

CHALLENGES AND PROSPECTS IN CONTEXTUALIZING FMNR IN TIMOR-LESTE

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FMNR IN TIMOR LESTE

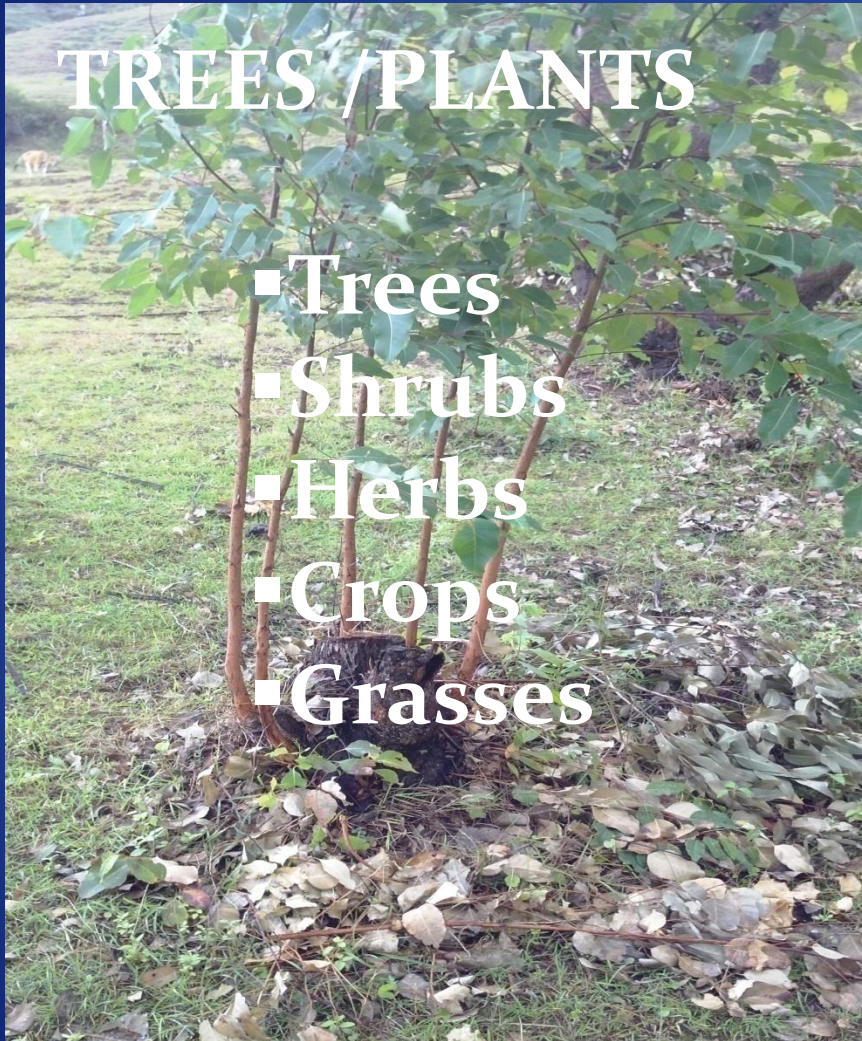
1. WHAT IS FMNR
2. WHO IS DOING FMNR
3. WHY COMMUNITIES DO NEED FMNR
4. HOW TO DO FMNR

