Agro-ecology approach in southern Xayabury – Lao PDR

Direct seeding on vegetal cover

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Landscape unit on the south of Sayaboury

Some physical, economic and agriculture aspects of the south of Xayabury

Average rainfall is 1200 mm.year^{-1}. A short dry season occurred from end of June to beginning of August

Intensive agricultural development depends on local market accessibility and financial capacities of the local enterprises

Main dryland crops are : maize, rice-bean, job's tears, peanut, rice and sesame

Land allocation has started since 1996. Cropping system is largely opportunistic, no particular crop rotation is followed and usually no fallow period can be observed.

Environnemental costs of present agriculture development

Land preparation is mainly based on ploughing on steep slope and pre-sowing herbicide application. Land erosion, roads and paddy fields destruction, pollution by chemicals and loss of agricultural land are common.

Ploughing on steep slope and land erosion

Implementing direct seeding systems on vegetal cover

Sesame crop on rice-bean mulch

A first way is based on direct seeded grain crops on former crop residues (rice-bean or job's tears straws). This system allows :

- to decrease weeds pressure and soil erosion ;
- to increase soil fertility and biological activity ;
- to decrease pollution by trapping chemicals on the vegetal cover.

A second way is based on cropping system and livestock production integration. Two mains systems can be performed :

- rotations with direct-seeded grain crops (maize, Job's tears) followed by forage production for grazing (2-3 years). The forage can be sowed on the main crop ;
- grain production system based on two crop sequences. A main crop (peanut, sesame) followed by a crop for small animal feeding (sorghum, finger millet).

Brachiaria ruziziensis sown 30 days after job's tears emergence

Cattle grazing on *B. ruziziensis* pasture

Sorghum production for small animal feeding

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