

**Proceeding of the Workshop on Land Use Options
and Extension Approaches in Shifting Cultivation,
24-27 February, 2010
Bandarban, CHT, Bangladesh**

May 2010

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Proceedings of the Workshop on Land use Options and Extension Approaches in Shifting Cultivation

Background

The workshop was organized under the “Regional Project on Shifting Cultivation (RPSC): Promoting Innovative Policy and Development Options for Improving Shifting Cultivation in the Eastern Himalayas”, which covers Bhutan, Bangladesh, and Nepal. The project, funded by the International Development Research Centre (IDRC), is aimed at contributing to the livelihood security of the shifting cultivators in the eastern Himalayas. The project’s specific objectives are:

- (i) To assess tenure changes and institutional arrangements in different shifting cultivation areas caused by various policy interventions and evaluate economic, social and ecological impacts, and identify gaps and needs for improving the relevance of policy interventions;
- (ii) To analyze and compare good practices and options related to shifting cultivation and alternative options adopted to generate new knowledge for appropriate policy recommendation; and
- (iii) To share good policies and practices related to shifting cultivation and alternative options through regional exchange.

Workshop objective

The objective of the workshop was to review, discuss and finalize the draft research protocol on Land Use Options and Extension Approaches in Shifting Cultivation.

Workshop Venue, Agenda and Proceedings

The workshop was held in Bandarban, Bangladesh which was attended by research partners from Bangladesh, Bhutan, and Nepal. Refer Annexure A for workshop program and Annexure B for participants.

Day 1: 24 February 2010

Session 1: Opening ceremony

The workshop began with an inaugural session. The Master of Ceremony offered a warm greeting to the distinguished guests and participants. Mr Moungh Thowai Ching, Executive Director, Green Hill delivered his welcome address. He accorded a warm welcome to the participants and expressed his gratitude to the Chief Guest - Mr. Masud Ahmed, Secretary -in-charge, Ministry of Chittagong Hill Tracts Affairs (MoCHTA) and Member of ICIMOD’s Board of Governors. He also highlighted the importance of the workshop.

The welcome address was followed by the introduction of participants which was succeeded by a presentation titled Land Use Research in the Regional Project on Shifting Cultivation was made. The presentation focussed on 4 topics: (i) shifting cultivation: a policy issue; (ii) Regional Project on Shifting Cultivation; (iii) land use research; and, (iv) objective of the workshop objective and programme. Besides, the presentation covered an overview of the dominant farming systems of the North East India, Bangladesh, Bhutan, China, Myanmar and Nepal. It also explained the intricate linkage between the culture, tradition, and livelihoods of shifting cultivators and the natural environment that support shifting cultivation. Further,

misunderstandings, disagreements and problems that exist between shifting cultivators and their governments were highlighted. The scope that the adaptive learning and management can offer for resolving the problems, misunderstanding and disagreements was also covered. The goal, some key policy issues, working approaches and process of the Regional Project on Shifting Cultivation were presented as well.

Mr. Aung Prue Mro, Councillor, Bandarban Hill Development Council said that in many ways the Chittagong Hill Tract (CHT) may be different from Nepal and Bhutan, and perhaps shifting cultivators in the CHT are more disadvantaged. He also stated that in the CHT other land uses are causing more damage to the land resources than shifting cultivation. He cited the Arum cultivation (Arum is a plant that is grown in the Jhum and to produce arum, it requires huge spade digging in the jhum field and fertilizer) perceived to cause more soil erosion than shifting cultivation, as an example. He said that in his view reclaiming the streams, reforesting the catchments and increasing public awareness in the CHT are very important. He expressed optimism that findings of the research on Land Use Options and Approaches will be useful for improving the land management in the CHT.

The Deputy Commissioner could not make to the inaugural session. In his Key Note Address, Mr. Masud Ahmed, Secretary, MoCHTA said that generally the Himalayan countries have many similarities. Regarding the CHT, he said that decreasing per capita population land ratio in the shifting cultivation areas poses a threat of rendering shifting cultivation unsustainable. He said that given that emotional and cultural ties of shifting cultivators with shifting cultivation can't be severed overnight, and as the population pressures mount, the need for the scientific research to find the ways of making shifting cultivation sustainable is very important. With this remark he wished a success to the workshop and declared it open.

The inaugural session ended with a vote of thanks to the participants- from Bhutan, Nepal, India and Bangladesh- guests, and the organizer (Green Hill) of the workshop.

Session 2: Research questions

Workshop process

The process to be followed in the workshop was presented. It was explained that since the assumption is that the issues which need to be studied are common to all the participating countries same protocol needs to be followed in all the countries. To have a common protocol for research means to ask same questions and apply same methodologies in each of the countries, even though the answers and findings may be very different depending on the individual country situations. The common protocol would make the research findings from the participating countries comparable with each other from which common lessons can be synthesized. It was stated that using same protocol would be advantageous particularly for policy research because by comparing research findings from different countries various policy options can be assessed.

Improving shifting cultivation: a case of NEPED, India

A case from Nagaland Empowerment of People through Economic Development (NEPED) on improving shifting cultivation in Nagaland was presented. The presentation covered (i) the fundamental aspect of changing jhum landscape in Nagaland; (ii) land use improvements in jhum; (iii) conversion of jhum to horticulture/ agriculture; and (iv) working with government and

farmers. In summary, the presentation pointed out how jhum can be practised in a changing social and economic context.

Plenary discussion on research questions

The following research questions were presented and feedbacks were sought from the participants.

1. How is shifting cultivation changing in terms of structure, functions and processes?
2. How are the changes affecting the shifting cultivators' livelihoods?
3. What is the impact of external factors and support on shifting cultivation and the livelihoods of its practitioners?
4. What are the most constructive options and approaches for improving land use and livelihoods in shifting cultivation areas?

