

Changes in Shifting Cultivation in Mizoram – Some Preliminary Findings

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Presentation outline

- Major questions about shifting cultivation in the Eastern Himalayas
- Research methods
- Preliminary findings



Eastern Himalayas and Southeast Asia



- Bangladesh
- Bhutan
- Cambodia
- India
- Laos
- Myanmar
- Nepal
- Northeast India
- Sri Lanka
- Thailand
- Vietnam



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A complex region with shared issues and opportunities...

- Nearly $\frac{1}{4}$ of global population
- Wide diversity of cultural, religious and linguistic groups
- Economic diversity and non-uniform growth
- Very high species endemism and diversity – said to be the diverse region on earth
- Relative isolation of rural communities, development practitioners and researchers
- Rural livelihoods based on shifting cultivation (*jhum*) on steep slopes



Common issues in the Eastern Himalayas:

- Poverty and food insecurity
- Jhum-based livelihoods
- Population growth
- Tribal minorities
- Gender inequality
- Water quantity/quality issues
- Climate change
- Substantial challenges in infrastructural development
- Isolation from markets and information
- Movement of zoonotic species
- ***VERY LITTLE DATA!***



Key Issue: Shifting cultivation

Government policies focused on eliminating jhum

In Mizoram, strategy is to distribute goods in hopes that people will abandon jhumming.

Very risky for farmers! Critical needs:

- Diversification; market outlets
- Alternative livelihoods
- Higher value crops with value-added
- Training, knowledge, technical assistance



Key issue: Food insecurity

Mizoram population growth % ± : Rapid population growth

- **1951:** 196,000 —
- **1961:** 266,000 +35.7%
- **1971:** 332,000 +24.8%
- **1981:** 494,000 +48.8%
- **1991:** 690,000 +39.7%
- **2001:** 889,000 +28.8%
- **2011:** 1,091,000 +22.7%

- Source: Census of India^[12]



Jhum is not sufficient; Most food is now imported



Key assumptions

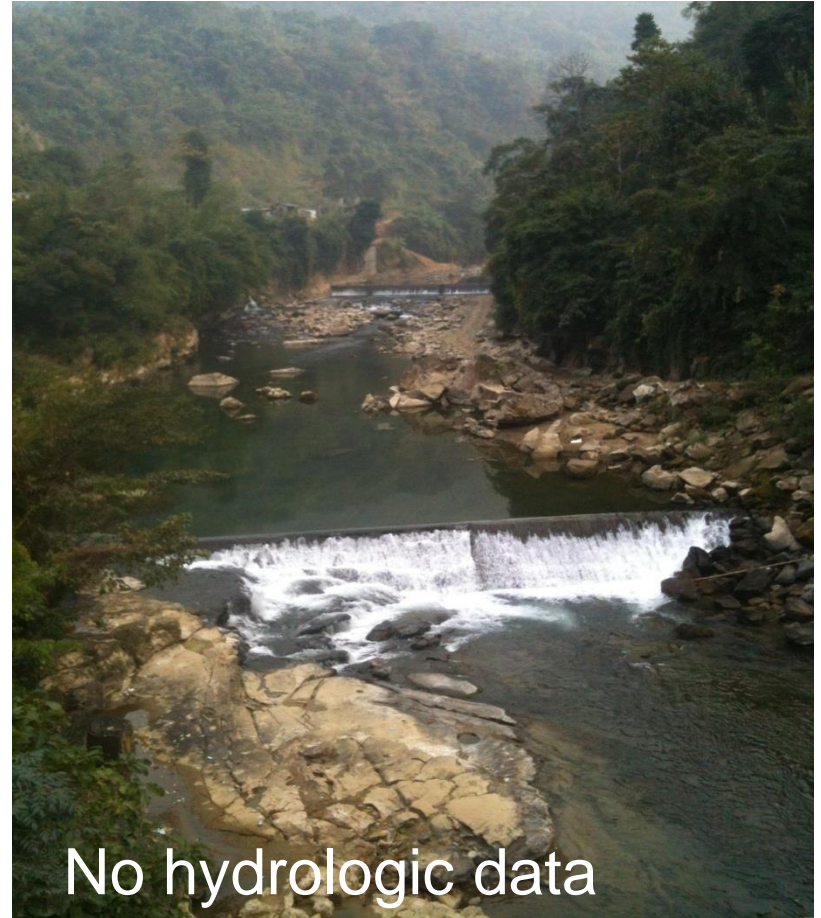
- Policymakers and academics have assumed that population growth and jhum lead to shortened fallow cycles and land degradation
- Mizoram's New Land Use Policy is based on this assumption
- Many academic papers repeat the same assumptions



The reality: No reliable data!!



Citizen science



No hydrologic data



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Big data gaps...

There are significant gaps in our understanding, for example:

- Basic hydrological, soils and meteorology data are lacking (water budgets; no water plans; no water quality data)
- Jhum fallow patterns and cycles
- Functioning of local markets, including labor markets
- Movement of zoonotic species

But: even less is known about people!

