



Australian Government

Australian Centre for
International Agricultural Research

Annual report

project

Enhancing livelihoods and food security from agroforestry and community forestry in Nepal

project number

FST / 2011 / 076

period of report

June 2015 – June 2016

date due

15 July 2016

date submitted

14 July 2016

prepared by

Ian Nuberg

*co-authors/
contributors/
collaborators*

Edwin Cedamon, Naya Sharma Paudel, Swoyambhu Man Amatya, Murari Joshi, Govinda Paudel, Prahlad Thapa, Krishna Shrestha, Hemant Ojha, Udeep Regmi, Rahul Karki

approved by

Contents

1	Progress summary	3
2	Achievements against project activities and outputs/milestones	5
2.1	Update of Outputs Table	5
2.2	Internal review of project progress	12
3	Impacts	15
3.1	Scientific impacts	15
3.2	Capacity impacts	17
3.3	Community impacts	17
3.4	Economic impacts	20
3.5	Communication and dissemination activities	24
4	Training activities	27
5	Intellectual property	30
6	Variations to future activities	31
7	Variations to personnel	32
8	Problems and opportunities	33
8.1	Agroforestry	33
8.2	Community Forestry	34
9	Budget	36
10	Appendix 1. Scientific publications 2015/2016	37
10.1	Journal papers	37
10.2	Conference papers	40
10.3	Theses	41
11	Appendix 2. Summary of UUL Workshop	43
12	Appendix 3: Summary of EPL on post earthquake timber supply	45
13	Appendix 4: Summary of Action Research Planning Meeting #6, 1 July 2016	48

1 Progress summary

The EnLiFT project has, in its third year, managed to achieve all its scheduled outputs despite the significant challenges of: 1] dealing with the aftermath of the major earthquakes of 25 April and 12 May 2015; 2] the fuel blockade imposed by India from September 2015 to February 2016; and 3] a prolonged winter drought that only broke in last week of May 2016.

In the agroforestry domain,,the project has completed a participatory market chain appraisal of agroforestry products, trained farmers to develop business plans for these products, undertaken further promotion of nurseries and demonstration plantings, and documented the barriers to the commercialisation of agroforestry trees in Nepal.

In the community forestry domain,the project has completed a number of meetings and interviews with stakeholders to better understand the link between regulatory framework, community institutions and community forest planning, generating rich action research insights into community-private sector partnership in forest enterprise development, and the interface between community forestry planning and local level planning. It has conducted a number of 'policy labs' by engaging policy actors, researchers and communities. It has also made great progress in establishing participatory silvicultural demonstration plots, field days, and assisting CFUGs to harvest trees in more active and sustainable ways. Great interest is being shown in the equitable forest management and silviculture from both government and local sources and the Department of Forests has requested EnLiFT to run a National Silviculture Workshop in late 2016.

EnLiFT's successes in the domain of under-utilised land has been the production of a paper explaining the genesis of under-utilised land and hosting a National Workshop on Under-Utilised Land in collaboration with National Planning Commission, the recommendations of which were delivered to the National Planning Commission for their 14th Plan.

Other activities, which required no specific output for this report also maintained momentum: characterising the EnLiFT farm-forest bioeconomic model and eliciting women's attitudes to EnLiFT activities. In this period EnLiFT has also submitted 2 publications to scientific journals, 7 conference / seminar presentations, 2 student theses, and has 6 papers ready for submission within next few months. Four papers and one book chapter have been accepted by international scientific Journals, with EnLiFT research being acknowledged for at least partial contribution.

There were two Key Performance Indicators for this period.

1] 'A policy brief on options for improving livelihoods and equitable benefit flows from community forestry conveyed to relevant policy makers'. This was achieved through 3EnLiFT Policy Labs with key policy actors, and also the associated notes and briefs shared with policy actors. Research findings on linking community forest with livelihoods and food security were shared and discussions were held on key questions covering the options for improving livelihoods and equitable benefit flows.

2] The'Review of lessons from community-private sector partnership in natural product businesses from Chaubas and other locations' was only partially achieved. Efforts to develop innovative community-private partnership arrangement are ongoing. Nevertheless the lessons so far are documented in a conference paper and one the journal papers due for submission later in 2016.

Acronyms used in report

AF	Agroforestry
AFO	Assistant Forest Officer
ARPM	Action Research Planning Meeting
CF	Community Forestry
CFUG	Community Forest User Group
DFO	District Forest Officer
DLCC	District Level Coordination Committee
DOF	Department of Forests
EnLiFT	Enhancing Livelihoods and Food Security from Agroforestry and Community Forestry in Nepal
EPL	EnLiFT Policy Lab
FAN	ForestAction Nepal
FECOFUN	Federation of Community Forest Users Nepal
IUCN	International Union for Conservation of Nature, Nepal
LRG	Local Research Group
LRP	Local Resource Person
MoFSC	Ministry of Forests and Soil Conservation
MTR	Mid-Term Review
NAF	Nepal Agroforestry Foundation
NAFP	Nepal Australia Forestry Project
PAC	Project Advisory Committee
SFM	Scientific Forest Management
UUL	Under-Utilised Land

2 Achievements against project activities and outputs/milestones

2.1 Update of Outputs Table

This is the Revised Outputs Table following Mid-Term Review (MTR)

Notes: [A] section = Original activity with completed outputs; [B] section revised outputs
The numbering of B section outputs has been reset to 1 and revised to account for changes.

Outputs required for this reporting period highlighted in blue

Objective 1: To improve the capacity of household based agroforestry systems to enhance livelihoods and food security

[A] Original Research Activity	Original & Completed Outputs	Planned & Actual Completion Date	Titles of output documents / comments
Activity 1.1: Identify baseline conditions and drivers of agroforestry practice and opportunities to improve productivity and increase income generation	O1: Workshop proceedings including a list of 'best-bet' innovations in agroforestry practice	[Y1:Q1] <i>July 2014</i>	Survey of Agroforestry Systems of Kavre and Lamjung Districts of Nepal Authors: SA Amatya, BH Pandit, I Nuberg, E Cedamon & YR Subedi,
	O2: Report of baseline information for developing pilot sites for use in Activity 1.5.	[Y1:Q3] <i>May 2014</i>	Research site selection report Authors: K. Paudel, YR Subedi, S. Tamang Quantitative Baseline Household Survey Report Compiler: Deepak Tamang Qualitative Baseline Report: Agroforestry Coordinator: Bishnu Hari Pandit
Activity 1.2: Analyse the markets and value-chains for products from agroforestry systems	O4: Report with short list of researchable existing and potential innovative market opportunities from both inside and outside Nepal that can be incorporated into agroforestry on private lands	[Y1:Q4] <i>June 2014</i>	Value Chain in Lamjung District Coordinator: BH Pandit Value Chain in Kabhrepalanchok District Coordinator: BH Pandit Agroforestry Nursery and Value Chain Training at Bode and Saraswati Authors: MR Joshi, SS Neupane & BH Pandit Why cannot local communities do forestry business? Analysis of barriers in the value chain of private forestry products in Nepal BH Pandit, KK Shrestha, HR Ojha, I Nuberg.
Activity 1.4: Develop functioning models to inform improved interactions between farm and forest systems	O7: Report of model design workshop	[Y1:Q1] <i>July 2013</i>	EnLiFT Modelling workshop report Bogor 25-29/11/13 Compiled by: Remy Juita, Avniar N. Karlan, Lisa Tanika and Betha Lusiana
	O8: Model of decision-making processes in land use	[Y1:Q4] <i>Sep 2014</i>	All the modelling attention has been directed to quantitative ENLiFT model. That model has been presented to the project's social scientists to solicit their input on how to measure the impact of institutional and policy innovations. Developing a formal construct of farmer decision-making processes will become a part of that task.
	O9: Model of nutrient and energy flows in farm-forest system	[Y3:Q2] <i>Oct 2015</i>	Current status described in EnLiFT Modelling Concept Authors: R. Mulia & B. Lusiana The model evolved from a 'nutrient-energy flow' model to a model of an 'index of food security' so that it can more effectively integrate with other research streams in the project.
Activity 1.5: Plan, implement and evaluate participatory action research of	O12: Report of proposed participative research designs and value-chain enhancements	[Y2:Q2] <i>Dec 2014</i>	Value Chain in Lamjung District: BH Pandit Value Chain in Kabhre District: BH Pandit Agroforestry Nursery and Value Chain Training

innovative agroforestry systems and market opportunities at 6 sites			at Bode and Saraswoti Authors: MR Joshi, SS Neupane & BH Pandit Monitoring and Evaluation of Agroforestry Nursery and Seedling Distribution as Part of Action Research Activity 1.5- Outputs 12 and 13 Authors: R.Niraula & BH Pandit
	O13: 6 pilot sites of improved commercial agroforestry systems for demonstration purposes	[Y3:Q4] Apr 2016	Outline demonstration trials being undertaken as part of this activity in Fodder Lopping Trial protocol. Authors: SM Amatya, ED Cedamon, BH Pandit, I Nuberg Loth Salla Harvesting demonstration Authors: ED Cedamon, SM Amatya, BH Pandit, I Nuberg Fodder Hedgerow trial Author: ED Cedamon

[B] Research sub-theme	Activity	New Outputs	DUE DATE	Comments
1] Market-oriented field interventions	Institutional mapping of AF	O1: Publication on "Drivers of farming systems adaptation, farmers' existing agroforestry practices, and perceptions of limitations to their livelihoods across six agro-ecological settings in the Middle Hills region" = KPI for 2014/15	JUN 2015	Delivered as publication "Adaptation factors and futures of agroforestry systems in Nepal" currently submitted to journal Agroforestry Systems
		O2: Report of Participatory Market Chain Appraisal of the full range of AF products (includes market trends and growing markets, and an appendix of EPL notes on regulatory constraints to marketing of AF products)	JUN 2016	Report available in draft form, waiting for feedback from ICRAF before finalisation.
		O3: Report of training and outputs of participatory business plans of priority products for each of 6 sites	DEC 2015	Report posted on Basecamp by SM Amatya <ul style="list-style-type: none"> • Training to 26 farmers over all research sites on Business Plan preparation • Six business plan prepared in Nepali Language • Field verification of these Business Plans in all six sites • Finalization of Business Plan and provided support (seeds, seedlings and expert technical support) for their implementation • Translation of six business Plan in English Language
		O4: Scientific paper characterizing AF formal & informal institutions that can catalyse AF products marketing and their change over time.	DEC 2015	Amatya et al 2015 "Removing barriers to the commercialisation of agroforestry trees in Nepal" Small-Scale Forestry Conference, Sunshine Coast. See Appendix 1
	Priority product implementation	O5: 1 st cycle report of commercial plantings	DEC 2015	Report posted on Basecamp SM Amatya: <ul style="list-style-type: none"> • Provided nursery materials and technical support • Nurseries established by LRP and LRG's • Seedling distributed to LRG's • Hedge Row demo plot established

				• Data collection format developed and applied
		O6: 2 nd cycle report of commercial plantings	DEC 2016	
		O7: Farmer-to-Farmer training of improved agroforestry systems O8: Extension package to facilitate expansion of innovations	JUN 2017 JUN 2017	
		O9: Recommendations for institutional and policy arrangements to enhance livelihoods through agroforestry O10: Report describing results, benefits and lessons from implementation of market-oriented agroforestry systems, O11: Scientific paper AF interventions to enhance livelihoods and food security	JUN 2017 SEP 2017 DEC 2017	
	AF research-policy interface	O12: Scientific Paper on land policy and food security (UNSW leads, PC and UniADEL contribute) O13: Policy brief on constraints and options for enhancing market oriented agroforestry	DEC 2017 DEC 2017	

[B] Research sub-theme	Activity	New Outputs	DUE DATE	Comments
2] Impact of agroforestry interventions Impact of agroforestry interventions	Agroforestry trials	O14: Progress report of agroforestry trials (NAF)	DEC 2016	
		O15: Extension sheets in Nepali on 6 priority product interventions (NAF)	JUN 2017	
		O16: Scientific paper(s) on performance of 6 priority product interventions for change in livelihood and food security (NAF lead, UniAdel contribute)	DEC 2017	
	EnLiFT Model	O17: Scientific paper quantifying factors determining an index of food security in the farm-forest system. (UniAdel lead/ ICRAF)	DEC 2016	
		O18: Scientific publication(s) establishing the biophysical and institutional bases for sustainable agroforestry innovations (ICRAF/UniAdel contribute)	DEC 2017	
	Women's Voices	O19: Paper on Women's perspective on agroforestry research for development (including appendix of EPL notes on gender issues in AF policy) (IUCN lead/UniAdel contribute)	DEC 2017	

Objective 2: To improve the functioning of community forestry systems to enhance equitable livelihoods and food security of CFUG members.

[A] Original Research Activity	Original & Completed Outputs	Planned & Actual Completion Date	Titles of output documents / comments
Activity 2.1: Analyse the status of community forestry systems and constraints to improving livelihoods and equitable benefit flows.	O19: Report of baseline information for developing pilot sites for use in Activity 2.5	[Y1:Q4] Apr 2014	Quantitative Baseline Household Survey Report Compiler: Deepak Tamang State of art in linking community forestry with food security in the Nepalese hills: Cases of Kavre and Lamjung districts Coordinator: Naya S Paudel,
Activity 2.2: Identify innovative community forestry institutions and management practices	O22: Report summarising the innovative options for improved community forestry management for presented by three altitudinal zones	Y1:Q4 Apr 2014	Community Forestry innovations Report Authors: NS Paudel, R Karki, G Paudel, D Khatri, H Ojha and K Shrestha
Activity 2.3: Analyse markets and value-chains for products from community forests.	O26: Report with a short list of researchable market opportunities that can be incorporated into community forestry	[Y2:Q1] Jul 2014 May 2015	Prospects in Marketing of Timber and NTFPs from Community Forestry in Nepal: List of Researchable Community Forest Tree Species DD Tamang; SL Shrestha, BDS Dangol, DS Tamang Researchable List of Trees Species in Community Forestry: Final Timber and Fuel-Wood Tree Preference Ranking Author: DD Tamang
Activity 2.5: Design, implement and evaluate participatory community forestry action research trials	O31: Report outlining research designs and agreements made with up to 6 CFUGs (PC) O31a: Evaluation report on results, benefits and lessons from participatory community forestry trials	[Y2:Q2] Oct 2014 DEC 2017	Silviculture demonstrations trial Authors: ED Cedamon, et al.

