Sustainable land management practices in the uplands

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Ministry of Agriculture and Forestry
Main challenge in Uplands Development

Increasing agricultural productivity

→ Agricultural intensification (green revolution)

High OUTPUT expected
Main challenge in Uplands Development

Increasing agricultural productivity

→ Agricultural intensification (green revolution)

High OUTPUT temporarily

+ DEGRADATIONS of the ENVIRONMENT
Degraded lands and soils loss . . .
Successfully tested techniques
Successfully tested techniques
Contour hedgerows, grass strips
Successfully tested techniques

Hillside ditch
Successfully tested techniques
Agroforestry
Improvements are possible, but... they must be acceptable for farmers.
AGRO-ECOLOGICAL OPTIONS FOR ECO-FRIENDLY INTENSIFICATION

- Uncultivated buffer zone (5-10m)
- Protection of rivers banks (trees, bamboos...)
- Fish/duck-rice production systems
- Dry season production cycles
- IPM, compost, SRI
- Diversified rice systems (legumes, forages)
- Diverse commodities (city yards, vegetables...)
- IPM, compost
- Crops post processing (dry, silo)
- Organic vegetable production
- Forage plots (cut and carry)
- Dry season fodder (silage, urea...)
- Agricultural activities diversification (frogs, mushrooms, trees, honey...)
- Crops diversification (rotation, association)
- Improved pastures
- Conservation agriculture
- Improved fallows
- Agroforestry
- Contour hedgerows
- Natural vegetative strips
- NTFP domestication
- Reforestation

River
Lowland Rice
Terraces Rice
Residential areas
Home Gardens
Upland crops
Forest

Water quality, siltation
Pest pressure, soil fertility, water and labor scarcity...
Diversification of agricultural income
Weed control, soil fertility, erosion
Alternatives to burning and/or tillage, pesticide use
Stop deforestation
Sustainable agriculture is maintaining crop nutrients (soil health)

Crop residues
Animal feed

Farm yard manure
Crop residue (compost)

Organic fertilizer
N, P, K+

3/15/2018
Organic Matter Management

Control

Fertilizer + OM
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<th>Compost</th>
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Rice yield = ?

2.1 t/ha
## Treatment Fertilisers Compost

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Rice yield = ?

2.4 t/ha
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Rice yield = ?

3.6 t/ha
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Rice yield = ?

3.6 t/ha

Compost: + 50 %

Time consuming, but acceptable for poor farmers.
Sustainable agriculture is the future of Lao Uplands

Thanks