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The topic of presentation is

- Lecture 1: Overview of FLR and Restoration Opportunities
Assessment Methodology (ROAM): a case study on the use of ROAM
in Viet Nam

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Forest Landscape Restoration

Assessing opportunities in Quang Tri, Vietnam

Jake Brunner, Head IUCN Indo-Burma Group
Hanoi, Vietnam
August 2021



Introduction and set-up of the study

Quang Tri: Selected by IUCN for its overall ambition and demonstrated commitment to forest restoration

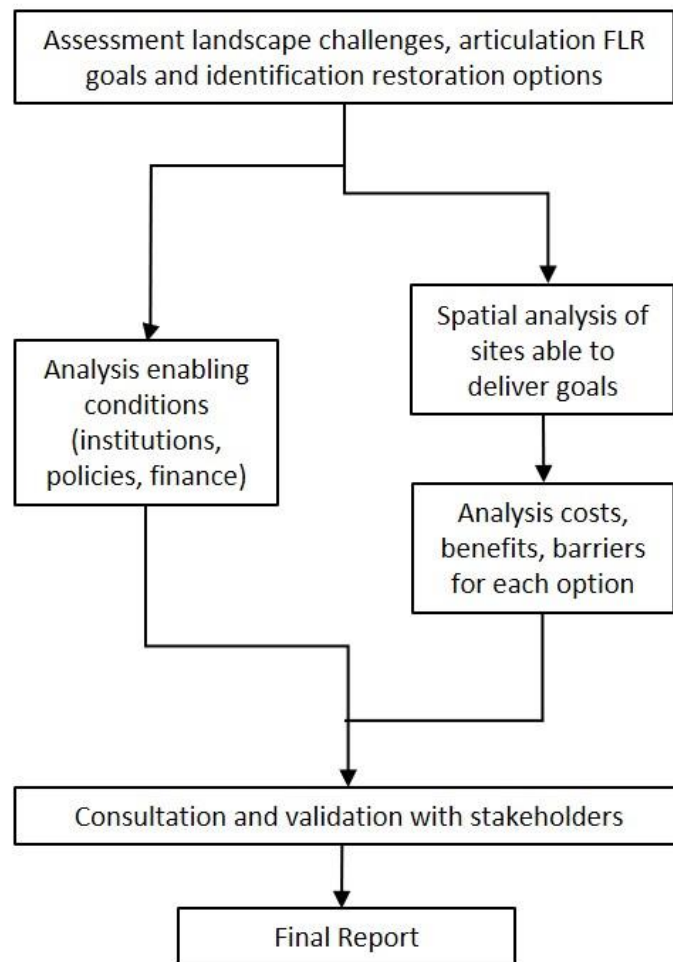
Restoration Opportunities Assessment Methodology (ROAM): Joint process led by IUCN to identify FLR opportunities

FLR goals

1. Increase forest biodiversity and quality
2. Conserve and enhance ecosystem services
3. Improve livelihoods to reduce incentives to encroach on the forest

Report

https://www.iucn.org/sites/dev/files/content/documents/2018/final_-_qt_roam_assessment_oct30.pdf