[B] Research sub-theme	Activity	New Outputs	DUE DATE	Comments
3] Inclusive community forest planning	Exploring link between regulatory framework and CF planning	O20: Process report on Inclusive community forest planning (FA leads, UNSW contributes)	DEC 2015	EnLiFT facilitated the timber sale process in Apchaur and conducted a series of meeting at different level to enhance the participation of Dalits and equitable benefits in Dhamilikuwa and Methinkot. The notes have been shared through Basecamp.
		O21: Process report including preliminary discussion paper on Inclusive community forest planning (FA leads, UNSW contributes)	DEC 2016	
		O22: Policy Brief: How regulatory framework and local level development governance shape CF planning in Nepal (FA leads, UNSW	DEC 2016	

	Understanding interface between CF planning and local level planning	contributes)		
		O23: Scientific report: "Inclusive community forest planning: How regulatory framework and local level development governance shape CF planning in Nepal" (UNSW leads, FA contributes)	DEC 2017	Contribution to the paper 'Edible forest' by Adhikari et al 2016
		O24: Process report on how local level planning accommodates CF management (FA leads, UNSW contributes)	DEC 2015	Posted on Basecamp NS Paudel 1. EnLiFT researchers and LRPs participated, shared project updates and documented this years local government planning meetings held in all 6 sites 2. Local governments have allocated funds for CF activities in their annual plan in 4 sites 3. Bilateral meetings have been organised with Local Government officials in 4 sites 4. Interviews were organised with local government officials (12) and CF leaders (8) in Lamjung on CF-Local Government collaboration and notes have been documented for further analysis. We will do same in Kavre later this year.
		O25: Process report including preliminary discussion paper on how local level planning accommodates CF management (FA leads, UNSW contributes)	DEC 2016	
		O26: Journal Paper: "CF innovation pathways for food security" (FA leads, UNSW contributes)	DEC 2015	Karki et al "From trees to food security: pathways in community forestry in Nepal" accepted in Environmental Conservation See Appendix 1
		O27: Policy Brief: on interface between CF planning and local level planning (FA leads, UNSW contributes)	DEC 2016	Policy interactions by FA
	Empowering women and disadvantaged groups	O28: Report on the perspectives, initiatives undertaken and outcomes related to empowering women and disadvantaged groups through inclusive community forestry	DEC 2017	
	CF research-policy interface	O29: EnLiFT Policy Lab report	JUN 2016	Policy Lap reports (various); Include them in the appendix (actual date of timber related EPL falls in previous Reporting period but the actual effects are in this year.
		O30: Report on EPL methodology/framework capturing learning from workshop reports (UNSW leads)	DEC 2016	Policy Lab paper being developed
		O31: Report describing the policy issues addressed under the EPL approach with recommendations to address the identified policy constraints.	DEC 2017 MAR	

		O32: Overall scientific paper on science-policy interface (UNSW leads, PC contributes)	2018	
--	--	--	------	--

[B] Research sub-theme	Activity	New Outputs	DUE DATE	Comments
4] Active and Equitable Forest Management	Silviculture demonstration, monitoring and measurement	O33: Silvicultural demonstration plots established on 3 sites in Kavre and 3 sites in Lamjung with a series of extension activities (Uni Adel leads, FA and UNSW contributes)	MAR 2016	
		O34: Process report on silvicultural research report #1 (FA leads, Uni Adel contributes)	DEC 2015	Posted on Basecamp by E Cedamon <ul style="list-style-type: none">• 8 demo plots established in Kavre and 3 demo plots in Lamjung• 5 field days conducted in the demo plots• EnLiFT project assisted 3 CFUGs to obtain permits for harvesting trees from the demo plots• Timber harvested from the plots were distributed to CFUG members for repair of houses damage by earthquake
		O35: Process report on silvicultural research report #2 (FA leads, Uni Adel contributes)	DEC 2016	
		O36: Policy discussion paper summarising key lessons from the active and equitable forest management action research highlighting key policy recommendations; including an appendix of EPL notes. (Uni Adel leads, FA and UNSW contributes)	JUN 2017	
		O37: Resource book for active and equitable community forest silviculture (FA leads, Uni Adel and UNSW contributes)	DEC 2017	
		O38. Journal paper: Silvicultural innovations for food security (Uni Adel leads)	DEC 2017	
		O39. Journal paper: Catalyzing active and equitable forest management: Practices and lessons (UNSW and UniAdel lead)	DEC 2017	

[B] Research sub-theme	Activity	New Outputs	DUE DATE	Comments
5] Market responsive CF institutions	Rapid market appraisal & business literacy workshops	O40: Research report analyzing timber market value chain, regulatory constraints opportunities and challenges facing the Chaubas sawmill. Includes EPL notes on regulatory challenges and solutions for Chaubas sawmill operation (SN leads, FA, UNSW and UniAdel)	JUN 2016	This output will be achieved in the form of the following 3 papers currently in progress. Paudel, et al "Making community forest management active and equitable: a framework and

		contributes)		<p><i>lessons from the mid-hills of Nepal"</i></p> <p>Paudel et al "Can community forestry groups run enterprises? A case of Chaubas timber processing company in Nepal"</p> <p>Paudel et al "Institutionalizing Community-based Enterprises in Nepalese Community Forestry"</p> <p>See Appendix 1</p>
		O41: Report on RMAs and business literacy workshops held at 6 priority research sites	OCT 2016	
		O42: Scientific paper based on the review of lessons on community-private sector partnership in natural product business from Chaubas and other relevant cases (UNSW leads, UniAdel, SN and FA contributes) O43: Report on the benefits from market responsive community forestry institutions	DEC 2016 DEC 2017	Community based enterprise: paper being finalised and will be submitted in a month time
		O44: Short illustrated handbook on how to compile business plan or make your own CFUG business scheme.	DEC 2017	

Objective 3: To improve the productivity of, and equitable access to, underutilised and abandoned agricultural land

[A] Original Research Activity	Original & Completed Outputs	Planned & Actual Completion Date	Titles of output documents / comments
Activity 3.1: Conduct key informant survey at district and village levels to identify the status of abandoned and under-utilised land in the study districts and sites complemented by GIS based information	O39: Preliminary key informant survey supported by GIS-generated maps of land use, tenure and access of 6 study sites with a focus on under-utilised and abandoned agricultural land	[Y2:Q2] <i>Oct 2014</i>	Quantitative Baseline Household Survey Report Compiler: Deepak Tamang Qualitative Baseline report: Under Utilised Land Coordinator: Yam Malla
	O40: Report on Training opportunity for Institute of Forestry students	[Y2:Q2] <i>Dec 2014</i>	This activity stalled when we realised that there were not enough funds in pay period 4 to fund IOF student projects
Activity 3.2: Generate in-depth case studies (8 different household / farm level cases) of land abandonment and underutilization to understand how multiple drivers cause underutilization and abandonment	O41: Report describing the drivers and dynamics of land use in the Middle Hills	[Y1:Q4] <i>Jul 2014</i>	Partially fulfilled by Transforming land and livelihoods: Analysis of agriculture land abandonment in the mid hills of Nepal Authors: K.Paudel, S.Tamang, K.Shrestha, R.Shah

[B] Research sub-theme	Activity	New Outputs	DUE DATE	Comments
6] Under-Utilised Land	Understanding UUL	O45: A scientific paper explaining genesis of under-utilised agricultural land & Household case studies of land access, use and abandonment (UNSW leads, UniAdel and UUL team contributes)	DEC 2015	Ojha et al "Disenchantment with agrarian civilisation? agricultural land underutilisation in middle hills of Nepal. Target Journal: Journal Peasant Studies or Journal of Rural Studies. To be submitted by August 2016 See

				Appendix 1
		O46: National UUL workshop to communicate EnLiFT knowledge; gather other UUL research; debate national UUL policy and strategy	JUL 2016	Report submitted on Basecamp. Summary in Appendix 2
		O47: Scientific paper modelling land-underutilisation in Nepal mid-hills through Bayesian Belief Network	JUN 2017	
		O48: Discussion paper integrating knowledge gained from AF & CF themes as it applies to bringing UUL back into production	DEC 2017	
		O49: Policy brief on options for bringing UUL back into production	DEC 2017	

2.2 Internal review of project progress

As part of EnLiFT's Action Research Planning Meeting #6 (1/07/2016) we undertook a cold, hard look at our progress to identify areas that needed specific focus, or if necessary triage, to achieve our overall aims within the next three pay-periods. We used a "traffic light" system to score our progress across the 6 research streams (chart presented to meeting in Figure 1). The traffic lights were also applied to the general outcomes of the project stated in the original project proposal document (Figure 2).

Research stream	Status	Comment
1] Market-oriented field interventions		Market chain work is weak
2] AF Impact		Model going well; still need to think about field measurement for model & social-institutional interactions
3] Inclusive community forest planning		Only one process report (Dec 2015) but still difficult to see where it is going and what "institutional innovations" will be achieved
4] Active and Equitable Forest Management		No problems even though we will only achieve 30 out of projected 48 demo sites; emphasis on quality
5] Market responsive CF institutions		Emphasis on Chaubas at expense of other sites has not paid off; no private-community partnership in sight
6] UUL		No expected problems to close off on this work

Progress good, documentary evidence that project output / review outcome will be achieved	
Progress OK but needs specific attention to achieve documentary evidence that project output / review outcome will be achieved	
Progress poor because of lack of documentary evidence that project output / review outcome will be achieved; needs urgent attention	

Figure 1 Traffic Light reflection on research streams to stimulate discussion in Action Research Planning Meeting #6

A1 – Achievement of outcomes

Guidance: Evaluate the extent to which the project activities and outputs have resulted in the desired outcomes, including engaging project partners and relevant stakeholders outside of the project. What are the most substantial outcomes that have occurred as a result of the project's activities?

Improved management of agroforestry and community forestry systems including improved silvicultural practices, and institutional and governance models for community forestry;	
Critical analysis of when, how and to what extent community forestry and agroforestry can enhance food security and improve livelihoods;	
Insights into improving existing markets and creating new markets for products of agroforestry and community forestry systems;	
Demonstrated approaches to bring abandoned agricultural land back into productive and equitable use;	
Demonstration sites and extension material to disseminate the new knowledge;	
A knowledge base to support improvements to the policy and regulatory environment for improving livelihoods from agroforestry and community forestry.	

Figure 2 Traffic Light reflection on achievement of outcomes so far

There was general, consensus on these assessments among the ARPM participants.

Market-oriented field interventions include the field agroforestry interventions and AF market chain work. While we will produce acceptable outputs for the market chain work, we generally agree it could have been done better. The problem lay in poor coordination between the three partner institutions involved in this work. Over the next 3 pay-periods we aim to redress the deficiencies in this research stream by ensuring the quality of measurement of impact of field AF interventions.

There was some discussion about the status of **Market-responsive CF Institutions**. The component of the work searching for innovative markets did not work that well because of the poor co-ordination among three partners involved in the market and value chain work (similar to Market-oriented field interventions). Also we recognise now the decision to focus all the institutional work around Chaubas mill has not paid off as much as it could have. This was not due to lack of effort from the research group but because of the socio-political complexity of the situation and inertia to change. Nevertheless, community groups are now fully on board with the project and much that has been learnt from the exercise is being captured in scientific publications and high-level policy linkage activities to create secure business environment for CFUGs to run timber business in partnership with private sector.

The process working with Chaubas mill has generated significant insights and more progress could be made given a concerted effort on policy and developing a business plan. Ideally given enough funds next quarter we should attempt: a) a focused policy intervention to create secure environment for private investors; b) robust business planning and agreements, and c) rolling out other market activities around timber and AF products in other sites.

The issues with the market work in both AF and CF themes have a consequence on the nature of the proposed outcome of **improved and new markets for AF and CF products**. While we all hoped to see innovative working markets for AF and CF products at the end of the project, this will not likely occur. While the various commodities introduced as part of the AF systems may be new to the concerned farmers, these commodities exist within the conventional market system; they cannot be seen as “innovations”. Within CF there are no new market chains to show for our efforts – the massive ground-work done in Chaubas is contingent on community and private groups being confident on the regulatory environment. Looking at the trajectory of success and

failure of this saw mill, the EnLiFT action research underway in Chaubas will provide insights on a) why do community forestry enterprises become noncompetitive? b) How does market enhance competitiveness of such entrepreneurship and c) If community-only enterprises fail to sustain, can any form of private-community partnership modality become effective to meet twin objective of economic development and environmental conservation?

There was also some deficiency in facilitating robust business planning work to enable FECOFUN to engage with policy makers for business development. Nevertheless, we can certainly claim that we have achieved a considerable degree of ***insight into the process*** of trying to find new markets.

The failure to produce ***demonstrated approaches to bring abandoned agricultural land into productive and equitable use*** was recognised at the MTR. We were not able to achieve this original outcome with UUL because of resource, structural issues and socio-political complexity of the UUL problems. The project's scope was too broad for the allocated funds, and this was aggravated by the transaction costs of coordinating too many local partners and unfavourable currency exchange rates. The baseline assessment provided important evidence to the project team and MTR to reconsider what can be actually achieved on the ground. Consequently, we cropped our view of achievable outcomes in UUL as part of the Mid-Term Review. Nevertheless, EnLiFT's achievements in the UUL domain have been worth the effort and are : 1] generation of a well-articulated and comprehensive understanding of the drivers and dynamics of UUL, and 2] locating our team in a central position in research and policy contributions on UUL via the National Workshop on UUL.

Based on the learnings from this process of reflection, the EnLiFT team has informally discussed potential follow-on projects for a possible second phase beginning in 2018. These will be communicated with the Forestry Research Program Manager for further discussion.

3 Impacts

Edwin Cedamon, Naya S Paudel, Swoyambhu Man Amatya , Murari Joshi,
Govinda Paudel, Ian Nuberg, Krishna Shrestha, Hemant Ojha

3.1 Scientific impacts

During the period July 2015 to June 2016, several publications have been produced in the form of conference papers and journal publications and six manuscripts for submission to various journal papers are being prepared based on preliminary research findings (see Appendix 1 for abstracts). Some of these papers form specific planned outputs while others contribute to the outputs. However, all of these papers draw from this research and also contribute to the outcomes of the project. Young and emerging researchers from partner organisations have either led these papers or have made significant contribution to them, with significant mentoring support from senior researchers.

Below is the list of paper titles and conference or journals to which these papers had been presented, submitted or being planned for submission.