After an extensive plenary discussion the research questions were finalized as below:

1. How is the shifting cultivation changing in terms of structure, functions and processes?
2. How are the changes affecting the shifting cultivators' livelihoods outcomes?
3. What is the impact of government policy, the private sector and civil society on shifting cultivation and the livelihood outcomes of its practitioners?
4. What are the most constructive options and approaches for improving land use and livelihoods in shifting cultivation areas?

Session 3: Conceptual framework

Shifting cultivation (a system- structure, function and processes)

A concept of shifting cultivation as a system - structure, functions and processes - was presented and discussed. A general understanding was created amongst the participants about the topic. Then the participants were sensitized about the changes affecting shifting cultivation. The presentation was interspersed with discussions which enabled the participants to enhance their understanding. Meta cards were handed out to the participants to write down the aspects related to the structure, functions and processes. Then the cards were re-arranged and placed under structure, functions and processes through a collective decision of the participants. The outcome of the collective decision is given in the Table 1.

Table 1: Participant's examples on shifting cultivation as a system with structure function and processes

Structure	Function	Processes
Forest	Soil and water conservation	Traditional cultural practices
Shifting cultivation land	Water catchment protection	Livestock management
Fallow land	Livelihoods	Fallow period (fallow management)
Horticultural crops	Biodiversity conservation	Fire management
Customary institutions	Wildlife conservation	Agriculture practices
Crop species/variety	Employment	Forestry
Shifting cultivators	Economic return/market value	Climate change
Soil	Income generation	Crop and fruit production
Natural resource base	Food security	Nutrient management
Agro biodiversity		Management practices
Water		Cultivation system
Plant/trees		Burning
Animal		

Livelihood Analysis

In the second part of the session 3, a sustainable livelihood framework, given in Annexure C, was presented. The key components covered were vulnerability context, livelihood assets, transforming structures and processes, livelihood strategies and outcomes. The presentation pointed out that adopting this framework would require a deeper understanding of how the different components are linked and influence each other. The participants' views were sought about every component. Generally, they held the view that shifting cultivators' livelihood would vary depending on their social, economical and environmental conditions. The participants found the framework appropriate for the intended research.

Day 2: 25th February 2010

Recap of day 1

The Day 2 started with the recap of Day 1. Generally, the participants could recollect most of the elements of shifting cultivation as a system as well the components of the livelihood analysis framework. The recap was followed by the presentation on external support.

Session 3 continued

External support

A concept about the external support, to be construed as government policies and private sector investment programmes in shifting cultivation, was presented. A framework to enumerate government policies and assessment of their impact on the shifting cultivation and the livelihood of shifting cultivators was presented. See Annexure E for assessment framework.

The other aspect the framework was about the private sector programs impacting on shifting cultivation and the livelihood of shifting cultivators. The need to understand the influence of the market economy on the structure, functions and processes of shifting cultivation as a system was highlighted. The presentation also underlined the importance of assessment of demand and supply of shifting cultivation related commodities in order to understand the impact of the private sector programmes on shifting cultivation. In particular, the presentation suggested taking the following into account while analyzing the impact of the private sector interventions on shifting cultivation:

- Collaboration with farmer groups/cooperatives
- Pricing by analyzing demand and supply
- Linking farmer to market and market to consumer
- Processing & manufacturing & product development
- Transfer technology and services (at different stages)
- Capacity building of farmers through training where necessary
- Provide necessary financial services (banking and insurance)
- Support expansion of infrastructure

Session 4: Towards constructive approaches

What are constructive approaches, and how do we identify them?

There was a presentation was on this topic. The presentation pointed out that options and approaches are being promoted or introduced in the traditional land use system of shifting cultivation. It was said that in order to know which of the options and approaches promoted/introduced are working, it is critical to understand their appropriateness and effectiveness. The participants were asked to identify options and approaches which have worked in their respective countries. They were asked to find criteria which made the options and approaches workable in their countries.

Plenary exercise on examples of options and approaches

The participants, grouped country wise, identified the options and approaches that have worked in their countries and presented in the plenary (giving reason why and how these options and approaches have worked in their countries). The presentations are summarized in the table below, while the criteria are given in Annexure E.

Bangladesh

Options	Why
Transforming Jhum to horticulture	<ul style="list-style-type: none">• After paddy harvesting horticulture (mix-fruits) can be grown• Provide availability of nutrient rich food• Continuity of cash earning round the year• Coverage of the vegetation• Employment for all family members
Community forest management	<ul style="list-style-type: none">• Provide all household requirements• Conservation of the biodiversity• Conservation of natural watershed• Fire management• Eco-friendly environment
Preservation of roots and tuber crops by indigenous techniques	<ul style="list-style-type: none">• Promotion of indigenous knowledge• Reducing of post harvest loss• Making availability of seeds to the producers• Save money
Working together (maleya)	<ul style="list-style-type: none">• Social bonding• Reduce vulnerability among SCs• Save time

Bhutan

Promotion of high-value horticulture crops	<ul style="list-style-type: none">• High value low volume medicinal and aromatic plant (Income high)• Potato cultivation (both seed and tuber)• Off-season vegetables (eg. Radish, tomato, cabbage , brinjal)
Promotion of upland paddy cultivation	<ul style="list-style-type: none">• Less resource required• Easy production• Reduce social gap• Food security• Change of taste (all the time people used to eat maize)

Promoting eco-tourism	<ul style="list-style-type: none"> • Can observed unique culture and tradition of SCs • Alternative income to SC farmers • Management of biodiversity
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Nepal

The Nepal team identified the integrated hedgerow technology as an option for the following reasons:

- Low-cost and using local materials
- Easily adapted by marginal farmers
- Help to reduce soil erosion and maintain soil moisture
- Help to improve family nutrition (through diverse products seasonally)
- Source of cash income through sale of diverse farm products (seeds, seedling of Napier, home garden products)
- Good community-based climate change adaptation option

Session 5: Research sub-questions

To determine sub-questions for all the main research questions, two groups were formed. Bhutan and Nepal teams were combined made to work on the main questions 1 and 2, while Bangladeshi team worked on question 3 and 4. The “consulate” process was used for the group work (same process followed in the T&I research workshop in Bhutan) which is presented in the box 1. The finalized research questions and sub-questions are presented in Annexure F.

