Research into the Long Term Impact of Development Interventions in the Koshi Hills of Nepal

Summary Report

Commissioned by

**Government of Nepal, National Planning Commission and
Government of United Kingdom, Department for International Development**

[Contract Number PO 5504]

July 2013

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Summary Report

Commissioned by
National Planning Commission (NPC), the Government of Nepal and
Department for International Development (DFID) Nepal, the Government of United Kingdom

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The views expressed in this summary report are those of the study team members and study groups and do not necessarily reflect the views and policies of the National Planning Commission, the Government of Nepal and the Department for International Development-Nepal, the Government of United Kingdom.

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Foreword

Nepal's effort for economic tranformation is associated with crucial challenges arising out of its geographical terrain as well as resources constraints. The need for more integrated policies of development across sectors in this context is recognized as extremely helpful to address these constraints.

Nepal's concerted development efforts through its national periodic plans are geared towards bringing about improvements in social and economic conditions of people across the country. With this end in view, since the beginning of planning efforts in 1956, the government together with support from development partners has continued to implement development programmes in different sectors which have had positive impacts in terms of enhancing livelihoods, alleviating poverty, improving health and education, generating employment and income, and so on. A lot has been accomplished but many more tasks still need to be done. The country has not been able to reduce poverty as targeted, due to various problems including inadequate road network facilities in the country. Attempts to assess the impact of development interventions in terms of social and economic factors are still limited to explain the successes/failures of these interventions and their impact on development trajectory.

This study, '*Research into the long term impact of development interventions in the Koshi hills of Nepal*', commissioned by the National Planning Commission, Government of Nepal, in association with the Department for International Development, UK has been carried out to assess the impact of development interventions executed during the past years. This endeavor has been supported by a number of institutions including the Government of Nepal, donors, non-governmental organizations, and private sector. To assess the impact, the Study has used a combination of multiple tools that include quantitative, qualitative and spatial analyses. An analytical framework has also been used to prioritize data triangulation and to undertake retrospective causal process mapping, cumulative causation and to assess the strength of evidence generated during the Study.

The Study has reported several key findings. An assessment of factors affecting poverty reduction such as government investment, remittances, donor funding, and creation of road network have been undertaken. Over the years, the interventions by the government and donor community are reported to have made significant contributions to the ensuing change, but perhaps not to the level as desired. Hopefully, these findings would be of great help to shape future development policy and, more specifically, to influence the debate on crucial areas that need to be considered in the designing, evaluation and execution of policies in future.

Government of Nepal

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Singha Durbar, Kathmandu, Nepal

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The NPC extends its sincere appreciation to DFID-Nepal for providing support to carry out this Study. Similarly, the NPC sincerely expresses its thanks to the members of the Study Team, Project Steering Committee, and Peer Review Committee for their contributions in the successful completion of this Study.

Last but not the least, all other organizations and individuals who have contributed directly or indirectly in the accomplishment of this work deserve our sincere thanks.

(Dr. Rabindra K. Shakya)
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Page v

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Foreword

The study on '*Research into the long term impact of development interventions in the Koshi hills of Nepal*' is an endeavour to assess the impact of development interventions in the Koshi hills of eastern Nepal over the past 40 years. Recognising that change processes are typically caused by multiple factors and interventions, the study commissioned by the National Planning Commission, Government of Nepal in association with the Department for International Development (DFID), UK attempts to evaluate the impact of interventions supported by a range of actors, including the Government of Nepal, donors, non-governmental organisations, private sector and other agencies.

Nepal has witnessed several strategies and policies for overall development across the country over the last six decades. Planned development effort was initiated in Nepal since 1956 and then a series of periodic development plans followed subsequently up to the current Thirteenth Plan (2013-16). The strategies and policies of the Approach Paper of the 13th Plan reveal the evolving conceptualizations of development globally and reflect leanings from implementation over several decades. Access and equity to development are crucial issues for improved overall development outcomes. Depending on the location and the type of development programmes and projects, social and economic impacts on the communities are likely to affect one group of residents more significantly than another. Development outcomes for communities and individuals thus, differ and it is critically important to understand the differential impacts of development and to understand how these come about.