Journal papers submitted

1. Cedamon E, Nuberg I, Paudel G, Basyal M, Paudel N (in press), Rapid silvicultural appraisal to characterize stand and determine silviculture priorities of community forests in Nepal, *Small-scale Forestry – accepted, awaiting for DOI*
2. Cedamon E, Nuberg I, Pandit B, Shrestha K (in press), Adaptation factors and futures of agroforestry systems in mid-hills of Nepal, *Agroforestry Systems*
3. Khatri, D, Shrestha, K. K., Ojha, H, Paudel, N, Paudel, G and Pain, A. (accepted). *Reframing Nepal's community forestry for food security, Environmental Conservation*

Conference papers and seminar presentations

1. Shrestha KK, Ojha H (2016), *Land Under-utilisation pathways: drivers, and policy solutions, National Workshop on Land Management and Food Security: Addressing Underutilised Agricultural Land Issues in Nepal*, Jointly organised by National Planning Commission and Australia Centre for International Agricultural Research 28 – 29 April 2016, Staff College, Lalitpur, Nepal.
2. Shrestha, KK (2016), *Persistence and change in Nepal: Local consequences of global remittance economy*, Political Ecology Group Seminar, Department of Geography, University of Cambridge, UK, 9th February 2016.
3. Amatya SM, Nuberg I, Cedamon E, Pandit B (2016), *Removing barriers to the commercialization of agroforestry trees in Nepal*, IN J. Meadows, S. Harrison, J. Herbohn, Eds, Conference Proceedings, IUFRO Research Group 3.08 Small-scale Forestry Conference, 11-15 October 2015, Sunshine Coast Australia, pp 5-17
4. Cedamon, E, Nuberg I, Lusiana B, Mulia R, Pandit B, Subedi Y, Shrestha K (2016), *EnLiFTModel 1.0: a livelihood and food security model of a forest-farm system*, IN J. Meadows, S. Harrison, J. Herbohn, Eds, Conference Proceedings, IUFRO Research Group 3.08 Small-scale Forestry Conference, 11-15 October 2015, Sunshine Coast Australia, pp 23-42
5. Paudel, G, Cedamon, E, Nuberg, I, Paudel, N and Shrestha, K (2015), *Why Community Forest Management in Nepal is not Active and Equitable*, Oral Presentation, IUFRO Research Group 3.08 Small-scale Forestry Conference, 11-15 October 2015, Sunshine Coast Australia

6. Paudel, G, Shrestha, K, Nuberg, I, and Khatri, DB (2015), *Institutionalizing community-based enterprise in Nepalese community forestry*, Oral Presentation, IUFRO Research Group 3.08 Small-scale Forestry Conference, 11-15 October 2015, Sunshine Coast Australia
7. Cedamon, E. (2015), *Enhancing livelihoods and food security from agroforestry and community forestry in Nepal*, Research Day 2015, School of Agriculture, Food and Wine, University of Adelaide, 2 November 2015, Adelaide Pavilion, Adelaide South Australia

Papers in process

1. Ojha H, Shrestha K, Subedi YR, Shah R, Nuberg I, Heyojoo B, Cedamon E, Tamang S, Paudel K, Rigg J, Malla Y, McManus P, (?) *Disenchantment with agrarian civilization? Agricultural land underutilization in the hills of Nepal*, for Journal of Peasant Studies
2. Subedi YR, Cedamon E, Mulia R, Lusiana B, Nuberg I, Shrestha KK, *Factors of Agroforestry Diversification in Mid-hills of Nepal*, Agroforestry Systems (?)
3. Paudel, G, Cedamon, E, Nuberg, I, Paudel, N and Shrestha, KK, Ojha H (?) *Making community forest management active and equitable: a framework and lessons from the mid-hills of Nepal*, (Journal for be determined)
4. Karki R, Paudel NS, Ojha HR, Shrestha KK, Nuberg I, *From trees to food security: Pathways in Community Forestry in Nepal*
5. Shrestha KK, Paudel G, Ojha HR, Paudel NS, Nuberg I, *Can community forestry groups run enterprises? A case of Chaubas timber processing company in Nepal*
6. Paudel G, Shrestha KK, Ojha HR, Paudel NS, Nuberg I, Cedamon E, Khatri D (?) *Institutionalizing Community-based Enterprises in Nepalese Community Forestry*
7. Ojha, H, Shrestha. K, Paudel, N, Nuberg, I, *Rethinking science-policy interface: Deliberative policy lab for reorienting forest policies for food security in Nepal* (Tobe submitted to Environmental Science and Policy)

In addition, two students from the University of Adelaide completed theses associated with EnLiFT,

1. De Ieso C (2016) *Retrospective analysis of an old silvicultural trial in Nepal*. Bachelor of Agricultural Science (Honours)
2. Endo, H (2016) *Evaluating the importance of fodder trees to soil nutrition of farming systems in the mid-hills region of Nepal*. M.Phil

In addition, two JAF holders, namely Lila Puri, UniAdelaide and Sujata Tamang, UNSW, are conducting their fieldwork in Nepal, connecting their research with that of EnLiFT work.

In addition, EnLiFT researchers have collaborated with wider research community to contribute to scientific publications, partly drawing on the EnLiFT research insights (EnLiFT formally acknowledged):

1. Ojha, H. R., R. Ford, R. J. Keenan, D. Race, D. Carias Vega, H. Baral and P. Sapkota. (In press). *Delocalizing Communities: Changing Forms of Community Engagement in Natural Resources Governance*. *World Development*.
2. Adhikari, J., H. Ojha and B. Bhattarai. 2016. *Edible Forest? Rethinking Nepal's Forest Governance in the Era of Food Insecurity* *International Forestry Review* September
3. Shrestha, K. K. & Ojha, H. (Forthcoming), 'Theoretical advances in community-based natural resource management: Ostrom and beyond', In Shivakoti et al., *Redefining Diversity and Dynamics of Natural Resources Management in Asia*. Elsevier, UK.

3.2 Capacity impacts

Capacity building of community institutions and research partners has always been a priority in this project. Accordingly, we have focused on members of community forest user group (CFUG) and local research group (LRG) at local level and DFO staff and FECOFUN members at district level. Trainings were conducted in all six sites for CFUG and LRG members on CF rules, importance of new technologies in AF and CF, governance and institutional aspects, coordination with local governments, DFO, and other government line agencies and FECOFUN.

In Kavre a three-day training on forest resource assessment using GIS mapping were conducted for DFO staff. These trainings were received well by the participants and have committed to use the learning in their forest management and institution building process.

3.3 Community impacts

EnLiFT has been supporting agroforestry action research in six CFUGs of Lamjung and KabhrePalanchok districts since April 2013. Community impacts of the projects can be outlined in relation to improved community forest management, empowerment of dalits and women to express their views, improved relations among community members and between CFUGs and forest officials, improved agroforestry practices, capacity building on technical and management aspects, improved AF products marketing and flow of benefits to groups and households.

Agroforestry

In agroforestry, more than 180 farmers are currently benefitting directly from project interventions which are now fully under operation. A further 126 farmers have been selected for inclusion in the project: at least 20 farmers from each site, at least 5 from each CFUG. They are being introduced to EnLiFT activities in the current summer growing period. The project will achieve its goal of 300 participating farmers.

Promotion of market oriented agroforestry interventions (one product one site) were developed and capacity of LRPs and LRGs were enhanced through several direct intervention such as preparation of business plans of their own focusing on the priority agroforestry products.

In the early stages of the project all participating farmers were instructed and supported in establishing nurseries. As there was considerable variation in the quality of nurseries we then focussed on farmers who demonstrated capacity to run a nursery well. Twelve medium size nurseries were established that produced more than 63,300 seedlings of fast growing multipurpose species such as Ipil-Ipil, Bhatamase, Guajuma, Mendula, Balkaino, Mulberry, Lapsi and NB₂₁. A list of farmers who have established nursery is provided in Table 1.

Table 1: List of farmers establishing nursery in Kavre and Lamjung

KavrePalanchok District		
Dhunkharkha	Chaubas	Methinkot
Mr. Sujan Shrestha Ms. Apshara Shrestha	Mr. ToranBdKuwar Mr. KanchoSarki Mr.ChettraBd Pandey	Mr. Kendra Pr Ojha Ms. KalpanaChimauriya
Lamjung District		
Nalma	Dhamelikuwa	JitaTaksar
Mr. Chakra Bahadur Gurung	Mr. RudraKadariya Ms. RadhaBisural	Mr. Rishi Ram Khanal Mr. Yog Ram Giri



Figure 3 Mr Kendra Ojha in Methinkot nursery



Figure 4 Dr Swoyambhu Amatya, EnLiFT nursery sign

More than 180 farmers have planted these seedlings on their farmland. Some of the selected farmers have established demonstration plots as well. They have already harvested some of the forest crop species and fed to their livestock especially in the lean period. More CFUG members are willing to participate in the program.

The spill-over effect of the project have already been persistent as neighbouring farmers are planting forage and tree crops on their farmland. The seedlings were provided to them free of cost by the project farmers. It has been learnt that more than 15 farmers were benefited from this sort of spill-over effect on one site at Dhamilikuwa of Lamjung district.

Community forestry: efforts to revive the saw mill

As a part of action research, EnLiFT project has been supporting CFUGs/mill executive committee in their efforts to revive the mill operation. Activities/intervention include facilitating series of bi/multilateral discussions amongst CFUGs, CFUGs and the mill management, CFUG/mill management and DFO. We are also supporting mill management to comply with the legal procedure (legal consultations, procedure of mill registration/renewal in district small and collage office etc.). Amid lack of trust between mill management and CFUGs, we helped people understand the complexities and recognize the need of working together for building trust and working environment. As a result of these meetings, the member CFUGs agreed to revive the saw mill and also approved the community-private sector partnership modality of saw mill operation. All CFUGs have nominated their representatives to the saw mill board and decided that they would be interested and capable to invest 49% share of the mill. They have agreed to allocate 51% share to the private investors.

EnLiFT has coordinated several on-site observation visits to Chaubas Saw Mill. Latest visit included forestry policy level authorities including director general of Dept of Forests, four joint secretaries, four DFOs, Ilaka forest officers, community federations, political party leaders and media. NTV Plus, Nepali TV channel, has recently aired a short story of Chaubas Bhumlu Community Saw Mill in its regular episode called 'Serofero- literally meaning surrounding'. On its the 10 minute program, the TV covered the history of the saw mill, legal/procedural complexities and ongoing revival process. The program is in Nepali, so it might be difficult for non-Nepali researchers. The program is online and can be reached through https://youtu.be/deD7_B7dBkM

Table 2 List of CFUG level workshops and discussion topics

Date	Activity	Place	Participants	
			Male	Female
7-Aug-15	Ilaka level W/S and public hearing	Dhamilikuwa	17	14
11-Aug-15	Ilaka level W/S and public hearing	Tandrang Taksaar	22	16
26-Aug-15	Ilaka level W/S and public hearing	Nalma	22	12
30-Aug-15	EnLiFT District level w/s	Besishahar	20	12
6-Sep-15	Ilaka level W/S and public hearing	Mithinkot	15	19
8-Sep-15	Ilaka level W/S and public hearing	Dhunkharka	17	28
11-Sep-15	Ilaka level W/S and public hearing	Choubas	14	20
24-Jan-16	Ilaka level w/s on Forest Management	Tandrang Taksaar	26	16
7-Apr-16	Ilaka level w/s on Forest Management	Dhamilikuwa	22	18
11-Apr-16	Ilaka level w/s on Forest Management	Kapurgoun, Baglungpani	20	16
24-Jun-15	District level W/S on CF market issues	Besishahar	21	5
19-21 May 2016	GIS training to DFO staff	Dhulikhel	16	1
8-May-16	Rapid market aprisal workshop	Dhamilikuwa	16	7
22-Jun-16	Rapid market aprisal workshop	Tandrang Taksaar	17	1

Number of people visiting each of silvicultural demonstration plots EnLiFT has coordinated five multi-stakeholder visits to its silviculture demonstration sites in Kavre and Lamjung. Three visit teams viz two policy level visit (one in Chaubas, one in Dhunkharka), one district forestry sector coordination committee visit and one cross-CFUG visit had onsite observation of forest management demonstration sites in Chaubas. High officials from department of forests including director general, and Chief of Community Forest Division visited EnLiFT demonstration plots both in Dhunkharka and Chaubas. The objectives of such visits were to provide an update of EnLiFT to key policy actors and obtain on-site feedback from them. The visit brought major forestry sector policy actors to the EnLiFT sites.

- Department of Forests (director general, four Joint-secretaries, four DFOs of Dolakha, Sindhupalchowk, Kavre and Lamjung, Ilaka Forest Officers)
- Federations of Community Forestry Users (general secretary and members of central secretariat, president and general secretary of Lamjung, member of Kavre district).
- Himalayan Grassroots Women's Natural Resource Management Association (President)
- Nepal Foresters' Association (General secretary)
- Federation of Forest Based Industry and Trade (president)
- Community Forestry Supporters' Network (President)
- Nepalese Federation of Forest Resource User Group (representative)
- RECOFTC- The Center for People and Forests (country program coordinator)
- Green Foundation (president)
- Media

Director general of Dept of Forests has made an exclusive comments about EnLiFT silviculture demonstrations and its potential to contribute to policy level. After the visit the DG (of Dept of Forest) posted the following message in his facebook-

It is the fact that a Public policy formulation approach based on strong evidence based research has always high level of acceptance, ownership and success rate compared to ad-hoc and incremental approach. In my personal view, our field visit was an excellent field laboratory policy dialogue. I am very much hopeful that it will definitely value add in drafting the forth coming Management guideline for established plantation community Forests. Let me extend my appreciation to your research team and all participants for their interesting thoughtful deliberation regarding forest management issues in CF. I also do acknowledge your field team members for their excellent effort to make it productive. The family, who offered us excellent food is really worth to praise!

Cross-CFUG visit provided opportunity to CFUG leaders around Chaubas to have an on-site experience of potential forest management in community forests. EnLiFT organized a field day to forest management demonstration plots established in Lampata community forests in Lamjung., on 26 January The visit team comprised of district forest officer, FECOFUN representatives, local political party leaders, members of community forestry user groups and EnLiFT researchers. The objective of the visit was to demonstrate the application of forest management systems in the community forest. As an endeavor to communicate the forestry science to the representative from different stakeholders, researchers explained how forest management practices can contribute to sustainable management of forests and contribute to enhance livelihoods of local community.

3.4 Economic impacts

Selected agroforestry crop cultivation and marketing has already been started. Information of cultivated species is available. Business plans of selected agroforestry products of all groups have been prepared. In all sites, farmers have established some kind of saving and credit system. Local farmers have knowledge of the lifecycle of important cultivated species, and the expected return from selected products. Traders are available in local markets, production technology demonstrated and marketing actors know each other. Local and district level traders and farmers have also increased their bargaining power.

It has been learnt that farmers involved in the project activities are gaining some economic benefits (Table 3) and diversifying local economies. According to the LRPs, more than half of the households have food sufficient for up to 9 months in the project areas. It means majority of farmers involved in agroforestry product cultivation and marketing are depending on off-farm and other cash income generated from the farms for food stuff purchase. A study in 31 households involved in agroforestry demonstration plot establishment in project research sites was conducted in April-May 2016, which shows that these 31 households have generated approximately Rs 3458529 from the sale of agroforestry products, which is Rs 111565 per household. This amount was used in health, sanitation, education and food stuff purchase.

Table 3: Income generation from different agroforestry products

	Research sites	Products sold	Earning in NRs per HH
1	Methinkot	Ginger, Turmeric, goats, milk and other vegetables	686,400
2	Dungkharka	Tomato, Milk, Potato and other vegetables	1,037,500
3	Chaubas	Cardamom, Marigold flower, pumpkin, ground apple	643,500
4	Dhamilikuwa	Banana, blackpepper, milk, tomato, goats and other vegetables	635,349
5	JeetaTaksar	Banana, goats, milk and vegetables	322,680
6	Nalma	Round chilly, goats, onion, potato and other vegetables	133,100
Total income (Rs)			3,458,529

Family labour has been used efficiently in agroforestry product cultivation in all test sites due to the proximity of farmer's residence. Income generated from sale of agroforestry products have supported significantly in food security and livelihood improvement to some extent. In some cases, farmers reported borrowing money from their relatives and friends, and saving and credit group in order to purchase food, which was repaid after selling agroforestry products grown under project initiatives.