Box 1: ‘Consulates’ are formed to work on research questions. Every consulate prepares sub-questions for the questions assigned to it. Every consulate has a ‘speaker’ and members. Members, not the speakers, of the consulates visit other consulates as ‘consultants’ and provide inputs. The speakers explain the sub-questions to the consultants and take their inputs. The consultants add their inputs using the colours assigned to them. The consulates prepare their final report and present it to the plenary.

Day three: 26th February 2010

Session 6: Field visit

On Day 3, the participants visited Baganpara village of Tankabati Union, Sadar Upazila, Bandarban district. The objective of the visit was to enable the participants to observe and learn about social, economic and cultural practices about shifting cultivation in the CHT. The field visit was followed by an on-farm discussion and a plenary meeting. The observations of the field visit and the plenary meeting are briefly summarised in the Annexure G.

Day 4: 27 February 2010

Session 7: Methodologies and tools

The recap of Day 2 and Day 3 was followed by two brief presentations on methodologies and tools. The first presentation was on participatory action research. The purpose of the presentation was to educate the participants in participatory research by sharing NEPED’s experience. The main points that the presentation underlined are:

- Good practices exist in every Jhum community for learning and dissemination;
- Diagnostic studies and documentation of 'good practices' in Jhum;
- Preparation of the action research plan;
- Partnership with Research Stations necessary for technical validation and support;
- Government's support necessary to create an enabling environment for entrepreneurship development;
- Farmer's participation in diagnostic surveys, action research planning and implementation.

The second presentation was on land use change analysis (Economic Analysis). The objective of the presentation was to (i) suggest a method to study land use changes in shifting cultivation areas, and (ii) using the method in predicting possible future land uses, in view of the emerging economic scenario and the farmers' perception about how global and other changes are affecting the shifting cultivation areas.

The presentation highlighted how global change and various forces acting on shifting cultivation can impact on the sustainability of land use management and the ecology. The major forces and or drivers of land use change highlighted were:

- Political drivers
 - Regulatory policies/policy failures
- Economic drivers
 - Market forces/incentive based mechanisms
- Climatic forces
 - Climate change, variations in water availability
- Evolutionary forces
 - Invasive species/pests/species extinction
- Globalization
 - Migration, remittance, employment, change in lifestyle

Steps involved in land use analysis are presented in Annexure H.

Session 8: Field research plans

A format for field research was presented - refer Annexure I. Then the country teams prepared their research plan and presented to the plenary. They highlighted the methods and tools to be used. Refer Annexure J, K and L.

Session 9: Wrap-up and closing

Way forward, closing remark and vote of thanks

A plan of action, proposed based on the assumptions that there will be one year project extension, was discussed and finalized in the plenary, refer Annexure M.

Then, on behalf of Green Hill, Ms. Tuku Talukdar, Chairperson of the organisation delivered her closing remark. She thanked ICIMOD for giving Green Hill the opportunity to host the workshop. She also expressed her appreciation to the participants for visiting Bangladesh in general and Bandarban in particular. Then on behalf of ICIMOD, Ms. Elisabeth Kerkhoff thanked the participants, concerned organizations, and individuals for their contributions in making the workshop a success.

