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 2016 – June 2017
date due	15 July 2017
date submitted	14 July 2017
prepared by	Ian Nuberg
co-authors/ contributors/ collaborators	Krishna Shrestha, Edwin Cedamon, Hemant Ojha, Naya Sharma Paudel, Bishnu Hari Pandit, Swoyambhu Man Amatya, Murari Joshi, Rahul Karki, Shambhu Dangal, Racchya Shah, Deepak Gautam
approved by	

Contents

1 Progress summary

Now completing its fourth year, the EnLiFT project has achieved all its scheduled outputs, and in addition sponsored and helped organise a National Silviculture Workshop in collaboration with the Department of Forests, Ministry of Forests and Soil Conservation . This 3-day workshop resulted in 31 recommendations that will inform much needed forest policy reforms.

In the agroforestry domain, we focussed on training activities of agroforestry system establishment and entrepreneurship. Half of the 300 participating farmers have received this 5-day training so far with backstopping support from Nepal Agroforestry Foundation trainers. An agroforestry entrepreneurship train-the-trainer manual, and associated extension material, is being published. A survey of participating farmers (n=289) found that household income was increased by 37 to 48% mostly due to EnLiFT agroforestry innovations, which can provide up to additional six months of food to the poorest households. Over three years an average of 14% of participating farmers have moved above the poverty line (range 2% to 34% across 6 sites), and 16% have moved to being food secure for more than 12 months (range 4% to 34% across 6 sites). A science-policy interface has become a platform to discuss on various policy issues, mostly related with agroforestry product marketing and to make appropriate recommendations to concern authorities.

In the community forest domain, the core activity of the silviculture team for this reporting period was on scaling-up and scaling-out of innovative silviculture practices trialled in demonstration plots. Silviculture boot camps were held in the six research sites covering 35 CFUGs covering 3,604 hectares of community forest managed by 5,080 households. Training in scientific forest management was also given to forest technicians and CFUG representatives in Kavre district. Project partner FECOFUN also delivered 11 training events on women empowerment in forest entrepreneurship, and district level interaction workshops on forest-based enterprise. As a consequence of EnLiFT engagement the harvest volumes per community forest has increased from between 9 to 16-fold where CFUG internal demand are fully met. Net revenue per hectare of forests thinned under the new silvicultural regimes was on average NRs750,632 (AUD 9,877 range $1,702 – 21,712 across 7 sites). Moreover, the project team has continued to engage with CFUGs and government officials to identity issues and opportunities for inclusive planning practice. The project team also identified the weak research-policy link in Nepal's forest and agroforestry sectors, and explored innovative methodological approach in the form of EPL (EnLiFT Policy Lab) to link research with policy process.

In this period EnLiFT has had 5 publications in scientific journals, 9 conference / seminar presentations, 6 papers published in our online Research Paper Series called *Agroforestry and Community Forestry in Nepa1,* 1 PhD student publication, and 1 Honours student thesis.

Reflecting on our successes so far, we can show that EnLiFT has: contributed to a shift in the government and local mindset from passive to active forest management; improved agroforestry systems to lift households above the poverty line and reduce food insecurity; established the link between food security and forestry, identified issues and opportunities of local level planning practice of CFUGs, explored innovative methodological approach in the form of EPL to link research with policy process, and analysis of the drivers for

under-utilised land; revitalised the Chaubas sawmill (a legacy of the 40-year Nepal Australia Forestry Project) with a private-community partnership; and materially contributed to post-2015 earthquake recovery efforts. We have learnt: that it is possible to achieve results in physical forest management against prevailing preconceptions; interdisciplinary research, though difficult, is more likely to have a real-world impact; interdisciplinary projects don't necessarily need a large team; and government partners need an incentive to be involved.

The Key Performance Indicator for this period was a report and policy brief on interactions and options for improving links between community forestry planning and local level planning. This work articulated the need for collaboration and reconciliation of local government and community forest regulations in order to facilitate inclusive and integrated planning of forest, livelihoods and food security. With the advent of recent local government election under the new Constitution, there is a good prospect for linking these planning processes and realise positive contributions in both social and environmental outcomes.

This bodes well for work in this sphere in any follow-on project after EnLiFT.

Acronyms used in report

AF	Agroforestry
AFO	Assistant Forest Officer
ARPM	Action Research Planning Meeting
CF	Community Forestry
CFD	Community Forest Division of the Department of Forests
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.

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

[A] Original Research Activity	Original & CompletedOutputs	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] *July 2014*	**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] *May 2014*	**Research site selection report** Authors: K.Paudel, YR Subedi, S.Tamang **Quantitative Baseline Household Survey Report** Compiler: Deepak Tamang **Qualitative Baseline Report**: **Agroforestry** Coordinator: BishnuHariPandit Paudel K, Subedi YR, Tamang S, Nuberg I, Shrestha K. (2014), Milestones in Selecting Field Sites for Participatory Action Research, ***Research Paper Series on Agroforestry and Community Forestry in Nepal***, 2014-01:1-56, Tamang D, Cedamon E, Nuberg I, Shrestha K. (2014), **Baseline Household Profile on Agroforestry, Community Forestry and Under-utilised Land in Six Selected Sites in Kavre and Lamjung Districts, Nepal, *Research Paper Series on Agroforestry and Community Forestry in Nepal*, 2014-02:1-79**
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] *June 2014*	**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 Saraswoti** 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] *July 2013*	**EnLiFT Modelling workshop report Bogor 25-29/11/13** Compiled by: RenyJuita, Avniar N. Karlan, Lisa Tanika and BethaLusiana
	O8: Model of decision-making processes in land use	[Y1:Q4] *Sep 2014*	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] Oct 2015	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 innovative agroforestry systems and market opportunities at 6 sites	O12: Report of proposed participative research designs and value-chain enhancements	[Y2:Q2] *Dec 2014*	**Value Chain in Lamjung District**: BH Pandit **Value Chain in Kabhre District** BHPandit **Agroforestry Nursery and Value Chain Training 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 Activity1.5- 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	Cedamon et al 2017. "Adaptation factors and futures of agroforestry systems in Nepal" *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	Delivered as "Participatory Market Chain Appraisal for Agroforestry Products: Insights from Nepal hills" SM Amatya, Nuberg, Cedamon, Shrestha, Pandit, Perdan, Joshi & Dhakal" Research Paper Series ##
		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 • 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 commercialis-ation of agroforestry trees in Nepal" Small-Scale Forestry Conference, Sunshine Coast.
	Priority product implementation	O5: 1st cycle report of commercial plantings	DEC 2015	Report posted on Basecamp SM Amatya: • Provided nursery materials and technical support

				• Nurseries establish by LRP and LRG's • Seedling distributed to LRG's • Hedge Row demo plot established • Data collection format developed and applied
		O6: 2nd cycle report of commercial plantings	DEC 2016	Delivered as Section 4.1 in this Annual report
		O7: Farmer-to-Farmer training of improved agroforestry systems O8: Extension package to facilitate expansion of innovations	JUN 2017 JUN 2017	Agroforestry System and Entrepreneurship Development : A Training of Trainers Manual; to be published August 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	Agroforestry EPL report. SM Amatya June 2017 Yet to come Yet to come
	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	Yet to come Yet to come

[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	AF trials on fodder biomass growth and Taxus baccatta were discontinued as focus necessarily shifted to AF product interventions.
		015: Extension sheets in Nepali on 6 priority product interventions (NAF) O16: Scientific paper(s) on performance of 6 priority product interventions for change in livelihood and food security (NAF lead, UniAdel contribute)	JUN 2017 DEC 2017	Agroforestry System and Entrepreneurship Development : A Training of Trainers Manual; to be published August 2017 Yet to come
	EnLiFT Model	O17: Scientific paper quantifying factors determining an index of food security in the farm-forest system. (UniAdel lead/ ICRAF)	DEC 2016	Cedamon, Nuberg, Pandit Shrestha (2017), Adaptation factors and futures of agroforestry systems in mid-hills of Nepal, *Agroforestry Systems*
		O18: Scientific publication(s) establishing the biophysical and institutional bases for sustainable agroforestry innovations (ICRAF/UniAdel contribute)	DEC 2017	Cedamon et al 2017 How understanding of rural households' diversity can inform agroforestry and community forestry programs in Nepal, *Australian Forestry*
	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	Yet to come

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 & CompletedOutputs	Planned &*Actual* Completion Date	Titles of output documents / comments
Activity 2.1: Analyse the status of community forestry systems andconstraintstoimprovinglivelihoodsandequitable 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* *May2015*	**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:DDTamang
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) 031a: 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 draft research reports have been shared through Basecamp.
		O21: Process report including preliminary discussion paper on Inclusive community forest planning (FA leads, UNSW contributes)	DEC 2016	Khatri eta l 2016 Reframing community forest governance for food security in Nepal, *Environmental Conservation*
		O22: Policy Brief: How regulatory	DEC	Karki, Paudel Shrestha,

		framework and local level development governance shape CF planning in Nepal (FA leads, UNSW contributes)	2016	Ojha 2017 Community Forestry planning in Nepal: How regulatory framework and institutional practice undermine planning for sustainable development
		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	**C**ommunity Forestry planning in Nepal: How regulatory framework and institutional practice undermine planning for sustainable development. In draft stage
	Understanding interface between CF planning and local level planning	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	Reported as Basecamp discussion threads leading to Output 27
		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 *Small Scale Forestry*
		O27: Policy Brief: on interface between CF planning and local level planning (FA leads, UNSW contributes)	DEC 2016	Community Forestry and Local Level Planning for Food Security and Livelihoods Authors: Anukram Adhikary, Hemant Ojha, Naya Sharma Paudel, Govinda Paudel, Krishna Shrestha and Ian Nuberg
	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	Yet to come
	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	Innovation at the Research-Policy Interface: Applying the Policy Lab Approach in Nepal's Forest Policy Process Authors: Hemant Ojha, Krishna K Shrestha, Naya S Paudel, Udeep Regmi (2017)
		O31: Report describing the policy issues addressed under the EPL approach with recommendations to address the identified policy constraints. O32: Overall scientific paper on science-policy interface (UNSW leads, PC contributes)	DEC 2017 MAR 2018	Yet to come Yet to come

[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	Silviculture Workshop papers Cedamon et al 2017 Paudel G et al 2017 etc
		O34: Process report on silvicultural research report #1 (FA leads, Uni Adel contributes)	DEC 2015	Combined report in Research Paper Series #
		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	Proceedings National Silviculture Workshop 19-21/02/2017
		O37: Resource book for active and equitable community forest silviculture (FA leads, Uni Adel and UNSW contributes)	DEC 2017	Yet to come
		O38. Journal paper: Silvicultural innovations for food security (Uni Adel leads)	DEC 2017	Cedamon et al 2016 Rapid silvicultural appraisal to characterize stand and determine silviculture priorities of community forests in Nepal, *Small-scale Forestry,*
		O39. Journal paper: Catalyzing active and equitable forest management: Practices and lessons (UNSW and UniAdel lead)	DEC 2017	Yet to come

[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 contributes)	JUN 2016	This output will be achieved:. Paudel, et al *"Making community forest management active and equitable: a framework and lessons from the mid-hills of Nepal"* Paudel et al "*Can community forestry groups run enterprises? A case of Chaubas timber processing company in Nepal"* Paudel et al "*Institutionalizing Community-based Enterprises in Nepalese Community Forestry* "
		O41: Report on RMAs and business literacy workshops held at 6 priority research sites	OCT 2016	This could not be delivered as SEARCH, the organisation responsible, left the project
		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)	DEC 2016	Community based enterprise: paper being finalised and will be submitted in a month time
		O43: Report on the benefits from market responsive community forestry institutions	DEC 2017	Yet to come
		O44: Short illustrated handbook on how to compile business plan or make your own CFUG business scheme.	DEC 2017	Yet to come

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

[A] Original Research Activity	Original & CompletedOutputs	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 complimented 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] *Oct 2014*	**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] *Dec 2014*	This activity stalled when we realised that there were not enough funds in pay period 4 to fund IOF student projects However, 3 sessions of training in silviculture tech
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] *Jul 2014*	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		DEC 2015	Ojha et al 2017. Agricultural land underutilisation in the hills of Nepal: investigating socio-environmental pathways of change, *Journal of Rural Studies*
		O46: National UUL workshop to communicate EnLiFT knowledge; gather other UUL research; debate national UUL policy and strategy	JUL 2016	Proceedings of *National Workshop on Land Management and Food Security: Addressing Underutilised Agricultural Land Issues in Nepal* (28-29/04/2016) Summary in Appendix 2 2015/16 Annual Report
		O47: Scientific paper modelling land-underutilisation in Nepal mid-hills through Bayesian Belief Network	JUN 2017	Cedamon et al 2017 Modelling land-underutilisation in Kavre district through Bayesian Belief Network. RPS ###
		O48: Discussion paper integrating knowledge gained from AF & CF themes as it applies to bringing UUL back into production O49: Policy brief on options for bringing UUL back into production	DEC 2017 DEC 2017	Yet to come Yet to come

2.2 Internal review of project progress

Ian Nuberg

As part of EnLiFT's Action Research Planning Meeting #8 (27/06/2017) we revisited the traffic-light analysis of progress previously undertaken as part of meeting #6 (16/06/2016).

Table 1 Traffic-light analysis of progress in 2016 and 2017

Research stream	16 June 2016	27 June 2017
1] Market-oriented field interventions	Market chain work is weak	Scheduled documentary outputs will be delivered, but quality below intended
2] AF Impact	Model going well; still need to think about field measurement for model & social-institutional interactions	Good publications in process
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	Documentation around this activity has caught up with good publication in process
4] Active and Equitable Forest Management	No problems even though we will only achieve 30 out of projected 48 demo sites; emphasis on quality	Have achieved 45 demo sites.
5] Market responsive CF institutions	Emphasis on Chaubas at expense of other sites has not paid off; no private-community partnership in sight	Private-community partnership at Chaubas has emerged, though not exactly as anticipated
6] UUL	No expected problems to close off on this work	Excellent publication output (Ojha et al 2017)

We also undertook a process of reflection of what we considered our successes, lessons learnt and opportunities. This reflection is summarised below, and also incorporated in other sections in this annual report.

Our Successes

Forestry management has moved from passive to active
We believe we have strongly contributed to change in the tone in the debate about forestry. The prevailing thinking was of conservation of forest cover for soil conservation, and this has led to policy and regulations in forestry sector that restricts active, equitable and sustainable management of forests. Indeed, it perversely creates a situation which encourages corrupt practice. Also, the news media promulgated a negative view of scientific forest management.

The success of our AEFM activity is founded on maxim that "people don't know what they want until they see it". After much negotiation and participative design with CFUGs we established 13 demonstration plots on 3 sites. These were opened up to inspection by government officials, civic organisations and news media who now unreservedly support this type of forest activity.

The corollary is the Director General of Forests asked EnLiFT to expand activities on whole-forest scale. So, this activity was scaled out to 32 other CFUGS in both Kavre and Lamjung.

Improved agroforestry systems lift households above poverty line and reduce food insecurity
Over 300 households participating in EnLiFT have benefited from high-value commodity interventions, high-yielding fodder germplasm and agroforestry business training. Surveys of the level of income and food security before and after 4 years participant in EnLiFT indicate and average of 14% shift above the poverty line (range 2 – 34 % across 6 sites) and an average of 16% increase in food security (range 4 – 34 % across 6 sites). This is impressive given the problems encountered in the field (see section on Problems).

Data from this activity, when applied in the EnLiFT farm-forest model shows how quite simple interventions can markedly improve household food security. This modelling also shows the significant extra value from improved fodder-livestock systems, and in particular the potential value of private and CF timber on food security if regulatory controls on sale of timber can be relaxed.

Linking food security with forestry.
Before EnLiFT the prevailing mindset in Nepal did not include a strong link between forestry and food security. Food security was associated only with the production of food crops on private land, and the increasing under-utilisation of land a major causes of food insecurity. EnLiFT's work in explaining the drivers and dynamics of under-utilised land and re-framing the farm-forest interface has shifted that mindset within the local research community. The EnLiFT frm-forest model also provides capacity to quantify the impact of forest-mediated improvements to household food security.

Revitalisation of Chaubas sawmill
Chaubas sawmill was established in 1996 as part of the Nepal-Australia Forestry Project. It was collaboratively managed by 4 surrounding CFUGs but fell into disuse under the stresses of the Maoist insurrection (1996-2006) and later problems in sawmill governance.

EnLiFT successfully re-instated the mill through community discussions, business literacy workshop, development of new business model and facilitation of private-community partnerships. Consequently, local investors have bought a new engine for the mill and it is in full operation bringing forest-wealth to the community. The mill was also crucial for rapid post-earthquake recovery for the surrounding communities.

Post-earthquake recovery
The AEFM demonstration plots were being harvested at the time of the 2015 earthquakes. The timber from this harvest went directly into re-construction activity. Previous to the earthquake CFUG members were not allowed to harvest timber without an active operational plan. Many CFUGs do not have these because they are costly to devise and there was no previous benefit or incentive for having one. There was also another restriction on the ability to sell CFUG timber to other communities. In response to great demand for timber, and in confidence that silvicultural methods being used improve the forest and do not degrade its conservation value, the DG of Forests relaxed existing regulations. This market-friendly situation still prevails and is a de facto experiment to show that more local autonomy on the harvest and sale of CF timber is compatible with sustainable forest management. This creates the environment for changes in policy and regulations that could improve community access to wealth locked up in forests.

Capacity building: At least 6 emerging researchers from Nepal have been able to work directly with experienced researchers to publish high quality research papers, disseminate scientific findings in scholarly conferences.

Lessons learnt so far

Don't be limited by the status quo
At the beginning of the project the prevailing attitude, even among some project members, was that we would not be able to get into the community forests to establish silvicultural demonstration plots. The regulatory limitations on harvest and sale of timber is so complex and restrictive under normal conditions, why would a foreign-funded research project find it easier? Indeed, it took 18 months for the letter from the Director General giving us permission to work in the forests to get to the DFOs. Nevertheless, once CFUG members, government officials and the media saw that we weren't denuding the hills but improving the utility and environmental value of the forests, attitudes changed and we were invited by government to upscale our silvicultural demonstration activities.

Interdisciplinary action research is hard, but more likely to have real-world impact
EnLiFT's interdisciplinary mix comprises biophysical quantitative, social quantitative, and social qualitative data, across the three domains of agroforestry, community forestry and under-utilised land. Finding the balance of allocating resources and responsibilities across the six research streams in six research sites and among the nine project partners has not been easy. We haven't been successful in all areas; the market chain work (i.e. social quantitative), especially in community forestry, has fallen below expectation. The project leadership could not facilitate an effective partnership between the three organisations engaged in that work, and one of those partners was asked to leave the project. The lesson from this failure is that it would be better to have just one partner organization working on a specific research activity such as market research.

Despite this failure in one corner of the project, the successes in other corners of the project are even stronger because of the mutually supportive impact on each other. A

project focusing on just silviculture demonstrations or just silviculture policy recommendations would not have the same impact in the realpolitik of the Nepali forest sector as our project did with both these activities.

Interdisciplinary projects don't necessarily need a large team
The early action research cycles of EnLiFT were pre-occupied with facilitating research teams and fund allocations across partner organisations. Despite the goodwill among all partners this was time-consuming, painful and not always effective. The group of partners was determined from the scoping workshop undertaken in 2012, but in retrospect we all agree there were too many partners. By the mid-term review the in-country leadership shifted from IUCN to ForestAction and one of the partners left the project.

In the early stages 33+ researchers were supposedly involved with the project; this does not include the 10 government officers, 3 FECOFUN representatives and 6 local resource persons or the many people employed on a casual basis by SEARCH for our baseline studies. As of this report, there are 14 individuals actively engaged in research (as measured by contribution to Basecamp, our communication intranet), noting that the three ICRAF members concluded their formal involvement at the end of last year. As a team we are working much more effectively now than we did in earlier action research cycles. The lesson from this is we should strive for a lean team in any follow-on project (i.e. EnLiFT-2) with very specific roles and to minimize the requirement for cross-organisational collaboration in specific tasks.