The human dimensions can be more challenging than bio-physical dimensions



No data? So what?

You can't manage what you can't measure!

How do you measure and evaluate impacts of policies, plans and programs without good data?

Data = evidence of project success or failure

➔ Urgent need for applied research and studies on biophysical and human dimensions to support development planning and decision-making



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Critical Research Needs as Determined at the March 2014 International Land Use Symposium



?

Theme	Research Areas and Questions
Biophysical baseline data Watershed management Climate change response	Rainfall patterns; stormwater runoff Hydrologic patterns and water budgets Soil fertility and erosion Historical land use Watershed planning Local water source management and maintenance
Production systems Weed control/pest mgmt Fire/burning strategies	What are current farming systems? How are they changing over time? What are soil requirements for potential crops? What crops, pests and management strategies are employed? How do producers control weeds? How is fire managed? What is the effect of fire on soils? Can mushroom production be initiated? How to achieve sustainable land management?
Socio-cultural Equity, gender, age, Outreach, education	What are current land and water tenure systems and issues? Tenure rights: Who owns what, including means of production? Crop selection - how and why? What are risks and constraints to the adoption of new systems? Do farmers actually adopt and maintain new practices? Livelihood and gender analysis: Who does what and when? Subsistence v. market and how much?
Economics/marketing Processing; Post-harvest chain	Financial and benefit/cost analysis Can farmers sustain livelihoods? Impact of privatization What is the best level of processing? Storage systems, post-harvest technologies and marketing. Potential crops; current processing (pros and cons)
Natural resources management	Who manages water resources?
Non-timber forest products	Fuelwood, charcoal, energy use and sustainable management

Gap Exercise on Production Practices – What Don't We Know about Shifting Cultivation?



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Methods

- Lit review: found one study in Mizoram was by Daman Singh (1996)
- Field studies: We visited the same villages and did semi-structured interviews on farming practices
- KAP (knowledge, attitudes, practices) study
- Data collection: Completed gender-disaggregated task calendars



Preliminary Findings

- Fallow cycles are getting longer, not shorter
- Rural families are already moving away from jhum toward more remunerative livelihoods
- Shift toward higher-value horticultural crops
- Producers appear to be aging, with fewer youth engaged in agriculture
- Very little extension support
- Farmers have already begun to innovate and are adapting to reduce their labor burden and increase their profits



Summing up...

- Like Mizoram, the entire Himalayan and SE Asian region is poised at a crossroads
- Population growth may be overtaking self-sufficiency in food production, pushing carrying capacity
- We see critical needs for information, education, training and capacity building at all levels
- This is an exciting time. There are significant challenges but also many good opportunities within reach
- There is tremendous opportunity for collaboration in almost all areas



Discussion



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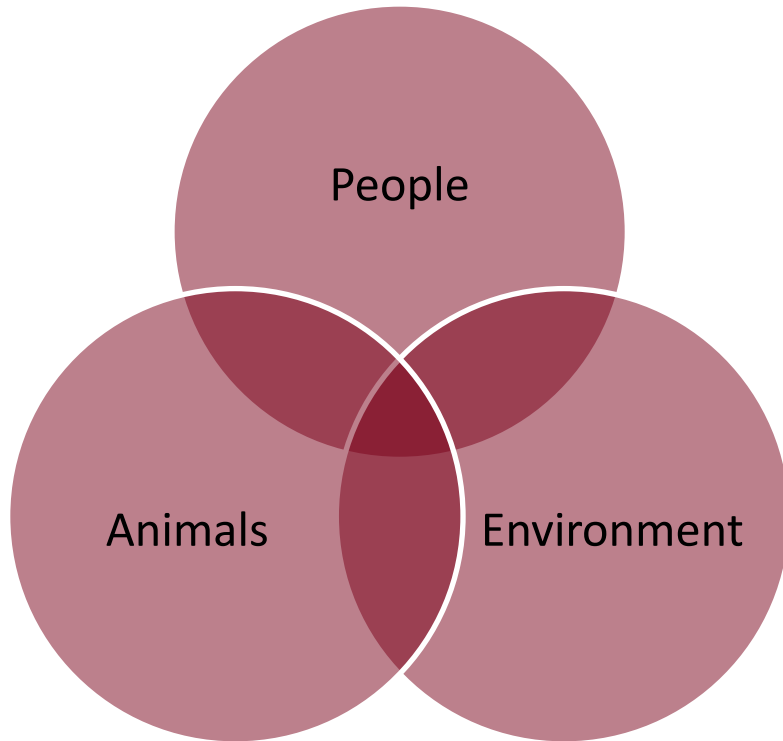




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Zoonotic diseases



Rabies, malaria, FMD, dengue, parasites, Avian influenza, swine diseases, mautam, etc.

