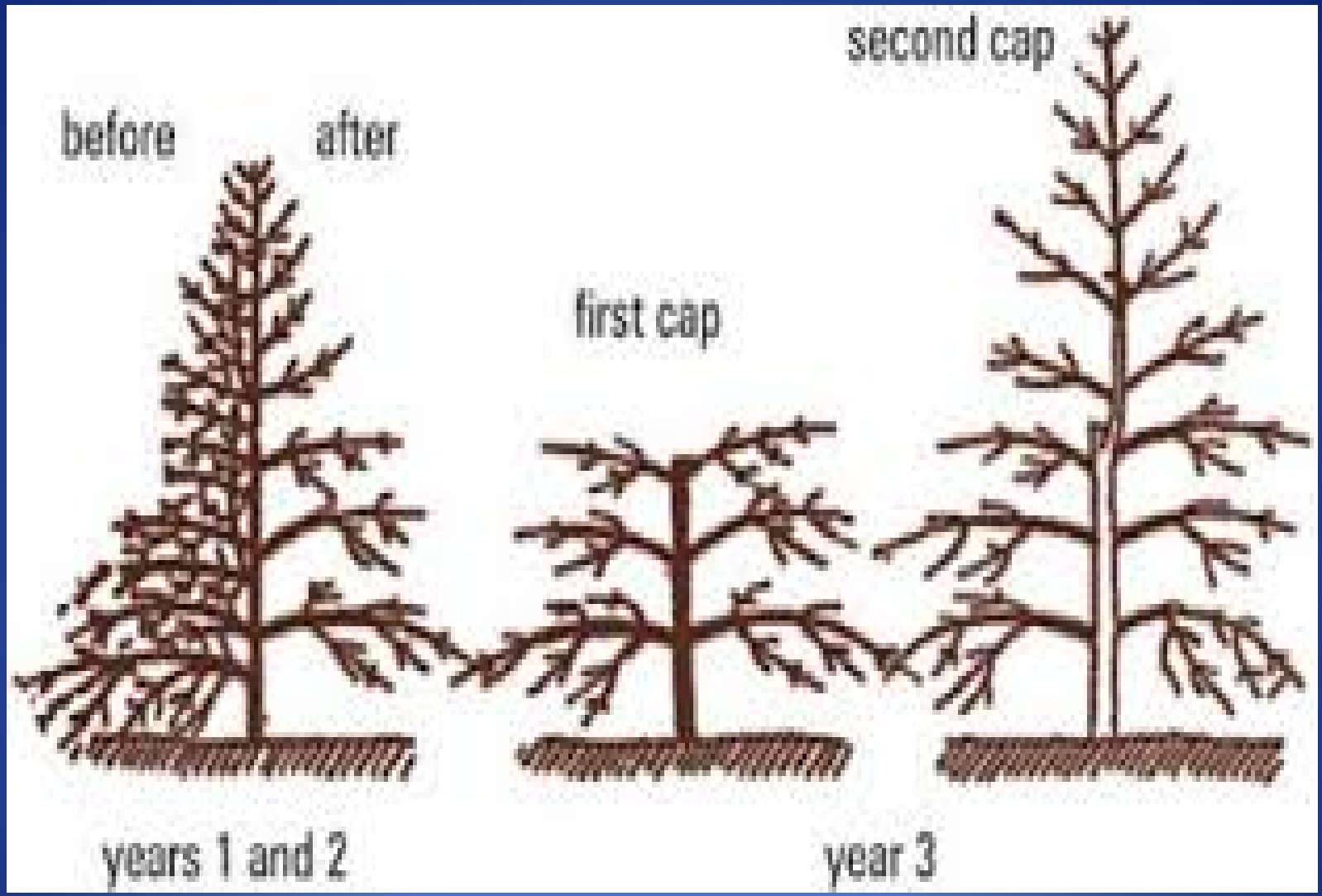

POLLARDING **(for high biomass)**

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WHY FMNR IN TIMOR LESTE?