Creation of agroforestry enterprise

Selected agroforestry product cultivation and marketing activities in all 6 sites are developing as small-scale enterprises, particularly to those who are fully engaged in nursery operation and crop cultivation practices. These activities have made economic development and livelihood improvement providing income generation opportunities and diversifying local economies.

Employment generation in agroforestry

Initially, 126 households of all research sites were involved to prepare and implement their agroforestry business plan. Both men and women of these households are involved to establish and operate nurseries, and to grow and sell agroforestry products which finally yielded some cash income. This employment is also known as green job that *genuinely* contributes to a more sustainable intervention.

Family labor has also been used efficiently in nursery and agroforestry product cultivation in all test sites due to the proximity of farmer's residence. Working in nursery and agroforestry product cultivation sites is just like seasonal selling of household labor, which also provides some income.

Economic impact from community forestry

Community forestry intervention has generated a significant amount of economic contributions to local economy in terms of creating income and employment opportunities.

Table 4 Estimate of economic benefits from community forests.

Total Household benefitted	1436
Timber distributed *(US \$)	16,500
Labor employment for silviculture action research (~702 MD) (US \$)	3510
Income from community saw mill	
net profit (US \$)	5,500
employee (~ 825 person days) (US \$)	6,875
Total contribution (US \$)	32385

* This includes the amount of timber distributed in three priority CFUGs of Kavre only.

3.4.1 Social impacts

Empowerment of women

There are four concrete actions which have resulted in women's empowerment in our research sites. In all sites there are male and female LRPs and both are actively active. Apart from the LRPs themselves, it has encouraged other women to come forward, raise their concerns and advance their proposals.

Governance training was conducted to three sites in Kavre during this period where inclusion of women in EC and other key decision making bodies were encouraged. Women actively participated in these trainings which helped them increase their leadership in CF related activities.

Inclusive provisions in project supported new Operational Plans which are not been implemented. As a result, the representation of women in key posts in EC has increased.

Women's Group assumed full role in plantation and management of Laicha Danda (in Lampata CFUG). They received financial support from the CFUG and have taken leadership of plantation and protection of the block. They are also assured of utilising those fodder and other trees

Women's group have received 1000 seedlings of cardamom (Fagarkhola); which they planted and are managing as a group plot. They will be benefiting from the Cardamom in this plot.

Table 5: Dates of governance training in three sites in Kavre

Dates		site	Male	Female
13-14 May 2016	CF governance training	Mithinkot	18	13
16-17 May 2016	CF governance training	Dhunkharka	23	21
19-20 May 2016	CF governance training	Choubas	12	16

Inclusion of Dalits in CFUG decision making

Dalits have benefitted from the special provision on Charcoal making in the recently revised OP (Lampata, Aanpchaur and Dharapani). Previously, they were denied of such rights. Similarly, CF land allocation has been made to six Dalit households and they have been supported with seedling and other technical aspects to grow cardamom (Fagarkhola). The group will benefit from the sale of cardamom next year.

Scaling up of selected agroforestry crop cultivation and marketing has already been started in all research sites. Farmers are organized in groups and work for collective marketing has been in discussion. Local farmers have knowledge of the lifecycle of important cultivated species, and return from selected products is coming. Traders are available in local markets, production technology demonstrated and marketing actors know each other. Beside these, the major opportunities of agroforestry promotion in study sites are as follows:

3.4.2 Environmental impacts

The project has contributed significantly to positive environmental impact through demonstrating better and sustainable management of forests, enhancing economic incentives for conservation through better market linkages, plantation of agroforestry crops in the private land, promotion of natural regeneration in the forest, etc.

One of the major impacts is through the reformulation of operational forest management plans in a number of CFUGs, as shown in Table 6.

Table 6 Changes in operational plans of community forests

CFUGs name	Date of approval	Key improvements in forest management and realising the benefits
Lampata CFUG, Jita Taxar, Lamjung	2015	New Operational Plan has increased members ownership and active involvement, active forest management, equitable benefit sharing,
Apchaur CFUG, Dhamilikuwa	2015	Identification of poor HH through well being ranking, differential price of forest product to poor HHs, 35% community fund in poor focus activities
Dharapani CFUG, Chaubas, Kavre	Plan prepared, and in review process	The new based on recent and will facilitate a substantially high amount of timber harvest and associated management
Narayansthan CFUG, Dhunkharka, Kavre	Plan prepared, and CFUG is planning to approve it through general assembly	Wellbeing ranking to identify poor HHs, Poor HHs get forest products in reduced price, 35% of total community fund in poor focused activities.

An the negative side, we experienced unprecedented fire risk during this reporting period that has damaged part of Chapani Community Forest. The repeated fire burnt the regeneration and damaged few trees. In the first incident of fire, people could save logs piled up in the forests. However, in the second incident, fire also burnt some logs and damaged the plantation carried out into the demonstration plots. Despite the local people, forest officials and security forces tried hard to put off the fire, it went out of control. Extremely dry season, gusty winds and accumulation of dried biomass posed threats of fire in the forests.

Nobody knows how fire the started, however, most probably it was started from cigarette butts thrown by (bus) passengers or people passing through the forests.

Fire reached tree tops through burning tree trunks in many dry and standing trees. However, there was not an uncontrollable canopy fire and therefore the damage was limited to the seedlings, not live big trees. This fire reminds (forest) management lessons- timely removal of dry biomass, construction/maintenance of fire lines, training/awareness about forest fire, provision of fire fighting tools (such as shovels, fire rakes) etc



Figure 3 Fire in Chapani Community Forest

3.5 Communication and dissemination activities

NayaPaudel and Ian Nuberg

During this period dozens of meetings and workshops were organized with the MoFSC agencies, FECOFUN and private sector to inform about the project updates and share knowledge outputs. There was one Project Advisory Committee (PAC) meeting, four District Level Coordination Committee (DLCC) meetings (two in each district), couple of meetings with the Dept of Forest, DFO, Stakeholder and with forest based business people (see Table 7). These meetings and workshop helped inform our key partners and stakeholders, helped get their support in our action and were worked as basis of data collection.

Table 7: Some important meetings and workshop for communicating EnLiFT activities.

Date	Meetings	Purpose
06/12/2015	DFSCC meeting, Kavre	EnLiFT FM demonstration
02/07/2015	DLCC, Kavre	AEFM and timber harvest in Demo plots
18/12/2015	Meeting with FECOFUN, FECOFUN secretariat	EnLiFT planning
01/01/2016	Meeting with Dept of Forests	Presentation of EnLiFT demonstration experience
03/01/2016	DLCC, Lamjung	Presentation of Lampata demonstration
26/01/2016	PAC meeting	Sharing of EnLiFT updates and presentation of AEFM experience
30/09/2015-01/10/2015	Interaction with district level stakeholders, Lamjung	Annual review and planning of EnLiFT
08-09/10/2015	Interaction with district level stakeholders, Lamjung	Annual review and planning of EnLiFT
19/11/2015	DLCC, Kavre	Sharing of EnLiFT updates and presentation of AEFM experience
12/05/2016	DLCC, Lamjung	Discussion of AF policy issues
26/08/2016	FECOFUN workshop	Sharing of EnLiFT updates and presentation of AEFM experience
04-07/11/2015	Meeting with DFO Chitwan	EnLiFT support to FM in Chitwan
01-02/02/2016	Action Research Meeting, Lamjung	EnLiFT review and planning
07-08/02/2016	Action Research Meeting, Kavre	EnLiFT review and planning
19/02/2016	Director General visit to Chaubas	Onsite observation of silviculture demonstration and Chaubas Mill
20/04/2016	District level UUL workshop, Lamjung	Sharing of UUL research in the district
27/04/2016	District level UUL workshop, Kavre	Sharing of UUL research in the district
28-29/04/2016	UUL workshop	
25/05/2016	Meeting with Silviculture division, DOF	Silviculture national workshop planning/description
23-24 June, 2016	Stakeholder meetings in Lamjung	Discussion on policy issues related to forest based enterprises and marketing of CF products

FECOFUN activities in scaling out

FECOFUN has been an active partner in this research project. They have been playing critical roles especially in integrating biophysical research and technological innovation with social and institutional aspects of community forestry among others. Besides, they have become important extension agents to communicate and scale out the innovations on participatory CF planning, silvicultural work and agroforestry campaign. They are also helping CF members, farmers and entrepreneurs to identify and promote business opportunities on forest based products. In particular, they organised interaction meetings with local governments in three sites, exposure visits of media people to silviculture research sites, organised site level FECOFUN to all six sites, and organised entrepreneurs workshop in three sites and one in district headquarters in Lamjung.

EnLiFT project website

An EnLiFT project website is under construction to disseminate the project information, activities and publications to stakeholders and wider audience. The front page of the website will contain the brief introduction of project including its objectives, project structure and research collaborators. In menu bottom, there will be: a. Home, b. Research Theme, c. News, d. Gallery, e. Publications, f. Blog, g. Contact Detail. Under these major menu there will be details of research themes, field notes, conference papers, research reports, journal papers, annual reports and magazines. Currently, this is embedded with ForestAction website as it would help regular update and maintenance with a minimum cost. The live template of the website can be checked using following link <http://forestaction.org/enlift/>. The construction of the website is expected to be completed by the midAugust, 2016.

A systematic cataloguing of project publications has started, with the project outputs divided into a) Field report; b) Discussion Paper; c) Technical reports

Field days

Field days were held in January 2015 to disseminate initial learnings of EnLiFT from silviculture demonstration work in Kavre and Lamjung. On 22nd January, DFO Kavre, FECOFUN Kavre and EnLiFT hosted representatives of the EnLiFT Project District Level Coordination Committee members, members of media from Kavre and Kathmandu, Foresters from District Forest Office and Ilaka Offices of Kavre and selected chairperson of CFUGs in Kavre on bus tour to Chaubas. The purpose of the tour was to show the silviculture demonstration and provide them opportunity to see silviculture practice and talk to forest users involve in the silviculture practice. There were a total of 30 people outside EnLiFT project who participated in the field day in Chaubas (Figure 7).

On the 25th January 2016, meetings and visit to silviculture demonstration plot in Lampata CF was organised by EnLiFT Project, DFO Lamjung and FECOFUN Lamjung to share learnings from silviculture practice to local politicians of the newly established municipality of Madhya Nepal (covering TandrangTaksar VDC) and CFUG representatives within the new municipality. There were about 40 people who join the meeting and field day which discussion in the field was facilitated by Edwin Cedamon, Madan Basyal and Mr. Chandar Man Dangol (Lamjung DFO) (Figure 8).



Figure 4. Thinning and pruning training for Chaubasllaka technicians and CFUG members (women and men)



Figure 5. Mr. Lal Shrestha, Chairperson of Kalopani CFUG showing 1 year old Loth salla seedling planted on the EnLiFT demo plot



Figure 6. ENLiFT providing a follow-up training on tree selection and marking for Selection Silviculture System in Lampata CF, TandarngTaksarLamjung.



Figure 7. Representatives of selected CFUGs in Kavre, Ilaka Forest Officers and DFO Foresters, Media personalities from Kavre and Kathmandu on a field day in Chaubas



Figure 8. Local Politicians, CFUG representatives and members, FECOFUN Lamjung and DFO Lamjung during the field day at Lampata Silviculture Demo Plot.

4 Training activities

4.1.1 Agroforestry

Swoyambhu Man Amatya

Training is one of the important components of the project interventions. Farmers were provided business plan orientation training and agroforestry product selection. The first business plan orientation training was imparted to participating farmers on June 2015 at Bhaktapur. The number of participants were 26 from all the six research sites.

It mainly focused onLRPs and LRG members of KavrePalanchok and Lamjung districts. The name of the farmers who participated on this training programme is provided in Table 8.

Table 8: Name and address of participating farmers in the business plan preparation.

	Name of training participants	Adress
1.	Mr. BholaNathPoudel	TandrangTaksar,Lamjung
2.	Ms. Som Maya Aachami	TandrangTaksar,Lamjung
3	Mr. RishramKhanal	TandrangTaksar,Lamjung
4	Ms. LaxmiGiri	TandrangTaksar,Lamjung
5	Ms. RadhaBisural	Dhamelikuwa,Lamjung
6	Mr. Rudra Raj Kadariya	Dhamelikuwa,Lamjung
7	Ms. Nanu Maya Lama	Dhamelikuwa,Lamjung
8	Mr. Hari Prasad Ghimire	Dhamelikuwa,Lamjung
9	Mr. Chakra BirGurung	Nalma,Lamjung
10	Ms. Kalpana B.K.	Nalma,Lamjung
11	Ms. Chandra KumariThapa	Nalma,Lamjung
12	Ms. KalpanaPanta	Tanahun
13	Ms. Surya Kala Gharti	Tanahun
14	Mr. Jaya Prasad Gurung	Nalma,Lamjung
15	Mr. Kendra Prasad Ojha	Methinkot,Kavre
16	Ms. Kamala Chimaurya	Methinkot,Kavre
17	Mr. Ram Prasad Ojha	Methinkot,Kavre
18	Mr. JitBahadurShrestha	Methinkot,Kavre
19	Mr. ToranBahadurKuwar	Chaubas,Kavre
20	Ms. RekhaPandey	Chaubas,Kavre
21	Ms. KalpanaGautam	Chaubas,Kavre
22	Ms. Santa Pahari	Chaubas,Kavre
23	Mr. SujanShrestha	Dhunkharkha,Kavre
24	Ms. ApsharaShrestha	Dhunkharkha,Kavre
25	Mr. BirBahadurShrestha	Dhunkharkha,Kavre
26	Ms. ParbatiShrestha	Dhunkharkha,Kavre

Participatory Action Research process was followed in imparting the training. The main purpose of this training was to make participation capable in preparing business plan of selected agroforestry products. This training was organized for 3 days. Field exercise was also included in the training. The agroforestry products identified in earlier interventions were used to prepare the business plan implementation process (Table 5).

Table 9: Agroforestry species identified for business plan preparation and implementation

Action Research Sites		Identified Products for business plan preparation
District	Research Sites	
KavrePalanchok	Chaubas	Cardamom based agroforestry
	Dhungkharka	Tomato and dairy based agroforestry
	Methinkot	Ginger and goat based agroforestry
Lamjung	Dhamilikuwa	Banana, black pepper and dairy based agroforestry
	JeetaTaksar	Banana based agroforestry
	Nalma	Round chilly and goat based agroforestry

The business plan on Chiraito cultivation prepared by farmers of Rasuwa district was presented to broaden the knowledge and skill of training participants for preparation of agroforestry business plan. The outcome of the training were:

- participants have gained knowledge and learnt practical skill on developing business plan of selected agroforestry species.
- development of the business plan as a key document for taking up of the their future activities.
- made commitment to act according to their agroforestry business plan of selected species.
- sharing of knowledge and experiences on collaborative action and learning and its link to implement business plan of selected agroforestry species in coordination with various local and district level line agencies.

