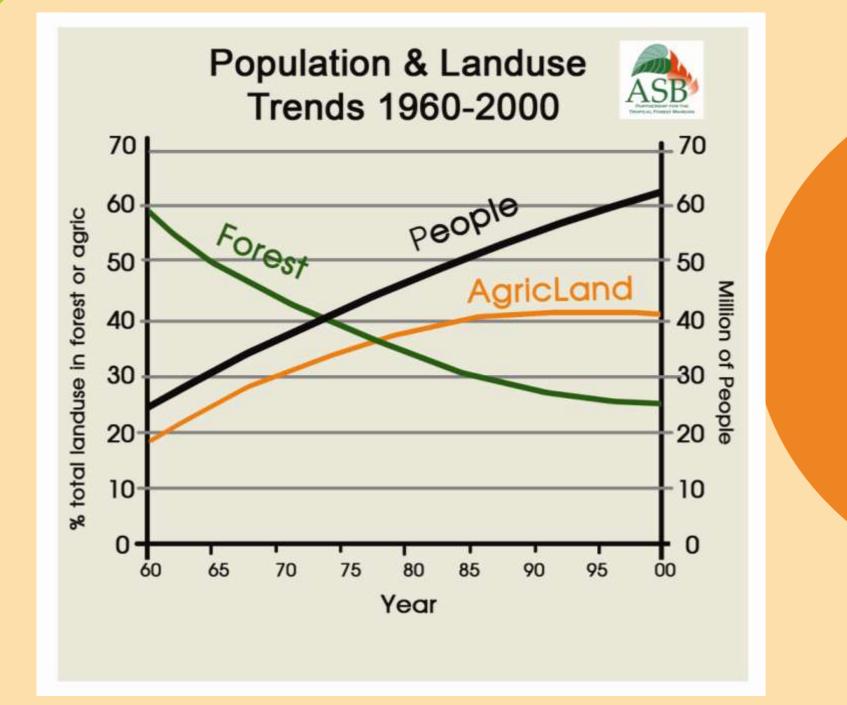
Northern Thailand

Mean Annual Rainfall: 1,300 mm

Who is planting or removing trees?



Traditional land use systems

With strong co-variance of forest types, ethnic composition and land use practices

according to altitude zones, previous studies suggest three major types of traditions with which traditional land use systems have associated. Their basic features and trends of change are summarized below:



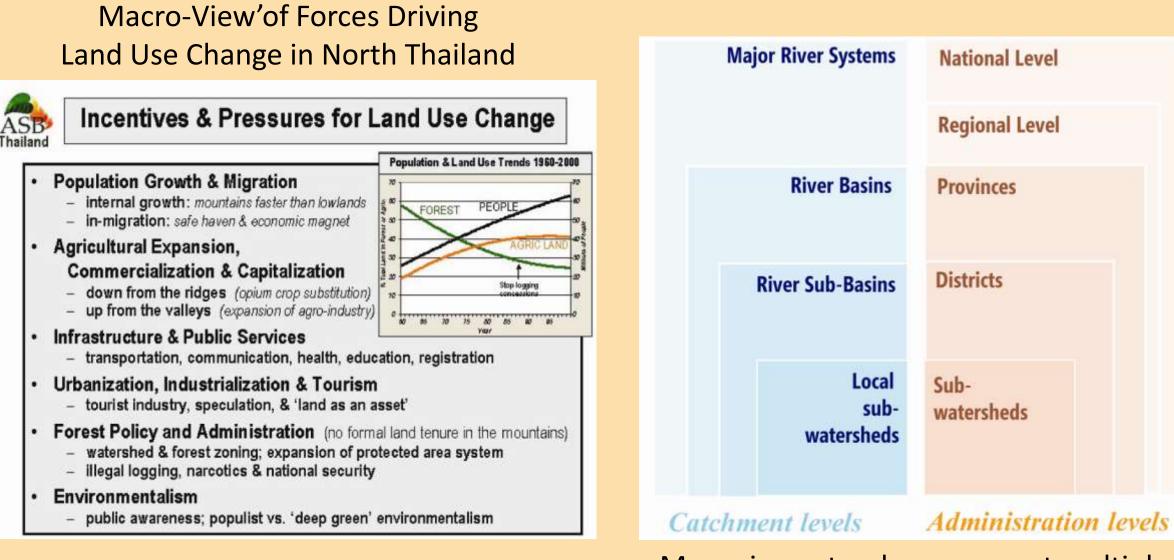
Major Ethnic Groups in Mae Chaem



Thailand

(1) Highland traditions have been associated with relatively mobile villages and 'pioneer'-type long cropping with very long 'abandoned' forest fallow.
Today, pioneer shifting cultivation and opium have been replaced by commercial vegetable production. There has also been substantial planting of pine plantations by the forest department in grassland areas the state claims to have resulted from pioneer shifting cultivation.