Government partners need an incentive to be involved.
In other ACIAR projects, partner governments and collaborating organisations are expected to invest in-kind commitment of their staff. Such an arrangement is not feasible in Nepal. Nevertheless, the role of a government partner is crucial if research activities are to have relevance and wider impact. The Community Forest Division (CFD) of the Department of Forest was a logical partner in this project. The Department of Forest Research and Survey would also have been a good partner; but it did not seem feasible to have two different government departments involved. As it stands, there have been problems even in transferring of the $\$10{,}000yr^{-1}$ funds into the CFD account so there has been no way of accounting for the involvement of government officers. The amounts we are dealing with are embarrassingly small, given that government officers are used to large figure commitments from large development projects, not a relatively small research project such as ours.

At the field level, this played out in the DFOs and AFOs feeling that they weren't getting their due share for involvement in the project. One DFO openly, and repeatedly, asked why we were so stingy with our money. It is a testament to the native goodwill and generosity of the Nepalese that they did commit their time and effort to the project regardless of payment. So, obviously if we can't afford to have every government officer on the payroll, then we need to find other incentives to secure their commitment in any follow-on project. At this stage, it could mean either: providing opportunities of professional advancement through post-graduate qualifications associated with a Phase-2 project; and /or allocating a part-payment to a small group of government officers or specific services.

Facilitating community-based and market oriented enterprises is challenging and requires higher level of input from external expert

The NAFP had envisioned that the Chaubas enterprise would function smoothly once it provided needed support in the establishment. However, this wasn't the case. While regulatory restrictions and Maoist civil war clearly created an unfavourable environment for business, our research shows that the structure of the enterprise was at the heart of problem. Communities are good at managing forests, but burdening them with the commercial work of running enterprise does not seem to work, and our action research to revitalise the enterprise has revealed two critical lessons: first, some form of partnership with the private sector is essential to catalyse a much need shift from subsistence mind-sets to more business oriented mind-sets; second, a clear forest management planning and silviculturally sound forest harvesting plan is needed to create confidence among communities, business groups, and the government agencies reluctant to allow market oriented management of forests. EnLiFT has made some modest progress towards this state but further research is need for a more nuanced knowledge of the timber market and community-based business governance.

Opportunities

Strong knowledge base for further work

EnLiFT has demonstrated technological options to improve resource sustainability and livelihoods while there are growing markets for forestry and agroforestry products; Nepal is still importing timber while its own forest lies underutilised. Despite rapid expansion of community forestry across the country, models of active and equitable management are lacking. There is a large research base describing the entrenched passive and inequitable management, and apart from EnLiFT's Active and Equitable Forest Management activity, there is still limited action research initiatives to demonstrate how community forestry management can made more active, equitable. Fortunately the government forestry administration appears to be open to development.

Recent political change favourable for further work

Nepal has recently elected local government for the first time in almost 20 years. The new local governments will take much of the regulatory power of the state forestry agency, thus creating an opportunity for more responsive regulatory environment for the communities to manage and market forest products. In this context, there is a growing demand for innovations in community-local government relationship. This is a good opportunity for further work in this area.

Encouragement from government and field for more work

Government appears willing to cooperate in research and policy uptake. For the past four years, the EnLiFT team has interacted repeatedly with the government officials to understand their concerns and perspectives on forest management, and then also organised several policy forums to share research insights gained in the EnLiFT districts. Policy makers have recognised the value of interdisciplinary and problem solving research that EnLiFT has undertaken, and there is an explicit demand for such type of research as an input to the policy debate. There is in particular a growing demand for evidence based policy and practice, as new leaders are elected and new generation forest administrators assume positions in the wider government system.

3 Impacts

3.1 Scientific impacts and dissemination

Edwin Cedamon and Ian Nuberg

The EnLiFT project has disseminated a many scientific products for the period July 2016 to June 2017 in the form of journal publications and conference papers drawing from research findings and contributing to the outcomes of the project (see Appendix 1 for abstracts). 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. In addition to written publications, Edwin Cedamon, researcher from the University of Adelaide, has also delivered lectures to undergraduate and graduate forestry students of Kathmandu Forestry College (Figure 2) (Affiliated to Tribhuvan University) and Institute of Forestry, Tribhuvan University, Pokhara on sharing the findings from the EnLiFT Silviculture Research.

Below is the list of paper titles and Project Output they may be associated to. These publications are available at the EnLiFT website http://enliftnepal.org/ .

Journal Papers for July 2016 to June 2017.

1. Cedamon E, Nuberg I, Paudel G, Basyal M, Shrestha K, Paudel N (2016), Rapid silvicultural appraisal to characterize stand and determine silviculture priorities of community forests in Nepal, *Small-scale Forestry,* DOI: 10.1007/s11842-016-9351-0 – **OUTPUT 38**
2. Khatri D, Shrestha K., Ojha H, Paudel G, Paudel N and Pain A (2016), Reframing community forest governance for food security in Nepal, *Environmental Conservation*, DOI:10.1017/S0376892916000369 **contribute to OUTPUT 21**
3. Cedamon E, Nuberg I, Pandit B, Shrestha K (2017), Adaptation factors and futures of agroforestry systems in mid-hills of Nepal, *Agroforestry Systems,* DOI 10.1007/s10457-017-0090-9 – **OUTPUT 01**
4. Ojha H, Shrestha K, Subedi Y, Shah R, Nuberg I, Heyojoo B, Cedamon E, Rigg J, Tamang S, Paudel K, Malla Y, McManus P (2017), Agricultural land underutilisation in the hills of Nepal: investigating socio-environmental pathways of change, *Journal of Rural Studies*, 53:156-172, DOI: 10.1016/j.jrurstud.2017.05.012 **OUTPUT 45**
5. E. Cedamon, I. Nuberg & K. K. Shrestha (2017): How understanding of rural households' diversity can inform agroforestry and community forestry programs in Nepal, *Australian Forestry*, DOI: 10.1080/00049158.2017.1339237 **contribute to OUTPUT 18**

Book chapters

1. Shrestha, K. K., Ojha, H. & Bhattarai, B. (*Forthcoming*), Disaster (in)justices in Nepal's earthquake recovery, In Douglass, M. and Miller, M., *Disaster Justice in the Asia Pacific*, MIT Press. (accepted 28 December 2016)

2. Shrestha, K. K. & Fisher, B. (*Forthcoming*), 'Global and national change and the changing context of Community Forestry in Nepal', In Thwaites, R., Fisher, R. & Poudel, M. *Community forestry in Nepal: adapting to a changing world*, Routledge, London and New York (accepted 28 March 2017).
3. Shrestha, K. K. & Ojha, H. (2017), 'Theoretical advances in community-based natural resource management: Ostrom and beyond, In Shivakoti, G., Pradhan, U., and Helmi, H. (2017), *Redefining Diversity and Dynamics of Natural Resources Management in Asia*. Volume 1, Elsevier, UK, pp.13 – 40.

Conference Papers:

EnLift researchers presented 8 papers in during the National Silviculture Workshop of which manuscripts of the five papers are included in the workshop proceedings published by the Department of Forests.

1. Cedamon E, Paudel G, Basyal M, Nuberg I, Paudel N (2017), Canopy Gaps and Regeneration Development in Pine and Sal Forests Silviculture Demonstration Plots in Midhills Nepal, In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..
2. Paudel NS, Ojha H, Shrestha KK, Karki R, Paudel G, Nuberg I, Cedamon E (2017), Towards Active Utilisation of Community Forestry: Silvo-Institutional Model for Sustainable Forest Management in Nepal, In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..
3. Paudel G, Karki DB, Basyal M, Paudel NS (2017), Silviculture for Enhancing Economic Contributions of Community Forestry: Experience from Lamjung District, In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..
4. Paudel G, Khanal PP, Cedamon E, Basyal M (2017), Prospects of Application of Shelterwood System in Mature Pine Stands in the Hills of Kavre District, In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..
5. Cedamon E, Paudel G, Basyal M, Nuberg I, Shrestha KK (2017), Q-Factor is a Useful Guide for Selection Silviculture on Nepal's Community Forests, In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..

all associated with OUTPUT 36

6. Tamang, S., 2015. *Feminisation of local communities and its impact on food security in Nepal*. Paper presented at student led conference 11-12, November 2015 organised by Faculty of Arts and Social Sciences, UNSW.
7. Shrestha, K. K. (2016), 'Disaster Justice or Disaster of Justice? Redistribution and Recognition of Disaster Injustices in South Asia', In *Disaster Justice in Anthropogenic Asia and the Pacific*, 17 – 18 November 2016, Asia research Institute, National University of Singapore.

8. Shrestha, K. K. (2016), 'Justice (re)considered: Situating Nepal's disaster recovery practice in the theories of justice', In *18 Months after the Nepal's Earthquakes: Practical Disaster Justice in the Recovery Work*, Institute of Engineering, Tribhuvan University, Kathmandu 6 December, 2016.
9. Tamang, S. & Shrestha, K., 2016. *"Feminization of agriculture in Nepal: A Burden or an Opportunity*" Paper presented at 2nd World Congress on Women Studies in Sri Lanka, 5-6 May 2016.

all associated with OUTPUT 18

Research Paper Series

1. Paudel K, Subedi YR, Tamang S, Nuberg I, Shrestha K. (2014), Milestones in Selecting Field Sites for Participatory Action Research, ***Research Paper Series on Agroforestry and Community Forestry in Nepal***, 2014-01:1-56, http://enliftnepal.org/wp-content/uploads/2017/05/Paper-Series-Vol-2014-01_170222-Draft1.pdf **OUTPUT 2 pre Mid-term review**

2. Tamang D, Cedamon E, Nuberg I, Shrestha K. (2014), Baseline Household Profile on Agroforestry, Community Forestry and Under-utilised Land in Six Selected Sites in Kavre and Lamjung Districts, Nepal, ***Research Paper Series on Agroforestry and Community Forestry in Nepal***, 2014-02:1-79, http://enliftnepal.org/wp-content/uploads/2017/07/Vol-2014-02-Quantitative-Baseline-Studey-Report-Final.pdf **OUTPUT 2 pre Mid-term review**

3. N Paudel, R Karki, G Puadel, H Ojha, M Basyal, A Bhandari, D Tamang, S Bhattarai, K Shrestha, I Nuberg. (2014), State of art in linking community forestry with food security in the Nepalese hills: Cases of Kavre and Lamjung districts, ***Research Paper Series on Agroforestry and Community Forestry in Nepal***, 2014-03:1-105

4. B Pandit, SM Amatya, D Gautam, R Niraula, S Bhattarai, YR Subedi, Nuberg I, Shrestha K, H Ojha (2014), Qualitative Baseline Study on Agroforestry in Kavre and Lamjung Districts, Nepal, ***Research Paper Series on Agroforestry and Community Forestry in Nepal***, 2014-04:1-56, http://enliftnepal.org/wp-content/uploads/2017/07/Vol-2014-04-Qualitative-Study-Report-AF-Final.pdf

5. Malla Y, Shah R, Chhetri R, K, Subedi YR, Tamang S, Paudel K, Basyal M, Shrestha S, Nuberg I, Shrestha K. Ojha, H(2014), Qualitative Baseline Study on Underutilised Land in Kavre and Lamjung Districts, Nepal, ***Research Paper Series on Agroforestry and Community Forestry in Nepal***, 2014-05:1-53 http://enliftnepal.org/wp-content/uploads/2017/07/Vol-2014-05-Qualitative-Study-Report-UUL-Final.pdf

6. Amatya SM, B Pandit, Subedi YR, Nuberg I, Shrestha K. (2014), Survey of Agroforestry Systems in Kavre and Lamjung Districts of Nepal, ***Research Paper Series on Agroforestry and Community***

Seminar presentations:

1. Cedamon E, (2016), Options for silviculture practice on community forests in Nepal: learnings from the EnLiFT Project, Occasional Scientific Seminar, Kathmandu Forestry College, 7 July 2016, Kotheswor, Lalitpur

2. Cedamon E. (2017), Silviculture-based Community Forest Management: options for optimising returns from community forests in Nepal, Institute of Forestry Special Lecture on Sustainable Forest Management, 14 July 2017, Pokhara Campus, Institute of Forestry, Tribhuvan University, Pokhara Nepal.

Figure 1 Dr. Edwin Cedamon receiving a token of appreciation from Dr. Ambika P Guatam, Principal of Kathmandu Forestry College after the seminar attended by about 50 Senior Students in Forestry and Natural Resource Management.

Policy briefs

1. Rahul Karki, Naya S Paudel, Krishna Shrestha, Hemant Ojha (2017) Community Forestry planning in Nepal: How regulatory framework and institutional practice undermine planning for sustainable development
OUTPUT 22

2. Anukram Adhikary, Hemant Ojha, Naya Sharma Paudel, Govinda Paudel, Krishna Shrestha and Ian Nuberg **(**2017) Community Forestry and Local Level Planning for Food Security and Livelihoods
OUTPUT 27

3. Hemant Ojha, Krishna K Shrestha, Naya S Paudel, Udeep Regmi (2017) Innovation at the Research-Policy Interface: Applying the Policy Lab Approach in Nepal's Forest Policy Process
OUTPUT 30

Extension Manuals

Joshi M, Pandit BH, Dhakal B, Amatya SM, Gautam D (2017) Agroforestry System and Entrepreneurship Development : A Training of Trainers Manual. (including extension flyers in Nepali on priority product interventions) in press to be released August 2017 **combined OUTPUTS 7, 8 and 15**

EnLiFT Website

The version of the EnLiFT website reported last year was a satellite webpage sitting on the ForestAction website. Even with the best internet connection this site loaded too slowly, so this year we rebuild the website with its own URL at http://enliftnepal.org/ using a Wordpress platform.

Of particular interest the website hosts our ***Research Paper Series on Agroforestry and Community Forestry in Nepal***, a bi-monthly serial publication of the project with **ISSN 2208-0392**. The issues comprising the volume 2014 were released in June 2017 as backtrack volume to somehow match delivery dates for most project outputs. The Research Paper Series are internally peer-reviewed papers on key project outputs. Importantly, they have ISSN registered numbers so they are more easily found by bibliographic search engines and more likely to be cited.

We are currently loading all our publications in categories of: Journal papers, Conference papers, Annual reports, Research Paper Series, Policy briefs, Manuals / Booklets, Discussion papers, and Project reports.

Figure 2 Two examples of covers of Research Paper Series

National Silviculture Workshop

Rahul Karki and Shambhu Dangal

The introduction of community forestry four decades ago has resulted in substantial recovery of forests in Nepal (39% in 1994 to 45% in 2015). However, due to a protection-oriented policy and institutional practice, and also weak capacity of forest agencies and local communities, forests are not properly managed. In this context, the EnLiFT project has initiated technical and institutional interventions to bring active silviculture in community forests.

Following the establishment of the silvicultural demonstration trial plots, several visits involving team of MoFSC officials, media personals, civil society members, and EnLiFT team members, were made to Chaubas. The visits were mainly aimed at showcasing the successes of silviculture intervention in CF. Among others, the visit by MoFSC officials, including the Director General (DG) of the Department of Forests (DoF), Mr Resham Dangi, was crucial in terms of giving a thrust to the silviculture agenda.

As a consequence of these visits, and the parallel activity of EnLiFT Policy Labs, the decision for organizing a National Silviculture Workshop was made for which support from the EnLiFT project was sought. Following the decision, a team of EnLiFT researchers and DoF staff met regularly to come up with a concrete plan for the workshop. Advisory and organizing committees were formed to oversee the overall organization of the workshop where EnLiFT staff had significant contribution as members of these committees. The first National Silviculture Workshop was organized in Kathmandu during 19-21 February 2017.

There was a firm commitment from the highest level of forest policy authority during the workshop. Among the participants were the Minister of Forest and Soil Conservation, member of the National Planning Commission (NPC), Secretary of MoFSC, DG of DoF, and representatives of Community-based Forest Management networks. Also present were over 40 District Forest Officers from various districts. In total, around 175 participated and there were 60 + papers presented during the workshop. Out of those, eight papers came from the research work of EnLiFT project.

The workshop concluded with four key messages, 28 recommendations in six thematic areas, and nine ways forward (see Appendix 2). Strong commitments were expressed from all sides to deliver the following outputs. The good news is that EnLiFT is working in most of these areas.

1. Prescribe appropriate silvicultural systems considering silivicultural characteristics, forest conditions including species composition, forest size, management objectives and physiographic characteristics, while not compromising multiple functions of forests.
2. Develop simple and integrated manual/handbook of silviculture for major forest types and regimes.
3. Develop capacity of the foresters and stakeholders (government, forest users, private sector, media and other stakeholders) on silviculture based management through motivational and promotional activities, awareness campaigns and training programs.

To operationalise the recommendations of the National Silviculture Workshop, a National Silviculture Working Group was formed in March. The working group sits every first Sunday of Nepali month. The SWG and DG of Department of Forests conducted visit to Chaubas to have better understand the issues and improved practices as a result of the visit, the working group has decided to develop a guiding document for management of pine plantations which is presently under drafting process.

3.2 Capacity impacts

The capacity building aspect of EnLiFT is covered in the sections on Scientific Impact and Dissemination, Training Activity, Policy Impact in this annual report.

3.3 Economic impacts

Bishnu Hari Pandit and Ian Nuberg

Agroforestry

EnLiFT's main agroforestry objective was to improve livelihoods and food security of people of the study area in order to respond to declining productivity and food insecurity due to a range of factors such as long term monocropping and also from abandoned agricultural lands. This summary report is based on the survey ('before' and 'after') of 289 households out of 363 who were involved in AF action research activities as Local Research Groups (LRGs) of farmers including focus group discussions (FGDs) and key informant survey (KIS). The aim of this report is to analyse local agroforestry innovations in Nepal's hills and generate key insights for improving and expanding agroforestry's relevance and impacts to household economy.

Change in income level

This report investigates the productivity and livelihood impacts of five Agroforestry (AF) systems including (1) banana based fodder and livestock (2) ginger based fodder (3) tomato, fodder and buffalo (4) alnus and cardamom and (5) round chili and fodder trees on private lands. Analysis of these systems indicated that farmers benefit most by banana based high yielding fodder system followed by alnus-cardamom system, tomato fodder and buffalo, ginger fodder and chili fodder system due to high value cash crops. Banana based system contributed more than other systems where the income is highest (NPR 30725/ year/household) at Dhamilikuwa. This is more than triplefold of Nalma village (NPR 9878). This is also justified from the facts of Jita taxar (banana system) where the under-story crop was also banana. After banana based AF, Alnus-cardamom system came in front from Chaubas and Nalma. The motivation to new AF innovation is depend on the sources of existing off-farm income. Among all off-farm sources, income from remittance is highest. Nalma used to receive the highest remittance (41%) in 2013 and now it is dropped to 34 percent. Dhungkharka has the least remittance record (10% in 2013 and 07% in 2016). Therefore, Nalma is not so keen to do new AF innovations and Dhungkharka is more concerned on immediate cash crop (e.g. tomato). Farmers of Chaubas are motivated to do cardamom under Alnus trees because of increasing benefits that they are receiving. This study has opened up new opportunities for the hill farmers to pursue banana based and Alnus cardamom system. This is the additional income for the farmers. Between farm and off-farm sources of income, the combined income from all off-farm sources of income has been the largest contributing source, contributing 63 percent before the project and now it is more than half (52%).