Quang Tri Province



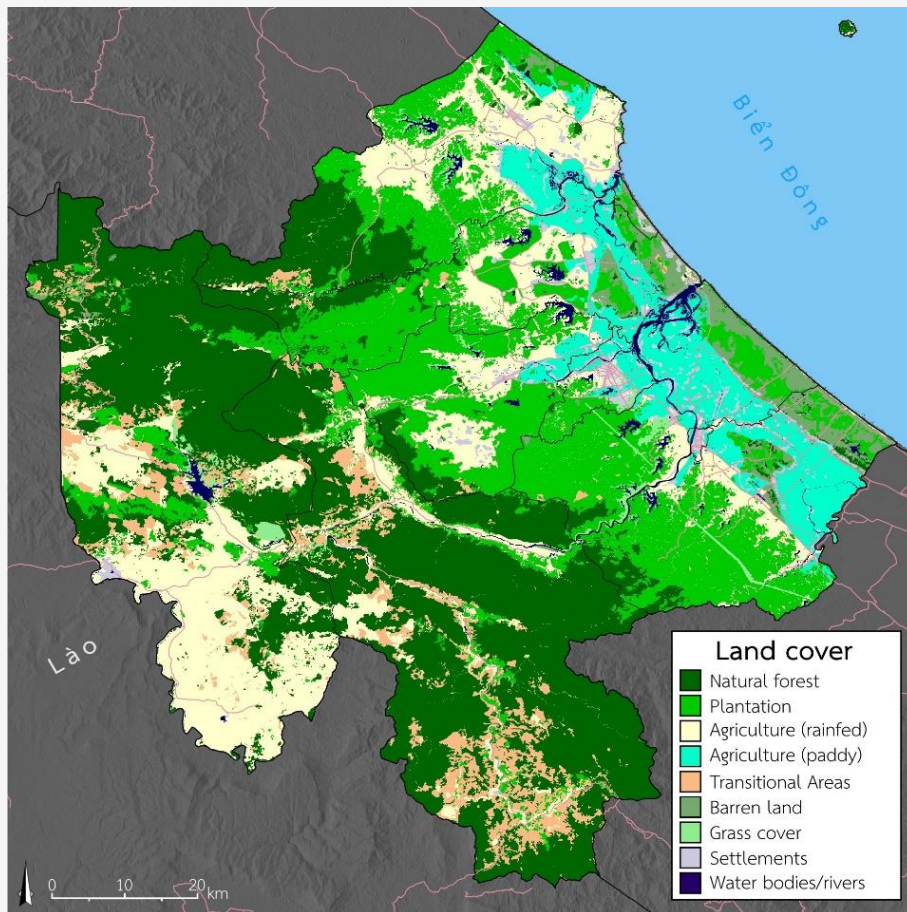
Characteristics

- North-central Vietnam (4,739 km²)
- Population size: 620,000 (71% rural); majority Kinh ethnicity, small minority other groups
- Avg. annual household income: US\$575

Forests

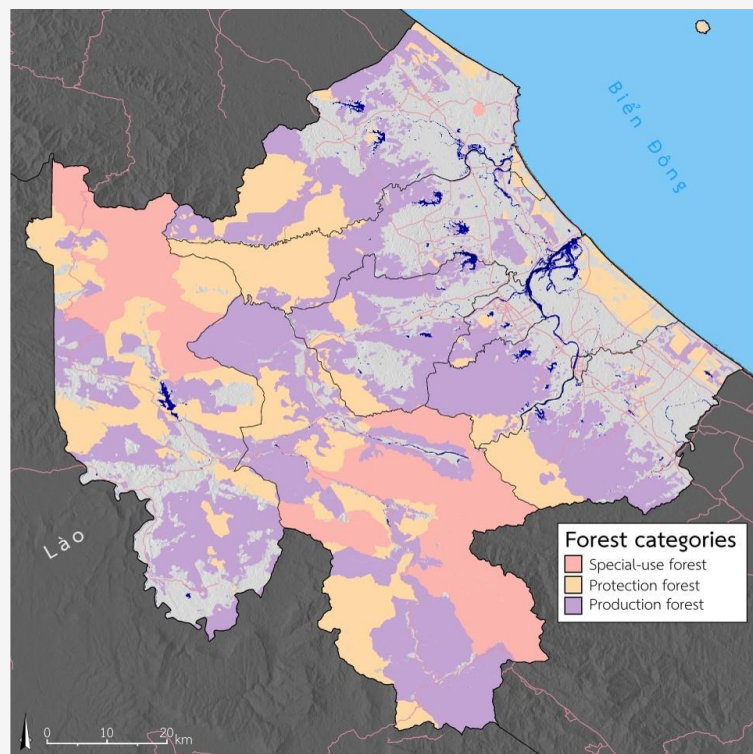
- Devastated during American War
- Fast recovery after economic reform late 1980s (98,000 in 1989 to 235,000 in 2016)
- Poor quality (acacia-ized)