Annexure A: Programme

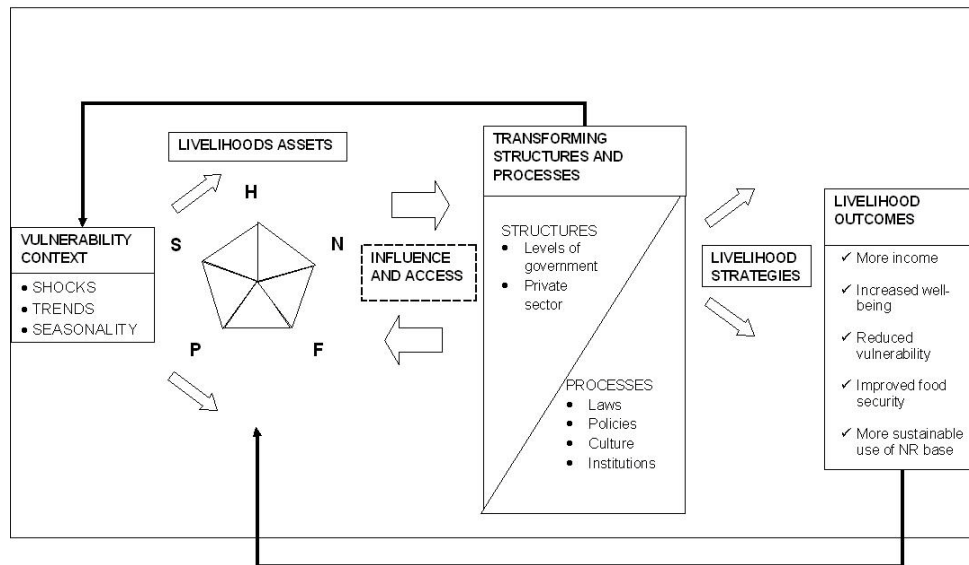
Time	Session	Responsible person
	Day 1	
Session 1	Inaugural session	Karma Phuntsho (MC)
09.00 – 09.10	Opening Remarks	Karma Phuntsho
09.10 – 09.20	Welcome Remarks	Mr. Moungh Thowai Ching, Green Hill
09.20 – 09.30	Participant Introduction	Karma Phuntsho
09.30 – 09.50	Land Use Research in the Regional Project on Shifting Cultivation	Elisabeth Kerkhoff
09.50 – 10.00	Remarks by the Hill District Council Representative	
10.00 – 10.10	Remarks by the Deputy Commissioner	
10.10 – 10.25	Key Note Address by the Chief Guest	
10.25 – 10.30	Vote of Thanks	Kamal Aryal
10.30 – 11.00	Tea and Group Photo	
Session 2	Research questions	
11.00 – 11.10	Workshop process	Elisabeth Kerkhoff
11.10 – 11.40	Improving shifting cultivation: case of NEPED, India	Vengota Nakro
11.40 – 13.00	Plenary discussion on research questions	Karma Phuntsho
13.00 – 14.00	Lunch	
Session 3	Conceptual framework	
14.00 – 15.00	Shifting cultivation	Kamal Aryal
15.00 – 15.30	Tea	
15.30 – 17.00	Sustainable livelihoods	Elisabeth Kerkhoff & Bhaskar Karky
	Day 2	
Session 3	Conceptual framework (cont.)	
09.00 – 09.10	Recap day 1	Karma Phuntsho
09.10 – 10.10	External support	Karma Phuntsho and Bhaskar Karky
Session 4	Towards constructive approaches	
10.10 – 10.30	What are constructive approaches, and how do we identify them?	Elisabeth Kerkhoff
10.30 – 11.00	Tea	
11.00 – 12.30	Overview of technological changes and of extension policy approaches to be studied and exchanged	Elisabeth Kerkhoff
12.30 – 13.30	Lunch	
Session 5	Research sub-questions	
13.30 – 15.00	Develop sub-questions	Elisabeth Kerkhoff
15.00 – 15.30	Tea	
15.30 – 17.00	Develop sub-questions Cont.	
	Day 3	
Session 6	Field visit	
	Shifting cultivation development in Bandarban	Jatan Kumar Dewan
	Day 4	
09.00 – 09.05	Recap day 2 and 3	Kamal Aryal
Session 7	Methodologies and tools	
09.05 – 09.50	Participatory action research	Vengota Nakro
09.50 – 10.30	Economic analysis	Bhaskar Karky
10.30 – 11.00	Tea	
Session 8	Field research plans	
11.00 – 12.30	Country teams fill up field research format	Elisabeth Kerkhoff
12.30 – 13.30	Lunch	
13.30 – 15.00	Country teams prepare field research formats Cont.	
15.00 – 15.30	Tea	
Session 9	Wrap-up and closing	
15.30 – 16.00	Way Forward	Elisabeth Kerkhoff
16.00 – 16.30	Closing Remarks	Mr. Moungh Thowai Ching, Green Hill
16.30 – 17.00	Vote of Thanks	Elisabeth Kerkhoff
18.00	Closing Dinner	

Annexure B: List of participants

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Annexure C: Sustainable livelihood framework