Major challenges that FMNR potentially have a positive impact on:

- High degree of deforestation (23.2 % of forest cover lost between 1990-2010)
- Major part of the country's landscape is made up of steep slopes, thus vulnerable to soil erosion
- Climate risks (high rainfall & high temperature), thus highly vulnerable to soil degradation
- Poverty & low diversity of livelihoods systems

HIGH DEGREE OF DEFORESTTAION

(Aileu district)

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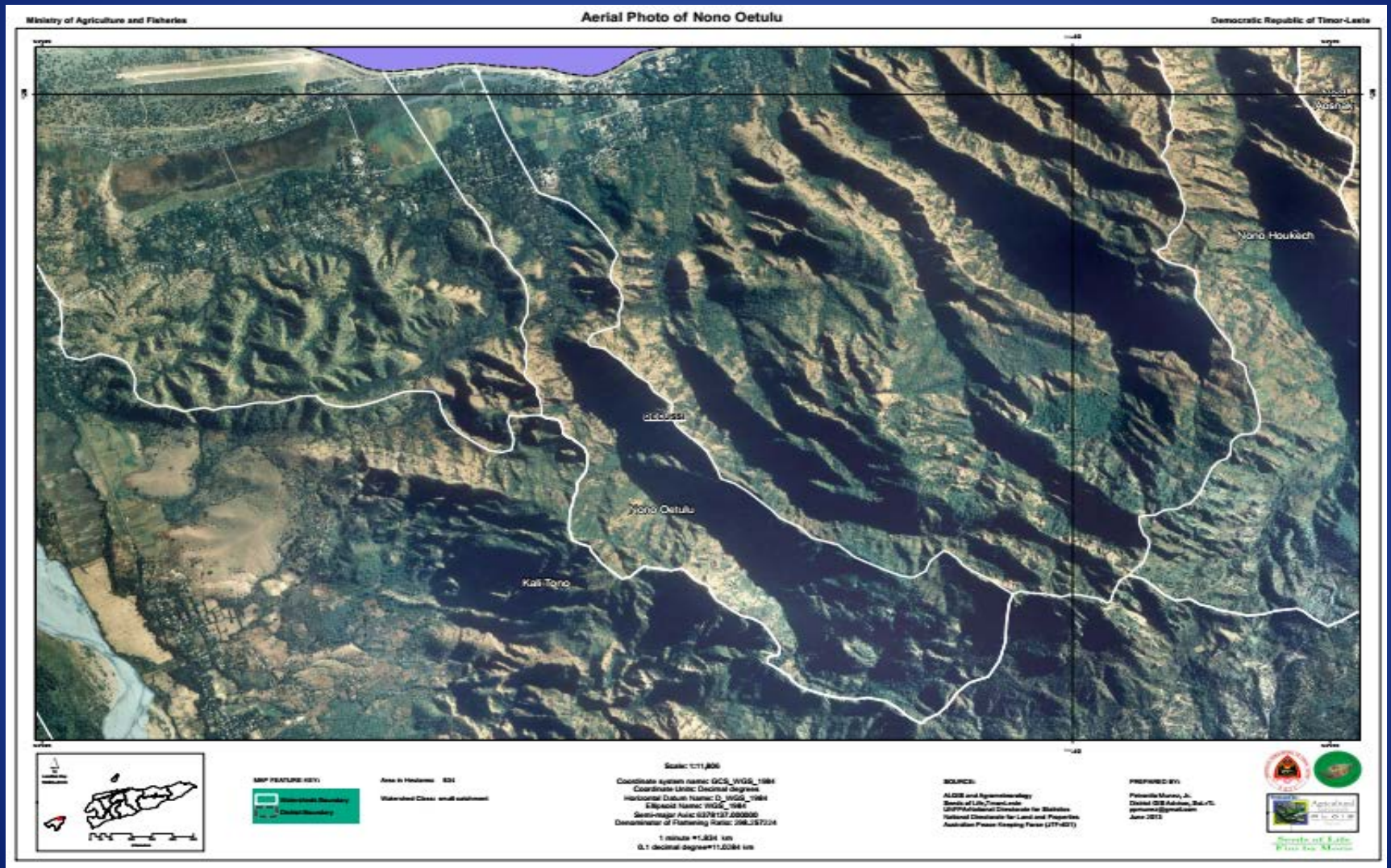
HIGH DEGREE OF LAND DEGRADATION

(Nono Oetulu)



HIGH DEGREE OF LAND DEGRADATION

(Sungai Lianau)