Land cover



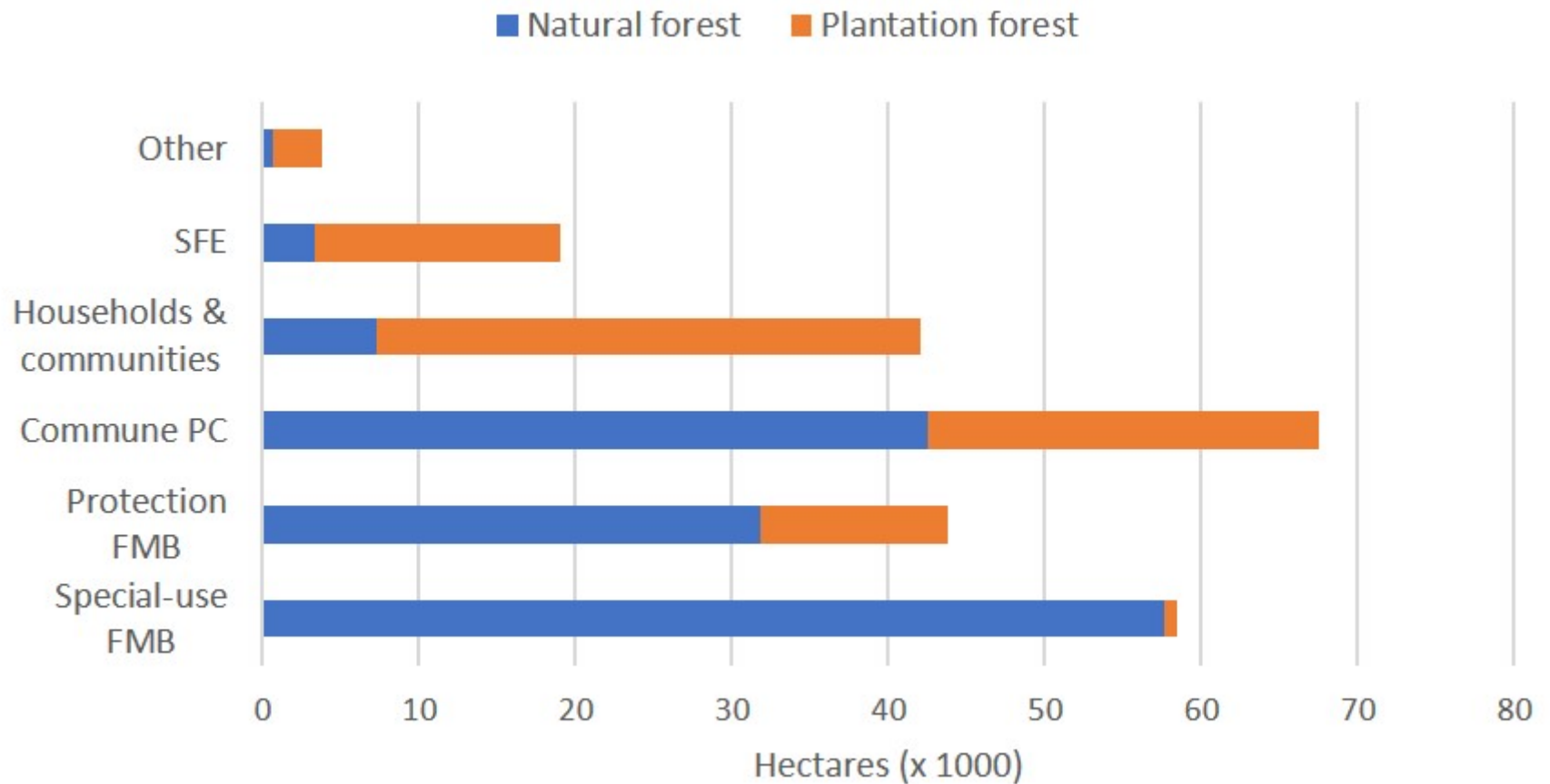
Land cover	Area (ha)
Natural forest	167,920
Plantation	114,524
Agriculture (rainfed)	91,008
Agriculture (paddy)	35,800
Transitional areas	28,460
Barren land	12,673
Grass cover	5,849
Settlements	10,119
Water bodies/rivers	7,276
Total	473,630