Cardamom planted by farmers' were having some problem and the project with the help of two experts have tried to identify the problems. The experts have the opinion that vigorous growth of the cardamom plants were found under shade with some moisture. Root rot in some of the clumps was found due to the fungus, *Fusariumsolani*. It was also confirmed after laboratory test. In the plantation area, plants were affected by severe drought. Very sparse or no shade was found to be one of the major problems in cardamom orchard. The opinion of the experts have provided

some relief to the farmers who have planted cardamom on their farmland.



Figure 9 Inspecting diseased cardamom

4.1.2 Community forestry

GovindaPaudel, FAN

The District Forest Office in Kavre has been talking about the need of providing GPS/GIS training to its senior staffs. Most of the rangers and AFOs have not fully developed confidence on the use of GPS while carrying out forest surveys and inventories. However, they are supposed to use the GPS and analyse the data and compile the results. So, EnLiFT supported DFO to organize this training. Three days training provided both the theoretical orientation and practical application of the GPS and GIS. DFO, AFO and ranger level forest technician benefitted from the training.

EnLiFT through its Market-responsive CF institution flagship provided a 6 days long 'business literacy workshop and participatory market assessment to the key business leaders from Chaubas Saw Mill and CFUG. Altogether, 25 participants comprising 8 women and 17 men participated the workshop. The workshop provided opportunities for them to reflect upon the past experience of community-only saw mill operation. Furthermore, the C-B sawmill and the 4 CFUGs were able to meet, discuss, negotiate and clarify a number of issues regarding the business trends and environment, current trend in timber and forest markets, governments policy, rules and regulations with the senior officials of the Department of Forest, District Forest Office, FECOFUN, Federation Of Forest Based Industry And Trade (FenFIT), Federation of Nepalese Chamber of Commerce and Industries (FNCCI) and private saw millers and furniture houses.

5 Intellectual property

There are no intellectual property issues in this project

6 Variations to future activities

Govinda Paudel

On 19th Feb, 2016 EnLiFT organized a visit of policy actors to silviculture demonstration sites located in Chapani CFUGs in Chaubas, Kavre. The objective of the visit was to provide an update of silviculture initiatives to key policy actors and obtain on-site feedback from them. A multi-stakeholder visit-team comprised of high-level officials from Department of Forests: The director general, four joint-secretaries, four DFOs, and other stakeholders such as FECOFUN, journalists, federations, etc. The idea of organizing a National Silviculture Workshop emerged at EnLiFT Demo-plots when the participants discussed the importance of evidence-based research for public policy formulation. The participants realized that the experience of practicing forestry science should be brought together in national level policy front and discussed among the policy actors, and practitioners.

Now, the DOF has taken the ownership of organizing this silviculture workshop. The event has formally appeared in government's regular program. The preparation is going on, though the date is yet to be decided. A technical committee has been formed where Shambhu Dangal and Govinda Paudel are the members of the technical committee. Most probably, the workshop will be organized in Dec, 2016. The objectives of the workshop, in a draft developed by the department are:

- To identify, analyze and synthesize diverse silvicultural practices (both indigenous and conventional) for SFM and examine their strength and weakness in various forest type and management regime
- Identify and analyze policy, regulatory and institutional challenges in promoting SFM
- Understand governance risks for massive SFM intervention and design appropriate safeguard measures
- Explore and agree on appropriate silvo-institutional models for managing forests under different management regimes with diverse objectives

Apart from setting the scene for this workshop, EnLiFT will provide support to speakers at the workshop to document and report on silviculture practices around Nepal, not just in the EnLiFT sites.

7 Variations to personnel

Naya S Paudel and Ian Nuberg

Since the inception of the project there has been several changes of personnel especially in relevant government agencies. During the past 3.5 years of project implementation, five secretaries at the Ministry of Forest and Soil Conservation, five director generals at Department of Forest, two DFOs in Kavre and three DFOs in Lamjung have been changed. Similarly, three Community Forestry Division chief, and three project focal persons have been appointed during this period.

Frequent changes in these key positions at the Ministry, Department and DFO level has posed a serious challenge in securing institutional memory, achieving their support in project implementation and especially in mainstreaming project lessons in the policy domain. Besides, it demands additional effort on the part of the project in informing the officials on the project activities and getting their support on some key policy issues.

There have been similar changes in FECOFUN. They had their National Assembly and that changed leadership the centre as well as in both project districts. In Lamjung they changed project focal person last year.

Partner organisation, SEARCH Nepal has withdrawn from EnLiFT. SEARCH was the local partner implementing the Market-Responsive Community Forestry Institutions research stream. The executive team was not convinced that the work plan proposed by SEARCH would achieve the outputs of that research stream. The proposed activity also required more funds that could be equitably allocated. SEARCH has repeatedly overspent their semi-annual allocations and there was no indication that they intended to keep to budget for the upcoming pay period. The executive team developed an alternative and affordable workplan, but SEARCH declined to be involved and withdrew from the project.

8 Problems and opportunities

Murari Joshi, NAF and Govinda Paudel FAN

8.1 Agroforestry

Major problems observed in agroforestry action research sites were low tree survival rate in the first cycle of plantation, disease in selected priority agriculture crops, drought, earthquakes, and fuel blockade by Indian government, and the delay in nursery production activities by LRG members. The survival rate of planted seedlings in JeetaTaksar was higher compared with in other test sites, which was 72.4%, and lower in Dhungharka with 24.5%. The main reason of low survival rate of planted seedlings in Dhungharka was frost damage. Other reasons for low survival rate of planted seedlings in all research test sites were: drought in winter months, open animal grazing system in fallow farm lands during winter months, planting immature (only 2-3 months old seedlings) seedlings and lack of care and management such as manuring during weeding, watering and protection.

The selected priority agriculture crops were also affected by diseases. Ginger (Kapurkote variety) grown in Methinkot research sites was affected by root rot (Rhizome) disease. About 30-35% ginger crops have been damaged by this disease. Similarly, root rot a fungal disease caused by *Fusariumsolani* was found in some of the clumps of cardamom in Chaubas test sites. In addition, severe drought has also affected the growth and development of cardamom plants. Cardamom farming is done in slopey and moist land having shade of *Uttistrees*. After earthquake in April 2015, water sources of cardamom growing areas have also been drying out slowly, which had adverse effects on growth and development of cardamom plants in Chaubas test site.

Two major earthquakes, 24/4/15 and 12/05/15 are regarded as the worst natural disaster to strike Nepal since 1934, which have created huge problem to implement project research smoothly. It has hampered greatly in quality seedling production activities in April and May 2015 and hedgerow plantation establishment in June-July 2015. Farmers were giving priority in their security rather than involving fully in project initiatives.

Blockade of fuel by the Indian Government was also another problem for providing timely socio-technical support to LRP and LRG members by the project researchers, and monitoring and evaluation of field activities carried out by the farmers.

Delay in nursery production work by LRG members for this season plantation is also another problem. Project has delivered seeds and other materials needed for seedling production in 3rd week of February 2016. But seedling production activities in nurseries by LRG members were started from the end of March 2016. Again they will have very young (2-3 months old) seedlings for hedgerow plantation.

Multi-stakeholders participation

This process has been considered to be an important element of action research planning, and plan implementation and monitoring and evaluation of implemented activities. For this, the project has conducted LRP and LRG member's capacity building activities for coordination and linkages with Village Development Committee (VDC), District Development Committee (DDC), District Forest Office (DFO), Federation of Community Forest User's Nepal (FECOFUN), District Agriculture Development Office (DADO), District Soil Conservation Office (DSCO), District Livestock Service Office (DLSO), Micro-Enterprise Development Project (MEDEP) and other line agencies for setting up and managing successful multi-stakeholder processes. Further work for the promotion of multi-stakeholder participation needs to be done in coming days.

Policy implication

In Nepal, there are no appropriate and focus agroforestry policy and institutions under the Department of Agriculture, Department of Forest, Department of Livestock Service and Department of Soil Conservation and Watershed Management for integrated agroforestry research, planning, capacity building, extension, implementation and monitoring and evaluation of implemented activities in coordination with various line agencies. For this, the lessons learned from this project can contribute to prepare focus and dedicated agroforestry policy in Nepal.

8.2 Community Forestry

Increased demand for timber during the post earthquake period has enforced communities harvest any available trees including those from our demonstration plot. Consequently, we could not establish plots in one of the research sites.

On the other hand, EnLiFT organised field visit of senior officials of the Department of Forest immediately after the earthquake to explore ways to increase timber supply for rehabilitation and reconstruction. There was a serious discussion between field staff and the visiting senior officials. Exemption on some of the procedural requirements for timber harvesting during the crisis was discussed in length during the meeting. Later on the government issued a policy guideline for the earthquake affected districts where several of normal procedural aspects have been exempted. The team is proud of initiating such important process for the speedy supply of timber to the CF members.

In response to the heightened demand for timber for reconstruction the government has introduced some measures that restricts CFUGs freely selling timber in the open market. Instead, they have to give it to the authorities. Apart from undermining CFUG autonomy, it has directly hit the Chaubas Saw Mill as the authority may divert timber away from saw mill. While this is a temporary measure, the private entrepreneurs who were once ready to invest in the Saw Mill now appear reluctant.

On 2th Dec 2015, the government issued decisions related to timber supply from community forests to the earthquake victims. The DoF circulated the decision to concerned district forest offices (DFOs) entrusting the latter with the following:

1. Allow Community forest user groups (CFUGs) to collect timber and fuelwood from community forests equivalent to total annual increment in accordance with DoF Forest Inventory Guideline of 2004.
 2. Allow CFUGs to harvest timber and fuelwood as per the latest operational plan when CFUGs are unable to renew (revise) operational plans of CFUGs.
 3. Carry out thinning in plantation forests of *Pinus patula* and *P. roxburghii* according to 'Thinning guidelines for *Pinus patula* and *P. roxburghii* plantations in Nepal, 2006' developed by Department of Forest Research and Survey.
1. Decisions 1 and 2 will be effective for coming two years.

EnLiFT team (especially FAN) has actively played its role in bring the forest management issues in all national level forest policy forums. This has helped garner support from political actors, media and others in favour of active and equitable forest management. Recent Earthquake and resulting increased timber demand for reconstruction has also induced debate on putting new management system which can substantially increase timber flow in the market. While almost all actors now support this shift, they all have a common concern of ensuring a governance system so that CFUGs and related actors are capable of handling a transparent transaction, equitable distribution and identify new

areas of investments from increased timber based revenue. Now the MoFSC itself has allocated a good budget to promote scientific forest across the country in this years' budget. The project team is very proud of these achievements though these cannot be solely attributed to the project alone. We see a much supportive working environment ahead in forest management and developing critical governance safeguard measures for active forest management and timber processing.

The fire burnt about 900 cft of pine logs piled up near the silviculture demonstration plots. The economic loss has been estimated to around Rs, 400,000 (Approx USD 4000). During the first fire, CFUGs, Ilaka Forest Office, Chaubas Police Post and EnLiFT researchers mobilized spontaneously and put out the fire. The fire could not reach the forest block where the demonstration sites located. The forest user groups had a controlled burning to reduce the fire hazards- the dried leaves, pine cones, fallen branches etc. However, the second fire incident went out of control despite a consorted effort of CFUG members, forest officials and police. The fire also damaged the seedling planted in the demonstration plots and other naturally grown plants.

In addition to the economic loss, the social/ political aspect of the fire was even worse. The underlying rationale of active forest management is that it helps manager(s) take out forest products and regenerate forests continuously. EnLiFT silviculture initiatives could demonstrate this, but the fire became a major setback this year.

Budget

Ian Nuberg

For the first two years of the project the allocation of an appropriate proportion of funds to each the Nepal partners was a very complex process each pay period. Allocation to the 4 NGO partners was complicated because members of each partner NGO were involved in research activities across AF, CF and UUL, whereas the responsibility to deliver an output within any of these themes was limited to one of the partner NGOs. We would spend an inordinate amount of time developing complex workplans for each activity and trying to determine an equitable and transparent direction of funds to each partner for the work their members did. This was followed by an equally complex acquittal process from each partner at the end of each pay period to account for their time and resources in each activity. Allocations to CFD and FECOFUN were based on that stated in the original proposal budget. This was (and still is, frankly) unsatisfactory because there was no clear way of ensuring value-for-money for their involvement in the project. This attempt to micro-manage allocations with great precision was unsatisfactory and time-inefficient.

For pay period 6 (beginning July 2015) we instigated a process of allocating a broad proportional split across the 3 research themes (AF, CF, UUL) to the partner leading that activity (i.e. AF to NAF, CF to FAN, UUL to IUCN). Each partner would allocate time and resources to achieve their outputs to the best of their ability. Payments from each theme to researchers from another partner organisation are made on basis of days invested at the end of the period. Fixed budget lines are assigned to NAF and IUCN for their coordinating functions. This line also includes agreed allocations to CFD and FECOFUN. This system works much better.

Table 10 shows the allocations in AUD across the three research themes. For pay periods 6 and 7 we agreed on a 40:50:10 split over AF:CF:UUL respectively. From our internal review process (Section 2.2 this report) we have revised this to a 47.5 : 47.5 : 5 for pay period 8. We are encouraged by the fact that the allocations for Nepal partners to undertake the work to complete the project successfully will increase every pay period. This is due to the fact that ICRAF's role in the project concludes at the end of pay period 8.

AUD	Jul 2015 pp6	Jan 2016 pp7	Jul 2016 pp8	Jan 2017 pp9	Jul 2017 Pp10 to Mar 2018
AF	16,463	20,731	30,722	45,706	48,394
CF	20,579	25,914	30,722	45,706	48,394
UUL	4,116	5,183	3,234	4,811	5,094
Research	41,158	51,828	64,678	96,224	101,883
Fixed	75,659	78,659	63,659	63,659	63,659
Total	116,817	130,487	128,337	159,883	165,542

Notional split for pay periods 8,9,10
AF 47.5%; CF 47.5%; UUL 5%

AUD1 = NPR 76

Table 10 Allocations across research theme operating costs and fixed costs.

10 Appendix 1. Scientific publications 2015/2016

10.1 Journal papers

Rapid silvicultural appraisal to characterize stand and determine silviculture priorities of community forests in Nepal

Cedamon E, Nuberg I, Paudel G, Basyal M, Paudel N (in press), *Small-scale Forestry – accepted, awaiting for DOI*

Abstract

Community forestry in Nepal is an example of a successful participatory forest management program. Developments in community forestry in four decades have focused on the social and governance aspects with little focus on the technical management of forests. This paper presents a silviculture description of community forests and provides silviculture recommendations using the rapid silviculture appraisal (RSA). The RSA, which is a participatory technique involving local communities in assessing forests and silviculture options, is a simple and cost-effective process to gather information and engage forest users in the preparation of operational plans that are relevant to their needs. The RSA conducted on selected community forests in Nepal's mid-hills shows that forests are largely comprised of dominant crowns of one or two species. The majority of studied community forests have tree density below 500 stems per hectare as a consequence of traditional forest management practices but the quality and quantity of forest products are low. Silviculture options preferred by forest users generally are those which are legally acceptable, doable with existing capacities of forest users and generate multiple forest products. For sustainable production of multiple forest products, the traditional forest management practices have to be integrated with silviculture-based forest management system.