In this contexts, the intent of the Koshi Hills study was to assess differential impacts of multiple development interventions over the past four decades to gain a better understanding of which groups of people have benefitted (or not) the most at district, community and household levels, what were the key mechanisms and different factors that have brought about changes in the conditions and opportunities in their life, and what were the perceptions of the local residents in terms of changes in their social and economic lives. Based on the rigorous methods of assessing the complexed measurements of long term impacts by using a mixed-methods approach—quantitative analysis, qualitative analysis and spatial analysis, as well as on an analytical framework to prioritising data triangulation and key retrospective causal process, some of the development intervention impacts as encouraging findings appear to have existed in the study: for instance, efforts being made by the private sector and at household level have been more successful in growing of off-season vegetables and high value crops such as tea, cardamom, and ginger; rearing of improved livestock breed and dairy products; increase in community forestry programme based timber and non-timber products, growing in cottage industry based local products etc. However, while some missed opportunities such as migration and remittance have been detected in the Koshi Hills where development interventions could have contributed to larger change, had there been adequate programmes to recognise the potential impact of remittance as a catalyst of change, which really began to take off in the 1990s. Had the government and donors understood this trend early, many

effective interventions could have been developed to assist households in leveraging remittances to better lift them out of poverty and increase their quality of life.

On behalf of the National Planning Commission, Government of Nepal, I take this opportunity to extend my thankfulness to DFID-Nepal for providing financial support to carry out this study as well as to the organizations and the people for furnishing the data needs and the materials to this work. Appreciation is also due to sincere and untiring efforts of the Study Team, comprising both national and international researchers and development professionals in bringing out this study successful. Also extended my gratefulness is to the Project Steering Committee Members, who represented different ministries, academics, and civil societies, as well as to the Peer Review Committee Members for their sincere support to successfully completion of this study.

As such, the ambition of the study was to understand the dynamics of economic and social change, to assess the role of development interventions and to draw conclusions, the key findings described in the study would be complement to our knowledge in understanding of development impacts and useful to development practitioners, policy makers, and researchers interested in development impacts.

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(Yuba Raj Bhusal)
Member Secretary
National Planning Commission
Government of Nepal

Foreword

Commissioned by the National Planning Commission, Government of Nepal and the UK Government's Department for International Development, the study, *'Research into the long term impact of development interventions in the Koshi hills of Nepal'* is a unique effort of this kind to assess the long term impact of development interventions in the eastern Nepal.

Over the past four decades, development interventions by the government and the donor community have made a significant contribution to change the social and economic condition of the people in the Koshi hills, but perhaps not yet to the level of expectation of the development practitioners. Also revealed by the study is that the most effective development interventions were those that helped individuals to meet their desire for change, providing an enabling and supportive environment. While the construction of road network, the community forestry programme, the adoption of growing of high value crops, the communication, and the remittance appear to have significant contribution to change, but the main driver of change has been the energy and initiative of the local people, who struggled to protect, maintain and enhance their livelihoods and improve the quality of their lives, as well as were also the main sources of investment and expenditure and innovations.

In the meantime, there has also been unearthed some unmet needs of the local people and many missed opportunities by the development intervention during the study period, where development interventions could have contributed to larger change on poverty reduction and increase in quality of life, had there been: adequate engagement with the local beneficiaries, the integrated working manner among key development agencies and the strong coordination between and within the sectoral or development agencies for execution of development programmes and projects. These are the study's some key lessons for learning, which would be useful to help development agencies for designing policy measures in the future.

At the end, I wish to extend my appreciation to all individuals, groups and organisations, including the study team members, the advisors, the study groups, the Project Steering Committee members, the Peer Review Committee members, and the organisations for their sincere efforts and support in making the study success.

Mr Bhaba Krishna Bhattarai
Joint Secretary
National Planning Commission Secretariat
And
Member Secretary of the Koshi Hills Study Project Steering Committee

Foreword – from DFID

The Koshi Hills area of East Nepal has received considerable investment from the Government of Nepal, development partners and the private sector since the 1970s. This has included a series of agriculture and agricultural research, forestry, community support and road infrastructure investments. Since then the area has experienced considerable change, with much anecdotal evidence of the impacts of some interventions in spurring economic growth, including the vital Dharan-Dhankuta and Dhankuta-Hile roads that have opened up access to markets and services in the region. Britain is proud of the role it has played in supporting development in the region, which has been based on a strong partnership with the Government of Nepal.

This study, commissioned by the National Planning Commission and supported by the UK Department for International Development (DFID), marks an important extension of this partnership. This is the first study of its kind that seeks to assess the impacts of long term development assistance in the region. In doing so, the study has examined the important relationships between government, development partners, the private sector and communities in driving development. It also explores the need for a regional perspective on economic development and the changing perceptions of the development needs of the people. What has emerged is a unique study that understands development as part of a process of change beyond the boundaries of development projects and which has impacts that are dynamic and long lasting.