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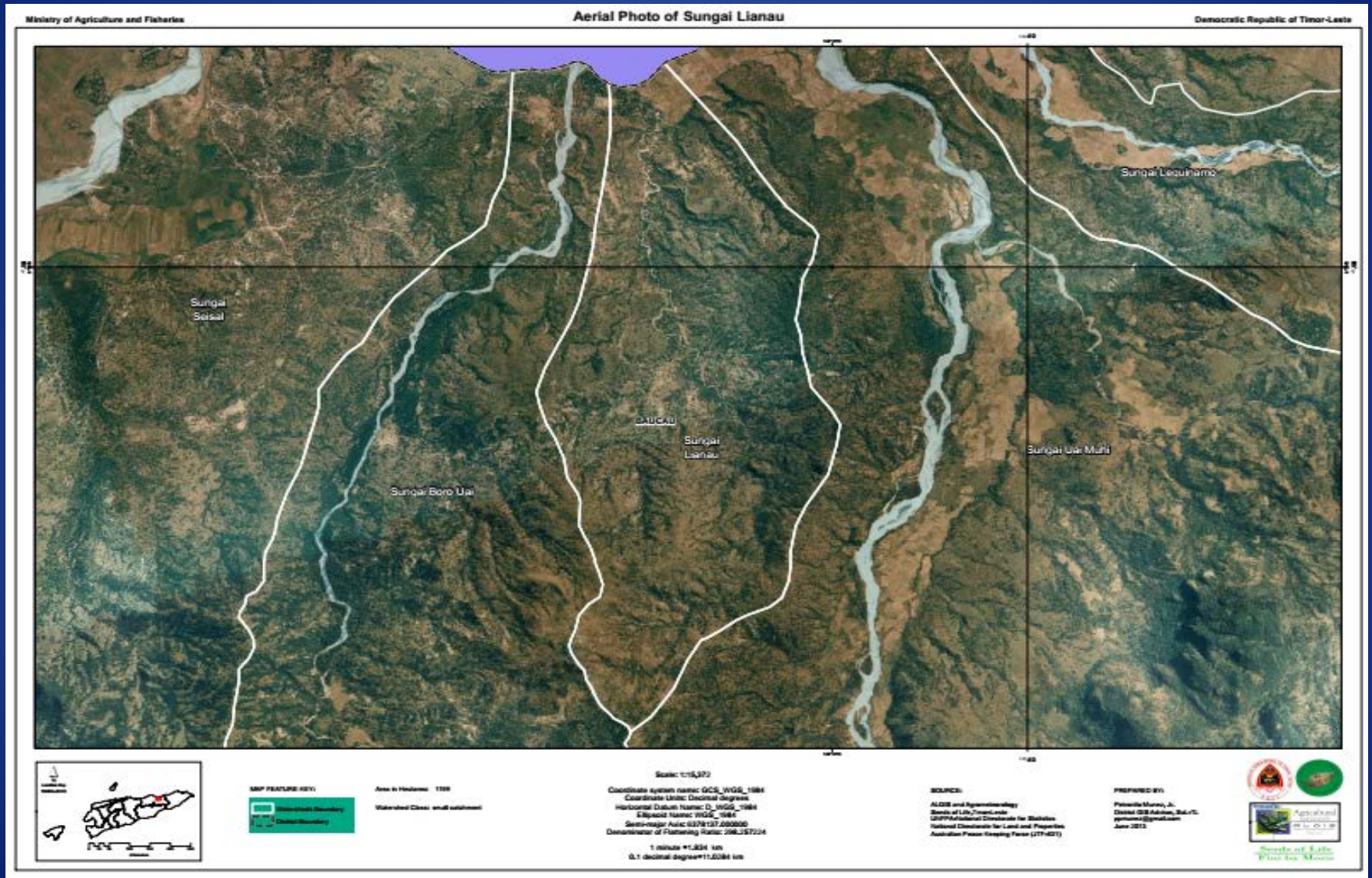

CHALLENGES IN PROMOTING FMNR

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1. FMNR is relatively new in Timor Leste
2. The value of Eucalyptus is not attractive at this time. Thus it is important to come up with alternative and acceptable models, suitable to diverse agro ecologies & farming systems in TL
3. Most better value timber species have long rotation period
4. Knowledge on potential non timber plant species and their role in FMNR is not available

