

Upland Agriculture Curriculum Initial Consultative
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Concept framework for upland agriculture research and education

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1. Why upland agriculture is important?

- Bypassed by Green Revolution and socially excluded
- Exploitative land use and farming practices have resulted in resource degradation (soil, water, biodiversity)
- Commercial monoculture farming systems increase farmers' indebtedness
- Future food production depends on sustainable intensification of upland agriculture

2. Upland agriculture research and education (UARE) framework

- The challenge of upland agriculture is to invest in approaches that build upon philosophy of sufficiency economy.
- The approaches aim to achieve jointly three basic elements at the landscape level:
 - Enhanced rural livelihoods (*live well, eat well*)
 - Productive and sustainable agricultural systems and resource management
 - Local entitlement to resources and services

3. Key processes of UARE

3.1 Basic thinking and practices

- Agro-ecosystem analysis through participatory approach
- Multi-stakeholder interaction through facilitation process
- Collective action and gender relations
 - Motivation, effectiveness, impact
- Decision support tools
 - Information, forecasts, scenario analysis
- Performance assessment
 - Multiple criteria and indicators

3.2 Research and development

- Linking ecological and social systems
- Agro-ecological principles and practices
 - Production practices: biodiversity by design, IPM, INM, ICM, WUW
 - Production systems: IFS, AF, CLIS, PFPS, OA,
- Appropriate use and conservation of biodiversity
- Knowledge creation and learning approach

3.3 Access and control of resources

- Farmers' rights in genetic resources
- Access to land and forest resources
 - Community Forest Acts
- Access to information and services

3.4 Systems of promotion and service delivery

- Devolution to local organizations and institutions
- Increasing roles and responsibility of local administration organizations (TAOs)
- Establishing funds for supporting local activities, welfares, social learning processes, and resource rehabilitating projects

3.5 Enhancing local competence and local initiatives

- Broaden public space and local forum for social learning
- Promote local knowledge
- Make use of local resource persons
- Promote collective action

3.6 Market intervention

- “Marketing begins at the household level.”
- Promoting local food system
- Supporting community market for distributing locally produced farm products
- Marketing network between TAOs
- Establishing partnership with private distributors

3.7 Policies that work

- Based on sufficiency economy
- Deliberative policy processes (interactive, social process design)
- Area-based development strategy: eg. to address poverty reduction, MDGs.
- Linking with other non-agricultural policies: food safety, small-and-medium enterprise (SME), etc.
- Organic agriculture initiative

Land use change in the Upper North

- Land use interface between lowland and upland for food security, and income generation of small farm holders in the Upper North



- Contribution of livestock to rural livelihoods

 - Food

 - Cash and saving

 - Employment

 - Benefit sharing

 - Efficient use of resources

- Potential for improvement

 - Cross-breeding

 - Feed improvement



Change in fruit tree system: litchi to citrus



- Agricultural expansion and intensification in the lowland-upland interface results from market demand and government policy:

Rice- fruit tree

Rice- fruit tree- rubber



Cassava cultivation on the less favorable environment

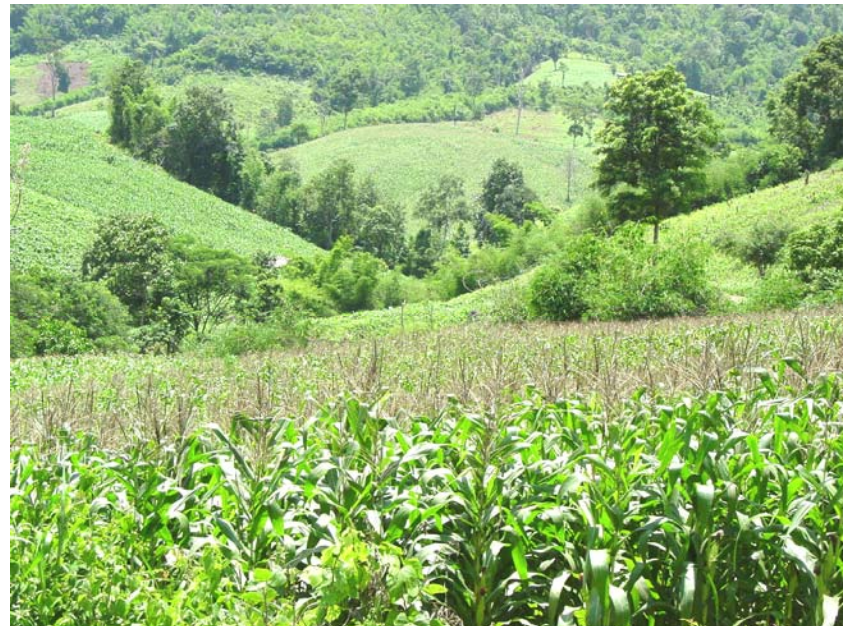


Maize cultivation on the rainfed uplands

Lower North
degrading area



Upper North
new planting area



Rainfed soybean in the Lower North

Declining in planted areas: less competitive crop



Transforming traditional soybean field into *phutssa* (*Ziziphus mauritiana* Lamk)



Rainfed sugar-cane in the Lower North

Integrating short season crops in sugar-cane rotation (water melon and sesame)



“Mobile” farming system

Group farming of watermelon on the rented land:
Capacities: control, adapt, learn, innovate



New farming systems in the Lower North

Migrant farmers with knowledge
and financial capitals

Table grape



Citrus



Raising cattle for cash and employment



4. Education: implications for interdisciplinarity

- Undergraduate:
 - Minor (package of five 3 credit-hour courses)
 - Interactive learning through case studies
 - “learning from farmers” internship
- Graduate:
 - research program
 - Professional program
- Non-degree training
 - Subject matter specialists
 - Methods and tools

5. Master of Science Program in Agricultural Systems

Systems principles and practices:

- AGS 701 Basics of Agricultural Systems 3
- AGS 704 Case Studies in Agricultural Systems 2
- AGS 705 Research Formulation and Communication 3
- AGS 791 Seminar 1

Elective courses:

- AGS 711 Decision Analysis and Risk in Agricultural Systems
- AGS 731 Sustainable Agricultural Systems
- AEC 765 Farm Systems Resource Planning and Management
- AGS 722 Spatial Information for Resource Management
- AEC 763 Development Project Planning and Management