Annexure D: External support assesement framework

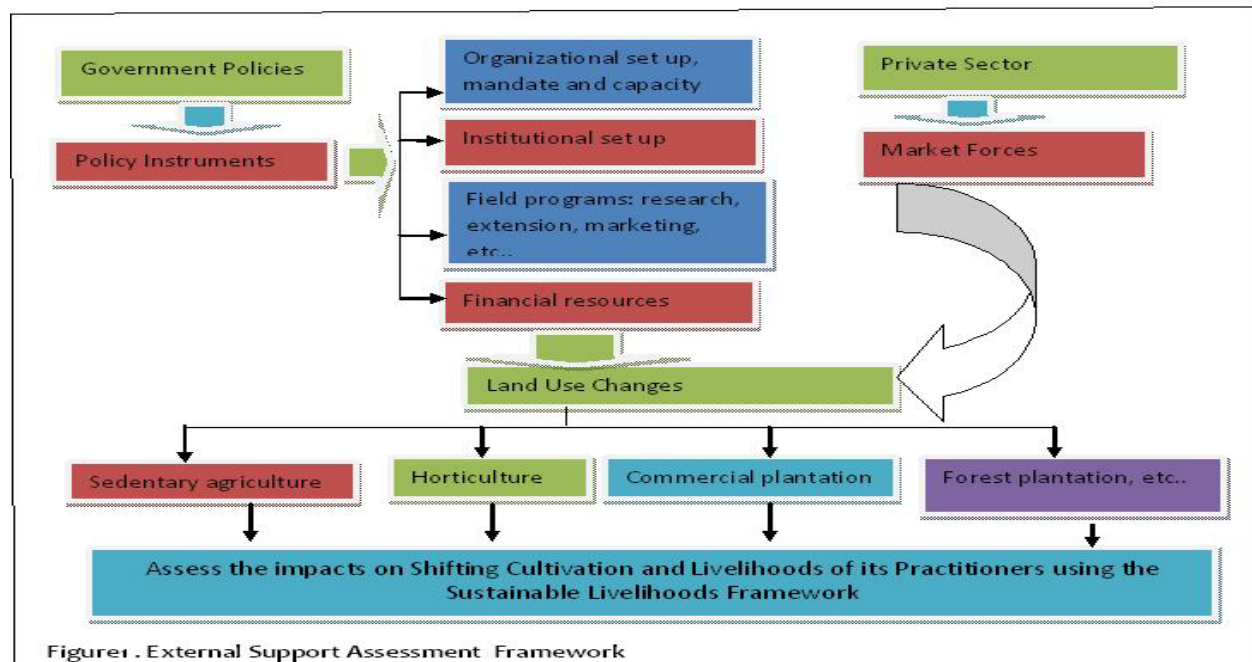


Figure1 . External Support Assessment Framework

Annexure E: Participants criteria for constructive options and approaches

- Constructive approach has to address the social values and norms
- Consistence with local culture
- Meets the needs and beneficial for majority
- Based on Management objectives and needs of the community
- Should be relevant to the needs of the farmers
- Should be practical and sustainable
- Sustainable livelihood and development
- Has to be ecologically and economically sustainable
- Appropriate rural technology being use by villagers
- Compatible to farmer's knowledge and attitudes
- Adaptive for local people generation to generation
- Simple and easy to understand by farmers
- Should be beneficial and easily adaptable to local situation
- Has to address the changing climatic condition
- Enhances adaptive capacity
- Suitable to the micro-climate of the area
- Low cost-techniques
- Locally appropriate and affordable technology
- Has to bear the results in the field
- Has to bridge the gap between policy to shifting cultivators
- Should be Gender friendly
- Has to respect the rights of the shifting cultivators

Annexure F: Main research questions and sub-questions

Q1: How is the shifting cultivation changing in terms of structure, functions and processes?

1. What are the main structures, functions and processes in the shifting cultivation system?
2. What is the timeline of major developments that have affected shifting cultivation?
3. How have these developments affected the structures, functions and processes from past till present?
4. What are the major changes, and their driving forces?

Q2: How are the changes affecting shifting cultivators' livelihoods outcomes?

1. What are the major livelihoods outcomes shifting cultivators aspire to and how have they changed over time?
2. What are their assets and how have they changed over time?
3. What livelihood strategies are they following and how have they changed over time?
4. How have the changes in livelihood assets and strategies affected their livelihood outcomes?
5. What is their socio-economic and environmental vulnerability context?

Q3: What is the impact of government policy, the private sector and civil society on shifting cultivation and the livelihood outcomes of its practitioners?

1. What are the government organisations and policies that affect shifting cultivation and the livelihoods of its practitioners?
2. What is the role of the private sector in shifting cultivation and the livelihoods of its practitioners?
3. What is the role of civil society organisations in shifting cultivation and the livelihoods of its practitioners?
4. How do government policy, the private sector and civil society impact shifting cultivation and the livelihood outcomes of its practitioners?

Q4: What are the most constructive options and approaches for improving land use and livelihoods in shifting cultivation areas?

1. What are the traditional and introduced land use options that improve the livelihoods of shifting cultivators?
2. What approaches are used to improve and promote these options?
3. To what extent do the options and approaches meet the criteria for constructiveness?
4. How can we adapt and apply these options and approaches in other shifting cultivation areas?

Annexure G: Summary of the field visit

The village, about 50 years old, is situated at about 16 miles from the Bandarban town. It was said that in earlier days the village used to have only 15 families. It takes about 1 and half hours by car from the Bandarban town. From the nearest village in the adjoining plain areas it takes about seven hours by foot to reach the village. Currently, the village has some 22 families with a total population of 135 people and the resident population belongs to the Mro ethnic group.

The village is surrounded by thick forests. Jhum cultivation is the main source of subsistence. Since the land holding is relatively large the fallow period of jhum is said to range from 12-15 years.

On an average, every family is said to have about 5 acres of land distributed by local 'karbari'. The families having more members and affordability can cultivate more than 5 acres. No family has any registered land, but they have generational possession rights. At the moment, 14 families are said to have jhum and orchard gardens, while 8 families only orchard. Apart from rice, they grow chilly, bean, sweet gourd, maize, cucumber, brinjal etc.. Generally, the food grown in the jhum lasts for 3-6 months. They supplement their food supply by selling mango, banana, papaya, jackfruit, tamarind and orange etc. The outside non-local middle buyers directly come to the village and take their different fruits from their orchard to Bandarban, Chittagong and so on to Dhaka.

It was said that few years ago the surrounding villages lost about 500 acres to the army for the extension of the artillery camps.

Over the last few years, like many other villages, the village started growing a special mango species named Rangu the quality of which is good and brings not only quick returns, but better returns as well. Annually they earn about 20-30 thousands taka from the sale of fruits.

The whole village has only one boy who completed secondary school certificate (SSC). CCDB, a Christian based organization helps the villagers in drinking water supply. UNDP, through a local organization named GRAUS, is also helping them in supplying solar power.

Overall, the visit was educative for the participants of Nepal, Bhutan and India.

Annexure H: Steps of land use analysis

1. Literature review
Similar studies, land use analysis, CBA studies, alternative land uses in the area, drivers of degradation and deforestation in the case of forested land, shifting cultivation in the case of shifting cultivation options, etc.
2. Identify study site, and stakeholders
3. List possible alternative land use based on expert consultation and with locals by identifying the drivers that lead to change. Identifying the changes will be a major task.
4. Define the unit of study
But a boundary on the land use to be analyzed i.e. what is the specific area of land that you are going to analyze as a unit. These are very location specific studies, and consequently covering large area will not be advisable.
5. Develop a spreadsheet and list of questions
The spreadsheet in excel will be provided with an example. But you will have to develop your own spread sheet with local specificities. The questions will be aimed at generating all data relating to direct use benefit out of that land use and direct costs associated in the production function. All cost and benefit will be calculated at farm gate prices.
6. Visit the field to refine:
Questionnaire on costs and benefits will be pretested in the field. As well as potential land use options will be discussed and finalized. You can have around for example around 10 different types of land use combinations.
7. Refine the spreadsheet and questionnaire based on the pre test.
8. Visit the field to collect data:
Quantify all direct use and costs associated (through focus group discussion)
Collect data on perception of farmers choice from among the different potential land uses (at household level)
9. Analyze the spreadsheet
Produce graphs and tables on economic aspect as well as on the farmer's perception. Then you can analyze the different scenarios. You can identify good practices and the constraints from this analysis. You can discuss with farmers and experts on how some of the bottle necks can be removed in order to plan for sustainable land use management. E.g. availability of rural finance, technological constraint, decreasing soil fertility, or access to markets could be some examples of constraints.
10. Write the report
11. Share the findings with locals and experts for comments
12. Finalize the report and share with policy makers.