Change in poverty level

According to the Nepal Living Standard Survey (NLSS), 2,200 calorie consumption by a person per day and access to essential non-food items are the index to measure poverty in Nepal. Based on current market prices, a person needs an income of at least Rs 19450 a year to manage food equivalent to 2,200 calorie per day and other essential non-food items (NLSS 2013). As per the report, an individual earning less than Rs 19450 per year is below

the poverty line. The national average household size is 4.77 and therefore below poverty line income per household is NPR 92,777 (4.77 HH size x 19450) as indicated at the bottom of the Table 2. Overall, the study found that the percentage of households below the poverty line dropped from 48 % in 2013 before project implementation to 34 % after the project in 2016. The highest level of poverty shift was observed in Dhamilikuwa, which is from 62 % to 28 % (Table 2). Chaubas have had the highest incidence of poverty, but changed positively over time (67% to 53%). The overall change in reduction in poverty level is significant between the project periods ($p<0.01$). The reduction in poverty is attributed mainly due to promotion of priority understory crops such as banana in Dhamilikuwa and Jita Taxar, cardamom at Chaubas, ginger at Mithinkot and tomato at Dhungkharka. The difference in overall change in reduction of poverty is 14% (48% to 34%).

Table 2: Poverty level 'before' and 'after' EnLiFT project

	Poverty level before 2013 (n = 289)**				**Poverty level after 2016** (n = 289)**					% change above poverty line
	Below poverty		Above poverty		Below poverty		Above poverty			
Village	n	%	n	%	n	%	n	%	Total	
1. Jita taxar	28	**48**	30	**52**	17	**29**	41	**71**	58	**19**
2. Nalma	14	**56**	11	**44**	11	**44**	14	**56**	25	**12**
3. Dhamilikuwa	33	**62**	20	**38**	15	**28**	38	**72**	53	**34**
4. Mithinkot	15	**31**	33	**69**	14	**29**	34	**71**	48	**2**
5. Dhungkharka	13	**26**	37	**74**	11	**22**	39	**78**	50	**4**
6. Chaubas	37	**67**	18	**33**	29	**53**	26	**47**	55	**14**
Total	140	**48**	149	**52**	97	**34**	192	**66**	289	**14% average**

*t is significantly different at the 0.05 level, **t is significantly different at the 0.01 level.

Change in food security level

To ascertain the role of AF innovations in reducing poverty and meeting food requirement of a person, Nepal's per-capita income was taken as a standard (i.e. 2200 calorie food can be purchased for NPR 19450). As explained earlier, the national average household size is 4.77. It means 4.77 persons need NPR 92777 for their food which is sufficient for 12 months. It means one person's food is enough for 2.5 months for a family of 4.77 size. For three months, NPR 23340 is needed. Three months food sufficient household is considered as ultra-poor, For six months feeding, the double (NPR 46680) of 23340 is required, which is a poor household. Similarly, for nine months feeding NPR 70020 (medium poor) and for the whole year (12 months), NPR 93360 (Well off) is required. Above this line is considered to be 'no' poverty (NLSS 2013). Food security level 'before' and 'after' is presented in Table 3 and Figure 3. Before project intervention, 146 households (52%) out of 289 were food sufficient, but now after the project was implemented, this increased to 192 households (69%). The change in food sufficiency level is highly significant ($p<0.001$).

Conclusion

After three years of piloting and experimentation EnLiFT found that household income was increased by 37 to 48% mostly due to agroforestry innovation, which can provide up to additional six months of food to the poorest households. This innovation could potentially make the majority of households (63%) out of poverty trap with no danger of food shortage during the year. The implication of this research is that farmers must

diversify their production through agroforestry innovations and achieve better returns from their production in order to escape subsistence poverty and improve their livelihoods. The out-migration of rural youth resulted in fallowing or abandonment of large tracks of fragile landscape in the study area. This land if utilized effectively through expansion of AF, which would contribute to both carbon sequestration and farm income in the hill slopes of Nepal, and it is expected to reduce the trend of migration that results on the impact of sustained village economies and environment conservation.

Table 3: Food security 'before' and 'after' EnLiFT project

Village	Project period	Food security level				
		Up to 3 months	4-6 months	7-9 months	9-12 months	More than 12 months
Jita taxar (n = 58)	Before	3	9	6	10	30
	After	0	6	4	7	41
Nalma (n = 25)	Before	1	3	5	5	11
	After	1	0	4	6	14
Dhamilikuwa (n = 53)	Before	2	8	7	16	20
	After	1	4	6	4	38
Mithinkot (n = 48)	Before	3	3	5	7	30
	After	2	2	4	6	34
Dhungkharka (n = 50)	Before	4	4	3	2	37
	After	2	2	2	5	39
Chaubas (n = 55)	Before	4	17	7	9	18
	After	2	16	6	5	26
Total Before		17	44	33	49	146**
Total After		8	30	26	33	192**

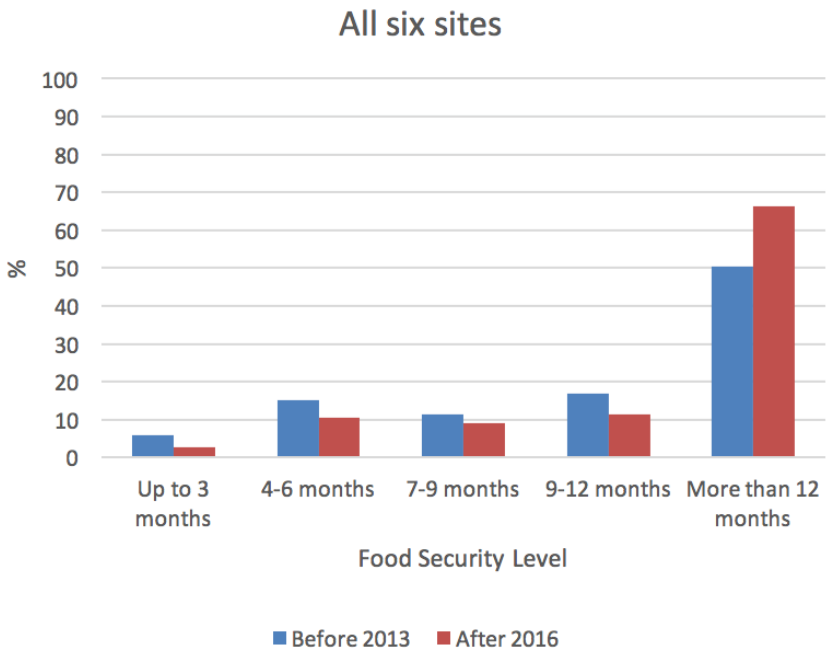


Figure 3 Average % in 5 food security category across all six sites attributable to EnLiFT

Community forestry

Edwin Cedamon

Active silviculture practice on community forests resulted an increase of harvests volume creating substantial timber surplus. Table 4 shows that harvest volume per CF has increased for about 9 to 16 folds where CFUG internal demand are fully met. The incremental economic benefits of active silviculture practice for plantation pine forest in Chaubas is on average NRs 129,000 per hectare to NRs 1.7 million per hectare derive for marketable timber surplus (Table 5). The total revenue from the 2016 timber sale is NRs 16.7 million, of which 3.3 million was directly paid by the timber buyers to labourers for harvesting and logging and NRs 11.4 million as CFUG income of which 35% will be allocated to pro-poor livelihood program in a form of soft loan. In addition to soft loans, households will benefit from the 25% of the CFUG revenue that will be allocated for forest management maintenance operations which will be paid as labour cost to CFUG members. This additional benefit ranges from NRs 5,000 to NRs 16,000 per year. Table 3 also shows that selection method yielded the highest revenue per hectare due to harvesting of larger and better quality trees.

Scaling the figure of financial benefit to whole Kavre District with a total of 18,995 hectare of CF will likely yield a revenue of NRs 2.2 billion to NRs 30.4 billion. This is significant asset that can be managed sustainably and value-added by better silviculture management.

Table 4 Comparison of annual timber harvest volume without AEFM intervention (2011-2015) with AEFM interventions project in four CFUGs

CFUG	Average Annual Timber harvest Volume before AEFM intervention (2011-2015) (cft)	Harvested timber volume in 2016 with AEFM Intervention (cft)
Dharapani	457.8	7,252
Chapanigadhi	629.4	9,324
Rakchahama	848.8	13,050
Lakuri	622.4	5,484

Table 5 Internal timber distribution

S.N.	Name of CFUG	Number of Household members	Timber (C.Ft.)	Rate	Total Amount
1	Lampata	260	881	45	39,645
2	Dharapani	64	600	25	15,000
3	Kalapani	296	1159	15	17,385
4	Fagarkhola	71	350	15	5,250
5	Chappanigadhi	105	500	25	12,500
6	Rakchhama	61	750	25	18,750
7	Lakuri Rukh Bhulbhule	88	475	25	11,875
				NRS	120405

Table 6 Volume of timber surplus and revenue from timber sale

Name of CFUG	Timber (C.Ft.	Rate	CFUG Revenue (NRs)	Labour charge	GoN royalties	Total amount	Remarks	Area (ha.)	Revenue per hectare
Rakchhama	8,475	305	2,584,875	847,500	446,209	3,878,584	Lot 1	8.6	450,998
Rakchhama	3,825	350	1,338,750	382,500	223,763	1,945,013	Lot 2	2.4	810,422
Dharapani	6,652	351	2,334,852	731,720	398,654	3,465,226	Lot 1	2.1	1,650,108
Chappanigadhi	6,086	401	2,440,486	608,600	396,381	3,445,467	Lot 1	8.5	405,349
Chappanigadhi	2,738	358	980,204	273,800	163,021	1,417,025	Lot 2	2.1	674,774
Lakuri Rukh	2,000	358	716,000	200,000	119,080	1,035,080	Lot 1	8.0	129,385
Lakuri Rukh	3,009	340	1,023,060	330,990	176,027	1,530,077	Lot 2	1.35	1,133,390
Total			11,418,227	3,375,110	1,923,134	16,716,471			

Silviculture interventions

Lot 1 Racchma – removal of 4D trees
Lot 2 Racchma – Selection method
Lot 1 Dharapani –selection method
Lot 1 Chapani – removal of 4D trees
Lot 2 Chapani – removal of 4D trees
Lot 1 Lakuri – removal of 4D trees
Lot 2 Lakuri – selection method

3.4 Community impact: Women's voice

Racchya Shah

An important research activity that cuts across both agroforestry and community forestry themes is Women's' Voice. It records and assesses the perceptions and opinions of participating women on EnLiFT's approaches, interventions and its demonstrated effects until now.

This activity has expected to appraise and capture women's insights and has intended to: identify challenges and barriers of women; encourage positive action to promote the full participation of women; and ensure project benefits both men and women equally.

The methodology adopted for this activity is as follows:

1. Qualitative information was collected through series of focus group discussion in research site of both Kavre and Lamjung district. The collected information was transcribed and translated and also attempted to process the data by using Nvivo.
2. A literature review was undertaken on women's participation and women's perception in agroforestry and community forestry activities
3. Currently, the quantitative data is being collected. To collect the data direct interview method was used. For the interview a checklist has been designed.

For the preliminary perception analysis, qualitative data was used and the findings from this analysis are expected to be further validated through findings generated by the analysis of quantitative data.

Currently, the quantitative data collection process is on-going in Kavre, while the processing and recording of the quantitative data collected from Lamjung is underway.

The outputs relating to this work (O19 and O28) are due in December 2017, but a draft paper of this work will be available on EnLiFT's website by the end of August in time for the Final Review.

3.5 Policy impacts

Hemant Ojha, Krishna K. Shrestha, Naya Sharma, SM Amatya, Rahul Karki, and Ian Nuberg

3.5.1 Context and rationale

Despite four decades of successful community forestry and other participatory models, there are ongoing confusion and contestations on the objectives and approaches of managing Nepal's forest, especially on the roles and responsibilities of government agencies, community institutions and different layers of government. Part of the problem lies with the policies being formulated by a small coterie of senior officials who are little informed by, or willing to learn from the syntheses and insights generated so far. In practice, the research-policy gap continues in the Nepal's forestry sector, despite a plethora of research and analysis on forest governance and management. As a result, contribution of forests to food security and poverty reduction goals has remained very low (Magrath et al 2013, Thoms 2008, Ojha 2009).

Nepal's forest and agriculture sector has remained vibrant, with regular policy workshops and research-policy interactions (Table 7).

Table 7: Experiments on Linking Research to Policy in Nepal Forestry Governance

Research-Policy Modalities	Research - Policy Approach	Outcomes
Adaptive Collaborative Management (2002-07) (McDougall 2009; ; Banjade 2013)	- Understand and facilitate change at local level - 'National Policy Learning Group'	- Positive local level impacts - Limited policy uptake
Task Force, Working Group	- Sitting in the formal policy task force constituted by the Government	- Contribution in participatory REDD+ process - Politicisation of science
Advisory Committee	- Advisory role to policy makers in drafting a specific policy	- Multi Stakeholder committee - Appreciation of new policy dimension - Symbolic Presence
'Ban Chautari' - a collaborative policy analysis and communication series (2010-11) (Ojha et al 2012)	- Diagnostic study in 9 ongoing policy issues - Critical discussion through central Ban Chautari events	- Critical analysis of policy issue - Good participation of stakeholders - Limited policy buy-in
Forest Policy Seminar Series (2008-09)	- Researchers delivering seminars in different policy implications inside the government premises	- Good participation of diverse stakeholders - Awareness on contemporary policy issues - Defense of constituency
Research into Use (2007-09)	- Putting previous research into use through innovation systems approach	- Collaborative learning, local innovations - Limited policy uptake
Nepal Policy Research Network (2010- ongoing)	- Consortium of research organisation	- Promotion of policy relevant social science research - Very Passive in its activities

Consultations in multi-stakeholder workshop are common in the process of policy decision.

Earlier we also had tried various modes of linking research to policy under the banner of adaptive collaborative governance (MacDougall 2009; Banjade 2013), policy seminar series, Ban Chautari (Ojha et al 2013), and others. However, we observed common limitations with these approaches. First, these gatherings involving 30 to 100 people were less constructive to arrive at any negotiated outcome as stakeholders tended to reinforce their specific positions and not prepared listen to others. Second, the policy makers tended to feel insecurity if they honestly accept policy shortcomings in such large gatherings and therefore often defend their stands. Third, there was weak linkage between what is discussed in these forums and what gets decided at the official meetings. Besides, these forums were often designed and conducted in such a way that they have become the tools for legitimising policy decisions. Due to the weak deliberative competence of many groups, they feel marginalised and have lost their interests in such forums. In this context, it became urgent to seek alternative, constructive approach that allows a deliberative dialogue based on science, which is scrutinised under a democratic process.

In the above context of weak research-policy link in Nepal's forest and agroforestry sectors, exploration of innovative methodological approach to link research with policy process has been identified as one of the core intervention areas under EnLiFT. The experiment we report here is primarily based on our work during its first four years, but also includes with other experiments on research-policy link (Ojha et al. 2012).

As a project team, we adopted an action research approach with 4 key features that differentiated it with similar research projects in Nepal. First, we focused on key problem areas within forest policy and practice that were most relevant to local communities as well as higher-level actors. Second, we adopted a holistic approach to research, development action and policy process by working simultaneously in three layers of forest governance and also avoiding the 'first research' and then 'communication' kind of linear order. Third, we took an adaptive approach to research where questions and associated activities were not predetermined. Instead, the team periodically met, reflected and planned activities for a maximum of six months, which allowed adequate space for accommodating any changes in local and external factors (e.g. earthquake and restricted India-Nepal supply chain). Fourth, instead of research informing to policy, we adopted a dialogic process in which policy demand also informed research agenda and specific questions. In many case, agenda that emerged during the researcher-policy makers dialogue have also shaped our research agenda.

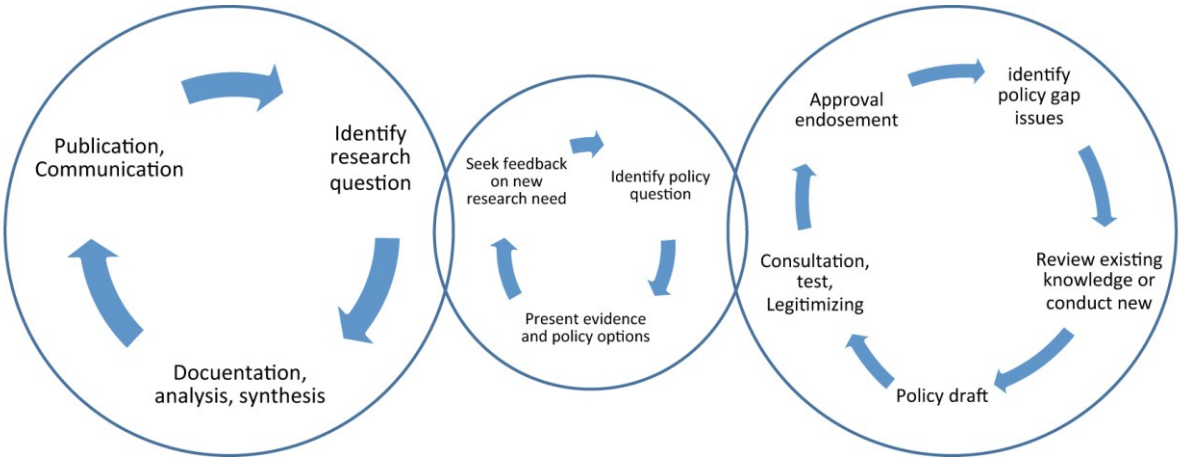
The specific policy issues for research and communication were identified based on baseline survey, group level meetings and district stakeholder meetings. DFO and FECOFUN, the key support institutions for CFUGs, also the partners in this research, further scrutinised the issues, were reframed and recommended as requiring policy response. The researchers in the team having their long experience in CF programme used their good judgment to frame and the policy questions. Required data on natural and social-institutional aspects were gathered, analysed and rectified at the local, district levels. Some of the key policy issues for policy lab included: i) legal and contractual value of CF operational plans and ways to simplify these; ii) creating regulatory environment conducive to private forestry; iii) regulatory and institutional support for active silvicultural operation in CF; iv) facilitating timber supply for post-earthquake reconstruction, etc.

The idea of EnLiFT Policy Lab (EPL) emerged as an innovative approach to strengthen science-policy interface where stakeholders could engage in an inquiry to explore, identify and facilitate appropriate policy options for contemporary policy issues such as those identified above. The EPL was designed following specific operational guidelines: i) actors: representing at least three different perspectives covering government, civil society, private sector, researchers, development professionals, conservation agencies, political parties and the like; ii) number of participants: minimum 6 and maximum 10 (plus 2 researchers); iii) duration: 2-3 hours; iv) rules of participation: moderated but open dialogue free from any perceived threat, every argument supported by concrete evidence, views will remain anonymous if taken for publication.

3.5.2 Conceptual framework

EPLs were formulated by blending the work conducted at Harvard and Stanford Universities as "Policy Labs" and the recent experiments in Nepal around Ban Chautari, Policy Discussion Forums, Nepal Policy Research Network and also drawing on the personal experience of various researchers over the past three decades in Nepal policy process. The main objectives of EPL are:

- To systematically engage policy actors in the research process,
- To identify and generate policy relevant data and evidence drawing on the rich experience of the policy actors,
- To generate thick descriptions of the ways in which key policy actors understand and interpret policy problems, including the contested views and interpretations of problems and solutions,
- To create opportunities for collaborative inquiry between researchers and policy actors, and
- To identify potential policy solutions to the problems.



Science and policy continue to be 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 on the ground, have emerged, but still the progress is limited. In this paper, we demonstrate deliberative policy inquiry approach, which can help strengthen science-policy interface. Below we present a case study of how this approach was translated in the particular context of forest and food security policy challenges in Nepal. It highlights that a contextually engaged, critical and reflexive approach, involving 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.