Forest categories and composition



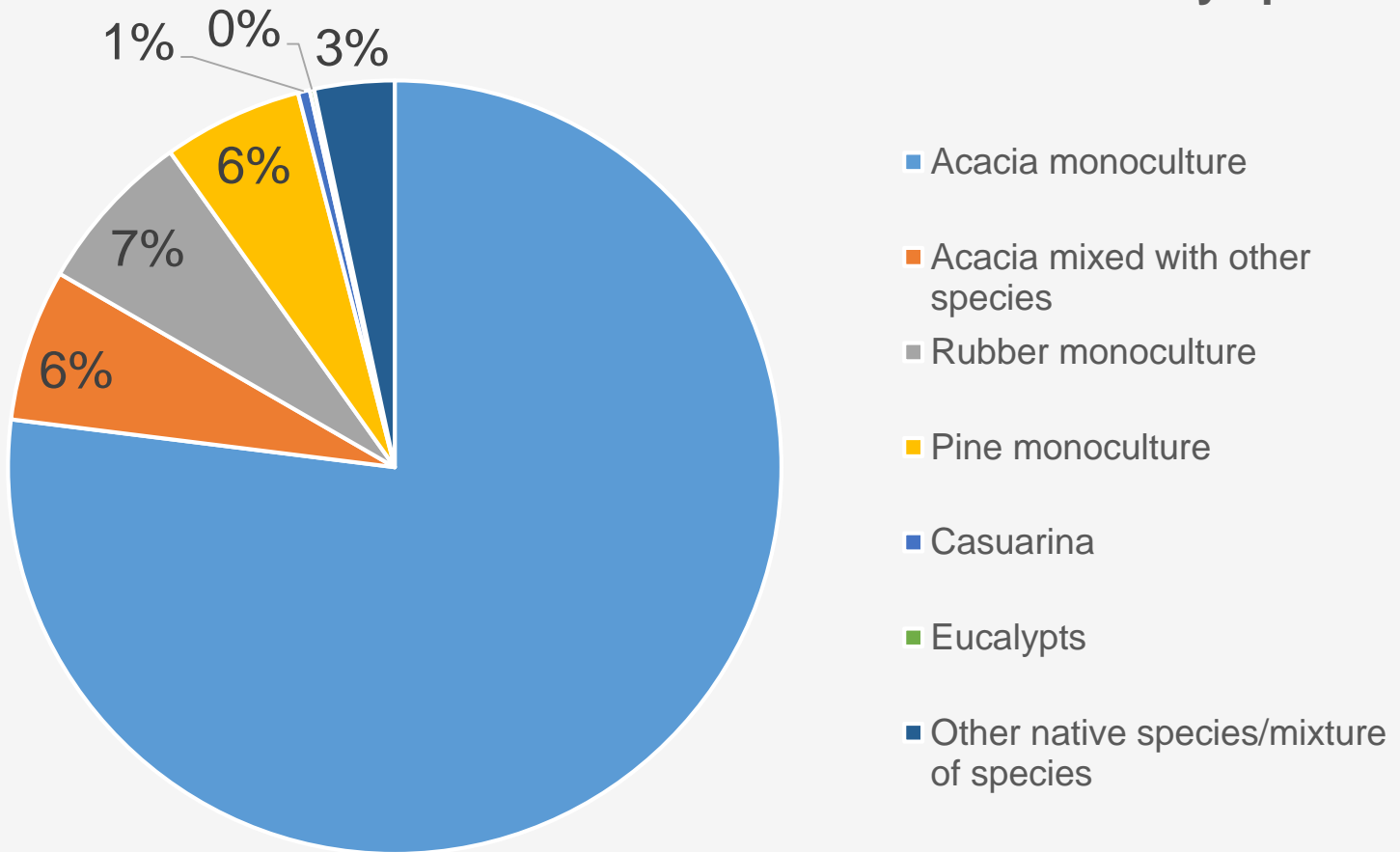
Forest category	Natural forest	Plantation forest	Non-forest	Total
Special-use	59,052	1,065	8,777	68,894
Protection	50,517	22,156	26,837	99,511
Production	32,425	61,049	72,988	166,461
Outside	1,335	7,161	2,215	10,710
Total	143,328	91,431	110,817	345,576