Annexure I: Field research format

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
Q1: How is the shifting cultivation changing in terms of structure, functions and processes?			
1. What are the main structures, functions and processes in the shifting cultivation system?			
2. What is the timeline of major developments that have affected shifting cultivation?			
3. How have these developments affected the structures, functions and processes from past till present?			
4. What are the major changes, and their driving forces?			

Annexure J: Bangladesh field research format

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
Q1: How is the shifting cultivation changing in terms of structure, functions and processes?			
1. What are the main structures, functions and processes in the shifting cultivation system?	Policies, land use, crops, soil and water conservation, bio diversity and processes of shifting cultivation, secondary information.	Ministry of Chittagong Hill Tracts Affairs (MoCHTA), Ministry of Environment and Forest (MoEF), Ministry of Agriculture, CHT Regional Council, Hill District Council, Union Parishad, Shifting Cultivators (SC), Headman, Karbari, Bangladesh Forest Research Institute (BFRI), Soil Research Development Institute (SRDI), Chittagong Hill Tracts Development (CHTDB), Bangladesh Agriculture Research Institute (BARI), Department of Agriculture Extension (DAE).	Focus group discussion, bench mark survey, questionnaire, personal interview, review of secondary data and reports, resource map.
2. What is the timeline of major developments that have affected shifting cultivation?	Major development programs of British period, Pakistan and Bangladesh period.	1900 CHT Regulation, secondary information.	Review of secondary data, personal interview and questionnaire, time line analysis, historical trend.
3. How have these developments affected the structures, functions and processes from past till present?	Process of affect	SCs, headman, Karbari, secondary information.	Do, case study,
4. What are the major changes, and their driving forces?	Policy, land use and ownership, population, civil conflict, out migration.	Do	Do, force field analysis.

Q2: How are the changes affecting shifting cultivators' livelihood outcomes?			
5. What are the major livelihoods outcomes shifting cultivators aspire to and how have they changed over time?	Food security, health, employment, income, education etc.	SCs	Well being analysis, cause effect analysis, ranking.
6. What are their assets and how have they changed over time?	Human, natural, social, finance and physical assets.	SCs	Cause effect analysis, individual interview.
7. What livelihood strategies are they following and how have they changed over time?	Livelihood assets (Income, savings, employment, production,	SCs	Cause effect analysis, individual interview. Apply "Livelihood Framework"
8. How have the changes in livelihood assets and strategies affected their livelihood outcomes?	Livelihood outcomes (e.g. Income, annual food availability, education, household pattern).	Do	Do
9. What is their socio-economic and environmental vulnerability context?	Vulnerability context - Information on shocks, trends and seasonality	do	Do
Q3: What is the impact of government policy, the private sector and civil society on shifting cultivation and the livelihood outcomes of its practitioners?			
10. What are the government organisations and policies that affect shifting cultivation and the livelihoods of its practitioners?	Relevant government organizations and policies,	Secondary information (1900 CHT Regulation, Hill District Council, CHTDB etc)	Policy review
11. What is the role of the private sector in shifting cultivation and the livelihoods of its practitioners?	Information of private organizations	Private organizations/Societies /Forum.	Discussion
12. What is the role of civil society organisations in shifting cultivation and the livelihoods of its practitioners?	Information of civil society organizations	Civil society organizations at upazila and district level.	Do
13. How do government policy, the private sector and civil society impact shifting cultivation and the livelihood outcomes of its practitioners?	Social, economic and environmental impacts	SCs, headman, Karbari, Local government Institutions (e.g. Union Parishad)	Discussion, cause and effect analysis
Q4: What are the most constructive options and approaches for improving land use and livelihoods in shifting cultivation areas?			

14. What are the traditional and introduced land use options that improve the livelihoods of shifting cultivators?	Traditional options, Introduced options e.g. Carbon trading (e.g. REDD+)	Field data,	Focus group discussion, economic analysis.
15. What approaches are used to improve and promote these options?	Information on what works and what is economically feasible	Field data,	FGD, consultation With experts
16. To what extent do the options and approaches meet the criteria for constructiveness?	Information on what is constructive	Farmers and experts	Stakeholder's consultation with farmers and experts.
17. How can we adapt and apply these options and approaches in other shifting cultivation areas?	Information on success stories	Farmers	Interview and disseminate information.