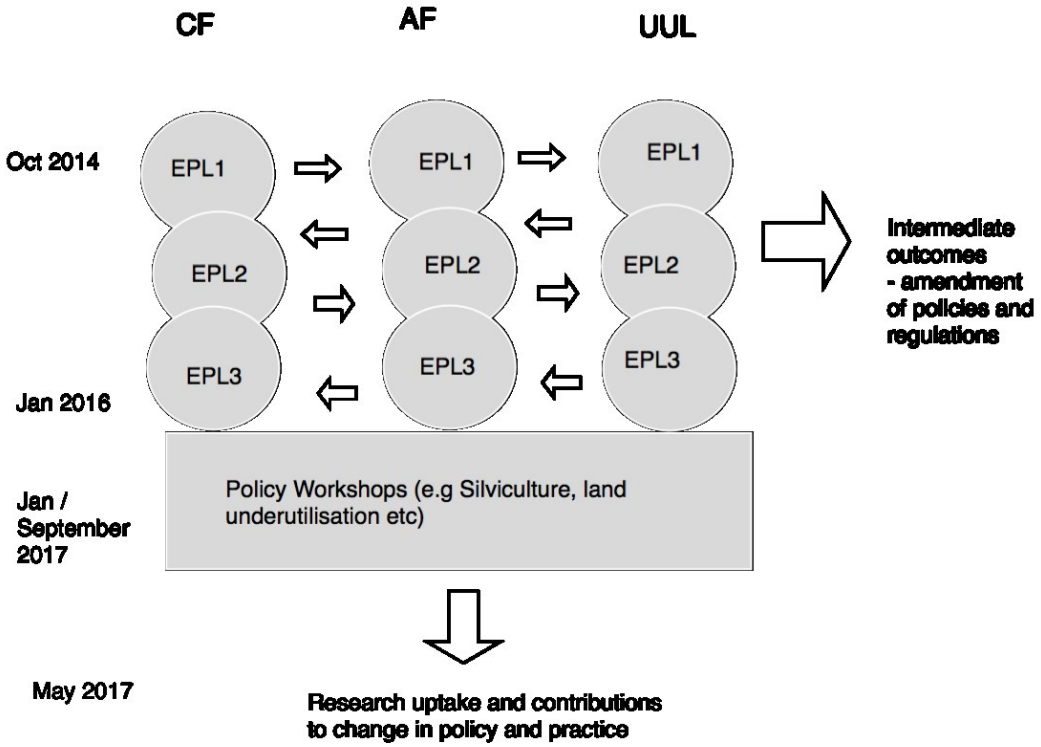


Fig 4. An overview of research policy interface with a focus on EPL methodology

3.5.2 Outcomes and achievements

EnLIFT has contributed to a number of specific policy agendas in the area of forestry, agroforestry, land management, forest product marketing, and active and equitable forest management. While policy work is not supported as a stand-alone theme with dedicated budget allocations, EnLIFT has organised policy labs and special, issue-focussed workshops to share important insights generated through research among the policy actors on unfolding policy development processes. We developed EnLiFT policy lab (EPL) methodology to ensure continuous dialogue and sharing between the research team and policy makers. In total 12 meetings were organised under the EPL with different topics, objectives and participants (Table 8). While EnLIFT policy labs provided a key mechanism to forge dialogue between research team and key policy actors, we also produced and circulated a range of policy recommendation briefs. A notable example is land underutilisation policy workshop, which was organised by the National Planning Commission of Nepal, in which EnliFT researchers provided sold recommendations for policy change. We are delighted to note that Nepal's apex level planning authority adopted some of our recommendations.

Other key achievements on policy fronts include the following:

- EPL which drew on the research findings of EnLiFT has informed timber supply strategy of the Nepal government for rebuilding houses in the earthquake affected areas.
- Agroforestry and modelling work have informed forest product marketing policy discussion in Nepal.
- EnLiFT has provided major policy inputs on silvicultural technology development in Nepal (as a member of scientific committee and organising committee)

- EnLiFT has pioneered a debate on linking community forestry with food security
- EnLiFT research has also been cited by and referred to in the wider policy discourse through the media and local level policy discussions
- EnLiFT has also empowered local communities to claim legislative rights over community forestry, which has contributed to effective implementation of the policy and regulatory arrangements favouring community based and market oriented forest management
- EnLiFT works in Chaubas contributes to the local level policy reforms at CFUGs for exploiting new commercial opportunities through partnership between communities and the private sector
- EnLiFT works in Methinkot and Dhamilikuwa triggering policy debates on strategic and inclusive planning practice to address challenges of elite capture
- EnLiFT works is improving planning and policy processes of CFUGs to deliberate multiple voices at the local level as well as national levels
- Works in land underutilisation leading the debates on policies on land utilisation and food security by addressing social and institutional issues and devising pathways and strategies to bring back underutilised land into production as well as preventing the rise of land underutilisation
- Silvicultural workshop and publications influencing Nepal's public policy makers and their organisation's willingness and capacity to make improvements in policies relating to the management and administration of CF system;
- Empirical and scholarly works enhancing awareness, knowledge and skills of researchers, policy makers and communities related to policy development
- EnLiFT Policy Lab engaging and informing policy makers about potential economic, social, and environmental ramifications of diverse voices from the grounds being articulated in the policy circle, and recognising the value of continuous learning in policy development by identifying causalities that inform the review of policies.

3.5.4 Policy arenas and interventions

Organising EPL involved a substantive preparatory work. Once the issue gets consolidated through local and district level research activities, all the evidence associated with the issue were collected, analysed and a 4-page briefing note was prepared. It was followed by identifying the relevant 8-10 participants comprising of senior government officials and other actors. Invitation were sent along with the briefing note and other relevant reading materials on the policy issue. A cool and ambient place was selected for venue and was provided with tea and snacks. Moderator began the meeting, followed by oral presentation of the problem on the ground with its geneology, actor landscape, consequences, current initiatives to resolve that and policy related questions (no power point slides). The moderator then summarized the presentation and asked participants to comment on the issue with specific order depending on the issue. Participants are asked to explore possible options, weight the options using relevant criteria and chose a move workable solution. Towards the end of the meeting, some immediate next steps were agreed and roles were assigned for the agreed next steps.

Table 8 Part1: Summary of EnLiFT Policy Lab and Associated Events

S.N.	Topic of Policy Lab	Policy Question	Participant/venue/date
1	Transforming state-community contract in community forestry	a. Backlog in renewal of CFOPs b. Conservative resource assessment (inventory, AAC calculation) c. Level of support and monitoring from DFO staff in CF activities	Civil society - 2 Government - 3 Donors -2 IUCN/ 15 Jan 2017
2	Scientific Forest Management	a. Community forests are suffering from passive management b. Regulatory and institutional regime are not supportive to active management c. Modifications and adjustments are needed to make recently Introduced scientific forest relevant to CF	Government- 2 Civil society - 4 Private sector - 2 Indreni Food land/ 12 Dec 2014
3	Policy and regulatory framework needed to promote private forestry	a. How have the regulatory provisions on registration, harvesting and marketing of private forest products constrained? b. How can such regulations and DFO support encourage private forest owners?	Government - 2 Private sector - 2 Civil society - 1 Donors – 1/ IUCN/ 8 March 2015
4	Implications of current land use practice on food security	a. What policy and regulatory factors have led to land underutilization in Nepal? b. How can local governments facilitate and enforce land use practice favouring food food security?	Government- 2 Civil society - 1 Private sector - 2 Political parties – 2 Hotel Summit/19 Jan 2015
5	Facilitate increased timber supply from CF/PF for post-earthquake reconstruction	a. How much is the demand-supply gap of timber for post-earthquake reconstruction? b. what exhumations can be made to ease timber harvesting and transport from AF/PF during reconstruction phase?	Government - 2 Civil society - 2 Private sector - 1 Hotel Ugrachandi Banepa/ 19 June 2015
6	Enhancing research –policy link through EPL	a. What are the different methodological options in linking research with policy?	Researchers -6/ September, 2014/IUCN
7	Understanding and experimenting with EPL	a. How is EPL distinct from conventional approach to research-policy liking? How can we conduct it effectively within EnLiFT?	Researchers -5/ October, 2014/IUCN

Table 8 Part2: Summary of EnLiFT Policy Lab and Associated Events

S.N.	Topic of Policy Lab	a. **Policy Question**	**Participant/venue/date**
8	Understanding and experimenting with EPL	b. How is EPL distinct from conventional approach to research-policy liking? How can we conduct it effectively within EnLiFT?	Researchers -5/ March, 2015/IUCN
9	Understanding and facilitating the coordination between forestry and agriculture	What are the existing mechanism to enhance agri-forestry interface? How does food security help increase forest and farm interlink?	Govt forest officer -4 Researcher -2/ August, 2015/ Ministry of Agriculture
10	Enhancing utility of ENLiFT research findings to implementers	a. To what extent the EnLiFT research finding are useful to you? How can you better use the research finding?	Govt forest officer -4 Local government officers -2 Researcher -2/ May, 2016/DFO Kavre
11	Enhancing utility of ENLiFT research findings to implementers	a. To what extent the EnLiFT research finding are useful to you? How can you better use the research finding?	Govt forest officer -4 Local government officers -2 Researcher -2; May, 2017/ DFO Lamjung
12	Facilitate timber harvest and transportation from private and CF lands	a. How are policy provisions on private forestry being implemented? What are implementation challenges in relaxing timber harvest and transport?	Govt forest officer -4 Researcher -2 March, 2017/Regional Forest Directorate Hetauda

There are both substantive as well procedural outcomes from these EPLs, though there are attributional challenges as multiple factors are at play. At least in two policy issues we observed more direct link to new policy decisions. On private forestry issue, the EPL explored a few areas, which could ease private forest owners to get their timber to the market. Later the government decided to exempt 26 tree species from all administrative process so that farmers can now sell their timber without any hurdles in harvesting and transportation. Similarly, facilitating increased harvest and supply of timber in the market especially in the earthquake hit districts discussed in length in the EPL. The Director General and Deputy Director General of Department of Forest among others participated in this discussion. Later the Department of Forest issued a circular, which significantly eased the administrative requirement for harvesting and transporting timber from private and community forests. In a third case, the issue discussed in EPL received attention by the authorities and stakeholders which later resulted in a National Workshop on under-utilised land and the issue now has been internalized into the National Planning Commission.

However, apart from these immediate policy outcomes, EPL helped develop appreciation of the role of research in making decision. There is an increased communication between policy makers, researchers and other stakeholders. And researchers also appreciated the value of constant engagement with policy makers as it would help make their research questions more relevant to the policy demand.

EPL induced open, honest and focused discussion on the policy issue in question. The quality of argument, role of evidence, and appreciation of alternative views counter arguments were much more different than usual multi-stakeholder consultation workshops. It is observed that EPL remained effective on those issues where there was a strong policy demand. In this case, discussion on private forests and timber supply for post-earthquake reconstruction resulted in good policy decision. Lastly, the EPL helped much the researchers to better frame the research question and articulate the findings through policy language that is appealing to the policy makers.

EnLiFT's research-policy interface activities which formally emerged since the mid-term review as the EnLiFT Policy Labs (EPLs) have had positive impacts, not fully reported in previous annual reports. The EPLs are a process to engage stakeholders in the process of collaborative inquiry with a view to explore, identify, promote suitable policy options for better linking forestry, agroforestry and underutilized land to food security and livelihoods of local communities in the hills of Nepal were carried out in the project sites.

Examples of some of the issues that EPLs discuss are as follows:

- How has the policies, laws and regulations (Forest Act 1993, Forest Regulation 1995, Environment Protection Regulation 1997, and Private Forest Development Directives 2011) promoted/inhibited registration, management, harvesting including timber marketing of private forest?

- How can implementing agencies such as DFO and Policy encourage private forestry development and marketing in the prevailing regulatory framework?

3.5.5 Outcomes

One of the classical problems of the consultation process is seeing 'how local issues are linked in policy'. Increasing the buffer of the scope of consultation and focusing on the major issues to be prioritized during consultation, the ways deployed to deliberate the findings to stakeholders, the appropriate filtration of the issues raised at local and thus address of the same in policy are key to consultation process. The followings are some of the issues that policy lab came to the conclusion.

- The policy provision is the major hurdles for major policy issues (for instance- inventory, OP revision and so on). The situation demands the revision of the current policy provisions.
- Lack of human resource (forest officials) at the grassroots level is the key problem behind increasing backlog of CF OP revision, poor DFO and CFUG relation and not being able to carry out inventory well on time.
- The national level workshop on 'Land use Policy and Practice in the hills of Nepal: implications on food security'
- The concept of EnLiFT policy lab is quite interesting and the continuity of the same needs to be done even after the project is over.

Although it is not the effect of Policy lab recommendation only but Government of Nepal, Ministry of Forest and Soil Conservation has recently (November 14, 2016) amended Forest Act 1993.

3.5.6 Key references

McDougall, C. et al., 2009. Facilitating forests of learning: enabling an adaptive collaborative approach in community forest user groups, a guidebook. Bogor: Center for International Forestry Research.

Ojha, H. R., N. Paudel, D. Khatri and D. Bk 2012. Can policy learning be catalyzed?Ban Chautari experiment in Nepal's forest sector. Journal of Forest and Livelihood 10(1): 1-27.

Magrath, W. B., Shrestha A, Subedi, B., Dulal H.B. and Baumback R. 2013. Nepal Forest Sector Survey: Policy priorities and recommendations. Washington, DC: Program on Forests (PROFOR), The World Bank.

4 Field work and dissemination

4.1 Second cycle of Agroforestry plantings

Swoyambhu Man Amatya, Bishnu Hari Pandit, Murari Raj Joshi, Bishow Dhakal

Two planting cycles have been completed within the project period. In first cycle of plantation, 180 farmers have planted 63,300 seedlings of various fast growing multipurpose tree species such as Ipil-Ipil, Bhatamase, Guajuma, Mendula, Balkaino, Mulberry, Lapsi on their respective farmlands. Seedlings of these species were raised in 10 nurseries. Among them, thirty one plots were established for demonstration purposes, where 11, 474 seedlings of Ipil-Ipil, Bhatamase, Mendola, Guajuma, Bakaino were planted. The 1st cycle of plantation has been already reported. This paper summarizes the 2nd cycle of plantation in two phases.

Second cycle plantation status- First phase

To start with 11 temporary nurseries were established in six sites. A total of 30,603 numbers of seedlings were raised in two districts (Table 9). Figure 5 and 6 provides the features of nursery and transportation of seedling in plantation sites.

Table 9: Tree species and their number in Kavre and Lamjung districts

S.No	Species	KabhrePalanchok district		
		Chaubas	Dhungkharka	Methinkot
1	Ipil-Ipil	1742	1566	1346
2	Bhattamase	980		2096
3	Koiralo	240		
4	Uttis	1312		
5	Chuletro	66		
6	Mendula	660		2096
7	Kimbu	800	5	
8	HattiPaile		360	
9	Paiyoun		1500	
10	Dudhilo		85	
11	Gogan		1005	
12	Chuletro		510	
13	Bakaino			462
	Total	**5800**	**5031**	**6000**
S.No	Species	**Lamjung district**		
		Dhamelikuwa	JitaTaksar	Nalma
1	Ipil-Ipil	874	1273	200
2	Bhattamase	713	1465	1200
3	Mendula	1037	660	900
4	Taki	610	610	
5	Koiralo	80	260	
6	Bakaino	766	2162	400
7	Kimbu	100		
8	Marich	152		
9	Lapsi			270
10	RaiKhaniyo			40
	Total	**4332**	**6430**	**3010**

Figure 5: A glimpse of forest nursery in Kavre

Figure 6: Seedlings being transported from DFO nursery, Kavre to site

Additional 9,861 seedlings were obtained from various sources (DFO office of Kavre, Lamjung and private nursery) and distributed among LRG's and LRP to plant on their farm land. The main species brought from DFO nurseries were Teak *Tectona grandis* (Teak), *Gmelina arborea* (Gamari), *Morus alba* (Kimbu) and *Cinamonum tamela* (Tejpat) which has been planted on farmers marginal and under-utilized land in all six sites.

Plantation establishment

A total of 226 farmers were involved during 2nd cycle of plantation establishment- first phase They have planted 28,396 number of multipurpose tree species such as Teak, Gamari, Eucalyptus, Khair, Lapsi, Tejpat, Ipil-Ipil, Mendula, Bhatamase, Bakaino, Kimbu, Tanki and 7, 892 forage species such as Broom grass, NB_{21} and Setaria on their farmland during late June-early July. Farmers involved in planting tree and forage crops in provided in Appendix 4. Table 10 shows the altitude, number of farmers and tree and forage planted by these farmers in all the six project sites.

Table 10: Altitude, number of farmers and number of seedlings planted in project sites.

S.N	Name of test sites	Altitude (MSL)	Farmers involved	Planted tree seedlings	Planted forage/broom grass seedlings
1	Dhamilikuwa	587 - 622	34	4710	3010
2	JeetaTaskar	452 - 668	39	4244	1805
3	Nalma	1089 - 1116	30	1689	565
4	Methinkot	1156 - 1174	42	6651	-
5	Dhungkharka	1715 - 2076	32	5492	2512
6	Chaubas	1690 - 1810	49	5610	-
Total			***226***	***28, 396***	***7,892***

Species wise breakdown of seedlings planted by LTGs/ LRPs in all the six sites are provided in Table 11.

Table 11: Species wise number of seedlings planted in project sites

Species	Test sites						Total seedlings planted in CFUG
	Dhamilikuwa	JeetaTaskar	Nalma	Methinkot	Dhungkharka	Chaubas	
Teak	250			150			**400**
Gamari	200			30			**230**
Eucalyptus	145						**145**
Chap						555	**555**
Khair	100						**100**
Lapsi	4	7	368				**379**
Tejpat	1230	1742	94	290	40		**3396**
Ipil-Ipil	566	628	245	1528	1735	2239	**6941**
Mendula	343	613	330	2264			**3550**
Bhatamase	552	479	415	1973		1669	**5088**
Bakaino	562	624	112	416			**1714**
Kimbu	67				5	688	**760**
Tanki/koiralo	691	151				244	**1086**
Raikhanayo			93				**93**
Badahar			32				**32**
Hattipaile					670		**670**
Gogan					1182		**1182**
Paiyoun					1450		**1450**
Dudhilo					95		**95**
Chuletro						73	**73**
Kutmero						5	**5**
Uttis						137	**137**
Loth Salla					315		**315**
Broom grass slips	3010	1710	565				**5285**
NB_{21}		95					**95**
Setaraia					2512		**2512**
Total	***7,720***	***6,049***	***2,254***	***6,651***	***8,004***	***5,610***	***36,288***

Second cycle nursery production and plantation establishment- Second phase

In addition to 226 LRGs who participated in the second cycle plantation of first phase, 74 new farmers have participated as LRGs in plantation programme, planting mainly of multipurpose species as hedge rows plantation this year (2017). The plantation of first phase was completed in August, 2016 and the second phase just started in the beginning June 2017. Despite enormous efforts, all 300 LRGs have not been successful in establishing high yielding fodder crops on their respective farmland as hedge rows. They planted an average of 148 fodder trees randomly on their private farmlands. Besides, they planted multipurpose tree species and forage crops as understory crops in all six sites. Table 12 provides a glimpse of change in agroforestry components between the base (2013) and year 2016 .

Table 12: Change in Agroforestry components in between 2013 and 2016.