FARMER MANAGED NATURAL REGENERATION

WHAT

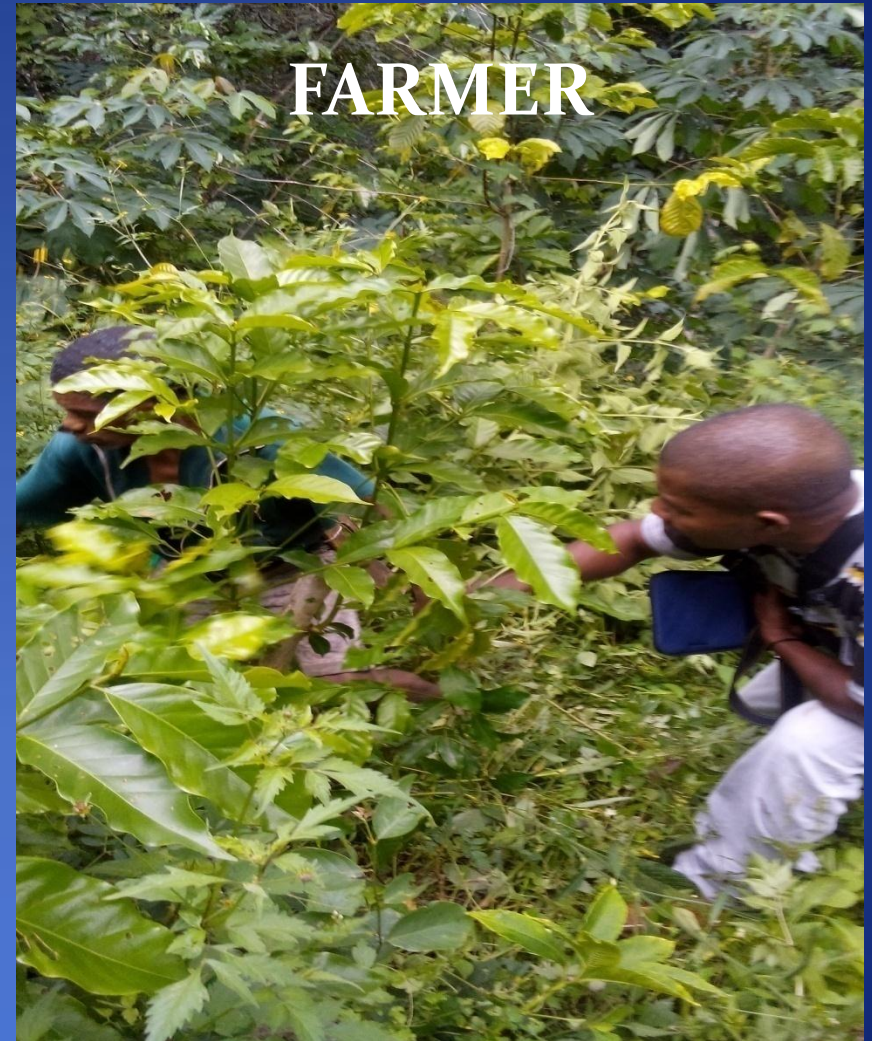
TREES / PLANTS

- Trees
- Shrubs
- Herbs
- Crops
- Grasses



WHO

FARMER



WHY COMMUNITIES DO NEED FMNR

ECONOMIC BENEFIT

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

ENVIRONMENTAL BENEFIT

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

HOW TO DO FMNR

1 – PROTECTION (from)

- Fire
- Cutting/slashing
- Livestock

2 – TREE MANAGEMENT

- Reducing competition
- Coppicing
- Pruning
- Lopping
- Pollarding

COPPICING (for high biomass)