While retrospective, this study is also forward thinking. We believe the evidence presented in this report is an important contribution to inform the Government of Nepal's efforts to promote inclusive poverty reduction and growth that benefits poor people. In the coming years, the UK looks forward to strengthening our partnership with the Government of Nepal in support of these efforts.

Philip Smith
Acting Head of DFID Nepal

Foreword

The Koshi Hills region of Eastern Nepal has received significant and consistent investment from the Government of Nepal, international donors and the private sector over the past 40 years; and there is significant supporting evidence for the progress that has been achieved through individual programmes and narrative reports. All partners can rightly be proud of this achievement.

This study provides a unique opportunity, however, to step back in two important ways from programmatic impact assessments and evaluations and macro-level development trends. It looks to evaluate long term change and unpack its drivers and it adopts a cross-sector, regional approach. As such, it differs in a fundamental way from programmatic monitoring and programmatic impact evaluations that are characterised by a short time horizon (typically three to five years) and a programmatic focus that prioritises output and impact measures generally, insofar as they have related to direct beneficiaries. Intended and unintended consequences, the transition from a programmatic theory of change to a sector or regional theory of change and long term change are generally less explicitly addressed, if at all. This study is specific in its adoption of a wider lens.

It is also specific in that it limits its scope to an investigation of only the most significant long term, socio-economic changes and only the most important, or those with the most plausible contributory evidence; in parts, informed by beneficiaries themselves. Both of these characteristics focus the study on answering one crucial question: What has actually been achieved by development interventions over the past 40 years and what can this tell us about future intervention?

The ambition of this study is to understand the dynamics of economic and social change, to assess the role of development interventions and to draw conclusions that may help shape future development policy-making and, more broadly, the approach taken to development, by providing key insights into what has, and has not, impacted on the socio-economic development of a region that has experienced consistent development intervention. By shifting the lens to the long term, the 'wide impact' and towards beneficiary-driven needs, we hope this will influence the debate on what constitutes effective development and how development interventions may be conceived and designed in the future.

The Effective Development Group and GRM International are proud to have been given the opportunity to contribute to the accumulation of knowledge on the implementation of effective development and to continue and build on its role working with Government of Nepal and donors to support development in this country. We remain committed to extending this partnership in the years to come.

We would moreover like to extend out thanks to the National Planning Commission, Government of Nepal and DFID Nepal for their vision and support throughout the process; as well as the Project Steering Committee and Peer Review Committee. Last but not least we would like to express our gratitude to the Study Research Team for their tireless efforts and professionalism in taking this challenging study to completion.

Andrew Koleros

EDG Programme Director

Acronyms and Abbreviations

ADB	Asian Development Bank	KIS	KHARDEP Impact Studies
APP	Agriculture Perspective Plan	Km	Kilometre
BNMT	Britain-Nepal Medical Trust	KOSEVEG	Koshi Seed and Vegetable
Br	British	LFP	Livelihoods & Forestry Project
CBO	Community Based Organisation	MLD	Ministry of Local Development
CBS	Central Bureau of Statistics	NDHS	Nepal Demographic and Health Survey
CEDA	Centre for Economic Development and Administration	NGIIP	National Geographic Information Infrastructure Programme
CEPREAD	Vegetable Production through Centre for Environment and Agricultural Policy Research Extension and Development, Seed Sector Support Project	NGO	Non-Government Organisation
CFUG	Community Forest User Groups	NLSS	Nepal Living Standard Survey
CPS	Community Support Programme	NPC	National Planning Commission
DANIDA	Danish International Development Agency	NSCA	National Sample Census of Agriculture
DFID	Department for International Development	NUKCFP	Nepal-UK Community Forestry Project
DHO	District Health Office	PAC	Pakhribas Agriculture Centre
DNPWC	Department of National Park and Wildlife Conservation	PAF	Poverty Alleviation Fund
DoE	Department of Education	PCRW	Production Credit for Rural Women
DoHS	Department of Health Services	PHCC	Primary Health Care Centre
EDG	Effective Development Group	PGRS	Pakhribas Gurkha Reintegration Service
EDR	Eastern Development Region	PRA	Participatory Rural Appraisal
EMIS	Education Management Information System	PSC	Project Steering Committee
FCHV	Female Community Health Volunteer	RAP	Rural Access Programme
FGD	Focus Group Discussions	RCA	Reality Check Approach
FHH	Focal Households	SHP	Sub-Health Post
GIS	Geographic Information Systems	SMIP	Safe Motherhood Innovative Project
GIZ	German International Assistance	SNV	Netherlands Agency for Development
GNDI	Gross National Disposable Income	SSSP	Seed Sector Support Project
GoN	Government of Nepal	TBAs	Traditional Birth Attendants
HHH	Host Households	TMI	The Mountain Institute
HMGN	His Majesty's Government of Nepal	ToC	Theory of Change
HMIS	Health Management Information System	TOR	Terms of Reference
HP	Health Post	UNDP	United Nations Development Programme
ICIMOD	International Centre for Integrated Mountain Development	UNICEF	United Nations International Children's Emergency Fund
IT	Information Technology	UNIFEM	United Nations Development Fund for Women
KHARDEP	Koshi Hill Area Development Project	VDC	Village Development Committee
KHDP	Koshi Hills Development Programme	WB	World Bank
KHST	Koshi Hills Study Team	WUG	Water User Groups
KII	Key Informant Interviews		

