Survey questions
Questions for households with outmigrants: How did agricultural practices change following the departure of the outmigrant(s)?
__ No change
__ Less land used
__ Different crops planted
__ More hired labor
__ Mechanization

Questions for outmigrants or potential migrants: What type of job do you expect to get? (formal/informal; high paid/low paid; permanent/seasonal). How much does this type of job typically pay (net) per month? Will you send money home? How much per month?

Motivation for model
Growth between 1985 and 1996 reduced overall poverty but was also associated with big increases in income inequity. This can be observed within rural areas as well as between rural and urban areas (check Medhi). Since the majority of Thais live in rural areas, with agriculture as their main source of income, it is relevant to ask whether we can explain the determinants of this worsening of income distribution within rural areas. While this question is of intrinsic interest, it may also be the key to several other questions of particular import in Thailand’s present circumstances.

Model:
Households maximize present value of a stream of net revenues obtained from the use of their initial resources (land and labor, both adjusted for quality) in a variety of activities. These activities vary across several dimensions: time to payoff, up-front cost, risk, uncertainty, and the time path of expected returns.

1. Agriculture: using existing land and labor resources, combined with 'current inputs' (seed, technology, hired labor, etc). Decide on allocation of existing land to different crops.
2. Migration: send out some members of the household for non-farm labor, mainly unskilled, with poss. of returning for harvest.
3. Land investments (fallow, irrigation, hedgerows etc.) aimed at sustaining or improving long-term productivity. Near-term losses should be offset by higher revenue flows in long term.
4. Labor investments (education), aimed at providing a higher remittance flow in the future—after a significant near-term sacrifice.

- 1&2: no costly investment in the quality of resource endowments (there may be some disinvestment in land if production techniques do not replace nutrients).
- 3&4: Costly investments must be made in order to secure revenue flows.
• From 1 to 4: increasing risk (esp. if subsistence targets are important), but annual returns should eventually greatly exceed those from 1&2.

Household's problem: choose a portfolio of activities that maximizes the expected utility of a stream of revenues, subject to constraints posed by the initial resource endowments, technology, and market access. Deal with uncertainty due to stochastic agricultural prices and non-farm employment probabilities. Deal with fixed costs, e.g. of migration decisions or land use changes such as planting perennials.

Examine household resource allocation and investment responses to permanent shocks (e.g. 1990-96) and transitory shocks (1997-98). Base analytical model on Frenkel and Razin, or Pindyck and Dixit?

A problem: are outmigrants included in the household or not? Answer in part by reference to seasonality of migration, and perhaps by interviewing migrants themselves. Also: do outmigrants play any role in resource allocation decisions?

Exogenous and policy factors: Intrinsic transport costs and market access, altering farm gate prices of goods produced. Information flows that alter market access for goods (e.g. vegetables produced for sale in external markets) and the subjective probability of employment by migrants (information flows may be functions of ethnicity, prior experience in the household and village, and so on). Policy shocks that alter relative prices, employment opportunities, and transport costs.

Programming approach:
- Construct 4 activity programs (ag. production, migration, land investment, labor investment)
- Link these through household optimization problem, including common resource and credit constraints
- Derive reduced form, revealing choice of activities in terms of exogenous and predetermined variables -- including policy and macroeconomic variables.
- Parameterize from survey data
- Examine responses to permanent and transitory shocks in key economic and policy variables.

Implications of model choice and structure for survey and sampling
Implications for sampling strategy? Perhaps re-introduce Bieng Luang and other Mae Taeng areas to ensure a wider range of variation in prices, market access, migration flows and land/labor investments.