BEFORE
TREE TO BE
COPPICED

CUT CLOSE
TO BASE IN
WINTER

FOLLOWING SPRING
SHOOTS RAPIDLY
REGROW FROM STOOL

7-20 YRS LATER
COPPICE READY
FOR HARVEST

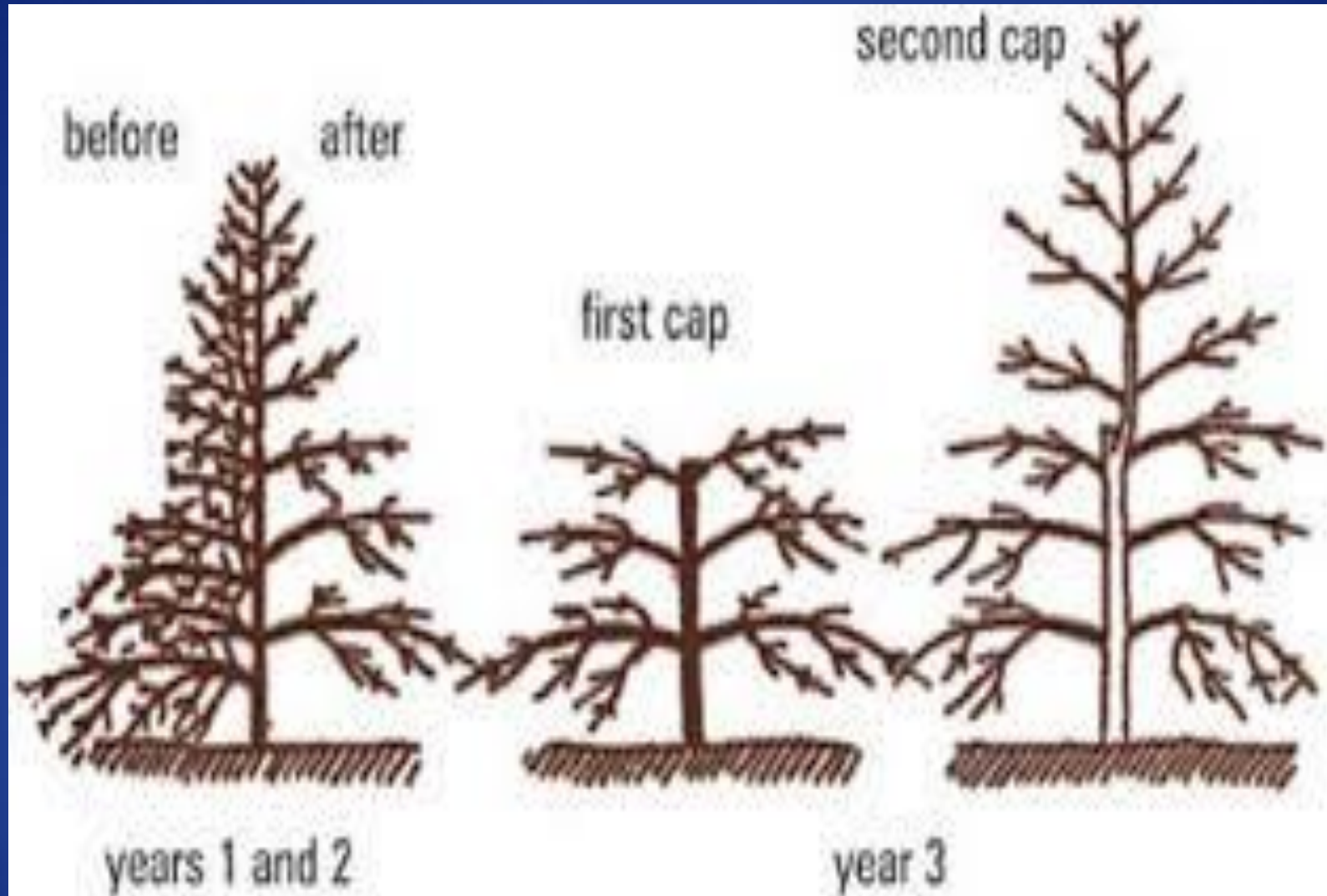
THINNING & PRUNING COPPICES

(for better timber & fruit production)



COFFEE PRUNING

(for better Coffee production)



POLLARDING (for high biomass)



WHY FMNR IN TIMOR LESTE?

MAJOR CHALLENGES FMNR POTENTIALLY

HAVE A POSITIVE IMPACT ON:

- High degree of deforestation (23.2 % of forest cover lost between 1990-2010)
- Geomorphology of the major part of the country
- Climate risks (high moisture & high temperature)

HIGH DEGREE OF DEFORESTATION



HIGH DEGREE OF LAND DEGRADATION



HIGH DEGREE OF LAND DEGRADATION



CHALLENGES IN PROMOTING FMNR

- **FMNR is relatively new in timor leste**
- **Many areas covered by eucaleptus trees and the relative value of eucaleptus is not Atractive at this time**
- **Most better value timber species have long rotation period**
- **Knowledge on potetntial non timber plant species and their role in fmnr is not avilable**