Contents

Tables

Figures

Acknowledgements

associated with different programmes and/or projects in the Koshi hills and who shared their insights and valuable archival documents from different points in time.

The study groups:

GRM International Ltd, London, United Kingdom
Effective Development Group, Canberra, Australia
Foundation for Development Management, Kathmandu, Nepal

July 2013

Executive Summary

The National Planning Commission (NPC), the Government of Nepal in association with the UK Government's Department for International Development (DFID) in Nepal commissioned a research study to assess the impact of development interventions over the long term in the Koshi hills region of eastern Nepal, focusing on the period from the 1970s to the present time in 2013.

This document provides a summary of the research study, which was conducted over an eighteen-month period (2011-2013) by a team of international and national researchers and development professionals. Over the study period, in addition to an extensive documentary review, several more specific independent in-depth research studies were conducted to investigate the linkages and relationships between development interventions and sustained changes in the Koshi hills region over the past forty years.

The report has drawn data from three sources, based on a mixed-methods approach such as quantitative secondary data, spatial mapping data, and qualitative primary data. The secondary data analysis was based on: (i) documentary review and datasets of population, agriculture, education, health, finance, transport and communication, government and project/programme documents, independent studies, etc; (ii) district-level poverty analysis of Nepal Living Standards Surveys—1995/96, 2003/04 and 2010/11; and (iii) economic analysis of investment, actual expenditure and growth trends at national, regional and district-levels, estimates of district and sector-wise GDP. The Geographical Information System (GIS) was used to identify key changes to land-use patterns in each of four Koshi hill districts (Bhojpur, Dhankuta, Sankhuwasabha and Terhathum) and Koshi hills region as a whole of three map data year points—1986, 1996 and 2010 as well as to generate thematic layers and datasets. Qualitative data was generated and some key quantitative results were verified by using Reality Check Approach (RCA) in the field across Koshi hills. Then this report has utilised an analytical framework for retrospective causal process mapping, key node analysis, cumulative causation and strength of evidence assessments to pull out key drivers in a non-linear and complex reality.

This report does not attempt to provide a general summary of all findings of the overall research study, as a report of this length cannot capture the breadth of information included in the full study. Rather, the results and analysis presented here are deliberately selective to address only the most significant drivers of change that we identified. Readers who are interested in more in-depth analysis into these subjects are invited to consult the additional research reports from this study, available at NPC website: www.npc.gov.np or via the DFID website or via the Effective Development Group website: www.edgroup.com.au.

The primary finding of the study is that the people of the Koshi hills region are better off now than in the 1970s across a range of indicators: quality of life has improved, living standards have increased and poverty has reduced. We identified long-term changes in economic opportunities both within and outside Koshi hills, and improvements in quality of life both at an individual and household level.

In terms of economic growth, the Koshi hills region has seen sustained positive change over the study period, with few instances of retraction. GDP has grown at an average annual growth rate of 2.8 per cent between 1971 and 2010 and GNDI has grown by an average of 3.0 per cent over the same time period. The economic growth rate for the Koshi hills region compares to 1.8per cent for the Koshi Tarai and 4.2 per cent for Nepal, meaning that though the Koshi hills region has been able to perform better in comparison to the Koshi Tarai, the growth is less than the average national growth rate.