AF components		Research sites (Before (B) = 2013 and After (A) = 2016)											
		Jita		Nalma		Dhamilikuwa		Mithinkot		Dhungkharka		Chaubas	
		B	A	B	A	B	A	B	A	B	A	B	A
1. Trees	Fodder	2	218	18	87	4	101	33	183	59	155	85	145
	Timber/ Fuel	8	37	63	154	4	27	21	31	98	161	41	59
	NTFP trees	1	30	1	13	1	25	2	7	32	67	2	4
2. Under storey crops	forage/ grasses	130	368	45	63	34	143	72	126	11	59	47	106
	Banana	8	30	13	17	12	45	2	2	0	0	0	0
	Tomato	8	41	7	18	5	26	13	42	30	90	0	11
	Cardamom	0	0	18	100	0	0	0	0	1	25	58	161
	Round chilli	0	0	1	17	0	0	47	60	6	14	0	0
	Ginger	91	108	27	37	0	0	325	383	0	0	0	0
3. Animal	Cattle/ buffalo	2.1	2.1	2.0	1.5	1.7	1.8	2.1	3.0	2.0	3.2	1.6	0.7
	Goat	1.6	3.9	1.2	3.0	2.3	4.3	3.7	5.2	2.7	4.2	1.9	2.7

Justification for second cycle- second phase AF plantation

We realized the gaps in our communication with the LRPs and LRGs as they did not follow the systematic AF plantation scheme (model) in the first two cycles and therefore we held meeting at Dhulikhel with all LRPs (30 LRPs) and project staff including Country Leader, both AF and CF theme coordinators and field coordinators on 18 to 21March 2017. This meeting defined the criteria and mechanism for support of AF action research program. The decision was, instead of providing seed/seedling incentive, per famer NPR 3000.00 would be provided for purchasing agroforestry priority product as an award to those who would establish one high yielding fodder tree hedge row of at least 25 meter length (50 to 100 seedlings) in his/her homestead garden.

Following the above decision, two to four LRPs per site took responsibility to prepare seedlings of *Leucaena*, *Flemingia* and *Teprosia* species by themselves for all sites except upper Dhungkharka. Nursery records show that at least 5000 seedlings per site (total 30,000) were distributed for hedge rows plantation. In upper Dhungkharka, keeping in view of the climatic condition Mulberry and Cinnamon (3,000 seedlings) were planted. Almost half of the 300 farmers have completed hedge rows plantation in their homestead. The rest will finish by the end of July, 2017. Therefore altogether 68,000 seedlings were planted in the two phases of the second cycle of plantation in sites.

4.2 Community forest field dissemination

Naya Paudel, Rahul Karki and Ian Nuberg

In this reporting period EnLiFT's involvement with FECOFUN has mainly been in two fronts. Firstly, the critical engagement of EnLiFT researchers has supported FECOFUN in organizing interactions on issues pertinent to forest-based enterprise both at the site and district level. The interactions mainly targeted enterprise owners, government officials, and local government representatives. A series of discussions on regulatory and institutional hurdles associated with registration, operation, and trade of forest products was held in

Kavre and Lamjung. As a result, some of the new enterprises, who were struggling to seek legal permits, have now been registered. Furthermore, the understanding of the legal and administrative requirements for enterprise registration, among the enterprise owners has been enriched. Moreover, such interactions helped entrepreneurs in their access to concerned government line agencies and local government officials. The intermediary role of FECOFUN has been critical in this regard.

Secondly, FECOFUN's engagement with the local government has had positive impacts in various fronts. FECOFUN organized workshops and meetings with different line agencies and local government offices to discuss areas for integrating CF priorities in local development planning process. Likewise, there was clarification on how CF members can access different support systems within the local line agencies. As a result, the CF members were able to get hold of information on various development projects and their existing schemes. Likewise, the access of CF members to local line agencies was enhanced as a result of their acquaintance with the officials during the workshops/meetings. A list of trainings and events organized by FECOFUN is provided in Table 13.

Table 13 List of trainings and events organized by FECOFUN in this reporting period

SN	Date	Activity	Place	Total participants
Kavre				
1.	18 November, 2016	Women empowerment and entrepreneurship development interaction in CF	Chaubas	31
2.	20 November, 2016	Women empowerment and entrepreneurship development interaction in CF	Dhunkharka	33
3.	22 November, 2016	Women empowerment and entrepreneurship development interaction in CF	Methinkot	24
4.	27 December, 2016	Workshop on mainstreaming community forestry and agroforestry	Dhulikhel	33
5.	23 January, 2017	Forest product based enterprise development workshop	Dhulikhel	41
6.	8 February, 2017	Opportunities and challenges on timber sale from CF	Banepa	33
Lamjung				
7.	13th Dec. 2016	District level interaction workshop on project progress	Beshisahar	18
8.	23 and 24 January 2017	Workshop on Women participants in CFUG	Dhamilikuwa	48
9.	2-3 Feb, 2017	Workshop on Women participants in CFUG	Taksar	44
10.	1-2 Mach 2017	Workshop on Women participants in CFUG	Nalma	54
11.	17 April 2017	District level interaction workshop on forest based enterprise	Besisahar	19

5 Training activities

5.1 Agroforestry training

Murari Joshi, Bishnu Hari Pandit , Bishow Dhakal, Swoymbhu Man Amatya, and Deepak Gautam

In this fourth year of EnLiFT the agroforestry focus has been training in agroforestry system establishment and entrepreneurship development. As part of this effort a Train-the-Trainer manual covers has been developed with two modules (selection of agroforestry option, nursery and plantation establishment) and agroforestry business enterprises including five priority understory crops as extension flier or leaflets. The major contents of the manual are agroforestry and its components, selection of high value commodities, nursery establishment and management, agroforestry products marketing, agroforestry business training focusing on high value commodities, policy and regulatory constraints, methods for preparing biochar based organic fertilizer and its use, and under-utilization of arable land.

Figure 7 Exposure training and visits

Figure 8 Training session Dhamilikuwa

Action research on agroforestry is grounded at community level by involving both members of community forest users groups (CFUGs) and Local Research Groups (LRGs) (> 300 farmers) in the six research sites with active role of Local Resource Persons (LRPs). LRPs from all six sites have tested this manual this year, and more than 150 farmers (at least 30 participants /site) received training locally with backstopping support of the NAF trainers.

This manual includes a five days training course involving mostly practical sessions and extension materials in simple Nepali language based on the learning of agroforestry interventions for improved livelihoods and food security of the local people. This Nepali version will be translated into English and published by the end of August, 2017.

Objectives of the training

The main objective of the training is to increase the institutional capacity of participant farmers for the promotion and adoption of agroforestry options and for increasing market access and enterprise development around agroforestry products and services.

Learning objectives:

At the end of the training, participants will have increased capacity to:

1. select appropriate agroforestry options and learn skill on seedling production and agroforestry plantation establishment and management,
2. develop the skill required for production and use of bio-char in agroforestry farms and
3. plan for, establish and operate agroforestry business enterprises.

Various methods of training facilitation are adopted in the training that include group discussion and presentation, role play, games, stories, field visits, showing flipcharts, posters and session summary by the facilitators. Session plan of each training session includes background, objectives of training session, teaching and learning activities, required training material, guidelines to the facilitators and time required for running the session. The contents of the two modules and extension flier and leaflets are discussed below:

Module 1: Nursery establishment, seedling production and agroforestry plantation establishment and management (3 days with 1 day practical work)

This module covers agroforestry, its principles and importance, nursery and its types, nursery site selection, types of nursery beds, nursery bed construction, sieving and mixing of soil, sand and organic manure, filling of poly bags, seed selection and treatment, seed sowing on beds and poly bags, mulching, watering, seedling transplanting in poly bags, thatching, irrigation, weeding, grading and root pruning etc. It also includes selection of best agroforestry options, planting methods and preparation and use of bio-char or organic manure in pits and agroforestry plantation establishment and management with different models.

Module 2: Agroforestry business plan preparation and implementation based on priority understory crops (2 days)

The focus of this module is to prepare and implement agroforestry business plan based on priority understory crops for each of the agroforestry systems. It includes entrepreneur and characteristics of successful entrepreneur, business plan and its importance, contents of business plan and business plan preparation and coordination and linkages with line agencies for business plan implementation, and monitoring and evaluation of implemented activities.

Extension materials- leaflets/ flier of priority products species

The LRP and LRG members of each action research site have selected high value priority understory crops for agroforestry interventions. In this extension package, two page leaflet of each of six priority products is enclosed. The high value priority understory crops of Methinkot, Dhungkharka and Chaubas test sites of Kabhre Palanchok district are ginger, tomato and cardamom, respectively and Dhamilikuwa, Jeeta Taksar and Nalma of Lamjung district are banana with fodder and black piper, banana with high yielding fodder and goats, round chili under high yielding fodder and lapsi trees, respectively. Each of the two page leaflets or fliers includes cultivation practice and marketing guidelines of six priority products (ginger, tomato, cardamom, banana, black pepper and round chili) that help facilitate training of these species for LRP and LRG members and other interested farmers and extension workers

5.2 Silvicultural training

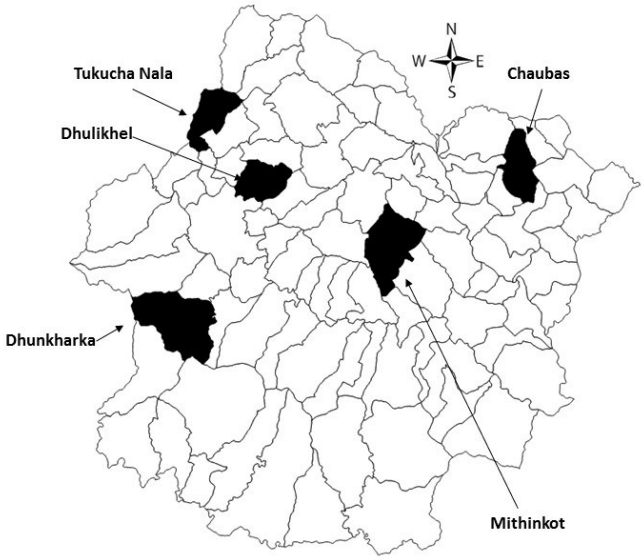
Madan Bashyal

The core activity of the silviculture action research stream for the period July 2016 to 2017 was on scaling-up and scaling-out of innovative silviculture practices trialled in demonstration plots. Silviculture boot camps were held in the six research sites covering 35 CFUGS covering 3,604 hectares of community managed by 5,080 households (Figures 9 & 10) (see Appendix 3 for the list of participants). All these CFUGs are now implementing varying levels of silviculture activities they learned from EnLiFT Project producing significant increase in volume of fuelwood and timber products from their last year's forest operations.

Figure 9 Mr. Reshi Ram Khanal, Lampata CF Chairperson, teaching women and men from neighbouring CFUGs how to measure diameter at breast height during the Silviculture Boot Camp in Taksaar

Figure 10 Mr. Shiva Ram of Khopasi Forest Ilaka and Mr. Binod Sapkota practicing pruning operating during the Silviculture Boot Camp in Dhunkarka, Kavre

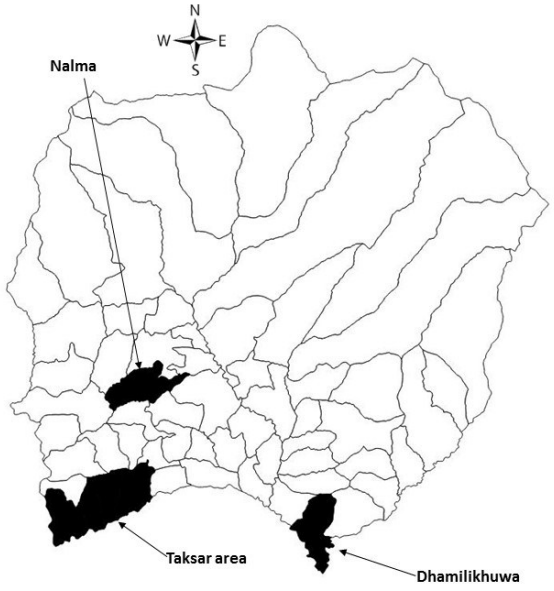
In addition to the silviculture boot camp, EnliFT also held a training on scientific forest management was attended by forest technicians of Kavre District Forest Office and representatives from four CFUGs in Nagarkot area and Chaubas. The training was held in Dhulikhel for four days where the board and lodging were covered with support from MEDEP and Kavre DFO.



CFUG Name	Forest Area (ha)	Number of Households
Chaubas		
Chapani*	83.5	117
Dharapani*	41.23	62
Racchma	53.25	84
Fagar Khola	41.55	58
Thople Kamere	48.91	125
Lakuri Bhulbhule*	39.2	88
Mithinkot		
SaPaRuPa	297.8	302
Lapsi Ban	105.14	157
Charuwa Ban	253.9	147
Mithinkot Ban	112.5	219
Dhunkarka		
Kalopani Ban	168.75	278
Narayansthan Ban*	209	112
Janajagriti	217	147
Khahare Ban	91.6	146
Gel Khola	7.42	80
Tukucha Nala		
Dhunge Pakha Bahal Ban*	104	251
Hile Jaljale Ban 'Ka'*	104	223
Hile Jaljale Ban 'Kha'*	180	300
Dhulikhel		
Phaskot Sundar*	95.49	251
All Kavre Sites	2157	3135

*These CFUGs were supported by EnLiFT in revising their operational plan whereby silviculture-based management are introduced in their new operational plan. All the new plans are now operational

Figure 11 Map of Kavre showing the locations of CFUGs participating in the EnLiFT Silviculture Action Research



CFUG Name	Forest Area (ha)	Number of Households
Taksar Area		
Lampata*	84.27	260
Kirtipur	66.45	154
Naag Bhairav	58.42	52
Sathimuri	30.05	78
Sunepani	54.65	147
Jyamire	63.6	97
Deurali	80.73	40
Dhamilikuwa		
Aapchour*	122.53	230
Lupugaun	143.19	137
Garambesi	23.55	152
Simalchour	61.84	218
Gaulitar	28.14	103
Nalma		
Langdi Hariyali	275.91	164
Sunkot Devi	133.02	42
Kagro Devi	62.55	27
Khundru Devi	158.43	44
All Lamjung Sites	**1447.33**	**1945**

*These CFUGs were supported by EnLiFT in revising their operational plan whereby silviculture-based management are introduced in their new operational plan. All the new plans are now operational

Figure 8. Map of Kavre showing the locations of CFUGs participating in the EnLiFT Silviculture Action Research

6 Intellectual property

There are no intellectual property issues in this project

7 Variations to future activities

As the project is entering its final year the main focus is to complete scheduled outputs. However, following the successes of the *National Workshop on Land Management and Food Security: Addressing Underutilised Agricultural Land Issues in Nepal* (28-29/04/2016) and *National Silviculture Workshop* (19-21/02/2017) we are also planning to initiate and sponsor a similar workshop on Agroforestry in January or February 2018.

The only other variation to scheduled activity is for the Nepal leader, Dr Naya S Paudel, to tour Australia in March 2018 and visit project co-leaders in Adelaide and Sydney. His tasks will be: to help write the final report, prepare the Phase 2 documentation; and co-author synthesis journal papers.

8 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. Table 14 lists the personnel occupying the various government positions and local representation since project inception.

Table 14 Position holders of government and local representation during the period of EnLiFT. Last listed is current.

Secretary **Ministry of Forest & Soil Conservation** Nabin Ghimire Krishna Chandra Paudel Ganesh Raj Joshi Sharad Chandra Paudel Shankar Adhikari Uday Chandra Thakur Krishna Chandra Paudel Prakash Mathema	**Director General, Department of Forests** Braj Kishor Yadav Bishwa Nath Oli Rajan Pokhrel Resham Dangi Gauri Shankar Timila Krishna Prasad Acharya	**Head** **Community Forest Division** Resham Dangi Shyam P Sharma Resham Dangi Krishna Pokhrel Anuj Raj Sharma
Kavre District Forest Officer Ganesh Roy Prem Khanal		**Lamjung District Forest Officer** Shuklal Prasad Jaisawal Chandra Man Dangol Khadananda Sharma Durga Karki
Kavre Assistant Forest Officers **Chaubas:** Babu Ram Aryal Lom Nath Timsina **Methinkot:** Shailendra Mishra **Dhungkharka:** Shiva Ram Thapa		**Lamjung Assistant Forest Officers** **Taxar:** Surya Devkota Surya Narayan Chaudhari Jhyam Narayan Sapkota **Nalma:** Surya Khadka Daya Nidhi Aryal **Dhamilikuwa:** Dandapani Bhattarai Lila Raj Khakural Amrit Acharya
Kavre Focal Person Krishna Bahadur Thapa Nuchhey Krishna Shrestha		**Lamjung Focal Person** Kashi Pandit
FECOFUN centre Chair: Apsara Chapagain Ganesh Karki		EnLiFT Focal person: Manju Malasi Parbata Gautam
FECOFUN Kavre Chair and contact persons Shanta Neupane Binod Sapkota		**FECOFUN Lamjung** Chair: Contact persons: Khim Gurung Ramachandra Regmi Loka Adhikari Shanta Sapkota

So far EnLiFT has been in communication with eight different secretaries at the Ministry of Forest and Soil Conservation, six director generals at Department of Forest, three Community Forestry Division chiefs, five two DFOs in Kavre and four DFOs in Lamjung. While the Kavre AFOs have been relatively stable, there has been a regular turnover of AFOs in Lamjung. Similarly, and three project focal persons have been appointed during this period.

These changes present 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.

In contrast, the active EnLiFT personnel has been relatively stable. Shambhu Dangal has joined the project and is particularly involved with the silviculture work. Govinda Paudel is leaving EnLiFT to take a John Allwright Fellowship at the University of NSW.

9 Problems and opportunities

Swoyambhu Man Amatya, Bishnu Hari Pandit, Ian Nuberg

9.1 Agroforestry problems

At the recent Action Research Planning Meeting #8 (June 2017) the project team reflected on some of the problems underlying the agroforestry field work. This was done in the spirit of honest reflection in order to improve field operations in the Phase 2 project.

The modality of agroforestry interventions on respective farmland was through Local Resource Persons (LRPs) and Local Resource Groups (LRGs) in each of six sites. These LRPs and LRGs are members of one of the Community Forestry User Groups in the respective villages. LRPs and LRGs were provided the concept of agroforestry and its benefits before any agroforestry interventions. Trainings were imparted on nursery establishment, plantation including hedge row, product identification and business planning among others time and again.

The following problems were perceived in agroforestry field interventions:-

1. **Delayed action research design and intervention**: The design of the Agroforestry action research intervention (Output 12) started little late than it was expected earlier. It is because the output coordinator has to leave the project immediately after the second-year project planning meeting. This also delayed the work on action research part of AF intervention.

2. **Flaws or imperfection in LRPs selection:** From our time to time visit in the field, it revealed us that some of the LRPs (e.g. Rup Bahadur Tamang from Dhamilikuwa and Sujhan Shrestha from Dhungkharka) were reluctant to be involved in this project. We investigated that their priorities and expectations were different from what we communicated with them during the time of LRP selection. The former one (Mr. Rup) discontinued after first AF Trainers of Training and Radha replaced him, which was perfect. The latter one, Sujhan still continuing but without much motivation. He is a local shop-keeper and dealer of milk collection center at Parthali. Besides many of the LRPs are politically active and belong to one of the political parties, which also created a mistrust among LRGs who are not affiliated with the same party.

3. **Payment of LRPs' fees and field coordination**: AF research theme is being coordinated by NAF, but the LRPs' payment is being made on the recommendation of field coordinator who is paid by FA. We experienced that LRPs were not so responsive to AF research work because they were paid by another agency. We raised this issue in several meeting and tried to avoid to give the name of any organization other than EnLIFT. This is somehow resolved now. The confusion was also created because of change of field coordination role. Additionally, we realized that AF theme coordination role was also changed in between the project which as a result also created some gaps

in communication between researchers and field coordinator and ultimately to the LRPs and LRGs.

4. **High expectation of LRPs/LRGs**: This was a big challenge for us to motivate the people who were willing to participate in the AF research activities as LRPs or LRGs. Their expectation was very high as if this was a development project. After a long discussion and clarification, each of the groups have realized the benefits of being involved in the project. The income received from the priority products, livestock and livestock products sale and nursery seedlings have motivated them to work on AF research activities.