CHALLENGES IN PROMOTING FMNR

- Tropical climate with high biomass production, thus no shortage of fodder & fuel
- The acceptance of FMNR is highly dependent on the economic return of existing species
- Traditional FMNR practices are existing but not recognised
- Absence of FMNR sensitive extension methodology that help the adoption of fmnr by farmers

No	Sub District	Village	Sub Village	Dominant tree species	System	Area in Hectare	Number of Beneficiaries
1	Bobonaro	Soilesu	Aiaras	Mahogany	Reforestation	4 Pilot site	43
				Mahogany	FMNR	1 pilot site	20
				Bamboo	Windbreak and Landslide	1 Pilot site	10
			Soilesu	Bamboo, Vetiver	SALT	1 Pilot site	43
		Oeleu	Molgen	Mahogany	Reforestation	1 pilot site	23
			Lolo	Mahogany	Reforestation	1 pilot site	Primary School (M=112 F= 82)
		Leber	Bucuk	Bamboo	Windbreak and Landslide	1 Pilot site	20
2	Balibo	Leolima	Bour	Mahogany, kenary, Saria and Blitas	Reforestation	3 pilot site	29
			Suilaku	Mahogany, Bamboo, Teak,	SALT	4 Pilot site	54
		Balibo Vila	Atara	Mahogany		1 pilot site	21
3	Lolotoe	O'pa	Tepa	Mahogany	FMNR	3 pilot site	27
				Mahogany	Reforestation	1 Pilot site	27
				Bamboo	Windbreak and Landslide	1 Pilot site	
			Raimean	Mahogany	Reforestation	1 Pilot site	13
		Lontas	Tasmil	Mahogany	Reforestation	2 Pilot site	50
				Mahogany	FMNR	1 Pilot site	9
				Casuarina, Bamboo, Hedan	SALT	1 Pilot site	Joint activity 2 Village