Forest management



Challenges in the plantation sector

Plantation forest land area by species

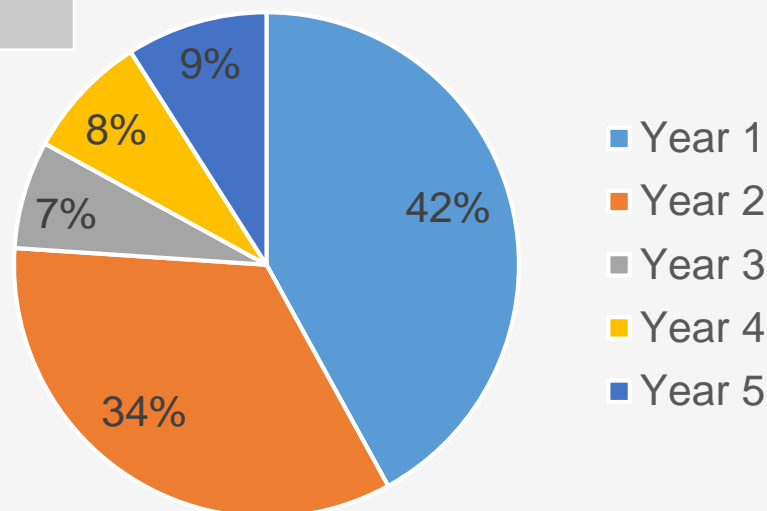


Challenges in the plantation sector

Acacia monoculture figures

Total forest area (ha)	68,031
Total newly planted area (ha)	17,417
Total area (ha)	85,447
Total volume (m3)	3,403,508
Average volume per ha (m3/ha)	50

Acacia area by tree age



FLR options

NATURAL FOREST

1. Enrichment Plant. & ANR (EP-ANR)

- Improve forest quality and biodiversity
- Reduce erosion degraded forest
- Improve water quality
- Alternative source of income for farmers/landholders (PES)

2. Extended Rotation (ER)

- Erosion control by reducing time land is bare after harvesting
- Improve water quality of river basins
- Increase incomes through high-quality timber (including FSC)

PPLANTATIONS

AGRICULTURE

4. Soil & Water Conservation (SWC)

- Prevent erosion by conserving high-quality soil on farm plots
- Prevent water run-off and improve water retention for crops
- Increase yields

3. Native Species Introduction (NSI)

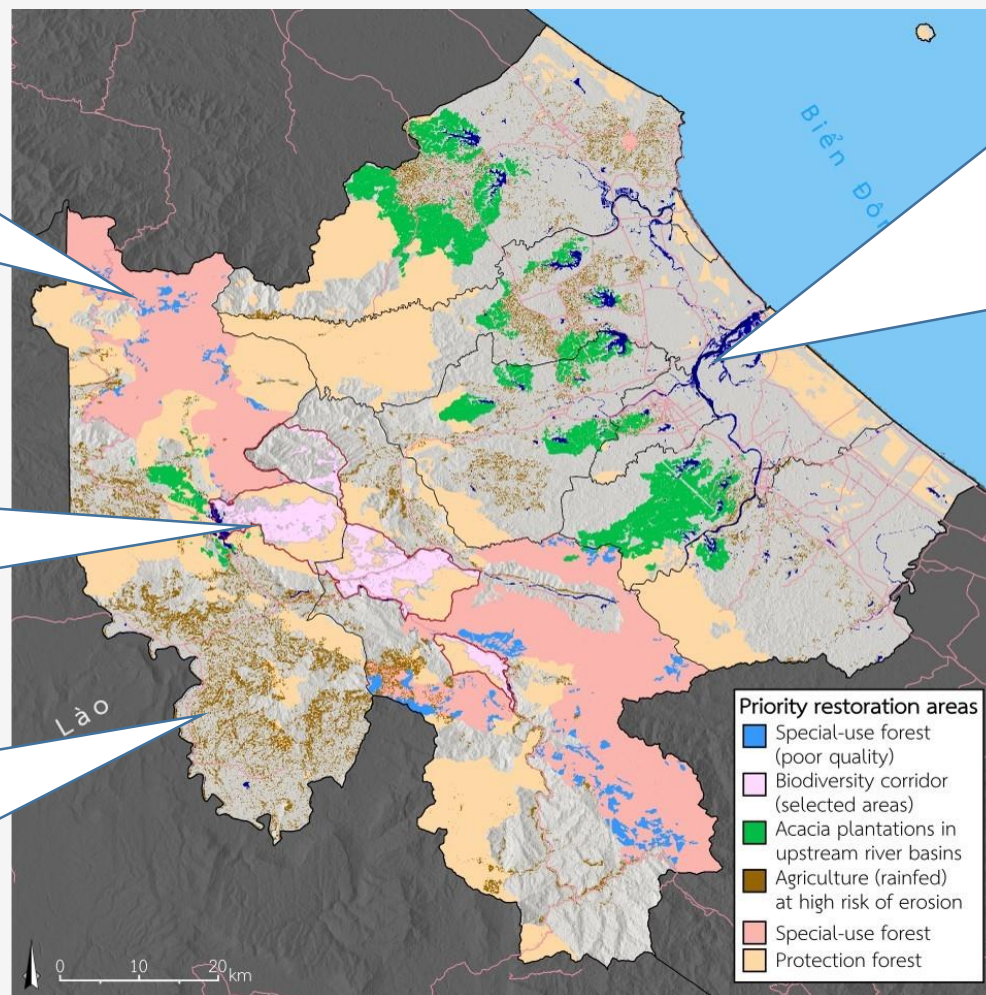
- Erosion control by reducing time land is bare after harvesting
- Improve water quality river basins
- Increase incomes through high-quality timber (including FSC)
- Increase biodiversity