Beyond economic indicators, the region experienced positive changes in key outcome indicators in health and education. Life expectancy rates within the Koshi hills have steadily risen and have consistently been higher than national averages. In 1998, they ranged from 61.3 in Terhathum, 61.7 in Sankhuwasabha, 64.3 in Bhojpur and 64.3 in Dhankuta, compared to 55 (national figures) and, by 2004, they had risen to 63.7 in Sankhuwasabha, 64.6 in Bhojpur, 64.9 in Dhankuta and 67.7 in Terhathum (UNDP, 1998; 2004). The literacy rates for males and females in all four districts in 2001 were higher than the national averages of 65 per cent for males (except for Sankhuwasabha) and 42 per cent for women. This has shown a continued rising trend with significantly higher rates again in 2011.

Disparities in poverty and social outcomes in Nepal (and in the Koshi hills) cut across gender, caste, ethnicity, religion

and across geographic regions. Yet the history of the availability of socially disaggregated data is fairly recent. The census of 1991 was the first to identify 103 different caste and ethnic groups in the country, since when, the classification of the population has become a major pre-occupation, with different dimensions of poverty, social discrimination and disadvantage, gender, caste, ethnicity, age, region, etc. all to be considered when devising 'socially inclusive' policies, programmes and projects. Nonetheless, the lack of data disaggregated by these factors, specifically gender-disaggregated data, which limited the ability, is a significant limitation to this study, reducing our ability to conduct disaggregated analysis and disentangle the differential impacts of development interventions on these different social groups.

In terms of drivers of change, our econometric analysis of economic growth and poverty reduction found that private investment, population growth and donor investment all had a positive impact on economic growth. Remittances, government expenditure and donor spending had a positive impact on poverty reduction.

The main driver of this change however has been the energy and initiative of ordinary men and women struggling to protect, maintain and enhance their livelihoods and improve the quality of their lives and that of their children. They are integral to the investment and expenditure driving the growth of the local economy and generating improvements in local society. Development interventions by government and the donor community have made a significant contribution to this change, but not as much as development practitioners would have liked or even expected.

Moving beyond, this study has three primary findings:

Firstly, long-term Impact is not programme or sector-specific; but is produced by the interactions of intended and unintended changes over time. This provides a crucial framing concept by which to understand the development successes and failures in the Koshi hills over the study period. By extending the time frame and focus of study it becomes clear that sustainable, long term change is a result of the cumulative and interconnected impact of multiple programmes and factors. This complexity is difficult to capture and address in single programmes.

Secondly, the definition of poverty in the Koshi hills is complex and is continually changing. Development interventions overall demonstrated an inadequate analysis of the multi-dimensionality and changing causes and manifestations of poverty. Though class, caste and ethnicity both continue to play the major part in defining poverty, they are not the only determinants. Previous models for the rural poor need constant interrogation.

Finally, and central to this study's finding, our analysis suggests that the most effective development interventions were those that helped individuals to meet their desire for change, providing an enabling and supportive environment. The most sustained changes were those that were driven by individuals: people desiring to change and help themselves according to their different capabilities, resources and needs.

Development interventions in general were planned 'inside the box', focused on helping individuals to do what they already did better and improve what they were already doing. For example, an assumption that people would want to stay in farming or foresting when other options existed. Interventions largely overlooked the importance of transformational change for beneficiaries, missing the broader range of opportunities available 'outside of the box'. Interventions largely ignored the decisions that individuals were making and the consequences of those decisions, around for example migration and remittances.

The construction of the road network, for example, though a costly investment in the short run, was the most significant contributor to change over the long run – both intended and unintended change. In terms of intended change, it was assumed that road construction would lead to economic growth through a reduction in transport costs. Indeed our economic analysis demonstrated that improvement in roads network connection had a strong influence on the improvement of economic activities. The key nodal analyses we conducted to identify drivers of change associated the construction of the road with each of the four long term changes we identified in this study. Households who participated in the reality check also identified roads as the most significant driver of change.

At the same time, the construction of the road network also facilitated sustained impact which was more widespread. For instance, though interventions in cash crop production, the improvement of animal breeds and the provision of extension services by government and donor interventions contributed to long term impact in general, they had a more substantial impact for households along roads and trails where marketing had developed.

The story of cardamom as a high value crop in Koshi hills is a specific example of this. Cardamom production took off when the roads and marketing structures were in place and when the price rose because of the collapse of production in India, Sikkim and Bhutan following the spread of disease there. The construction of major roads and agricultural support programmes (such as Pakhribas Agriculture Centre - PAC) were associated with increases in cardamom production as a high value crop, as small holders and farmers had better technology and information. This increased technology and information as well as access to and confidence in markets, at the same time as cardamom prices rose, was the right combination to make cardamom an important cash crop in the Koshi hills.