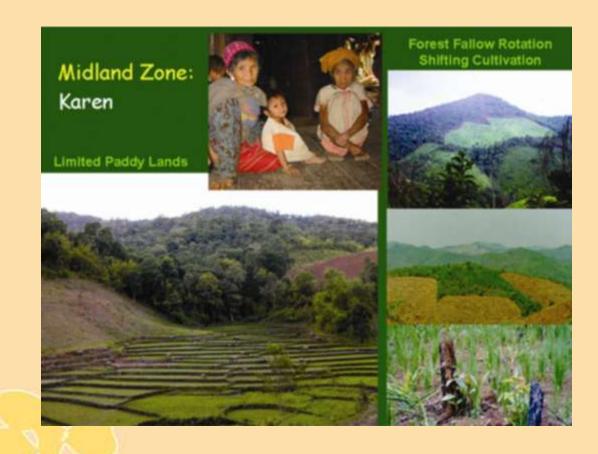
Land user concerns: center on markets for commercial crops and land security. *Wider environmental concern:* centers on deforestation of hill evergreen forest areas, and impacts on stream flow, erosion and pesticide pollution.



Managing natural resources at multiple levels : from local to international

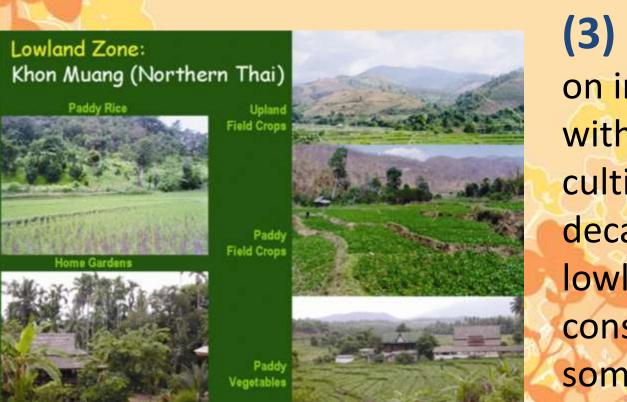
Overall trends associated with changing land use mixtures of mosaic patterns include:

- Differences between altitude zone land use domains of ethnic groups are becoming less distinct.
- Change appears to be associated with increased competition over land



(2) Midland traditions are associated with 'established' villages and systematic short cropping with long 'rotational' forest fallow systems that often include paddy land. Today, pressures from population growth, expansion of both lowland and highland systems, and especially government policy, have reduced land availability, often resulting in much shorter forest fallow cycles, and even conversion to fixed fields in some areas.

Major concerns: food security, land security and crop markets. *Wider environmental concerns:* tend to focus primarily on deforestation, and to some extent on water use and stream pollution.



A Real Marca

(3) Lowland Thai traditions have largely focused on irrigated paddies and home gardens, sometimes with supplemental short cropping - short fallow cultivation on nearby lower slopes. During recent decades, in addition to intensification of paddy and lowland vegetable production, there has been considerable further expansion of field crops, and in some cases orchards, into forested watersheds above

- resources, 'degradation' or conversion of traditional systems, increased agricultural commercialization based on 'lowland' technologies, and larger areas cleared of forest at any one time.
- Very little research and development has aimed at understanding traditional systems or the impacts of the transformations they are going through.

Major policy-related issues associated with changes in Mae Chaem include:

- state and lowland perceived deterioration of the natural resource base due to deforestation and intensifying agricultural production in upper tributary watersheds, and its immediate and longer-term impacts on resources used by downstream society
- needs of poor mountain communities to have secure access to resources and services that will allow them to improve their food security and livelihoods
- associated growing upstream-downstream tension and conflict.

Overall patterns: Mae Chaem Watershed

Overall					system footprint				11 01		
	major village system components			ratio.		10.10				Mae Chaem:	
patterns: Mae Chaem	paddy rice	upland roa	field crop	orchard	bilow per Jupland ap km	C110311	land	ALC: NOT THE REPORT OF	permi forest		In the second second second
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	Overall Study	Area			1.8	20	15	. 21	63		
		Contraction of the second s			-			-	-		

Population distribution circa 1997

e Chaem:	Population	n & Ethn	ic Gr	oups				
O	Population Distribution by Elevation 2 & Mountain Ethnic Group							
Section 1		Overall Population		Karen & Lua	Hmo & L			
me -	Mae Chaem	67,912	28%	63%	9			
SAN A	- High Peaks	-		26%	-			

- Midlands 32% 1% 30% 1% - Lowlands 35% 27% 7% 1% Population & Ethnic Composition in Context

paddy lands.

Major concerns: markets for commercial crops, availability and quality of irrigation water, and land security.

Wider environmental concerns: tend to focus on water use, pollution and deforestation – primarily as they relate to perceived negative externalities of upstream land use.

200 P	Manual in all all a	Population			Group
	Mountain ethnic g - North Thailand	12,091,337	ader pop	ulations 3%	3%
	- Chiang Mai Prov	1,573,757	8%	7%	1%
	- Mae Chaem	67,912	72%	63%	9%
	Est. average annu	al population	n growth	rates, 197	2-97
and the second	- North Thailand	1.6%	3.0%	1.4%	5.1%
18 - 20 SD Kilometers	- Chiang Mai Prov	1.6%	3.2%	2.4%	5.2%

Reference :

Thomas, David E., P. Preechapanya and P. Saipothong. 2004. Landscape Agroforestry in Northern Thailand: Impacts of Changing Land Use in an Upper Tributary Watershed of Montane Mainland Southeast Asia. ASB-Thailand synthesis report 1996-2004. Chiang Mai: World Agroforestry Centre. 184p.

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