Annexure K: Nepal field research format

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
Q1: How is the shifting cultivation changing in terms of structure, functions and processes?			
1. What are the main structures, functions and processes in the shifting cultivation system?	<ul style="list-style-type: none"> a. Biophysical components (plant, soil, wildlife, water, landscape) b. Socioeconomic components (out-migration, employment, aspiration of younger people, labour pattern, social cohesion, cultural) c. Management practices (soil and water, vegetation, nutrient) d. Political elements e. Policy 	Research sites / farmers Literatures key political informants Policy	Field surveys and analysis PRA exercises Literature review and key informant interview Policy review (agriculture and forestry)
2. What is the timeline of major developments that have affected shifting cultivation?	<ul style="list-style-type: none"> a. Political movements b. Development activities c. Policy reforms d. Natural disasters 	Literature / research sites	Literature review Historical timeline exercises Field observation
3. How have these developments affected the structures, functions and processes from past till present?	<ul style="list-style-type: none"> a. Effects of political movements b. Effects of development activities c. Effects of policy reforms d. Effects of natural disasters 	Research sites/ farmers	Desk analysis Field verification

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
4. What are the major changes, and their driving forces?	a. Biophysical changes (plant, soil, wildlife, water, landscape) b. Socioeconomic changes (out-migration, employment, aspiration of younger people, labour pattern, social cohesion, cultural) c. Change in management practices (soil and water, vegetation, nutrient) d. Political changes e. Policy changes	Research sites / farmers Literatures key political informants	Field surveys and analysis PRA exercises Literature review and key informant interview Policy review and analysis (agriculture and forestry)
Q2: How are the changes affecting shifting cultivators' livelihood outcomes?			
5. What are the major livelihoods outcomes shifting cultivators aspire to and how have they changed over time?	a. Livelihood outcomes of shifting cultivator b. Change of their aspiration over time	Research sites/ farmers	SL framework, PRA exercise Historical timeline analysis,
6. What are their assets and how have they changed over time?	a. Livelihood assets b. Change of their assets over time	Research sites/ farmers	SL framework, PRA exercise Historical timeline analysis,
7. What livelihood strategies are they following and how have they changed over time?	a. Local livelihood strategies b. Change of their assets over time	Research sites	SL framework PRA exercise Historical timeline analysis,
8. How have the changes in livelihood assets and strategies affected their livelihood outcomes?	a. Effect of changes in livelihood assets and strategies on livelihood of shifting cultivators	Research sites	SL framework, Desk analysis, meeting
9. What is their socio-economic and environmental vulnerability context?	a. Shocks, trend and seasonality of socioeconomic context b. Shocks, trend and seasonality of environmental context	Research sites	SL framework PRA exercises
Q3: What is the impact of government policy, the private sector and civil society on shifting cultivation and the livelihood outcomes of its practitioners?			

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
10. What are the government organisations and policies that affect shifting cultivation and the livelihoods of its practitioners?	Government organizations and policies related to shifting cultivation	Government authorities Policies	Literature review Key informant interview Policy review
11. What is the role of the private sector in shifting cultivation and the livelihoods of its practitioners?	a. Information on private sector b. Role of private sector (market, entrepreneurs, bank, cooperative)	Private sectors / local to national level	Literature review Key informant interview
12. What is the role of civil society organisations in shifting cultivation and the livelihoods of its practitioners?	a. Information on civil society organizations b. Role of civil society organizations (CBOs, NGOs, INGOs,)	Civil society organizations / different levels	Literature review Key informant interview
13. How do government policy, the private sector and civil society impact shifting cultivation and the livelihood outcomes of its practitioners?	Impact of government policy, the private sector and civil society organizations on shifting cultivation and the livelihood outcomes	Government authorities Policies Private sectors / local to national level Civil society organizations / different levels	Desk analysis Consultation meeting
Q4: What are the most constructive options and approaches for improving land use and livelihoods in shifting cultivation areas?			
14. What are the traditional and introduced land use options that improve the livelihoods of shifting cultivators?	Traditional and introduced land use options that improve the livelihoods of shifting cultivators; and their characteristics	Research sites / farmers	Field observation /survey, Interviews, Focus group discussions
15. What approaches are used to improve and promote these options?	Traditional and introduced land use approaches to improve and promote options	Research sites / farmers	Field observation /survey, Interviews, Focus group discussions

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
16. To what extent do the options and approaches meet the criteria for constructiveness?	a. List of criteria for constructiveness b. Information of sub-questions 14 and 15	Research sites / farmers	Field observation /survey, Interviews, Focus group discussions, analysis of options and approaches (socio-economic, environmental)
17. How can we adapt and apply these options and approaches in other shifting cultivation areas?	a. Information on site-specific constructive options and approaches b. Information on site characteristics in which we are going to piloting these options and approaches	Research sites and/or outside / farmers	Establishment of demonstration plots, extension and dissemination

Annexure L: Bhutan field research plan

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
Q1: How is the shifting cultivation changing in terms of structure, functions and processes?			
1. What are the main structures, functions and processes in the shifting cultivation system?	<p>Major physical structures like Tseri land, Forest areas, Ethnic community, type of crops grown, livestock raised, Agro-biodiversity- NTFP</p> <p>Information on major functions like food security, income generation, household nutrition, water, soil and wild life management</p> <p>Process will include Government policies, laws and acts such as Land acts 2007, Revised Forest acts 2005, Draft water act 2007, Biodiversity act- 2003, Cooperative act 2007</p>	<p>Individual thram holders, Geog RNR officials, Gup office record, RNR Census</p> <p>RNR census, 10th FYP progress report, Geog RNR officials, Gup office record</p> <p>GNHC, MoA &F, NLC Dzongkhags and RNR geog Offices, RNR-RDCs</p>	<p>Literature review, Personal discussion with concerned officials</p> <p>Literature review, Personal discussion with concerned officials</p> <p>Literature review, Personal discussion with concerned officials</p>
2. What is the timeline of major developments that have affected shifting cultivation?	Time series data on major development activities over a period	Shifting cultivators- within that talk to women and men groups, elderly persons in that community	Time line analysis/ historical transect Direct observation- physical verification during visit
3. How have these developments affected the structures, functions and processes from past till present?	Different events and development interventions that took place over time period which had affected structure, function and processes	Refer Policy, strategy and progress report documents of GNHC, NLC, MoA &F, Dzongkhags and Geogs Shifting cultivators themselves	Time line analysis, Kuragraphy, Focused group interview, individual interviews with elderly persons in the community, literature reviews, review folk tales booklets