Adaptation factors and futures of agroforestry systems in mid-hills of Nepal

Cedamon E, Nuberg I, Pandit B, Shrestha K (in press), *Agroforestry Systems*

Abstract

Farmers in Nepal mid-hills have practiced agroforestry for generations as source or supplement of timber, firewood and fodder from government forests. The nature and extent of agroforestry practice is being challenged by social and economic change particularly in response to labour out-migration and remittance income. Understanding is required of the critical factors that influence farmers in the way they adapt agroforestry to their circumstances. This paper analyses the intersection of livelihood resources and agroforestry practice to identify trajectories of adaptation to improve livelihood outcomes. Using data from a survey of 668 households, it was found that landholding, livestock holding and geographic location of farmers are general drivers for agroforestry adaptation. A multinomial logistic regression model showed that in addition to these variables, household income, household-remittance situation (whether the household is receiving remittance or not) and caste influence adaptation of a specific agroforestry practice. The analysis indicates that resource-poor households are more likely to adapt to terraced-based agroforestry while resource-rich households adapt to woodlot agroforestry. Appropriate agroforestry interventions are: 1] develop simple silvicultural regimes to improve the quality and productivity of naturally-regenerating timber on under-utilised land; 2] develop a suite of tree and groundcover species that can be readily integrated within existing terrace-riser agroforestry practices; 3] acknowledge the different livelihood capitals of resource-poor and resource-rich cultural groups and promote terrace-riser and woodlot agroforestry systems respectively to these groups; and 4] develop high-value fodder production systems on terrace-riser agroforestry, and also for non-arable land.

Disenchantment with agrarian civilization? Agricultural land underutilization in the hills of Nepal

Hemant Ojha, Krishna K Shrestha, Yuba Raj Subedi, Racchya Shah, Ian Nuberg, Binod Heyojoo, Edwin Cedamon, Sujata Tamang, Krishna P Paudel, Jonathan Rigg, Yam Malla, Phil McManus.

Abstract

Why should a parcel of agricultural land be abandoned when there is a scarcity of food? In this paper we address this question in relation to the hills of Nepal, where agricultural land is being abandoned at an unprecedented rate, despite looming food scarcity. Responding to studies that have highlighted land abandonment trends, we conducted in-depth case studies in two of Nepal's hill districts to understand how the phenomenon of land abandonment is taking place and under what circumstances. Transcending linear models of agrarian change which attribute land abandonment to one or more prominent factors, our studies show complex causal pathways leading to land underutilization. These pathways are often triggered by three key socio-economic and political dynamics in contemporary Nepal, namely: sociocultural change favouring out-migration; evolving economic opportunities making farming less profitable; and a policy context that fails to recognize the gravity of the land abandonment challenge and its consequences. The paper establishes that land underutilization is a result of systemic processes operating across scales, but rooted in local dynamics of agrarian change. Policy implications of this finding on national and local food security, and sustainable local livelihoods are also discussed.

Status: The paper is almost in final stage of editing. It will be submitted in a couple of weeks time.

Can community forestry groups run enterprises? A case of Chaubas timber processing company in Nepal

Krishna K Shrestha, Givinda Paudel, Hemant R Ojha, Naya S Paudel, Ian Nuberg

Abstract

Community forestry enterprises (CFEs) are considered as means to enhance community livelihoods in many developing countries. It is usually assumed that CFEs contribute to social, economic and environmental development and address poverty. However, a growing body of literature suggests that CFEs often struggle to sustain economically profitable and socially beneficial operations. Many CFEs have emerged, operated and then failed. Questions are thus raised about the viability and sustainability of CFEs. The aim of this paper is to investigate why do CFEs fail and what makes them likely to succeed. By analyzing the establishment, support mechanisms and cycle of success and failure of *Chaubas-Bhamlu* Community Saw Mill (Chaubas CFE) located in Kavre district of Nepal, this paper demonstrates that CFEs fail because of unsupportive government policy, lack of business capacity, armed conflict, complexities of heterogeneous communities and poor infrastructure. We argue that CFEs do not necessarily lead to sustainable enterprise, even with substantial start up support from external agencies such as aid projects. Despite good natural resource base, viable business plan, and significant start-up capital and marketing support, community enterprises run and operated in heterogeneous society face number of socio-cultural and political complexities. Efforts to initiate and maintain such CFEs require deeper understanding of entrepreneurial basics, viz. innovation, risk, knowledge, and opportunities, which are embedded within the policy environment, societal differences, and political conflicts so that CFEs can evolve as an enterprise and sustain socio-economic and environmental benefits.

Status: An earlier version of the paper has already been submitted to the conference organised by IUFRO. Currently, the team is working on revision and will be prepared as a journal paper and will be ready for submission by Sept, this year.

Institutionalizing Community-based Enterprises in Nepalese Community Forestry

Govinda Paudel, Krishna Shrestha, Hemant Ojha, Ian Nuberg, Naya Paudel, Edwin Cedamon and Dil Khatri

Abstract

Community forestry enterprises have emerged as one of the strategies to address poverty in natural resource dependent communities. It is assumed that benefits from such enterprises help

develop communities and protect environment. These assumptions are however partially met, mainly due to insufficient or inappropriate (or both) institutional arrangements of these enterprises leading to failure to deliver desired outputs and sustain entrepreneurial enthusiasm. This paper investigates why such failure occurs and persists, and how these enterprises can better respond to market opportunities available locally and nationally. The article draws on a case study of *Chaubas-Bhamlu* Community Sawmill in Kavre district of Nepal. It analyses institutional modality of the sawmill and provides insights into how local institutions evolved over time with promise of better resource management and enhancing economic and environmental outcomes.

The study analysed the history of sawmill to understand initial ambitions and institutional arrangement, factors contributing to mill's success and reasons of its recurrent closure. Unstructured interviews with founder members, government authorities and local leaders helped to understand institutional lapses and prospects of the mill's revival and sustenance for maximizing benefits. Review of internal documents such as meeting minutes, transaction report and payroll records provided data to understand sawmill's prospects and limitations in generating income and employment. The result suggests that community enterprises, though capable of addressing social inequality, are not institutionally prepared and capable in responding to emerging markets. It is argued that institutional innovation to reconfigure partnership and institutional networks and linkages is necessary to help such enterprises become competitive in the market place.

Making community forest management active and equitable: a framework and lessons from the mid-hills of Nepal

Govinda Paudel^{1*}, Edwin Cedamon², Ian Nuberg², Naya Paudel¹, Krishna Shrestha³, Hemant Ojha³

Abstract

Nepal's community forestry (CF), despite celebrated success in achieving environmental outcomes, has not been performing well for optimizing economic benefit and addressing issue of inequality. Firstly, community forests remained seriously underutilized because of protection-oriented management. Secondly, CF's achievement on equity and livelihood has been questioned because of persistent inequitable benefit sharing and elite control. Forest management becomes active and equitable when it enhances forest productivity, optimum use of forest products and equitable benefit distribution. This paper has explored underlying drivers of inactive and inequitable management of CFs and examined local politics that shapes forest management decisions.

The study has drawn on ongoing research project being implemented in six community forest user groups (CFUGs) in Kavre and Lamjung districts of Nepal. We reviewed operational plans of CFUGs for information on total resource potential and benefit sharing provisions. Informed observation of CFUG activities allowed us to understand local politics of resource governance. We also reviewed previous decisions of communities related to forest product utilization and benefit sharing mechanisms. Additionally, our analysis was also informed from interviews with relevant stakeholders. We found that community forests in Nepal are not actively managed and communities are harvesting forest products far less than full potential. The reasons for inactive and inequitable management include inadequate silvicultural knowledge in communities, inequitable distribution of benefits favouring well-off households, and local elites shaping management decisions that restrict access of poor and marginalized people. We argue that institutional transformation is required for active and equitable forest management that is responsive to needs of poor and marginalized people and suggest pathways for such transformation. The study contributes to literature on politics of access on common forest resources.

From trees to food security: Pathways in Community Forestry in Nepal

Rahul Karki, Naya S Paudel, Hemant Ojha, Krishna Shrestha, Ian Nuberg

Abstract:

Nepal's community forests have been widely acclaimed as an exemplary of natural resource management model. As a successful decentralized forest management model, community forests have played a significant role in providing livelihood and food security of the poor and marginalized people. This paper examines the pathways linking community forestry to livelihood and food security in Nepal. In doing so, it looks at the different dimensions of the pathways through which community forestry contributes to the food security of the rural poor. This paper draws empirical evidences from in-depth cases on pathways in community forestry and interview with forestry stakeholders at national, district and local level. We found that community forests contribute to

livelihood and food security of the poor and marginalized groups through four diverse pathways. Yet, the contributions are not fully recognized to the extent that there have been no efforts towards enhancing the services from forests. Our analysis suggests that there is a need to re-conceptualize the policy to make it more sensitive towards addressing the livelihood and food security of rural poor. Moreover, there is a need to understand the contextual factors, institutions and approaches based on which livelihood and food security of the poor and marginalized groups are being met in order to increase the productivity of community forests.

Key words: Food security, community forests, pathways, poor and marginalized, Nepal

Rethinking science-policy interface: Deliberative policy lab for reorienting forest policies for food security in Nepal

Hemant Ojha, Krishna k Shrestha, NayaPaudel, Ian Nuberg

Abstract

Science and policy continue to remain unlinked, compromising the quality and effectiveness of policy decisions on matters related to environment and development. In recent years, the theory of science-policy interface, and also some functioning models, have emerged, but still the progress is limited. In this paper, we demonstrate **deliberative policy inquiry** approach which can help science-policy interface. To do this, we first present a critical review of current theory of science-policy interface, and then outline a deliberative policy inquiry approach. We then present a case study of this approach was translated in the particular context of forest and food security policy challenges in Nepal. The paper highlights that a contextually engaged, critical and reflexive approach, involving multi-stakeholder deliberative policy lab has the potential to significantly strengthen science-policy interface. It also identifies continuing challenges and issues. Also highlights key methodological elements of deliberative policy inquiry approach.

Key words: science-policy interface, deliberative policy lab, food security, forest policy, Nepal

10.2 Conference papers

Removing barriers to the commercialization of agroforestry trees in Nepal

Amatya SM, Nuberg I, Cedamon E, Pandit B (2016), IN J. Meadows, S. Harrison, J. Herbohn, Eds, Conference Proceedings, IUFRO Research Group 3.08 Small-scale Forestry Conference, 11-15 October 2015, Sunshine Coast Australia, pp 5-17

Agroforestry has evolved as part of the traditional subsistence farming systems in the mid-hills of Nepal. These farming systems are undergoing major changes brought about by the outmigration of male labour and resulting feminisation of the rural labour force. There has been inadequate agronomic development, and serious food insecurity is a problem in Nepal. Of 75 districts, 42 have a food deficit. Most of these districts are in the mid-hills and mountain region of Nepal. Fortunately, the productive functions of trees in these agroforestry systems perform important subsistence functions of supplying firewood and fodder, and also present a resource that can be utilised to redress the trade imbalance of Nepal's timber products. However, there are many barriers to getting these trees into the market. This paper presents two agroforestry case studies of differing situations with respect to market integration of agroforestry products. It then analyses the barriers for advancing agroforestry, and draws practical policy implications for promoting commercial agroforestry, in Nepal. The first case study describes subsistence level agroforestry systems including: fuel and fodder trees on terrace risers sustaining a few livestock; agropastoral systems on fallow land; and silvo-fishery, apiculture and sericulture. In most areas of Nepal agroforestry has not made major advances and all these practices by and large provide productive services at subsistence level only. There are however instances where agroforestry trees are well linked into industrial wood flows. The Government of Nepal is promoting small-scale woodlots or private forests as part of an agroforestry system. Adoption of private forestry in Nepal remains very low with only about 2458 registered private forests covering an area of 2333 ha. Despite this low registration, volume of timber extracted from private land is twice that than from other sources (community forest and government forest). The second case study describes a situation where trees from private land are well linked into commercial wood flows and highlights the specific institutional arrangements that have facilitated this development.

EnLiFT Model 1.0: a livelihood and food security model of a forest-farm system

Cedamon, E, Nuberg I, Lusiana B, Mulia R, Pandit B, Subedi Y, Shrestha K (2016), , IN J. Meadows, S. Harrison, J. Herbohn, Eds, Conference Proceedings, IUFRO Research Group 3.08 Small-scale Forestry Conference, 11-15 October 2015, Sunshine Coast Australia, pp 23-42

Abstract

This paper presents the concept, specification and calibration of a systems model for temporal simulation of a forest-farm livelihood system. The model has been developed to examine the level of food security of the forest-farm livelihood system in Nepal and to identify interventions to increase household income and food security. The model framework consists of five modules: annual crops, tree and understorey, livestock, community forest and Food Security Index. The household activities are categorized into the four aspects of food security: availability, access, use, and stability of supply. The model can be applied over 6 household types based on caste and wealth. This typology was derived from cluster analysis of data from a survey of 668 households in 6 villages in 2 mid-hill districts. An example is presented from simulation runs of one type of household – a capital-rich Janajati household for four selected agroforestry production scenarios. The simulation experiment reveals strong relative significance of the tree-understorey module on household food security and the crucial importance of off-farm income and remittances from overseas.

10.3 Theses

Retrospective analysis of an old silvicultural trial in Nepal

Christopher De Ieso

A thesis submitted for the partial fulfilment of the requirements of the Bachelor of Agricultural Science with Honours, School of Agriculture, Food and Wine, University of Adelaide

Abstract

It is possible to gain useful information from 33 year old trial plots, which have not been used in decades, providing long term information that can help improve management knowledge. In the Sindhupalanchok region of Nepal the Nepal-Australia Forestry Project created a thinning management demonstration trial in 1983 at Pipaldanda. Most of the information originally measured has been lost and the site left relatively untouched, with the exception of Non Timber Forestry Products (NTFPs) being collected by the Community Forest User Groups (CFUG) that manage the site. This study returns to discover if it is possible to record useful information regarding the impact of the thinning treatments 33 years later, to determine the usefulness of thinning on hilly, naturally regenerated, *Shorea robusta* (sal) forests. We were able to detect the impact of the thinning treatments on the forest by measuring the entire population around the trial to create comparison plots, then using the slope position as a strata, we used measures of Height (m), DBH (cm), canopy cover, and species distribution and count to compare with the area of forest outside the treatment plots. We found significant traces from some of the original thinning treatments on the site. The treatments were the most intensely thinned, and had either positive or negative impacts on *S. robusta* growth, depending on their position on the slope, illustrating the importance of environmental conditions when considering management techniques.