5. **Lack of family cooperation**: Before planting trees on their farmland LRGs/ LRPs were briefed about the key features of the tree concerned. Its requirements in nature and benefits one can obtain planting trees on farmland. Actual demonstration of digging pits and planting technique was also demonstrated in the field. Unfortunately, it was observed that in some of the sites, particularly in Dhunkharka (Kavre district) that the planted trees were absent on the farmland. LRPs/ LRGs were not able to specify the exact cause of not having trees in farmland which were planted last year. The reasons were of two folds: firstly, the planted trees (*Leucaena* and *Flemingia*) were not suitable (though we provided high altitude *Leucaena diversifolia*) in high altitude (upper Dhungkharka), secondly some of the senior family members (Example LRP Apsara Shrestha's father-in-law) did not want to have trees on their home-stead gardens because their landholding size was very small and intensive vegetable cultivation had been a practice long before. However, from this year, there has been a big competition to plant fodder trees and grasses along terrace edges and risers as hedge rows. More than 3000 Mulberry and cinnamon trees in upper Dhungkharka and another 3000 *Leucaena*, *Teprosia* and *Flemingia* in lower Dhungkharka are being re-introduced there to support second cycle of commercial plantation.

6. **Inadequate motivation to commercial tree planting**: Teak *(Tectona grandis*) and Gamari (*Gmelina arborea*) trees are valued for their timber quality and economic return. These tree species were introduced in Kavre and Lamjung sites. These tree species were brought from Hetuada and Chitawan. Before planting, the tree species were introduced to LRPs/ LRGs along with their value and the sites (location) required for its optimal growth. Despite all the instructions, these trees were seen planted near to wet lands and shaded area. Hence they look moribund and not happy. It was felt that the whole exercise was futile. Either the experts could not brief LRGs/ LRPs the use of these trees and its future economic value or LRGs/ LRPs took it very lightly. On field observation, it was found that one of the sites where Teak (*Tectona grandis*) and Gamari (*Gmelina arborea*) were planted did not even fall on the project site. It was in Tanahun district across the river. It seems farmers wanted to plant trees away from their homestead and utilize the barren land but without much caring. There had also been a lack of follow up and coordination from the side of researchers, especially during the time of plantation.

7. **Final reflection by project leader, Ian Nuberg**

Considerable effort and expense has been invested in the agroforestry research theme with some modest positive impact. The agroforestry team is to be applauded for achieving the target of at least 300 participating farmers, delivered agroforestry business training and high-value agroforestry commodities that have increased incomes for some participants; but it has not achieved the extent of striking innovative change in agroforestry practice as envisaged. This is not due to any lack of good planning and hard work, but, I believe, to a compromised selection process of the Local Resource Persons.

Clear criteria were set for the selection of the six research sites in 2013 and it was the task of the action research coordinator at the time, from ForestAction, to find these villages and LRPs. It is my impression that these selections were made more on political-personal grounds rather than objective criteria (e.g. the requirement for elevational differences between sites was not closely observed). Accordingly, the LRPs were not selected on the basis of their merit and commitment to the task. Compounding this problem was the fact that the researchers who had to deal with the LRPs came from another organisation, Nepal Agroforestry Foundation, and could not rely on the same political-personal connections as the original action research coordinator.

The lesson to be learnt here for EnLiFT-2 is that LRPs should be selected on merit and demonstrated commitment to work with the field researchers. There should also be some form of contract that clearly states the criteria of payment-for-performance.

9.2 Opportunities

The Opportunities normally dealt with in this section can be found in other sections in this report; Section 2.2 Internal Review of Project Progress and Appendix 4, EnLiFT Phase 2 Preliminary Proposal.

10 Budget

Ian Nuberg

Table 15 was presented in the 2015/2016 Annual Report as an indication of how we have simplified the allocation of funds across research themes and fixed organisation costs amongst the Nepal partners.

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 15 Allocations across research theme operating costs and fixed costs (source 2015-16 Annual Report)

Without a doubt, this arrangement has eliminated the headaches associated with micro-managing allocations to diverse partners according to hastily-devised workplans in action research meetings. However, it has introduced a lack of clarity, at least to the project leader, in how funds are acquitted and carried over from one pay period to the next (Table 16).

Table 16 Actual allocations 2016-17 and variations from plan decided in 2015-16

	PP8	PP9
AF	41,597	45,706
CF	37,847	45,706
UUL	3,984	4,811
Research total	**83,428**	**96,223**
variation from 2015-16 plan	*18,750*	-
Fixed costs		
IUCN	18,270	18,270
FAN	35,390	35,390
CFD	5000	5,000
FECOFUN	10,520	8,960
Fixed total	**69,180**	**67,620**
variation from2015-2016 plan	*5,521*	*3,961*
Total	**152,608**	**163,843**
variation from plan	*24,271*	*3,961*

The over-expenditure in PP8 and PP9 was apparently funded from unspent moneys from PP7 which is curious because the general impression among the project was that we did not have enough funds in PP7 to do everything we needed to do. There has been no indication from IUCN that we have overspent our Nepal allocation. It is fortunate that there was enough left over to support later pay periods. The fluctuation in exchange rates will account for some of this variation (exchange rates used for PP8 was 81.7 and PP9 was 76.1).

The variation in budget allocations from the original project proposal of 2013 raised questions from IUCN-Headquarters. There was a freeze in the disbursal of PP9 funds until this was explained as an inevitable consequence of action research processes.

Despite some of the vagaries around the details of how money is carried over from one pay period to the next, this process of devolving of financial decision making to local partners seems to be working. However, there do seem to be inefficiencies and complexities of having one partner being the bank for other partners. The lesson to be learnt here for any follow-on project is that we need to have fewer partners, with lead partner being the 'bank' and to have a simpler, more transparent allocation and acquittal process.

A final budgetary consideration is that we need to think very carefully about how we spend the PP10 allocation. The project officially ends in March 2018 and there will be an extra 3 months of work that needs to be funded from PP10 to see the project to the end. Also the earliest possible commencement of a Phase 2 project (should we be fortunate to be awarded it) will be June / July 2018. We need to consider holding back on the PP10 allocation to pay for a potential Phase 1 – Phase 2 interim. This can only be acted upon the formal instruction from ACIAR that we can proceed to Phase 2.

11 Appendix 1. Scientific publications 2016/2017

11.1 Journal papers

Cedamon E, Nuberg I, Paudel G, Basyal M, Shrestha K, Paudel N (2016), **Rapid silvicultural appraisal to characterize stand and determine silviculture priorities of community forests in Nepal,** *Small-scale Forestry,* DOI: 10.1007/s11842-016-9351-0,

Published Online: 7 September 2016

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 a rapid silviculture appraisal (RSA) approach. 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 region shows that forests are largely comprised of dominant crowns of one or two species. The majority of studied community forests have tree densities below 500 stems per hectare as a consequence of traditional forest management practices but the quality and quantity of the trees for producing 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.

Khatri D, Shrestha K., Ojha H, Paudel G, Paudel N and Pain A (2016), **Reframing community forest governance for food security in Nepal,** *Environmental Conservation*, DOI:10.1017/S0376892916000369

Published Online 26 August 2016

Abstract
The growing challenge of food insecurity in the Global South has called for new research on the contribution of forests to food security. However, even progressive forest management institutions such as Nepal's community forestry programme have failed to address this issue. We analyse Nepal's community forestry programme and find that forest policies and local institutional practices have historically evolved to regulate forests either as sources of timber or as a means of biodiversity conservation, disregarding food security outcomes for local people. Disciplinary divisions between forestry and the agriculture sector have limited the prospect of strengthening forest–food security linkages. We conclude that the policy and legislative framework and formal bureaucratic practices are influenced by 'modern forestry science', which led to community forestry rules and practices not considering the contribution of forests to food security. Furthermore, forestry science has a particularly narrow focus on timber production and conservation. We argue

for the need to recognise the importance of local knowledge and community practices of using forests for food.
We propose adaptive and transformational approaches to knowledge generation and the application of such knowledge in order to support institutional change and policy reform and to enable landscape-specific innovations in forest–food linkages.

Cedamon E, Nuberg I, Pandit B, Shrestha K (2017), **Adaptation factors and futures of agroforestry systems in mid-hills of Nepal,** *Agroforestry Systems,* DOI 10.1007/s10457-017-0090-9

Published Online: 24 March 2017

Abstract

Farmers in Nepal mid-hills have practiced agroforestry for generations as main source or supplement of timber, firewood and fodder from government forests. The nature and extent of agroforestry practice is being challenged by rapid social and economic change particularly in the recent rise of 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 relationship of households' livelihood resources and agroforestry practice to identify trajectories of agroforestry 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 key 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 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 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. The analysis generates important insights for improving agroforestry policies and practices in Nepal and in many developing countries.

Ojha H, Shrestha K, Subedi Y, Shah R, Nuberg I, Heyojoo B, Cedamon E, Rigg J, Tamang S, Paudel K, Malla Y, McManus P (2017), **Agricultural land underutilisation in the hills of Nepal: investigating socio-environmental pathways of change,** *Journal of Rural Studies*, 53:156-172, DOI: 10.1016/j.jrurstud.2017.05.012

Published online: June 2017

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 land abandonment is taking place, and under what circumstances. Using an interdisciplinary lens and transcending linear models

of agrarian change which attribute land abandonment to one or more prominent factors, our study unravels complex, cross-scalar processes, involving the interaction among social forces and environmental factors which lead to land underutilisation. The paper shows that land underutilisation happens through what we term 'socio-environmental pathways', which operate across scales, yet are deeply rooted in local dynamics of agrarian change. These pathways are triggered by, and embroiled within, three wider socio-economic and political dynamics in contemporary Nepal, namely: socio-cultural changes that favour out-migration; evolving economic opportunities that make farming less profitable; and a policy context in which the gravity of the land abandonment challenge goes unrecognised. The framework of 'socio-environmental pathways' applied here also advances a theoretical lens to explain agrarian change in a way that integrates multiple scales and multiple sectors, emphasising a thoroughly empirical approach. Finally, we identify key policy implications of this research on livelihoods and sustainable development.

E. Cedamon, I. Nuberg & K. K. Shrestha (2017): **How understanding of rural households' diversity can inform agroforestry and community forestry programs in Nepal,** *Australian Forestry*, DOI: 10.1080/00049158.2017.1339237

Published Online 2 July 2017

Abstract

Socio-economic diversity can help to bring about innovative development in agroforestry practices. The diversity of households in the mid-Nepal hills was analysed using survey data from 521 randomly selected households in six villages. A cluster analysis derived the following household typology based on socio-economic variables—Type 1: resource-poor Brahmin/Chhetri; Type 2: resource-poor Janajati; Type 3: resource-rich mixed-caste households; Type 4: resource-rich Brahmin/Chhetri; Type 5: resource-rich Janajati; Type 6: resource-poor Dalit households. The analysis revealed that social status (caste/ethnicity), household status on foreign employment and landholding are strong predictors of household segmentation in rural Nepal. This paper suggests revision of existing wellbeing ranking approaches using these socio-economic variables for more inclusive and equitable agroforestry and community forestry outcomes.

11.2 Conference Papers

Cedamon E, Paudel G, Basyal M, Nuberg I, Paudel N (2017), **Canopy Gaps and Regeneration Development in Pine and Sal Forests Silviculture Demonstration Plots in Midhills Nepal,** In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..

Abstract

Silviculture demonstration plots were established in Kavre and Lamjung districts by the EnLiFT Project to examine stand response to selected silviculture system – uniform shelterwood, selection system, and negative thinning and as a showcase to forest users for these silviculture system. This paper analysis the extent of canopy gaps on these demo plots after silviculture treatments and regeneration development one-year after treatment. Using crown photographs, crown covers are estimated and compared between silviculture systems. The analysis have shown that rigid silviculture systems like shelterwood and selection system can create significant canopy gaps than negative thinning in pine plantations and that the rate of natural regeneration is directly related with the canopy gaps.

In Sal-Katus-Chilaune forest however, negative thinning created canopy gaps larger than selection silviculture demo plots due to removal of 4-D trees, majority are Chilaune trees, which typically have large spreading crown. Although conclusion from the demo plots at this stage may be too early to make on regeneration growth and canopy gap relationship, it is clear that silviculture operations have significant role in promoting higher rate regeneration growth and that rigid silviculture operations like selection and shelterwood systems are better than current silviculture regime represented by negative thinning in this study.

Paudel NS, Ojha H, Shrestha KK, Karki R, Paudel G, Nuberg I, Cedamon E (2017), **Towards Active Utilisation of Community Forestry: Silvo-Institutional Model for Sustainable Forest Management in Nepal,** In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..

Abstract

This paper explains what we term the „silvo-institutional model‟ for a more productive, sustainable and equitable management of community forests in Nepal. The paper draws on four years of action research in six research sites of Kavre and Lamjung districts, complemented by the review of silviculture-based forest management by Nepal government in various parts of the country. The findings indicate that first, early silviculture-based forest management initiatives have failed because they did not adequately considered the policy and institutional dimensions. Second, current initiatives, while looked promising for the active utilisation of community forests, have faced with complex regulatory and institutional barriers. We argue that a new „silvo-institutional model‟ which combines technological and institutional dimensions, has a potential to increase the prospect of successful implementation of silvicultural-based forest management.

Paudel G, Karki DB, Basyal M, Paudel NS (2017), **Silviculture for Enhancing Economic Contributions of Community Forestry: Experience from Lamjung District,** In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..

Abstract not provided

Paudel G, Khanal PP, Cedamon E, Basyal M (2017), **Prospects of Application of Shelterwood System in Mature Pine Stands in the Hills of Kavre District,** In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..

Abstract

Nepal‘s forestry has given little or no attention to initiate productive management of forests. Forestry practices dominated by protection-centric dogma provided incentives to passive management of forests. Communities (also state) suffer from such state of inaction(s) in forestry. Despite many benefits, silviculture system based forestry remains neglected. Amid rare experience of application of shelterwood system (SWS) in Nepal, we have analyzed the prospects of application of SWS in the hills of Nepal. This paper is based on the analysis of data from few demonstration plots in mature pine stands in Kavre district. The plots are established in mature pine plantations at rotation age. We applied

SWS as a treatment in the demonstration plots and measured and compared the regeneration with the control plot. We demonstrate that SWS is applicable in mature pine plantations in the hills with some modification in felling pattern.

We also evaluate the social and biophysical response to crown opening under SWS. We analyze and enlist the challenges and prospects of the application of SWS in the sloppy hills. Our findings suggest additional set of precautions, such as the grazing and forest fire control, should be taken while applying SWS in the hilly terrain.

Cedamon E, Paudel G, Basyal M, Nuberg I, Shrestha KK (2017), **Q-Factor is a Useful Guide for Selection Silviculture on Nepal's Community Forests,** In S. Adhikari, R. Karki, and A. Gurung, (eds), Proceedings of the First National Silviculture Workshop, Kathmandu, Nepal, 19-21 February, 2017, pp……..

There is growing interest by forest users, government forestry officers and policy makers on maximising forest goods and livelihood provisions from community forestry in a sustainable manner. However the way several mature community forests are currently managed based on selection, e.g. negative thinning and crown thinning is questionable as it results to decline in forest stock, timber quality and regeneration. To assist forest users in managing their community forests, an action research has been implemented in Kavre and Lamjung to manage planted Pine (Pinus spp.) and naturally-regenerated Sal (Shorea robusta) through selection system. This paper describes what is q-factor and its relevance for sustainable community forest management in Nepal. The simple guideline for selection system introduced to 30 community forest users groups in six sites are presented for wider adoption and policy recommendation.

11.3 Student Publications and Theses

Puri, L, Nuberg I and Ostendorf B (2017) **The adequacy of community forest operational plans for estimating fuelwood supply and consumption in Nepal.** Submitted draft with response to reviewers 11/07/17 to Australian Forestry for ACIAR Special Edition

Fuelwood derived from community forests of Nepal is critical for rural livelihoods. Supply of fuelwood is regulated through a system of operational plans which are currently for 5 years. The main aim of this study is to evaluate the adequacy of operational plans in addressing the demand and supply of fuelwood in community forests of Nepal. Data was gathered from operational plans, household interviews and fuelwood supply assessment in 13 community forests of Nalma (inaccessible by road) and Taksar (accessible by road) villages of Lamjung district. Our study revealed that *per capita* fuelwood consumption in Nalma (486 kg) was significantly higher than in Taksar (398 kg), and there were also significantly different combinations of fuelwood, biogas and electricity in both villages. These differences were associated with their respective distances from the main road. Community forests were the major source of fuelwood that contributed 57% and 63% of the total fuelwood consumption in Nalma and Taksar respectively. Out of 13 community forests, 9 have planned the annual demand and supply of fuelwood well below our estimates, indicating that most of the operational plans inadequately represented the prevailing demand and supply of fuelwood. In addition, the planned quantities of fuelwood demand and supply in current operational plans were markedly different and poorly linked to their previous projections, which suggests that there has been inconsistent

and inadequate application of standard planning guidelines. We recommend a revision of the methods used in the preparation of these plans to determine the fuelwood demand and supply in community forestry implementation.

Feetham H (2017) **The Impact of Agroforestry Interventions on Food Security in the Mid-hills of Nepal.** A thesis submitted for the partial fulfilment of the requirements of the Bachelor of Agricultural Science with Honours, University of Adelaide.
Supervisors Ian Nuberg, Bishnu Hari Pandit and Olena Kravchuk

Agroforestry has the potential to improve livelihoods and food security in the mid-hills of Nepal through the integration of new, high-value species into the traditional farming system. Such interventions have the capability to improve productivity, improve access to new markets and attain high prices at markets. ENLIFT is an agroforestry model, based on the Stella® platform, that represents the economic interactions between agroforestry systems on private land and community forests on public land. Its output is a Food Security Index (FSI) which is based on expenditure capacity, household size and specified poverty thresholds. Eight intervention species were assessed for their impact on food security improvement in two household types, resource-rich and resource-poor Brahmin/Chhetri. The perspectives of farmers in Kavre and Lamjung districts receiving these intervention species was gathered and analysed to determine the benefits and constraints farmers have experienced. The model indicated that all interventions significantly improve the FSI when compared to baseline systems, in particular the suite of banana, turmeric and round chilli. The model's sensitivity to changes in variables such as crop yield, input costs and market price was most variable for the poor household. Farmers receiving these interventions indicate they experience benefits but are still constrained by poor market links and a lack of agronomic and marketing knowledge for these crops. The knowledge generated by these findings can inform the design of effective strategies to improve food security and livelihoods in Nepal.

12 Appendix 2. Summary of National Silviculture Workshop

First National Forest Silviculture Workshop 19-21 February 2017

Key messages, Recommendations and Next Steps:
The participants worked in 10 groups to identify key messages, recommendations and next steps to implement the recommendations. The compiled key messages, recommendations and next steps are:

Key messages:

- An enabling environment for silvicultural application need to be created through policy guidelines, institutional commitment, awareness raising and training.
- Silviculture is the fundamental to improve forest health, increase production of goods and services, which can transform Nepal from timber importing to exporting country and help achieve the sector's vision of 'forestry for people's prosperity'.
- Silviculture based sustainable forest management, considering the local practice and knowledge, need to be applied in all accessible forests with active participation of concerned user.
- All the constraints that prevent the effective implementation of silviculture need to be removed by recognizing the context, objectives and on-the-ground reality of forest management.

Recommendations:
Silvicultural technologies:

4. Prescribe appropriate silvicultural systems considering silivicultural characteristics, forest conditions including species composition, forest size, management objectives and physiographic characteristics, while not compromising multiple functions of forests.
5. Develop simple and integrated manual/handbook of silviculture for major forest types and regimes.
6. Increase the productivity of the forests by ensuring quality of seed, mother tree selection, seed orchard, gene pool conservation, and using appropriate harvesting and logging tools and techniques.
7. Identify and document indigenous and traditional silvicultural knowledge, and improve indigenous system considering science and market.