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
4. What are the major changes, and their driving forces?	Information on land use changes, change in farmers lifestyle/ living condition, life expectancy, farmers literacy rate, immunization level, financial security Information on driving forces like economic and, political	NLC, RNR census, 10 th FYP progress report of MoA &F, MoH and MoE, Gup office , RNR Centres and Tseri farmers	Literature review, Kuragraphy, Focus group discussion with elderly persons in the community
Q2: How are the changes affecting shifting cultivators' livelihood outcomes?			
5. What are the major livelihoods outcomes shifting cultivators aspire to and how have they changed over time?	Past and present livelihood information on food security, HH income generation and nutrition, education, biodiversity	RNR census, FYP progress report of MoA &F, MoH and MoE, Gup office , RNR Centres and Tseri farmers	Time line analysis, Literature review, Kuragraphy
6. What are their assets and how have they changed over time?	Five major assets Information on livelihood assets and its effect	From tseri farmers	Livelihood frame analysis, Focus group discussion with elderly persons in the community
7. What livelihood strategies are they following and how have they changed over time?	List of livelihood strategies perused by farmers themselves The impact of those strategies on their livelihood	Geog RNR office, Tseri farmers themselves	Livelihood survey using livelihood strategy framework questionnaire
8. How have the changes in livelihood assets and strategies affected their livelihood outcomes?	Those livelihood assets that changed over time Information on different strategies perused by farmers and its affect on their livelihood output	Geog RNR office, Tseri farmers themselves	Livelihood survey using livelihood strategy framework questionnaire
9. What is their socio-economic and environmental vulnerability context?	Socio- economic information like demand and supply chain, market price, population trend, pest and diseases, wild animal damage, drought etc	Dept. of Marketing and Cooperatives, Geog census, Tseri farmers themselves,	Literature review, Livelihood strategy framework questionnaire, consultative visit
Q3: What is the impact of government policy, the private sector and civil society on shifting cultivation and the livelihood outcomes of its practitioners?			

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
10. What are the government organisations and policies that affect shifting cultivation and the livelihoods of its practitioners?	List of Government organizations and their policies, policy instruments like laws, acts, rules	MoA &F, Dzongkhags, Geogs RNR offices, Gup office	Literature review, Stakeholder analysis
11. What is the role of the private sector in shifting cultivation and the livelihoods of its practitioners?	List of private sectors and their roles and responsibilities	Both from local market, traders/middleman and tseri farmers	Market force analysis, Kuragraphy
12. What is the role of civil society organisations in shifting cultivation and the livelihoods of its practitioners?	List of Civil society (NGOs) and their roles and responsibilities	NGOs like Tarayana Foundation and RSPN	Literature review, Stakeholder analysis
13. How do government policy, the private sector and civil society impact shifting cultivation and the livelihood outcomes of its practitioners?	Information on impact assessment of these bodies	Tseri farmers themselves, MoA &F impact assessment documents, Dzongkhags, Geogs RNR offices, Gup office, Tarayana Foundation impact assessment documents	Literature review
Q4: What are the most constructive options and approaches for improving land use and livelihoods in shifting cultivation areas?			
14. What are the traditional and introduced land use options that improve the livelihoods of shifting cultivators?	List of traditional land use options List of introduced land use options	Tseri farmers, Geog Extension agents, RNR-RDC technical documents, Dzongkhags progress report, MoA&F journal	Economic analysis on land use change, Kuragraphy with elderly farmers and key informants, direct field observation, discussion with Extension agents and researchers, Literature review
15. What approaches are used to improve and promote these options?	List of constructive approaches based on pre selected criteria	Tseri farmers, Geog Extension agents, RNR-RDC technical documents, Dzongkhags progress report, MoA&F journal	Economic analysis on approaches, Kuragraphy with elderly farmers and key informants, direct field observation, discussion with Extension agents and researchers, Literature review

Sub-Questions	Information What information do you need?	Source Where is it? /Who has it?	Methods and Tools How will you get it?
16. To what extent do the options and approaches meet the criteria for constructiveness?	Information on positive attributes of selected options and approaches	Tseri farmers, Geog Extension agents, RNR-RDC officials	Economic analysis on viable options, Kuragraphy with elderly farmers and key informants, discussion with Extension agents and researchers
17. How can we adapt and apply these options and approaches in other shifting cultivation areas?	Detail information on selected options and approaches that meet pre- selected criteria for piloting and demonstrating to other shifting cultivation areas	Tseri farmers, Geog Extension agents, RNR-RDC officials, ICIMOD progress documents	Extension tools such as awareness campaign- publicity, on farm research trials/ research out research program farmers field school approach Regional sharing mechanism

Annexure M: Future plan of action

		09				10				11				12			
Inception workshop	●																
Tenure and institutions workshop	●																
Land use options workshop	●																
Work plans and LoAs	Mar																
Situation analysis	Mar																
Reporting	Mar																
Finalise research protocols	Mar																
Finalise field research plans, activities and timeline	Mar																
GIS workshop	Apr/ May																
Research work by country teams	Apr																
National-level policy dialogue events and activities																	
List of interesting options and approaches	Apr/ May																
Website and e-discussion																	
Prepare and pre-test livelihood questionnaire	Aug/ Sep																
Economic analysis of LUO																	
Regional sharing, exposure, networking	Aug/ Sep																
Mobile workshop																	
Draft comparative analysis reports																	
Regional workshop (Write shop?)																	
Final comparative analysis reports																	
Regional policy dialogue w/shop																	
Prepare final project report																	