POTENTIAL FMNR APPLICATIONS IN TIMOR LESTE

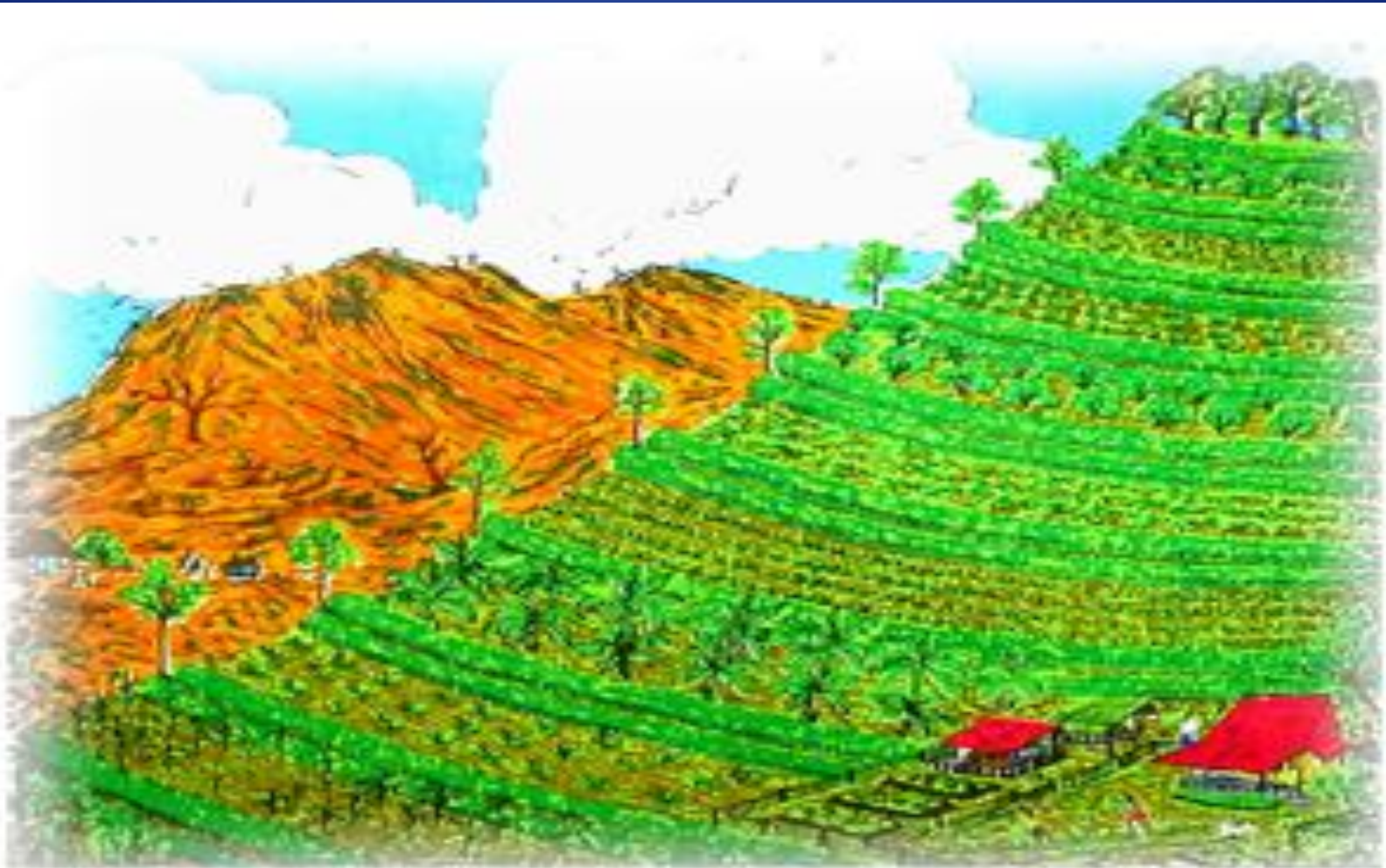
1. Vegetation cover & fuel wood & construction
2. Land slide control
3. Cash crop
4. Soil improvement – food security
5. Wind break

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



2. LAND SLIDE CONTROL

FMNR for SALT (Slopping Agricultural Land Technology)



2. LAND SLIDE CONTROL BAMBOO MANAGMENT



3. CASH CROP & VEGETATION COVER (COFFEE BASED FMNR)



4. SOIL IMPROVEMENT - FOOD SECURITY

TITHONIA (*Tithonia diversifolia*)



IMPORTANCE OF TITHONIA

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

TITHONIA IMPACT ON MAIZE PRODUCTION (Bobonaro)

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
	Tithonia leaf green manure	75 X40 cm	10	9	1.3	16.9
	Tithonia 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
	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
	Tithonia leaf green manure	50 x40 cm	8	8	0.9	15.3
	Tithonia 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
	Compost	50 x30 cm	10	9	0.7	16.2
	UREA & TSP	50 x30 cm	10	8	0.6	15.0
	Compost + UREA & TSP	50 x30 cm	12	10	0.8	20.5
	Tithonia leaf green manure	50 x30 cm	13	14	0.8	14.3
	Tithonia leaf green manure + TSP	50 x30 cm	13	12	0.9	16.5
	Control (no treatment)	50 x30 cm	11	11	0.6	18.3

TITHONIA IMPACT ON VEGETABLES (Baucau)



GAMAL - *Gliricidia sepium* (Bobonaro)



GAMAL - *Gliricidia sepium* (Bobonaro)



WIND BREAK

Bamboo for windbreak



BAMBOO CUTTINGS PREPARATION BOBONARO





**RESEARCH AGENDAS
&
FUTURE ENGAGEMENTS**

POTENTIAL OF SORGHUM AS AN FMNR CROP



POTENTIAL OF PIGEON PEA AS AN FMNR CROP



POTENTIAL OF SUGARCANE AS AN FMNR CROP



POTENTIAL OF BANANA AS AN FMNR CROP





THE END

THANK YOU