Forestry programmes are one of the few areas where there has been a consistent and sustained programmatic approach throughout the study period, based on the principles of community ownership. Conservation efforts can be considered a success, particularly in the regeneration of forests, with well-defined policies, institutions and practices, which encompassed government, NGOs and local communities. The data showed that, while the area under forest and the area under grassland (pasture) declined significantly in the decade from 1986 to 1996, GIS data and other sources point to a reverse in the trends, where forest coverage in 2010 actually exceeds that in 1986.

As of 2011, over 115,000 ha of forests have been handed over to a total of 1,449 Community Forests User Group (CFUGs) in the Koshi hills. They comprise memberships of almost 142,000 households. Due to the strong forestry-farming linkage in rural Nepal, with high interdependence on land cultivation, raising livestock and forest products, community forestry programmes covered a majority of households in the rural areas of the Koshi hill and other hill districts and significantly contributed to poverty alleviation in the region.

It could be thus argued that less should be attempted and key interventions identified which might create an enabling environment for development led by private investment and innovation. These 'enabling environment' interventions could include: infrastructure, representative local government to provide more of a say in local planning and development, responsive 'funds' for local development, girls' education (and education more generally), and encouragement for private initiatives. Critically, these interventions require provision of a basic framework: democratic, transparent and responsive government; effective legislative structures; accessible financial services; and infrastructure support to improve roads, telecommunication and education.

Further, many missed opportunities were detected where development interventions could have contributed to larger change had there been adequate engagement with beneficiaries. For example, the importance of permanent and seasonal migration overseas and the impact of remittances were completely overlooked by the donor community in the 1990s when this phenomenon really began to take off. The changes in remittances and the diffusion of new information that followed changes to migration have transformed the Koshi hills region. If donors had understood this trend early and the potential impact of remittances as a catalyst of change, many effective interventions could have been developed to assist households in leveraging remittances to better lift them out of poverty and increase their quality of life.

The ambition of this study is to understand the dynamics of economic and social change, to assess the role of development interventions and to draw conclusions that may help shape future development policy-making and, more broadly, the approach taken to development, by providing key insights into what has, and has not, impacted on the socio-economic development of a region that has experienced consistent development intervention. By shifting the lens to the long term, the 'wide impact' and towards beneficiary-driven needs, we hope this will influence the debate on what constitutes effective development and how donor led development interventions should be conceived and designed in the future.

1. Introduction

1.1 About this report

This document is a summary report of a larger research study into the long term impact of development interventions in the Koshi hills region of Nepal that was conducted over a 15-month period by a team of international and national researchers and development professionals. Over the study period, independent in-depth research studies were conducted to investigate the linkages and relationships between development interventions and sustained changes in the Koshi hills region over the past 40 years.

This report attempts to capture the high-level summary findings of the larger research study, drawing conclusions from analysis conducted using the primary and secondary data collected in the independent research studies. This report presents a brief introduction to the research study, an abbreviated description of the primary research methods used, descriptive results of the major long term changes in the region and the results of further analysis into the key drivers of these long term changes.

This report does not attempt to provide a general summary of all findings from the overall research study, as a report of this length cannot capture the breadth of information included in the full study. Rather, the results and the analysis presented here are deliberately selective to address only the most significant drivers of change that were identified.

The individual research studies included over 1,000 pages of primary and secondary research findings, including a full documentary review, economic modelling, poverty impact assessment, primary qualitative research and thorough secondary analyses. The results included an in-depth analysis into the macro- and micro-political economy of the region, including the changing roles of institutions and government over time; trends in development planning, resources and interventions; and analysis into the changing social dynamics in the region, including social exclusion and changing gender roles.

1.2 Background

The National Planning Commission (NPC) of Nepal, in association with the UK government's Department for International Development (DFID) in Nepal, commissioned a study to assess the impact of development interventions over the past 40 years in the Koshi hills region of eastern Nepal, encompassing an overall period from the 1970s to the present time in 2013. Recognising that change processes are typically caused by multiple factors and interventions, this study assesses the impact of interventions supported by a range of actors, including the Nepal Government, donors, non-governmental organisations (NGOs) and the private sector, in addition to the investments by the UK government. The study assesses the interaction of these interventions with the influence of wider, social, political and economic factors to explain the long term success or failure of each and their cumulative impact on the key, socio-economic development trends of the study period.