CHALLENGES IN PROMOTING FMNR

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4. Due to tropical climate and high biomass ecosystems, there is no major shortage of fuel & fodder (unlike the case of semiarid Africa). Thus FMNR should address other local priorities
5. The acceptance of FMNR is highly dependent on the economic return of existing tree species
6. Traditional FMNR practices are existing but not recognized by communities
7. Absence of FMNR sensitive extension methodology that would facilitate the adoption of FMNR

POTETNTIAL FMNR APPLICATIONS IN TIMOR LESTE

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1. Vegetation cover & fuel wood & construction
2. Land slide control
3. Cash crop
4. Soil improvement – food security
5. Wind break

1. VEGETATION COVER & EROSION CONTROLL (FMNR for private & community woodlot)

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2. LAND SLIDE CONTROL

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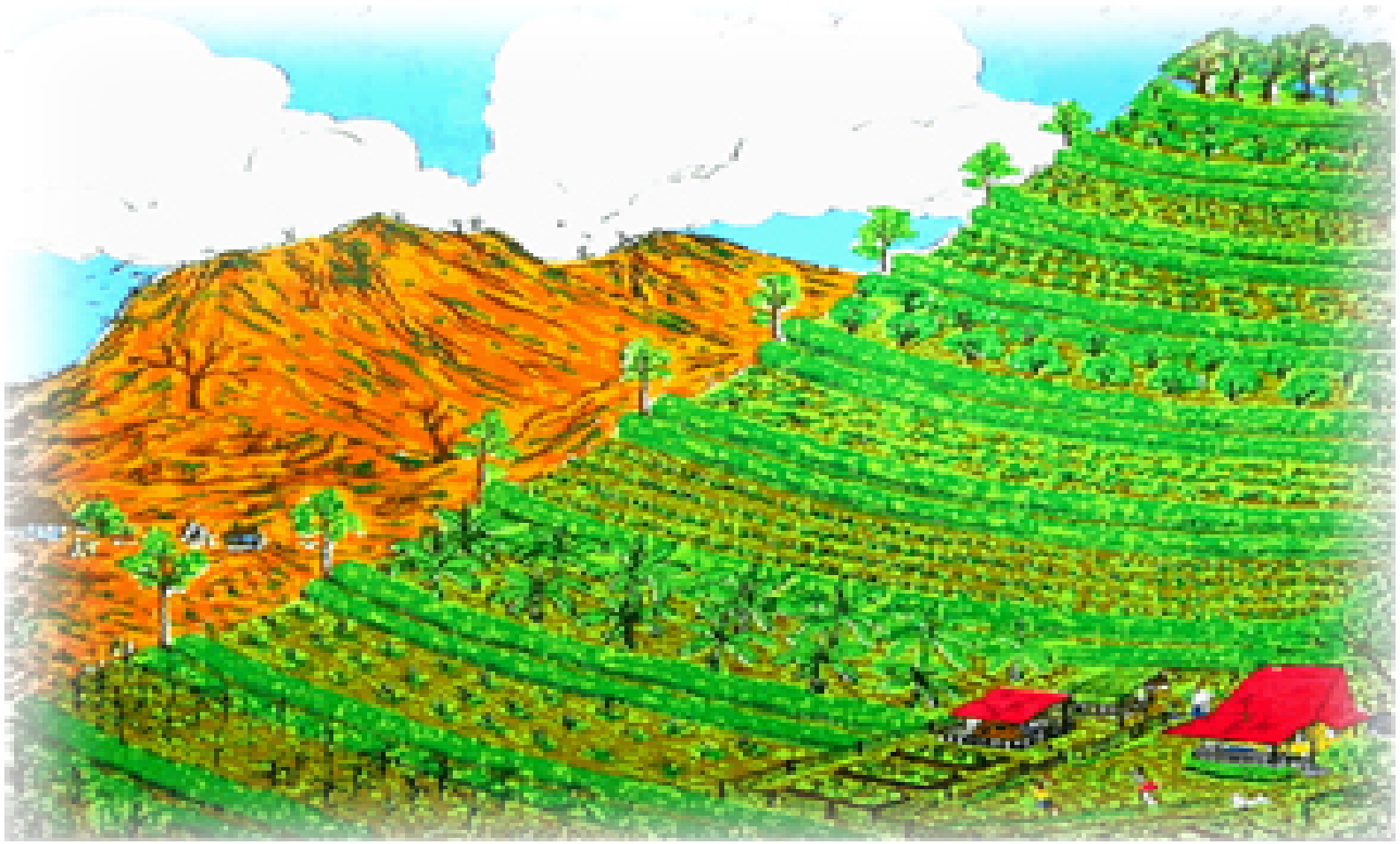
FMNR for SALT (Slopping Agricultural Land Technology)