Evaluating the importance of fodder trees to soil nutrition of farming systems in the mid-hills region of Nepal

Hiroshi Endo

A thesis submitted for the partial fulfilment of the requirements of the Master of Philosophy, School of Agriculture, Food and Wine, University of Adelaide

The livelihood of Nepali farmers in mid-hills Nepal is interrelated to forest- livestock-farming system. Farmers go to the forest to take fodder as feed for livestock then the livestock products are used for their consumption and income sources. The fresh manure is utilized as fertilizer for crop farming as farm yard manure (FYM). However, the nutrient relationship among fodder, manure, and farm yard manure has not been clearly understood. In addition, the monetary value of the nutrient of FYM has not been quantified. The aim of this study is to evaluate the importance of fodder trees as a source of soil nutrition. To achieve this, this study has the following objectives: 1) to examine the nutrient status in commonly-used fodder trees, 2) to determine the nutrient status of

fresh manure from livestock feeding on different fodder trees, 3) to survey the use and quality of farm yard manure, and 4) to determine the equivalent market value of the nutrients in farm yard manure. This study explains the results of analysis identifying the concentration of Nitrogen (N), Phosphorus (P) and Potassium (K) in four forest fodder species. Additionally, it analyses the nutrient composition (NPK) of the manure of five goats, cows and buffalo feeding on three types of fodder species over a 27-day cycle. Finally, it calculates the monetary value of the nutrients in both fodder and manure. The nutrient content of each fodder species is different for each village and according to livestock type. The nutrient content of fresh manure produced by different fodder types also differed in K concentration (for cows) and in P and K concentrations (for buffalo). This study shows that *Quercus* is a promising fodder for cows and buffalo, along with *Ficus* fodder also for buffalo. Furthermore, the P concentration in FYM differed for each village. Lastly, an analysis of the nutrient-equivalent monetary value of FYM determined that it is five to ten times less than the market value of FYM traded.

11 Appendix 2. Summary of UUL Workshop

Prahlad Thapa

Recommendations of the National Workshop for 14th Plan of National Planning Commission

The following text has been submitted for inclusion in 14th National Plan.

Programme to bring back Under-utilised and Abandoned Agricultural Land into Production and Enhance Productivity

Background

The construction of physical infrastructure such as roads, industrial estates, urban settlements, electricity generation and extension lines, educational institutions, hospitals, etc. is increasing at a fast rate. In addition, conservation needs have aimed to increase forests, watersheds, water-bodies, etc. For these reasons, agricultural land in the Terai and in the periphery of towns and cities is gradually being converted into non-agricultural uses.

On the other hand, people, most often from the hill-region of Nepal, are migrating to cities and abroad in search of jobs, often leaving agricultural land abandoned/fallow and underutilised. As recent research conducted by EnLiFT (Enhancing Livelihoods and Food Security from Agroforestry and Community Forestry) Project in 2015 has shown that nearly one-third of agricultural land has been abandoned in the middle hills.

Due to conversion of agricultural land into non agricultural uses in Terai and peri-urban areas and underutilization in hills, food production has been negatively affected. Though land conversion in Terai and peri-urban areas cannot be checked immediately, agricultural underutilised land in the hills can be brought back into production. In view of the huge agricultural import [Approximately Rs 1 Kharba (US\$ 1billion)] and one-fourth of landless Nepalese farmers living under food insecurity, this state of agricultural land underutilization in the hills has become a serious problem.

Several proximate causes have been identified for agricultural land underutilisation. Declining land productivity has forced people to move out of agriculture. Lack of security and confidence hampers the use of land. On the one hand, land owners feel insecure of maintaining their ownership in share cropping. On the other hand, share croppers are also not interested in farming due to insecure leasing terms. Absence of clear land contract/regulatory arrangement prevents agricultural entrepreneurs to engage in the farming business. Various drivers have made the situation worse - youth out-migration (triggered by the lack of employment opportunity at home), lack of agricultural subsidies and services, decline of traditional farming institutions, inequitable land ownership, limited technological innovations, and a lack of overall environment for business oriented agricultural innovations.

These factors have shown a clear need to enhance agricultural productivity and prevent agricultural land from being left abandoned/fallow by addressing some of the proximate causes and underlying drivers. This directly contributes to enhance food security, increase employment opportunities and help alleviate poverty – the major goal of the national plan.

Objective

To ensure that agricultural land will be fully utilised and no land will be left abandoned/fallow, and hence contribute to food security in Nepal, particularly to the country's vulnerable and poor people

Strategies

- Increase agricultural production by bringing back the abandoned/fallow agricultural land into production
- Attract youth interest and private sectors investments towards agriculture by promoting agriculture as a dignified and attractive enterprise

Operating Policies

- Clear legal and regulatory provisions will be made to facilitate leasing/contracting of agricultural land that ensures the protection of the interests of both land owners and the share croppers
- Land use planning will be implemented at local, provincial and national level through a full-fledged Land Commission and local governments
- A new agricultural subsidy scheme, including the protection of vital food crops, will be introduced to encourage farmers, entrepreneurs and local governments (including incentive to channel remittance to agriculture)
- A special nation-wide campaign 'youth and agriculture' will be launched in the rural areas and schools by providing educational materials and incentives such as loans, subsidies and school bursaries to students through local governments
- In order to achieve food self-sufficiency and promote commodities with comparative advantage, provisions will be made to allocate a certain percentage of national income received through remittance, for the purpose of bringing back the underutilised agricultural land into production.
- Ministry of Agriculture, Forests and Soil Conservation, Irrigation, and Land Reform and Management will jointly plan activities to bring back underutilised agricultural land into production and implement the integrated plan with common objective.
- The concept of a Land Bank will be piloted in selected VDCs and municipalities with special attention to the livelihoods of the poor, Dalit and disadvantaged groups.
- In order to attract and retain agricultural graduates in agricultural production and engage them in commercial farming, post-graduate scholarships will be provided through the Land Banks. These graduates will be given land by the Land Bank including loans and subsidies for commercial farming.

Expected Outcomes

- 30% of the underutilised agricultural land (2015 benchmark) will be brought back into productive use by 2021
- Agricultural productivity will be increased
- A shift in youth attitudes to view agriculture as a better opportunity for wealth generation than working overseas

12 Appendix 3: Summary of EPL on post earthquake timber supply

EnLiFT Policy Lab (3/2015) in Increasing timber flow from farm, private forests and community forest for post-earthquake reconstruction

19th June, 2015

Prepared by: Udeep Regmi

Realizing the increasing timber demand for post-earthquake reconstruction and the policy hurdles in extracting timber from Community Forest (CF) and Agro-Forest (AF) a Policy Lab was organized on 19 June, 2015 at IUCN. The Policy Lab was moderated by Dr. Swoyambhu Man Amatya, EnLiFT Policy Leader.

Participants include key policy actors in the field of forestry and agro-forestry and includes spokesperson and planning chief of Ministry of Forest and Soil Conservation (MFSC); Chief Community Forest Division; Chairperson FECOFUN, Chairperson FENFIT (Federation of Forest Based Industry and Trade), Secretary Private Forest Association, Director Nepal AgroForestry Foundation and a researcher from Forest Action.

Following three policy questions were discussed during the meeting:

1. How much is the demand-supply gap of timber for post-earthquake reconstruction?
2. What are the policy implications in the timber supply chain on different sources of timber?
3. During this reconstruction period what can be done to increase the timber availability and accessibility from sustainable source?

Key Conclusion:

- Government is in opinion of construction of HHs with minimal use of timber
- Operational plan backlog and thus restriction of timber harvesting is one of the major hurdles for increasing timber supply from CF
- The demand of timber can be addressed internally in many timber hit districts
- Clear assessment of district wise timber availability would help in planning inter-district timber supply
- Restrictive provisions mainly - harvesting only 40 to 60 percent of timber of Annual Allowable Cut (AAC), restriction in collection of timber for 4 months during monsoon, permission from forest officials to cut timber of own private land needs to be soften

Action Point:

- Submission of list of restrictive policy hindering the sustainable supply of timber from community forest and agro-forest to ministry of forest and soil conservation.

On the issue of demand-supply gap of timber for post-earthquake reconstruction following remarks were made by the participants:

- At this moment it is very difficult to assess the actual need of timber right away. Several estimations show several figures. Slowly when people start to reconstruct then the actual figure comes into the picture.
- Post Disaster Needs Assessment (PDNA) figures out average area of a HH is 450 Sq.ft and the timber required for the same is 150 Cft. But due to low availability people might be using less than required by compromising wherever possible.
- 61 percent of the community forest and 70 percent of the leasehold forest lies in mid-hills of Nepal. And these districts are comparatively hit hard by earthquake compared that of

mountain and hills, showing thereby timber requirement can be fulfilled internally. In this context, Government is also in the process of finalizing district wise timber demand along with total timber that can be generated within district from different forest management modalities.

- For the re-construction of world heritage site total amount of timber required is 2.7 million Cft.
- Spoke person of MFSC opined that - "government is in opinion of promoting construction of houses with minimal use of timber however, will try its best to extract timber from different alternative behind CF and PF. We are planning to extract timber from protected areas as well where trees have fallen down due to natural calamities. For instance, there are more than 3000 trees falling down aside highway that passes Suklaphata National Park."
- As per participant from Private Forest Association, timber supply can be increased if current cases at court can be resolved. As per him "there are thousands of court cases related with timber still pending at court. If these cases could be resolved all those timber stored at district forest office can be a good source of timber. This recon this is a complicated solution, but categorization of cases and subsequent decisions can be attempted."
- Regarding the possibilities of using timber for construction from leasehold and religious forest the Ministry officials conveyed that the available figures and government estimation shows timber available from leasehold and religious forest being very minimal or zero.

On the issue of policy implications in the timber supply chain on different sources of timber it was stated that:

- When the issue of OP backlog has one of the major hurdles for increasing timber supply from CF was being discussed, Chief of Community Forest Division opined that "*OP timeframe can be increased from 5 years to 10 years. This is up to MFSC as Forest Act 1993 allows in revising the time frame of OP revision through a circular by MFSC. We will try to see what can be done*".
- Timber doesn't falls under very-necessary component of post-earthquake reconstruction thus have fetched low attention from government.
- Recent government decision on May 8, 2015 decided that CFUGs from Chure can harvest dead, dying, diseased and deformed trees if local demand cannot be still be satisfied from fallen trees. However, identification of dead, dying, diseased and deformed trees is difficult.
- As per the current rule only 40 to 60 percent of annual timber increment can be harvested by CF. For some period this can be made 100 percent.
- The meeting also discussed on the issue of using trees on private land. It was stated that that as per the Private Forest Directives 2011, certain species of timber [For example - Lapsi (*Choerospondias axillaris*) , Jamun (*Syzygium cumini*)] cannot be extracted without permission from DFO/AFO for personal use as well.
- Article 16.2 of Forest Regulation prohibits collection of timber from forest (both CF and PF) during the month of Ashad, Shrawan, Bhadra and Ashwin. Similarly, there are complexities in selling timber from one's farm. One needs to take permission from DFO/AFO for the same. Easing this would in one hand increase timber flow in market and

while in other farmers can construct their house from this earning whose house has been destroyed. This are even more complexities for those farmers who have not registered their farm as private forest

On the issue of increasing timber availability and accessibility from sustainable source it has been pointed out that:

- When raised question on the current government decision on timber extraction from Chure, forest official shared us that "current decision of Cabinet of Nepal on May 8, 2015 has nothing to do with earthquake. Government was planning for this decision before earthquake hit."
- Government needs to loosen policy and strengthen its monitoring. Showing some anecdotal cases of irregularities cannot tighten harvestable timber supply at this moment of time.
- Representative from FENFIT proposed the introduction of technological innovation to decrease supply of timber in long run. As per him "technological innovation is required both in cutting logs into pieces and increasing life span of timber. It is the right time to introduce technology that would increase the life of both timber and bamboo. In the long run, it would decrease the demand for timber."
- For the easy supply of timber machinery support for cutting the wooden logs into pieces is required. As there are no forest related industries in and around forest certain distance - cutting of log into pieces through manual labor would take months.
- Article 16.2 of Forest Regulation prohibits collection of timber from forest during the month of Ashad, Shrawan, Bhadra and Ashwin. As we are beginning of reconstruction period starting Ashad - for a year or so this needs to be revised. As the article 16.2 mentions the provision of collection during the time of natural calamities, to the earliest possible government needs to issue circular on the same. This applies to private forest as well.
- There should be separate policy provision for heritage site as the type of timber for it is different that of other. For example construction of heritage sites requires longer wooden log.
- To address the increasing timber demand government should also be ready to deduct taxes in import of timber as it decided with zinc plate. However, if tax is deducted government needs to monitor price so that there won't be irregularities as it happened in case of trampoline.

Participants

Name	Institution and Affiliation
Mr. Krishna Pokharel	Chief, Community Forest Division
Mr. Kapil Adhikari	Chairperson, Federation of Forest Based Industry and Trade
Mr. Krishna Acharya	MoFSC- Planning Chief
Mr. Bishnu Gynwali	Secretary, Private Forest Association
Mr. Ganesh Karki	Chairperson FECOFUN
Dr. Swoyambhu Man Amatya	EnLiFT and Nepal AgroForestry Foundation
Mr. Udeep Regmi	Researcher, Forest Action

13 Appendix 4: Summary of Action Research Planning Meeting #6, 1 July 2016

Introduction

This report synthesizes the discussions and outcomes of the Enhancing livelihood and food security from agroforestry and community forestry in Nepal (EnliFT) projects' action research planning (ARP) meeting held on 1 July 2016, in Lalitpur (see annex 1 for the workshop schedule). As a part of its annual meeting plan, this year, the project partners met to review and reflect on the activities conducted in 2015 and further planned for outputs for 2016-2017 phase. In addition, issues pertinent to implementation of the activities in three themes and across disciplines in addition to communication of the outputs with the stakeholders and communities were also discussed during the meet.

Building on the discussions from the previous action research planning meeting held in December 2015, this meeting prioritized on reflecting the achievements on all three themes and areas of interventions during the 2016-2017 period. Moreover, key elements were discussed to ensure effective delivery and outputs of the project. The following sections summarize the key highlights of the discussions during the workshop.

Introduction and objectives of the meeting

The workshop was formally commenced by Dr Ian Nuberg, where the objectives of the meeting were presented (see annex 2 for the presentation). The Key Performance Indicators (KPI) and outputs for the period 2015/2016 were highlighted during the presentation. Few deliverables, particularly under the market oriented field interventions have been lagging behind and need urgent efforts. Likewise, outputs in few other areas, due Dec 2015, are being worked out for 2016.

Apart from the deliverables and outputs targeted for 2016-2017, Dr Ian presented interesting lessons from Africa. A similar nature of project on agriculture and food security funded by the ACIAR is being implemented in four African countries – Brurundi, Ethiopia, Rwanda, and Uganda. The interventions has had visible impacts on the ground; i) establishment of rural resource centers; ii) improved understanding of tree crop interactions in different species and context; iii) new and enhanced crop modeling capacity; iv) capacity building of students and researchers; and v) extension system improved. Likewise, the learning from Africa gives some lessons to prepare the review of ACIAR project in Nepal (see presentation 1 for detail).