1.3 Study Rationale

This study provides a unique opportunity to step back in two important ways from assessments of the impact of development interventions and programmatic evaluations, as they have been conducted to date. It attempts to evaluate long term change and it adopts a cross-sector approach. As such, it differs in a fundamental way from programmatic monitoring and programmatic impact evaluations that are characterised by a short term horizon (typically three to five years) and a programmatic focus that prioritises output and impact measures generally, insofar as they have related to direct beneficiaries. Intended and unintended consequences, the transition from a This study provides a unique opportunity to step back in two important ways from assessments of the impact of programmatic theory of change to a sector or regional theory of change and long term change are generally less explicitly addressed, if at all. This study is specific in its adoption of a wider lens.

It is also specific in that it limits its scope to an investigation of only the most significant long term, socio-economic changes and only the most important, or those with the most plausible contributory evidence; in

parts, informed by beneficiaries themselves. Both of these characteristics focus the study on answering one crucial question: "What has actually been achieved through development interventions over the past 40 years and what can this tell us about future intervention?"

To adequately capture this second element, the study was conceptualised and designed to focus on the processes of change within the development trajectory of the whole Koshi hills region over the past 40 years. By being process-focussed, as well as regional and long term in scope, the study aimed to unpack the real development progress of the region and to understand what key drivers contributed to this.

The ambition of this study is to understand the dynamics of economic and social change, to assess the role of development interventions and to draw conclusions that may help shape future development policy-making and, more broadly, the approach taken to development, by providing key insights into what has, and has not, impacted on the socio-economic development of a region that has experienced consistent development intervention. By shifting the lens to the long term, the 'wide impact' and towards beneficiary-driven needs, we hope this will influence the debate on what constitutes effective development and how donor led development interventions should be conceived and designed in the future.

2. Research Methods

2.1 Research Approach

In the Koshi hills region of Nepal, there have been many project- and programme-specific impact assessments that have attempted to document and understand the changes to the social and economic conditions of people in the specific areas where programme interventions took place. While this study drew upon these resources, the overall research design departed significantly from this programmatic approach. The study approach incorporated four stages:

• Research of the key socio-economic changes during the 40 year study period. This included:

– macro-level and disaggregated trends; and

– beneficiary-led research into the lived reality of these trends

• Research of development interventions implemented during the study period; analysing trends and variations in theoretical rationale and practical implementation, sectors, target beneficiaries and geographical locations.

• Research into the key processes of change and the most important (the greatest contributory impact) drivers of these changes.

• Primary research into beneficiary and household experiences in relation to these changes and drivers, in order to give a voice to beneficiaries and provide a reality check for top-down perceptions of poverty and poverty alleviation.

As its definition of long term change, the study used those socio-economic developments that demonstrated sustained change throughout the study period and that have impacted on a critical mass of people or have the potential for structural transformation.

2.2 Research Questions

This research approach was operationalised in the following specific research questions:
• What were the socio-economic changes that occurred in Koshi hills during the study research period?

• What were the enablers and drivers of these changes?

• What were the consequences of these changes on the lives of community members in Koshi hills?

• What was the contribution of aid within this process?

2.3 Research Methodology

The research questions guided the selection of five independent research methodologies presented in five independent studies.

Complex pathways to change, confounding effects and inputs, unintended as well as intended consequences and the intangible nature of many of the impacts that are hoped to be achieved make the accurate measurement and evaluation of development impact fundamentally challenging. Not only is it difficult to measure long term impact, but developing an understanding of what contributed to these changes represents a fundamental challenge.

Recognising these challenges, the study used a mixed-methods approach and utilised an analytical framework that prioritised data triangulation and key process tracing to draw key messages from the corpus of research products.

2.3.1 Independent research studies

In order to answer its research questions, the research team conducted five key studies over the 18-month research period. A brief overview of each study's approach and methods are provided below, presented sequentially, as each informed elements of the next:

• A **documentary review**, which examined over 1,000 independent data sources on development interventions and outcomes in the Koshi hills region from the last four decades, including project documentation, census, agriculture reports, financial statistical reports and other Government of Nepal statistics, as well as other independent research studies that were both quantitative and qualitative in nature (Annex A – for detail). This documentary review informed the design of follow-on research studies, as well as providing a full dataset of development indicators (Annex D) used to conduct a more in-depth analysis.

Based on the results of the document review and the datasets collected through the review, the research team conducted three secondary analyses in three separate research studies:

• A **geographical information systems (GIS) mapping exercise**, which identified key changes to land-use patterns of available three map datasets year points: 1986, 1996 and 2010 for the four focal districts.

• An **analysis of district-level poverty data** stemming from the three Nepal Living Standards Surveys (NLSS) conducted by the Central Bureau of Statistics in 1995/96, 2003/04 and 2010/11.