FLR restoration areas (A+B+C)

EP-ANR of poor quality forest in SUF, with support of PES (6,303 ha)

EP-ANR of poor quality forest and other (to be converted) land in corridor (9,879 ha)

SWC in (rainfed) agriculture at high risk of erosion, special attention for cassava areas (24,975 ha)



ER & NSI (+FSC) for acacia plantations held by large land holders (9,541 ha)

ER & NSI (+FSC) family-held acacia plantations (>10 ha) (1,332 ha)

ER with support of FSC for family-held acacia plantations (3-10 ha) (2,660 ha)

(13,533 ha)

Total: 54,000 ha
(11% province)

Costs, benefit and barriers

FLR option	Costs/benefits	Barriers
1. EP-ANR	<ul style="list-style-type: none"> Costs vary greatly depending on intervention required Carbon: +97 tCO₂e/ha (vs. poor-forest); +32 tCO₂e/ha (vs. natural growth) 	<ul style="list-style-type: none"> Costs of implementation Maintenance and follow-up Low incentive for landowners
2. ER	<ul style="list-style-type: none"> IRR: 19.1% (vs. 15.8% BAU) (over 2 rotations; 23 years) Carbon: +49 tCO₂e/ha (vs BAU) 	<ul style="list-style-type: none"> Delayed income; limited technical capacity Requires land/capital VCs adapted to short rotation
3. NSI	<ul style="list-style-type: none"> IRR: 18.6% (vs. 15.8% BAU) (over 30 years) Carbon : +81 tCO₂e/ha (vs BAU) 	<ul style="list-style-type: none"> Delayed income; limited technical capacity Requires land/capital VCs adapted to acacia
4. SWC	<ul style="list-style-type: none"> Fertilizer can increase cassava yield by 50-110%; return 1-2 years Intercropping can double or triple profits; costs increase Cross-slope barriers reduce soil loss by 50%; yield impact modest Carbon +1-6 tCO₂e/ha/yr 	<ul style="list-style-type: none"> Limited access to fertilizer and improved cassava varieties Intercropping requires labor and capital Cross-slope barriers labor intensive; benefits long-term

Enabling (and constraining) factors

Motivation/incentives

- Forest tenure allows farmers to invest in FLR
- Difficulties getting loans, government plays key role
- Logging ban as disincentive
- PES payment low and fixed regardless performance

Implementation capacity

- Proven FLR models exist
- Basic skills, but technical assistance required (especially on NSI)
- Enrichment planting and ANR often fail due to lack of follow-up
- Costly/low availability of key inputs and seedlings

Markets and value chains

- International demand for legal timber and dependence on imports
- Smallholder FSC implemented in several provinces
- No market incentive to promote sustainable cassava practices

Policy support and enforcement

- PRAP (2016–2020) with measures to curb deforestation and degradation
- Laws/institutions well developed, but often not enforced
- Growing emphasis on sustainability and forest conservation, but national policies remain focused on quantity

Thank you