Thematic presentations

Output 2,3, and 5: Swoyambhu M Amatya

Dr Amatya presented various activities and its subsequent outputs and achievements under the market oriented field interventions carried out by the Nepal Agroforestry Foundation (NAF) (see Annex 3 for presentation). In doing so, Dr Amatya highlighted the different species of fodder and its use in six research sites of Kavre and Lamjung. Likewise, he underlined the different agoforestry products sold and income made out of the sale in those six sites. So far, about 11 nurseries have been established and 29955 seedlings of timber and fodder species have been distributed in different sites. Though cardamom showed a positive growth, severe drought and fungus in the roots hindered the production last year. Similarly, 126 new additional farmers, including 20 farmers

from each site, have been selected under the agroforestry interventions. Apart from the field level interventions, two district level EnliFT Policy Labs (EPL) have been organized in May 2016.

Output 20, 24, and 40: Govinda Paudel

A brief update on market oriented community forestry institutions was carried out by Govinda Paudel (see annex 4 for presentation), where he initially underlined some achievements on Chuabas sawmill related interventions. The locals are keen on reviving the Chaubas sawmill where local private groups are interested in investing on sawmill. However, regulatory uncertainties in terms of timber supply and lengthy registration process surrounds the minds of the local communities and private investors. Therefore apart from local level facilitation and interventions, there is a need to carry out consultations on legal issues in order to sort out confusions. Moreover, a clear incentivizing mechanism has to be in place in order to motivate the local communities to work towards reviving sawmill.

Apart from the field level intervention, reports related to business literacy workshop and research report analyzing the value chain of timber, and regulatory constraints are in progress. Besides, two journal articles are in progress while the third was presented during the small scale forestry conference in New Sunshine Coast and soon to be published in Small Scale Forestry Journal. Apart from achieved activities in Lamjung and Kavre, there are few planned activities until December 2016. Those include: Rapid Market Appraisal (two events) in Methinkot and Dhunkharka; business literacy workshop (5 workshops) - Kavre (2) and Lamjung (3); business plan development of Chaubas Mill; stakeholders' workshop in Kavre, sharing the community-private partnership, its challenges and opportunities; and legal consultations (with environmental and business layer) to develop legal documents required by the authorities.

Output 26: Rahul Karki

A brief presentation on the status of the journal paper on community forestry-food security pathways was made by Rahul Karki. The paper is under construction and will primarily be highlighting the fact that community forestry is contributing to food security of the forest dependent people in variety of ways, however this is not well recognized and as a result, there has not been efforts in terms of enhancing the service. The paper will go through double round of circulation among the authors team before it is submitted during end of August. See annex 5 for presentation slides.

Output 29 and inclusive CF planning: Naya S Paudel

Dr Naya S Paudel presented some updates on the activities under inclusive community forestry planning theme (see annex 6) in addition to some key highlights on output 29 on the EnliFT Policy Lab (EPL). In doing so, Dr Paudel underlined some of the key elements of the CF action research and its intended outcomes. While some of the major activities under the theme were listed, Dr Naya also stressed on the prioritized activities for July-Dec 2016 period. Among the different proposed activities, participatory monitoring and assessment of OPs, content analysis of VDC/municipalities and OPs of six research sites, and district level meetings with different stakeholders are some of the

major ones. Finally, different sources of data, their analysis and write up plans were underlined.

In addition, Dr Naya highlighted the different EPL events carried out in the past and its subsequent outputs. Likewise, planned activities and write up under the EPL activities was also shared during the presentation.

Discussion:

How is the legacy of EPL in the post EnliFT period thought of?

There has been a good response and feedback from the policy actors that have actually participated in the EnliFT meetings in the past. The appreciation has particularly been on the methodology, where compared to the conventional workshops, EPL has rather been in a constructive way in which policy actors have identified it as a way to ensure effective dialogue between researchers and policy makers.

Output 17, 33, and 34: Edwim Cedamon

Dr Edwin Cedamon, in his presentation, highlighted the silvicultural interventions in different research sites in Kavre and Lamjung. There are four major impact pathways that the silvicultural research intends to follow; science, capacity building, practice, and policy. In terms of the science aspect, various demo plots are established where silvicultural interventions and its impact are being studied. Likewise, training of trainers to CFUG members and forestry technicians was provided mainly in Chaubas of Kavre and Taksar of Lamjung. In terms of practice, different silvicultural plots have been established and the provisions are being incorporated in the OPs of respective CFUGs with those demo plots established. Finally in terms of policy uptake, dialogues and feedback with the Department of Forests is going on while different events are being featured in the newspapers and videos as well (see annex 7 for the presentation).

Responses from field support individuals

Madan Bashyal:

The fact that demo plots did not work in all six sites is mainly because after the earthquake, people thought that the marked trees are meant to be harvested and cut them out. So the red markings actually mislead the CFUG members leading them to cut down the trees. While in Aapchaur, there is a certain conflict among the CFUG members and the people are not much interested in establishing demo plots in the area.

Shanta Neupane:

This project has changed the mindset of the local communities on how sustainable forest management (SFM) is carried out. People now consider that if everything is done commonly, it can be done. However, the forest officials are afraid to support cutting of trees. Nevertheless, at the community level, the perception has changed and people now understand that trees are meant to be cut.

Bhola Paudel:

Initially, a person perceived that excessive trees have been cut down in the name of SFM in Taksar, but later realized that it has been carried out scientifically and is reasonable. Moreover, the needy people have now been getting the forest products and are really positive towards the intervention. The neighboring CFUGs too have a positive impression on the SFM intervention in the area.

Output 45: Yubaraj Subedi

Mr Yubaraj Subedi briefed on the progress on journal paper that explains the genesis of under-utilised agricultural land & Household case studies of land access, use and abandonment. The paper has been targeted for an esteemed journal of Peasant Studies and is targeted for submission in a months' time. The paper highlights on the different pathways of Under-utilised land in Nalma and Methinkot. Moreover, the paper attempts to bring two in-depth case studies and causal pathways of UUL to answer why agricultural land is being abandoned. See Annex 8 for the presentation.

Output 46: Prahlad Thapa

In the context of the national workshop on land management and food security held in 28-29 April in Kathmandu, Dr Prahlad Thapa in his presentation highlighted its major objectives and outcomes. The two day's workshop primarily aimed at discussing the various aspects of agricultural and food security issues pertinent to the context of Nepal. The first day of the workshop included presentations from experts and researchers from diverse backgrounds. Likewise, the second day of the workshop brought in policy actors and stakeholders to agree on issues related to land utilization and food security. The recommendations gathered during the workshop were forwarded to the National Planning Commission of Nepal for incorporation in the 14th development plan. See annex 9 for presentation.

EnliFT model: Rachmat Mulia

Dr Rachmat Mulia delivered his presentation on 'assessing impact of agroforestry interventions to household income with the EnliFT model', where he introduced the model concept and its utility in the project. The model looks at the household level income where flow from different sectors contributing to the HH income is analyzed. Moreover the model also looks at the socio-economic attributes of six household typologies. See annex 10 for presentation.

Bayesian Belief Network model of UUL: Binod Hiyojo

Prof. Binod Hiyojo delivered his presentation on the Bayesian Belief Network model, the objective of which is to develop a BBN network based on the causal loop diagrams of land under-utilisation of four different sites. Moreover, this is also aimed at examining the relationships of various factors and subsequently identifies leverage points for UUL. The major findings of the model are presented in annex 11.

Women's voice: Racchya Shah

Ms Racchya Shah updated on the women's voice research under the EnliFT project. The primary aim of the research is to document the change in women's perception of the interventions and innovations brought about by the EnliFT project. This initiative is also expected to identify the challenges and barriers faced by women and ensure positive action towards equitable benefits among men and women. Focus Group Discussions (FGDs) and interviews have been carried out in different research sites of Kavre and Lamjung to understand the perceptions of women. Findings of the research revealed that there has been a positive interest among women to participate as LRGs in the project, though involvement of poor women is still weak. There were also strong interests among the women to be involved in community forestry activities rather than merely limiting their role as beneficiaries. Likewise, women have a positive impression towards agroforestry interventions in different sites, where grass and fodder related

activities have been perceived to benefit. Nevertheless, nursery establishment and management has been perceived not to benefit all due mainly to the time consumed. Detail of the presentation is attached in annex 12.

Traffic light evaluation and response

This section includes the discussions on progresses made against the stipulated timeline of activities under three themes. Dr Ian Nuberg facilitated the session by presenting the major outputs/outcomes of the interventions under different themes and disciplines. A combination of three colors – red, green and orange – were used to denote the status of the activities where red stood for major work needed, orange stood for some achievements made but still efforts needed, while green meant good progress. The presentation was followed by open discussion including a skype meeting with Dr Hemant Ojha and Dr Krishna Shrestha from University of New South Wales. The discussion points are summarized below.

- Market oriented field interventions have not been efficient to the level that it was expected and it should've been.
- Inclusive CF planning: There does not seem to be much of institutional innovation under the theme, though there are some achievements that are noteworthy. Efforts need to be placed to achieve institutional innovation. There have been good theoretical discussions and papers have been published and are in line for publication, though efforts need to be laid on ground level changes.
 - ✓ Though there might not be much of innovative flagship achievements to document so far, yet there have been few significant contributions under the CF theme. For instance, the EPL carried out after the earthquake had a positive contribution in terms of facilitating timber supply in the most affected districts.
 - ✓ Initially in the project sites, local communities had a perception that this project is developmental in nature as was the Australian supported project years back. However, gradually, this conception has changed among the community members and now fully perceives it as an action research initiative.
 - ✓ The way of our collaboration with the CFUGs, and the way local communities deliberated with the DFOs and even within the team is something that we can draw a strong rationale on the contribution of this project.
- Active and equitable forest management: There has been a quite a significant level of achievement under the sub-theme. About 30 out of 48 quality research sites have been established which is impressive.
- The problem that lies with the Chaubas mill is that the development agenda overrides the business agenda. So inclusion of 50 percent women in the management of Chaubas sawmill is something perceived not to help the better functioning of the business. So now there are voices that support the role of those who can do business rather than bringing issues of inclusion and equity in Chaubas.
 - ✓ Perhaps discussing the role of women in business is not applicable. Therefore, some capacity building activities targeting the women in order to bring them to the competitive environment in business is important.
- Market responsive CF institutions:
 - ✓ Though a lot of energy has been spent in Chaubas saw mill, apart from publications, it has not really paid off in terms of actually establishing private-community partnership.
 - ✓ In the past, there have been a lot of engagement and institutional experimentation on the sub-theme. If the efforts can be placed for another year or so, there is optimism for some level of achievement.
 - ✓ Creating new markets for identifying products is lacking.

Strategic interventions and their potential impact pathways

Following the traffic light evaluation, Dr Naya Paudel facilitated the session which aimed at discussing strategic interventions on selected activities and their potential impact pathways. What has been achieved so far and what are the required interventions to achieve the intended outputs/outcomes were the major agenda of the discussion. The following points highlight the major discussions held during the session.

- In terms of the Agroforestry interventions, a format has been developed to measure the survival growth, height and other biological settings of the prioritized species. However, the measurement should be made depending on the nature of the species. For example, in case of bananas, in addition to other parameters, measurement of the leaf index is equally important. There are sometimes problems where farmers do not carry out measurement during the harvesting, thus missing out the critical measurement during the harvesting period. So, there is sometimes need to follow up on such activities with the farmers and make sure measurements at each stage is made.
- The biophysical database is too poor right from the beginning of the project intervention to have a quality biophysical paper. So there is a need to have an interdisciplinary lens of documenting our interactions and innovations that we have had with the local communities as well as other stakeholders in the project.
- Having too many parameters for measurement might be confusing and that will also demand a certain expertise.
- The measurements that have been made in the past, for instance the baseline, have been significant in modeling. Both qualitative and quantitative measurement is equally important and need to embed the measurement aspects in our study.
- Six aspects of measurement in EnliFT are important: i) Baseline: measurement of situation before intervention, though there is no specific research question there; ii) Specific analysis for example silvicultural trial that focused on particular research question; iii) involvement of people for e.g. who participated when and how frequent was that; iv) result from the trial: the question of adoption is important because participation is different from adoption for instance like how many people came, how did they participate etc.; v) Wider diffusion of the learning for e.g. how many news appeared in the media, dissemination to satellite districts and so forth; and vi) policy uptake: visits from the policy makers, media and other stakeholders to the research sites; their response to the interventions and so forth.
- **Science outcome:**
 - ✓ There is diversity of science outputs that we can plan for the EnliFT project. Apart from the scientific journal papers, there are other forms of outputs that can be targeted for diverse audience which include policy briefs, manual, discussion paper, poster/pamphlet, extension materials for farmers and students. In addition, a silvicultural workshop is being planned in collaboration with the Department of Forest. This could be a good platform to share the findings of our silvicultural interventions as well.
 - ✓ The target audiences and institutions should be clear while focusing on the outputs. For instance, the National Planning Commission could be one of our target institutions where our efforts can be laid to incorporate our knowledge in the periodic plans. In addition, teaching materials could be one of other important outputs where local community groups will be the target audience. Similarly, in a slightly broader context, the FAO is working on a cross-sectoral food policy, where there could be a space for us to feed in the learning from our project as well.
- **Development outcome:**

- ✓ There is a challenge to reach the remaining research sites in the days to come. However, there are some achievements in this line. For example, 300 farmers have been reached in which 120 additional farmers have been provided with some orientation on agroforestry activities.
- ✓ In the context of Chaubas, there is a need for strategic plan to take the interventions forward to establish a community-private partnership. Yet, lack of support and ownership at the Ministry level has rather created a sense of dilemma among the investors and local communities. There is therefore a need for a high level committee involving government mechanism to deal with the issue. Moreover, intervention is needed both at the level of MoFSC as well as local community.
- **Capacity building and development:**
 - ✓ Cross-site visit: The Local Resource Persons (LRPs) and the district stakeholders can organize training while the research team will provide support in terms of training materials and resources. In addition, cross-site visit within the district will be important to have knowledge exchange among the CFUG groups.
 - ✓ Sensitization on enterprise: There is a need to sensitize the local farmer on the registration process in addition to other legal requirements in order to establish an enterprise. The business literacy workshop held in the past could be an important platform for such sensitization.
- **Policy contribution:**
 - ✓ There has been a significant contribution of our intervention during the earthquake. This has especially been in the form of breaking regulatory barriers in providing timber to the victims. Regular engagement and discussion forum like EPL has had a vital role in facilitating this.
 - ✓ EnliFT project members' engagement in policy forums has had significant role in having visibility of the project. In this line, Mr Murari has been participating in the Agroforestry policy team discussion and briefed about EnliFT project and its contribution to livelihood and food security.

EnliFT project website

There is a work in progress for EnliFT project website. The website will include all the basic information on the project in addition to the various publications that have come out of the project. Currently, ForestAction's official website will host EnliFT webpage, however, if there's any additional resource allotted for the purpose, EnliFT might see its independent website in the days to come. All the organizational logo of EnliFT partners will be displayed in the website. Since it is still in the construction phase, any additional comments from individuals are welcome.

Closing

Following the discussion on the content of EnliFT annual report facilitated by Dr Ian Nuberg, Dr Prahlad Thapa placed his final remarks before closing the workshop. Dr Prahlad stressed on the need to have a target audience for all our publications, without which there is a risk that those outputs will end up having no readership. Finally Dr Thapa thanked all the project members and closed the workshop.