2. LAND SLIDE CONTROL

Bamboo management

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3. CASH CROP & VEGETATION COVER (Coffee based FMNR)

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4. SOIL IMPROVEMENT - FOOD SECURITY

(high biomass plant, Tithonia divrsefolia in Aileu district)

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IMPORTANCE OF TITHONIA

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1. High nitrogen content
2. High potassium content
3. Fast decomposing (2-4 weeks)
4. Very high biomass production
5. Good for green manuring
6. Available almost everywhere
7. Some pesticidal characteristics reported
8. Fodder for ruminants

IMPACT OF TITHONIA ON MAIZE PRODUCTION

(Leolima, Bobonaro District)

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No	Soil treatment	Spacing	Number of plants/m2	Number of cobs (ears)/ m2	Weight in Kg/m2	Moisture content
	Compost	75 X40 cm	9	9	0.8	15,2
	UREA & TSP	75 X40 cm	9	9	0.8	14.1
	Compost + UREA & TSP	75 X40 cm	8	11	0.6	17.7
	Thitonia leaf green manure	75 X40 cm	10	9	1.3	16.9
	Thitonia leaf green manure + TSP	75 X40 cm	8	8	1.7	17.8
	Control (no treatment)	75 X40 cm	10	10	0.4	19.1
	Total					
	Compost	50 x40 cm	10	9	0.5	20.0
	UREA & TSP	50 x40 cm	10	10	1.6	19.6
	Compost + UREA & TSP	50 x40 cm	12	12	0.7	14.1
	Thitonia leaf green manure	50 x40 cm	8	8	0.9	15.3
	Thitonia leaf green manure + TSP	50 x40 cm	9	10	0.7	19.3
	Control (no treatment)	50 x40 cm	10	10	0.6	20.6
	Total					
	Compost	50 x30 cm	10	9	0.7	16.2
	UREA & TSP	50 x30 cm	10	80.6	0.6	15.0
	Compost + UREA & TSP	50 x30 cm	12	10	0.8	20.5
	Thitonia leaf green manure	50 x30 cm	13	14	0.8	14.3

TITHONIA'S IMPACT ON VEGETABLES

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Left block chemical fertilizer, Center Tithonia green manure & right block compost applied (Baucau district)

GAMAL - *Gliricidia sepium (Bobonaro)*

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GAMAL - *Gliricidia sepium* (Bobonaro)

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WIND BREAK

Bamboo for windbreak

BAMBOO CUTTINGS PREPARATION BOBONARO

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RESEARCH AGENDAS & FUTURE ENGAGMENTS

- In order to expand the horizon of FMNR applications in terms of addressing environmental & livelihoods challenges in diverse farming and land use systems, it is important to identify potential FMNR system components (trees, shrubs, herbs etc…).

- Inclusion of as many plant species as possible would help FMNR in expanding its scope and application.

- Non timber producing plants and regenerating annual & biannual crops would help the application of FMNR in cultivated land.

- The plant species mentioned in the following slides are for general considerations (doesn't necessarily mean to TL)

STUDYING THE POTETNIAL OF SORGHUM AS AN FMNR CROP (Sorghum Ratooning)

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STUDYING THE POTETNIAL OF PIGEON PEA AS AN FMNR CROP

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STUDYING THE POTETNIAL OF SUGARCANE AS AN FMNR CROP

STUDYING POTETNIAL OF BANANA AS AN FMNR CROP

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RECOGNITION OF HIGHVALUE FMNR PLANT SPECIES

Example 1 – Rhmanus prinoides (Gesho), a regenerating and annually harvested high value shrub in Ethiopia

RECOGNITION OF HIGHVALUE FMNR PLANT SPECIES

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Example 2 – Catha edulis, a regenerating and constantly harvested high value shrub in Ethiopia

THE END

THANK YOU