Capacity building and awareness:

8. Develop capacity and capability of foresters and stakeholders (government, forest users, private sector, media and other stakeholders) on silviculture based

management through motivational and promotional activities, awareness campaigns and training programs.

9. Develop training manual on silviculture based forest management for different levels.
10. Create and mobilize expert group to develop strategy, intensify silvicultural practices and develop knowledge and capacity of stakeholders
11. Establish *Forest Council* to ensure technical quality for silviculture based forest management.

Governance, institution and organization:

12. Ensure rights of forest managers by defining and clarifying role and responsibilities of participating parties in silviculture based forest management.
13. Reform existing institutions in line with the state re-structuring to provide technical backstopping for the silviculture based sustainable forest management.
14. Develop and institutionalize information system based monitoring mechanisms.
15. Establish set of principles, criteria, indicators and verifiers for evaluating and developing quality of silviculture based forest management governance.
16. Develop and implement contracting of forest management in community, private and public partnership.
17. Create enabling environment for silviculture-based forest management with safeguard measures for the potential misuse of funds and risk of encroachment, fire, and environmental hazards.

Policy / legal framework and guidelines:

18. Define and authenticate silvicultural related terms, terminologies and activities.
19. Review and harmonize existing policies, acts, regulations, strategies and guidelines regarding silvicultural provisions.
20. Carry out permanent zoning of forest area in each district based on forest type and management systems.
21. Expedite operational /management plan preparation and approval process.

Research and innovation:

22. Document existing qualitative and quantitative data on silvicultural practices including local skills and knowledge, and identify the gaps
23. Identify silvicultural options for trees outside forests (private, public)
24. Implement research trials (harvesting) to identify suitable silviculture systems across different management regimes and contexts
25. Undertake research to identify the blockages to the application of silvicultural knowledge and communicate the success stories
26. Conduct research into the market opportunities for forest goods and services, and economic optimal rotation age

Investment, Technology and Safety:

27. Develop self-sustainable forest financing from sources of fund from FUGs, forest entrepreneurs, private sector, corporate responsibility and the government, and by also establishing forest development and industry promotion board/fund.
28. Develop financial and technical incentives (such as grant, low interest loan and insurance provisions) with simple access mechanisms for forest management

29. Address the trade barriers with local stewardship/certification and by simplifying harvesting, logging, grading and transportation procedures.
30. Improve measurement, harvesting and logging tools and technologies; and mechanize and digitize the forest management and marketing operations.
31. Make compulsory to use safety gears and strengthen workers safety, OHS (Occupational Health and Safety), capacity building, insurance and social safety.

Suggested next steps:

1. Prepare a 10-year plan for silviculture based forest management, and allocate budget from the next fiscal year to implement activities identifying specific location and define goal to increase forest productivity by 1 cft per year per ha.
2. Document and maintain existing seed orchards, and develop new seed orchards of major species in each physiographic region.
3. Set up silviculture working groups at Central and Regional/State Level, and expedite the process of forming Forestry Council.
4. Review and harmonize existing directives and guidelines to promote silviculture based forest management.
5. Revise and update community forest inventory and thinning guidelines.
6. Develop research plan in coordination with academic institutes, Ministry of Forest and Soil Conservation, and private sector.
7. Allocate a proportion of income from all forest management regimes to research and innovation (like 25% into forest management)
8. Explore the possibility of establishing forest development and industry promotion board/fund
9. Strengthen Forest Workers' rights, safety and safeguards.

13 Appendix 3. Farmers involved in 2nd cycle of plantation establishment

1. Chaubas test sites

SN	Farmer's Name	Fodder tree				Timber tree			
		Kimbu	Bhatmase	Chuletro	Ipil	Koiralo	Kutmero	Uttis	Chap
1	DhurbaBdKunwar	16	33	1	45	5			
2	Man BdKhatri	15	33	1	45	5		10	
3	RekhaPandey	16	33		45	5		22	
4	RadhikaGautam	15	40	1	50	5			
5	Tanka Maya Chaulagain	15	33	1	45	5			
6	Sabina Kunwar	16	33	1	45	5			
7	Rita Sarki	15	33	1	45	5			
8	BindaDarji	16	33	5	45	5			
9	BimalaPahari	16	33	5	45	5			55
10	BhagwatiPahari	16	33	1	45	3			
11	Kamala Pahari	16	33	1	45	5			
12	KanchaSarki	16	40	8	35	5			
13	KalpanaPahari	16	33	5	46	6			50
14	MithhuPahari	16	33	1	45	5			
15	Ganesh Pahari	16	33	1	45	5			
16	SrijanaKharel	16	33	1	45	5			
17	Kamal BdKunwar	16	33	1	45	5			
18	ParbatiGautam	16	33	1	45	5			
19	Gita Kunwar	16	33	5	45	5			
20	BishnuPahari	16	33	1	45	5			
21	Rama Khatri	16	33	1	45	5			
22	UrmilaPahari	16	33	1	45	5			
23	Ram BdPahari	16	33	1	45	5			50
24	YadavPandey	16	33	1	45	5			
25	ChetraBdPandey	16	33	1	45	5			
26	Ganesh BdPahari	16	33	1	45	5			
27	ApsharaPandey	16	33	1	45	5			
28	BimalaPandey	16	33	1	45	5			
29	LokBdKunwar	16	33	1	45	5			
30	DamodarThapa	16	33	1	45	5			50
31	Min BdChaulagain	16	33	1	45	5			
32	Thakur Prasad Chaulagain	16	33	1	45	5			
33	Indra Prasad Gautam	16	33	1	45	5			
34	HomNathChaulagain	16	33	1	45	5			
35	Bijaya Lama	16	33	1	45	5			
36	Gita Kunwar	16	33	1	45	5			
37	RadhaKunwar	16	33	1	45	5			
38	SarmilaPahari	16	33	1	45	5			
39	Ajay Kunwar	16	33	1	45	5			
40	NirmalaThapa	16	33	1	45	5			50
41	ToranKunwar	16	33	1	45	5			
42	SushilaKunwar	20	100	5	100	10		40	
43	SitaPandey	16	33	1	30			10	
44	Santa Thapa		35	2	45	5		10	55
45	TikaBdKunwar		35		45	5		15	55
46	Bharat Pahari		33	1	45	5		30	25
47	BimalaPahari		33		45	5			55
48	SubbaPahari			1	45	5	5		55
49	ChameliPahari		33		43	5			55

2. Methinkot test site

SN	Farmer's Name	Fodder tree			Timber tree			
		Mendula	Ipil-Ipil	Bhatmase	Bakaino	Tej Path	Khamari	Teak
1	JeetBdShrestha	100	40	60	10	10		
2	Ram Kumar Shrestha	90	30	50	10	10		
3	Indra Kumar Chimauriya	75	40	50	10			
4	SumitaSilwal	42	40	42	10			
5	Chandra Mani Silwal	42	26	42	10			
6	Kabhi Prasad Silwal	70	40	42	25	30	6	30
7	Shambhu Kumar Upreti	50	26	42	10			
8	Mina Shrestha	100	50	50	10	10		
9	Kamala Chimauriya	42	26	42	10	40	6	30
10	Sanu Maya Shrestha	11	60	150	10	10		
11	Kamala Ojha	42	26	42	10			
12	Ram HariOjha	42	26	42	10	10		
13	KalpanaAdhikari	80	26	50	10	10		
14	Kul Prasad Ojha	70	50	15	10			
15	PursottamOjha	42	26	42	10	10		
16	Kendra Prasad Ojha	64	26	60				
17	AmbikaOjha(Ka)	42	26	42	10	10		
18	JunaOjha	42	26	42	10			
19	GomaOjha	55	26	40	20	10		
20	RupaOjha	57	26	42	10			
21	Krisna Prasad Adhikari	42	26	42	10	10		
22	Ram Prasad Ojha(Kha)	70	26	40	10			
23	ParbatiBhujel	70	40	30	10	10		
24	Krishna Prasad Poudel	42	26	42	10			
25	Dinesh Prasad Poudel	42	26	42	10			
26	Murari Prasad Poudel	42	26	42	10			
27	RajendraDahal	50	50	50	10			
28	LaxmanDahal	42	26	42	10			
29	HariBdDahal	100	100	100	25	10		
30	Krishna Prasad Mainali	42	26	42	10	10		
31	HariBdShivabhakti	60	60	60	8	6		
32	KarnaBdDahal	50	50	50	10	10		
33	KanchiMijar	42	26	42	10	4		
34	Gokul Prasad Bhurtel	42	26	42	10			
35	GayatriDhital	170	120	120	13			
36	Kamala Bhurtel	20	26	20	5			
37	SrijanaBhurtel							
38	Ganga Bhurtel							
39	Madhav Prasad Chimauriya	70	60	60	10	20	6	30
40	Hari Krishna Silwal	50	50	50	20	20	6	30
41	Rohini Prasad Silwal	50	50	50		30	6	30
42	ParbatiSubedhi	10	26	20				

3. Dhungkharka test site

Tree seedlings:

SN	Farmer's Name	Fodder tree						Timber tree	
		HattiPaile	Gogan	Ipil	Paiyoun	Dudhilo	Kimbu	Loth Salla	Tej Path
1	Ram Hari Timalasina	40	82						
2	Ram Prasad Nepal	100	90	150	60				
3	Nanda Maya Timalsina	20	30	80	20	50			
4	EkNidhi Ghimire	80	60						
5	Nepal Gopal	60	90	200	60				
6	Bed Prasad Timalsina			50	50			45	5
7	Krishna Prasad Timalsina		20	50	50			45	5
8	Ram Bd Timalsina			50	50			45	5
9	Bel Prasad Timalsina			50	50			45	5
10	Nara Nath Timalsina			50	50			45	5
11	Bhagwan Ghimire			50	50			45	5
12	KedarBd Chettri		20	50	50			45	5
13	BirBd Tamang	10	15	50	50				
14	NetraBd Shrestha	50	30	50	50				
15	Sujan Shrestha	40	30	100	80				5
16	Saptaman Shrestha	20	15	70	75				
17	PremBd Shrestha	10		100	70				
18	Man Mai Timalsina	70	80	40	10				
19	Narayan Shrestha		60	10	50	15			
20	Saraswoti Timalsina	15	70	20					
21	PakaNidhi Ghimire		55						
22	Ram Hari Timalasina	30	55						
23	Bhim Maya Tamang	15	15	30	70		5		
24	Makha Mali Shrestha			100	100				
25	Nani Maya Shrestha			70	50				
26	Krishna Hari Shrestha		40	50	50				
27	Sanu Maya Shrestha		15	80	80	10			
28	BirBd Shrestha		50	100	100				
29	Bed Prasad Timalsina	100	100						
30	Hari Maya Shrestha	10	55	10	25	10			
31	Sabitri Timalsina		55	25					
32	Parbati Shrestha		50	50	100	10			

Forage

S. No	Farmer's Name	Forage slip # Mulato / Falarish / Sumba Setaria	S. No	Farmer's Name	Forage slip # Mulato / Falarish / Sumba Setaria Slip Nos
1	Sabitri Timalsina	75	18	Bhim Maya Tamang	75
2	Saraswoti Timalsina	75	19	Ganga Maya Shrestha	75
3	Bhim Prasad Timalsina	75	20	SaptamanShrestha	75
4	PremBd Waiba	75	21	PremBd Shrestha	75
5	Min Pd Timalsina	75	22	Ram GopalShrestha	75
6	Lila PdTimalsina	75	23	Krishna Hari Shrestha	75
7	Krishna PdSapkota	75	24	PremPdShrestha	75
8	Krishna PdTimalsina	75	25	Apshara Shrestha	75
9	LaxmanTimalsina	75	26	EkNidhi Ghimire	93
10	Nanda Raj Timalsina	75	27	Mana Maya Timalsina	93
11	BishnuSapkota	75	28	Ram Prasad Nepal	93
12	Hari Maya Shrestha	75	29	RamhariTimalsina	93
13	Nani Maya Shrestha	75	30	Kedar Chettri	53
14	ParbatiShrestha	75	31	Bed Pd Timalsina	53
15	Narayan Shrestha	75	32	BadriNath Timalsina	53
16	BirBdShrestha	75	33	Krishna Prasad Timalsina	53
17	Sani Maya Shrestha	75	34	BhagwatiGhimire	53

4. Dhamilikuwa test site

SN	Farmer's Name	TIMBER				NTFP		FODDER						Grass
		Teak	Gamari	Eucalyptus	Khair	Lapsi	Tejpatta	Ipil	Mendula	Bhattamase	Bakaino	Kimbu	Tanki/ koiralo	Broom Grass
1	Mina Gotame			15			50	15	10	10	10	5	21	
2	Mohan Maya			12	10	2	10	10	5	10	10	3	22	50
3	Niranjana parajuli			15	15	1	50	11	5	10	10	2	21	100
4	Bel Maya Gurung			15	7		50	10	5	10	10	3	21	150
5	Muk Maya Gurung						50	10	5	10	10	5	21	50
6	Sarmila Bhujel	50		20	21		50	10	5	10	10	2	21	150
7	Santa Maya Bagale			18	7	1	50	10	5	10	10	1	21	100
8	Ratna Kumari Srimal		50				50			5	3	3	4	100
9	Laxman Nepali			10	10		50	10	5	10	10	2	21	100
10	Bhoj Kumari Bhujel						50	5	17	22	70	1	1	100
11	Kiransedai		50				50	20	10	60	15	13	35	300
12	Sarita Shrestha	50					15	10	3	15	10	5	11	50
13	Prem Parajuli						50		5	10	3		6	100
14	Tika Kumari													100
15	OM prakash Bhujel												2	
16	Dibas Chandra Laudari													100
17	Somraj Siluwal		50				50	10	3	10	5	5	20	100
18	Naravan Shrestha							20	10	20	20		22	
19	Bishanu Bdr Shai							10	5	5	5	5	11	100
20	Kaushilya Tamang							30	5	15	20		25	100
21	Min Bdr Tamang		50				50	20	5	10	10	5	31	100
22	Hira Man Tamang						50	25	10	20	10	1	41	25
23	BirBdr Tamang						50	20	5	10		5	21	50
24	Suk Bdr Tamang						50	30	5	10	15	1	31	100
25	Sabitra Kandel						50	20	5	20	1		31	100
26	Gokarna Pandey						50	20	10	20	10		40	60
27	Khagraj Kadriya	50					50	80	40	70	90		95	100
28	Rudra Raj Kadriya						50	35	60	25	20		15	100
29	BeniRaman Dumrakoti	50		40	30		5	30	40	5	20		10	250
30	chini Maya tamang						50	20		10	30			100
31	Deepak Pandey	50					50	20	5	20	20		20	50
32	Radha Bisural						50	40	45	80	90		45	100
33	Radha Magar						50	15	10	10	15		5	25

5. JeetaTaksar test site

SN	Farmer's Name	Species plantation								
		NTFP		Fodder					Grass	
		Lapsi	Tejpatta	Ipil	Mendula	Bhattamase	Bakaino	Tanki/koiralo	Broom Grass	NB21
1	Yogiramgiri		56	50	10	20	15	5	100	50
2	Damber Malla		50	20	25	18	21	4		
3	Bishanu Giri		50		25	0	0	0		
4	PadamBdr. Thapa		96	25	25	20	25	3	200	
5	Laxmi Giri		0	10			200	20		
6	LalBdr Thakuri		50	15	20	11	5		50	
7	Risiram Giri	7	10	20		20	30			
8	Devgiri		30	5	8	7				
9	Risiram Khanal		75	35	38	50	25	15	100	
10	HariDutta Khanal		50	10	10	25	5		200	
11	BholaNath Poudel		50	30	25	15	20	15	100	
12	BaburamKunwar		40	8	10	5	5	3		
13	Basanta Regmi		44	20	15	10	4	2		
14	Ramji Giri		40	18	15	10	8	2		
15	DhanBdr. Pariyar		40	10	15	15	5	2		
16	samser BK		40	10	15	5	8	2		
17	BirBdr BK		40	30	35	20	15	2		
18	Suk Bdr BK		40	30	35	20	10			
19	Padam Pariyar		40	15	10	10	8			
20	HariBdr Nepali		50	20	25	20	30		100	
21	Usha Nepali		50	15	20	10	5		150	
22	Purni Maya Lamsal		30	10	15	5				
23	BishanuBdr Nepali		50	10	11	10	15			
24	Surya Kala Dahal		50	10	15	10	15			20
25	Bamadev Dahal		50	8	10	5	10			25
26	Juna Nepali		50	15	10	5	5	1		
27	BalBdr Sunuhar		30	10	5	5	1			
28	Bishanu Maya Puri		50	15	10	10	15			
29	Risiram Puri		50	8	5	5	2			
30	Basundharadawadi		20	10	15	10	10	20	30	
31	Shree Krishna Giri		50	10	25	15	3	3	50	
32	Suntali Maya Giri		50	30	25	20	30	10	50	
33	Kalpana Basnet		50	17	15	15	15	3	30	
34	ChandraManiPoudl		50	30	20	15	30	5	50	
35	Ram Nath Poudel		50	15	3	15	10	25	70	
36	Dhurba Raj Poudel		50	10	15	5	4	3	200	
37	BuddhiSagar Poudel		40	10	15	5	5	2	30	
38	Bharat Pokhrel		50	7	8	5	5	4	100	
39	Shree Ram Poudel		31	7	10	8	5		100	

6. Nalma test site

SN	Farmer's Name	NTFP		FODDER						GRASS
		Lapsi	Tejpatta	Ipil	Mendula	Bhattamase	Bakaino	Raikhanayo	Badahar	Broom Grass
1	Sudip Gurung		10	10					2	25
2	Dilman Gurung	5	10	10			5	3	1	10
3	Raj kumar Pariyar		5		5	5	5	2	1	20
4	Purna Kumar Pariyar	5	5	10			3	2	1	
5	Ram kumar Pariyar	3	5	15				3	1	
6	Saran Pariyar	30	10	40	35	75	5	2	2	50
7	Chandra Kumari Thapa	3	1	10	30	30	3	3	2	
8	Nalkasi Gurung		5		10	10	3	2	1	
9	MainaKasiGurung		5	10	11	15	5	2	1	30
10	Dhan Kumari Guruung			20	20	35	15	3	1	30
11	Parbati Thapa			30	24	65		2	1	30
12	Chandra Kasi Gurung				5	5		1		
13	Min Kasi Gurung	260	10		15			2		
14	Santosh Gurung		3		5	10	1	4		30
15	BirkhaBdr Gurung				20	20	10			30
16	Bimal Pariyar		5		10	10	5	4		30
17	PanchaRamPariyar		5		10	10	10	2		30
18	Chakra Gurung			10	10	20	5	2		100
19	NandaBdrBudathoki	2	1				5	2	1	10
20	Minras Gurung	2		5	5		5	2	1	15
21	Tika Ram Budathoki	5		10	5		5	2	1	
22	KulBdr Budathoki	2	3					2		
23	BhimBdr Gurung	1	5	25	30	20	5	2	1	25
24	KumRus Gurung	50		20	10	10		2	10	
25	Katak Raj Gurung		3		5	25	5	2		25
26	Karma Raj Gurung							6	2	
27	BomBdr Gurung			10	10	20	5	2		
28	Ram Bdr Gurung		1		5	5	5			
29	Dharma Raj Gurung		2	10	40	20		30	2	25
30	Bilchan Gurung				10	5	2	2		50

12 Appendix 4 List of participants of EnLiFT Silviculture Extension Activities

Participants list in Forest management training, Dhulikhel

S.N.	Name of Participant	Organization/Office/CFUG
1	Prem Prasad Khanal	District Forest Office, Kavre
2	Khadga Bahadur thapa	Fagarkhola CFUG, Choubas
3	Dhruba Bahadur Kunwar	Thople kamare CFUG, Choubas
4	Sarita Kunwar	Fagarkhola CFUG, Choubas
5	Sushila Ghimire	Hile Jaljale Ka CFUG, Nagarkot
6	Ram Prasad Ghimire	Hile Jaljale Ka CFUG, Nagarkot
7	Balram Ghimire	Hile Jaljale Ka CFUG, Nagarkot
8	Shankar Kumar Jha	District Forest Office, Kavre
9	Kanchho Sharkee	ChaPani Gadhidada CFUG, Choubas
10	Chandra Singh Lama	Dharapani CFUG, Choubas
11	Madhav Choulagain	Dharapani CFUG, Choubas
12	Guna Raj Shrestha	Rakchhama CFUG, Choubas
13	Indra Bahadur Tamang	Rakchhama CFUG, Choubas
14	Bed Prasad Ghimire	Hile Jaljale Kha CFUG, Nagarkot
15	Dev Hari Parajuli	Hile Jaljale Kha CFUG, Nagarkot
16	Ishwari Ghimire	Hile Jaljale Kha CFUG, Nagarkot
17	Shiva Ram Dulal	Dhungepakha Bahal Ban CFUG
18	Ramkrishna Dhital	Dhungepakha Bahal Ban CFUG
19	Barsha B.K.	Dhungepakha Bahal Ban CFUG
20	Jit Bahadur Tamang	FECOFUN, Kavre
21	Suraj Dahal	FENFIT, Kavre
22	Nhuchhe Krishna Shrestha	District Forest Office, Kavre
23	Baburam Aryal	District Forest Office, Kavre
24	Bishwa Dhakal	Nepal Agro-forestry Foundation
25	Govinda Poudel	Forest Action Nepal
26	Dipesh Basnet	Kathmandu Forestry Collage
27	Raj Kumar Shrestha	Kathmandu Forestry Collage
28	Madan Bashyal	Forest Action Nepal
29	Tej Bahadur K.C.	DFSCC, Kavre
30	Lomnath Timsina	District Forest Office, Kavre
31	Ram Hari Bistha	District Forest Office, Kavre
32	Shambhu Dangaal	Forest Action Nepal
33	Hem Kumar Aryal	Department of Forest/GoN
34	Edwin Cedamon	University of Adelaide

Participants list in Silvicultural Boot Camp, Jita/Taksaar, Lamjung

S.N.	Name of Participant	Organization/Office/CFUG
1	Rishiram Khanal	Lampata CFUG, Tandrang Taksaar
2	Shri Kumar Shrestha	Deurali CFUG, Ramgha
3	Karna Bahadur Adhikari	Deurali CFUG, Ramgha
4	Tika Bahadur Poudel	Deurali CFUG, Ramgha
5	Bhadri Thapa	Deurali CFUG, Ramgha
6	Junee Shrestha	Deurali CFUG, Ramgha
7	Sarala Shrestha	Deurali CFUG, Ramgha
8	Dhwoj Bahadur Dura	Nag Bhairav CGUG, Tandrang Taksaar
9	Uma Dura	Nag Bhairav CGUG, Tandrang Taksaar
10	Roshani B.K.	Sunepani CFUG, Suryapal
11	Maiya Adhikari	Sunepani CFUG, Suryapal
12	Sommaya Achhami	Lampata CFUG, Tandrang Taksaar
13	Mithi Maya Shakhee	Jyamirekhola CFUG, Ramgha
14	Sita Shrestha	Sunepani CFUG, Suryapal
15	Suryakala Dahal	Sathimure CFUG, Tandrang Taksaar
16	Padam Kumari Gurung	Lampata CFUG, Tandrang Taksaar
17	Shakuntaka Poudel	Kirtipur CFUG, Jita
18	Subhadra Poudel	Kirtipur CFUG, Jita
19	Bishnu Maya Poudel	Kirtipur CFUG, Jita
20	Tulashi Prasad Tiwari	Sunepani CFUG, Suryapal
21	Shri Ram Poudel	Kirtipur CFUG, Jita
22	Ram Thapa	Jyamirekhola CFUG, Ramgha
23	Madhumaya Shakhee	Jyamirekhola CFUG, Ramgha
24	Shiva Bahadur Thapa	Jyamirekhola CFUG, Ramgha
25	Basundhara Thapa	Jyamirekhola CFUG, Ramgha
26	Basanta Giri	Naag Bhairav CFUG, Tandrang Taksaar
27	Hari Bahadur Nepali	Sathimure CFUG, Tandrang Taksaar
28	Aasha Bayalkoti	Sathimure CFUG, Tandrang Taksaar
29	Sapana Gotame	Sathimure CFUG, Tandrang Taksaar
30	Shumi Gurung	Naag Bhairav CFUG, Tandrang Taksaar
31	Yagya Prasad Bhattari	Sunepani CFUG, Suryapal
32	Edwin Cedamon	University of Adelaide
33	Aananda Kunwar	Sunepani CFUG, Suryapal
34	Shanta Sapkota	FECOFUN, Lamjung
35	Ramji Bagale	Jyamirekhola CFUG, Ramgha
36	Madan Bashyal	Forest Action Nepal
37	Bhola Poudel	FECOFUN, Lamjung

Participants list in Silvicultural Boot Camp, Dhamilikuwa

S.N.	Name of Participant	Organization/Office/CFUG
1	Mohan Maya Gharti	Garambeshi CFUG, Dhamilikuwa
2	Shanta Maya Bagale	Garambeshi CFUG, Dhamilikuwa
3	Indra Kumari Nepali	Garambeshi CFUG, Dhamilikuwa
4	Rudra Bahadur Gharti	Garambeshi CFUG, Dhamilikuwa
5	Jagat Bahadur Pokhariya	Garambeshi CFUG, Dhamilikuwa
6	Laxman Nepali	Garambeshi CFUG, Dhamilikuwa
7	Rajendra Laudari	Simalchouri Naringhat CFUG, Dhamilikuwa
8	Prem Prasad Parajuli	Simalchouri Naringhat CFUG, Dhamilikuwa
9	Sita Shrestha	Simalchouri Naringhat CFUG, Dhamilikuwa
10	Rameshwori Bhatta	Simalchouri Naringhat CFUG, Dhamilikuwa
11	Laxmi Pathak	Simalchouri Naringhat CFUG, Dhamilikuwa
12	Sunita B.K.	Simalchouri Naringhat CFUG, Dhamilikuwa
13	Manju Sedhai	Simalchouri Naringhat CFUG, Dhamilikuwa
14	Rasana Pathak	Simalchouri Naringhat CFUG, Dhamilikuwa
15	Shanta Sunar	Aapchour CFUG, Dhamilikuwa
16	Nanu Maya lama	Aapchour CFUG, Dhamilikuwa
17	Bishnu Bahadur Magar	Aapchour CFUG, Dhamilikuwa
18	Ram Krishna Ghimire	Aapchour CFUG, Dhamilikuwa
19	Radha Bisural	Aapchour CFUG, Dhamilikuwa
20	Hasta Bahadur Tamang	Lupugaun CFUG, Dhamilikuwa
21	Mana Maya Tamang	Lupugaun CFUG, Dhamilikuwa
22	Ruk Bahadur Tamang	Lupugaun CFUG, Dhamilikuwa
23	Amrit Maya Tamang	Lupugaun CFUG, Dhamilikuwa
24	Goma Chiluwal	Goulitar CFUG, Dhamilikuwa
25	Goma Pandey	Goulitar CFUG, Dhamilikuwa
26	Hari Prasad Chiluwal	Goulitar CFUG, Dhamilikuwa
27	Takendra Nath Chiluwal	Goulitar CFUG, Dhamilikuwa
28	Udaya Bahadur Shahi	Lupugaun CFUG, Dhamilikuwa
29	Shanta Sapkota	FeCOFUN, Lamjung
30	Bhola Poudel	FeCOFUN, Lamjung
31	Madan Bashyal	Forest Action Nepal
32	Edwin Cedamon	University of Adelaide

Participants list in Silvicultural Boot Camp, Nalma, Lamjung

S.N.	Name of Participant	Organization/Office/CFUG
1	Shyam Bahadur Gurung	Langdi Hariyali CFUG, Nalma
2	Mani Raj gurung	Langdi Hariyali CFUG, Nalma
3	Bhim Bahadur Shahi	Khundru Devi CFUG, Nalma
4	Janga Bahadur Gurung	Langdi Hariyali CFUG, Nalma
5	Dil Man Gurung	Langdi Hariyali CFUG, Nalma
6	Rana Bahadur Gurung	Khundru Devi CFUG, Nalma
7	Amar Bahadur Gurung	Khundru Devi CFUG, Nalma
8	Baghbir Gurung	Khundru Devi CFUG, Nalma
9	Bhim Bahadur Gurung	Sunkot Devi CFUG, Nalma
10	Dambar bahadur Gurung	Sunkot Devi CFUG, Nalma
11	Tek Bahadur Gurung	Sunkot Devi CFUG, Nalma
12	Beel Bahadur Gurung	Langdi Hariyali CFUG, Nalma
13	Shivalal B.K.	Khundru Devi CFUG, Nalma
14	Manoj B.K.	Khundru Devi CFUG, Nalma
15	Shivalal Pariyar	Langdi Hariyali CFUG, Nalma
16	Kalawati Gurung	Langdi Hariyali CFUG, Nalma
17	Nanda Bahadur Ghale	Langdi Hariyali CFUG, Nalma
18	Kamala Devi Gurung	Khundru Devi CFUG, Nalma
19	Indra Bahadur Gurung	Sunkot Devi CFUG, Nalma
20	Dharmaraj Gurung	Sunkot Devi CFUG, Nalma
21	Tula Ghale	Sunkot Devi CFUG, Nalma
22	Tek Bahadur Gurung	Kagro Devi CFUG, Nalma
23	Sarita Gurung	Kagro Devi CFUG, Nalma
24	Bilchanda Gurung	Kagro Devi CFUG, Nalma
25	Prem Kumar Gurung	Langdi Hariyali CFUG, Nalma
26	Tirkashi Gurung	Khundru Devi CFUG, Nalma
27	Dev Bahadur Gurung	Khundru Devi CFUG, Nalma
28	Kamala Ghale	Khundru Devi CFUG, Nalma
29	Bimala Gurung	Khundru Devi CFUG, Nalma
30	Ratna Kashi Gurung	Khundru Devi CFUG, Nalma
31	Jamindraman Gurung	Kagro Devi CFUG, Nalma
32	Dayanidhi Aryal	District Forest Office, Lamjung
33	Madan Bashyal	Forest Action Nepal
34	Bhola Poudel	FeCOFUN, Lamjung

Participants list in Silvicultural Boot Camp, Mithinkot Kavre

S.N.	Name of Participant	Organization/Office/CFUG
1	Ramesh Kumar Thapaliya	Sa.Pa.Ru.Pa. CFUG, Mithinkot
2	Kamala Chimariya	Sa.Pa.Ru.Pa. CFUG, Mithinkot
3	Sani Maya Shrestha	Sa.Pa.Ru.Pa. CFUG, Mithinkot
4	Goma Bhujel	Sa.Pa.Ru.Pa. CFUG, Mithinkot
5	Kalpana Adhikari	Sa.Pa.Ru.Pa. CFUG, Mithinkot
6	Apsara Adhikari	Methinkot CFUG, Methinkot
7	Kabita Poudel	Methinkot CFUG, Methinkot
8	Tara Poudel	Methinkot CFUG, Methinkot
9	Kedar Kuikel	Methinkot CFUG, Methinkot
10	Lilamani Dangal	Methinkot CFUG, Methinkot
11	Murari Prasad Poudel	Methinkot CFUG, Methinkot
12	Krishna Pd. Adhikari	Sa.Pa.Ru.Pa. CFUG, Mithinkot
13	Bishnu Bahadur Shrestha	Sa.Pa.Ru.Pa. CFUG, Mithinkot
14	Shailendra Mishra	District Forest Office, Kavre
15	Kendra Prasad Ojha	Sa.Pa.Ru.Pa. CFUG, Mithinkot
16	Kabi Prasad Silwaal	Lapse CFUG, Mithinkot
17	Juna Ojha	Lapse CFUG, Mithinkot
18	Parvati Bhujel	Lapse CFUG, Mithinkot
19	Goma Ojha	Lapse CFUG, Mithinkot
20	Yegya Prasad Thapaliya	Lapse CFUG, Mithinkot
21	Baburam Thapa	Charuwa CFUG, Mithinkot
22	Dhana Bahadur Tamang	Charuwa CFUG, Mithinkot
23	Madan Bashyal	Forest Action Nepal
24	Edwin Cedamon	University of Adelaide

Participants list in Silvicultural Boot Camp, Choubas, Kavre

S.N.	Name of Participant	Organization/Office/CFUG
1	Sangita Goutam	Dharapani CFUG, Choubas
2	Laxmi Choulagain	Dharapani CFUG, Choubas
3	Sobha Thapa	Fagarkhola CFUG, Choubas
4	Dhurba Bahadur Kunwar	Thople Kamare CFUG, Choubas
5	Ganesh Pahari	C hapani Gadhidada CFUG, Choubas
6	Shanta Bahadur Mahat	Fagarkhola CFUG, Choubas
7	Tasbir Tamang	Dharapani CFUG, Choubas
8	Shambhu Pahari	C hapani Gadhidada CFUG, Choubas
9	Bir Bahadur Pahari	Thople Kamare CFUG, Choubas
10	Krishna Bahadur Tamang	C hapani Gadhidada CFUG, Choubas
11	Rana Bahadur Pahari	Thople Kamare CFUG, Choubas
12	Lal Bahadur Pahari	Thople Kamare CFUG, Choubas
13	Bimala Pandey	Fagarkhola CFUG, Choubas
14	Kalpana Pahari	C hapani Gadhidada CFUG, Choubas
15	Parvati Gautam	Thople Kamare CFUG, Choubas
16	Sangita Pahari	Thople Kamare CFUG, Choubas
17	Ganesh Kumar Tamang	C hapani Gadhidada CFUG, Choubas
18	Sabina Kunwar	Dharapani CFUG, Choubas
19	Ranta Bahadur Tamang	C hapani Gadhidada CFUG, Choubas
20	Rita Sharki	C hapani Gadhidada CFUG, Choubas
21	Sharmila Pahari	Fagarkhola CFUG, Choubas
22	Bhim Bahadur KC	Dharapani CFUG, Choubas
23	Kchetra Bahadur Pandey	Fagarkhola CFUG, Choubas
24	Binda Kharel	Lakuri Bhulbhule CFUG, Choubas
25	Sushila Kunwar	Fagarkhola CFUG, Choubas
26	Toran Bahadur Kunwar	Fagarkhola CFUG, Choubas
27	Netra Bahadur Kunwar	District Forest Office, Kavre
28	Pirtha Bahadur Kunwar	Thople Kamare CFUG, Choubas
29	Purna Bahadur Kunwar	Thople Kamare CFUG, Choubas
30	Binod Sapkota	FeCOFUN, Kavre
31	Edwin Cedamon	University of Adelaide
32	Madan Bashyal	Forest Action Nepal
33	Govinda Poudel	Forest Action Nepal

Participants list in Silvicultural Boot Camp, Dhunkharka, Kavre

S.N.	Name of Participant	Organization/Office/CFUG
1	Ratnamai Timilsina	Jana Jagriti CFUG, Dhunkharka
2	Sunita Maya Ghalan	Jana Jagriti CFUG, Dhunkharka
3	Kulmai Timilsina	Khahre CFUG, Dhunkharka
4	Nani Maya Shrestha	Kalapani CFUG, Dhunkharka
5	Sita Timilsina	Jana Jagriti CFUG, Dhunkharka
6	Prem Kumari Timilsina	Jana Jagriti CFUG, Dhunkharka
7	Sanu Ghimire	Khahre CFUG, Dhunkharka
8	Saraswati Timilsina	Khahre CFUG, Dhunkharka
9	Savitri Timilsina	Khahre CFUG, Dhunkharka
10	Aekanidhi Ghimire	Narayansthan CFUG, Dhunkharka
11	Bhim Prasad Timilsina	Khahre CFUG, Dhunkharka
12	Nanda Prasad Bajgain	District Forest Office, Kavre
13	Gopal Prasad Timilsina	Khahre CFUG, Dhunkharka
14	Ramhari Timilsina	Narayansthan CFUG, Dhunkharka
15	Krishna Bahadur Ghimire	Jana Jagriti CFUG, Dhunkharka
16	Prem Prasad Shrestha	Kalapani CFUG, Dhunkharka
17	Nim Prasad Timilsina	Kalapani CFUG, Dhunkharka
18	Lal Bahadur Shrestha	Kalapani CFUG, Dhunkharka
19	Muna Shrestha	Kalapani CFUG, Dhunkharka
20	Nisa Shrestha	Kalapani CFUG, Dhunkharka
21	Yeshoda Shrestha	Kalapani CFUG, Dhunkharka
22	Kedar Prasad Timilsina	Jana Jagriti CFUG, Dhunkharka
23	Nandamai Timilsina	Narayansthan CFUG, Dhunkharka
24	Bal Bahadur Tamang	Kalapani CFUG, Dhunkharka
25	Usha Timilsina	Narayansthan CFUG, Dhunkharka
26	Bed Prasad Timilsina	Jana Jagriti CFUG, Dhunkharka
27	Krishna Prasad Timilsina	Khahre CFUG, Dhunkharka
28	Sujan Shrestha	Kalapani CFUG, Dhunkharka
29	Hari Chandra Lama	FeCOFUN, Dhunkharka
30	Apsara Shrestha	Kalapani CFUG, Dhunkharka
31	Rita Adhikari	Jana Jagriti CFUG, Dhunkharka
32	Binod Sapkota	FeCOFUN, Kavre
33	Govinda Poudel	Forest Action Nepal
34	Shiva Ram Thapa	District Forest Office, Kavre
35	Madan Bashyal	Forest Action Nepal
36	Edwin Cedamon	University of Adelaide

14 Appendix 5. EnLiFT -2 Preliminary Proposal Outline

The EnLiFT project (FST/2011/076) concludes in March 2018, and the project team believes we can support a case for a follow-on project, EnLiFT-2, at our end-of-project review on these grounds:

1. Successful delivery of key outputs which have verifiable impact on food security from EnLiFT interventions;
2. Established relationships of credibility and trust with government officers and participating communities;
3. Current re-organisation of government administrative regions and planning institutions, following the long-awaited Constitution, is an ideal opportunity to offer research outputs that will have impact in policy development.

This is only an outline of objectives and tasks. The project team is also still debating the extent to which we can spread ourselves across Kavre and Lamjung (perhaps only 2 sites per district) and into Sindhupalchowk.

We are aiming for a 5-year project with similar investment as EnLiFT-1.

1. **Promote Active and Equitable Forest Management (AEFM) using participatory silvicultural management**
   - 1.1. AEFM upscaling in Community Forests
   - 1.2. AEFM demonstrations in Private Forests
   - 1.3. AEFM Impact assessment
   - 1.4. Silvicultural research-policy interface

2. **Improve community forestry planning and governance**
   - 2.1. Assessment of social and economic drivers shaping community forest practices and outcomes
   - 2.2. Inclusive and strategic community forest planning practice: demonstration cases
   - 2.3. Community forest and local government partnership models: demonstration cases
   - 2.4. Research-policy interface for community forest planning and governance

3. **Facilitate the establishment of small-scale forest enterprises**
   - 3.1. Survey of forest enterprises in Central Region
   - 3.2. Analyse regulatory systems for sale of timber and other forest products from private land and community forests
   - 3.3. Facilitate local forest enterprises that address social disadvantage
   - 3.4. Research-policy interface for local forest entrepreneurship

4. **Building capacity for improved forest management**
   - 4.1. Train-the-Trainer for AEFM and upscaling
   - 4.2. Post-graduate certificate in Active and Equitable Forest Management
   - 4.3. Higher degree research training
   - 4.4. Contribution to forest research information system management

Linkages between EnLiFTs 1 & 2 and Recommendations from Silviculture Workshop