• An **economic analysis** of national, sub-national and district-level inward investment and growth trends from 1971 to 2010, drawing on, inter alia, actual expenditures from the Financial Comptroller General Office's records, estimates of district and sector-wise GDP and development indicators based on the NLSS (I, II, III), the Nepal Human Development Reports (1998, 2004) and the Regional Plan Report (1989).

The results of the documentary review and the three secondary analyses permitted the research team to develop an overall 'hypothesis of change', outlining the major socio-economic changes in the Koshi hills area.

• A qualitative '**reality checks approach**' **(RCA) study** was then conducted in order to examine this 'hypotheses of change', as well as to verify some key quantitative results, based on secondary data sources. The RCA study sought to understand the views, perspectives and opinions of people living in poverty by means of 'light touch' participant observation involving 27 host families, their neighbours and local service providers (in total, about 600 people).

It gathered information about how people perceived and experienced change. By living with families for several days and nights, it provided insights into their attitudes and behaviours, and the significance of different change interventions. It was used as an interpretative lens for the review of largely quantitative data.

Selection process of sites for RCA field study

As no standard baseline information existed for the analysis of overall cumulative impacts of various interventions in the Koshi hills over the last 40 years, selection of the field sites for RCA study was made. This followed a series of steps and was based on four criteria. They were: (i) the Koshi Hills Baseline (KHB) study, 1978-79 and KHARDEP Impact studies (KIS), 1980-85; (ii) remoteness, as defined by the Ministry of Local Development (MLD); (iii) diversity of ethnicities and castes; and (iv) vegetable growing concentrated areas. Six out of 12 VDCs (selected based on those criteria) representing the KHB and KIS studies were selected for consideration. In so doing, the inhabitants of the selected sites of the VDCs allowed them to recall earlier perspectives and update these, with a particular emphasis on their felt impacts, and benefits of the development activities being initiated in the region.

Additionally, in recognition that the economy and society of the eastern hills has changed significantly over a much longer, historical period and that the 'deep history' of the region is still relevant at present, an in-depth study of the 'Deep History of the Koshi Hills Region' was also conducted to provide an important historical context to the more recent changes in the environment, economy, society, culture and politics of the Koshi hills. At the end of the independent research study period, two consultative workshops were held by the study team

(one of which was in Dhankuta, one of the Koshi hills districts) with key stakeholders, in order to verify the quality of data reported in the research study final reports and to clarify the research study results in terms of the overall study objectives and research questions.

2.3.2 Analytical approach

The five research studies were then analysed to provide an insight into the key research questions. The analytical approach developed was similar in structure to a 'Theory of Change' (ToC) framework. It was used to make sense of change processes that are multi-layered, non-linear, have multiple stakeholders and which require deep and systems-level changes. It relied on multiple methodologies of data collection, measurement and analysis—quantitative and qualitative, impact and process oriented, and traditional and non-traditional, etc (Connell & Kubisch, 1998).

In a departure from a programmatic Theory of Change framework, however, the approach used retrospective causal process mapping, key node analysis, cumulative causation and strength of evidence assessments to pull out key drivers in a non-linear and complex reality. This recognised the complexity of interrelations and pathways to change, which meant that construction of a single, or even multi-faceted ToC in the conventional sense was simply not possible, nor useful.

• **Causal Process Mapping.** We identified an end point based on the study's primary objective—long term impact. We then identified the key characteristics of long term change in the Koshi hills, which we used as the key dependent variable—the change that is being explained.

The causal process mapping framework was then used to trace the processes and relationships that have been the key drivers of this change, linking resources and investments to socio-economic changes. We identified key enablers of change—the development interventions and contextual and/or environmental factors that open this story and the chains of factors that link these to outcomes. These factors in the causal process maps were defined through key node analysis.

• **Key Node Analysis.** Analysis of all research studies led to the development of key nodes within the causal process maps, identifying significant short and long term elements. Nodes were specified as follows. The research team examined all of the short and long term developments relating to poverty alleviation. Those that recurred most regularly and with the strongest plausible causal links within the data were included in the causal process maps. For example, to understand the growth in alternative livelihoods, commercial innovation recurred throughout documentary and primary sources. Likewise, and more specifically, the service sector was identified throughout the different research studies as being a key staging point in this causal process.

• **Cumulative Causation.** Cumulative causation was used as an analytical framing tool to address the issue of attribution. The length of the study period and the multiplicity of variables impacting on the socio-economic developments in the region meant that strict attribution was not possible. Instead, the study used cumulative causation to frame the insight into the mix of factors that contributed to an end impact and the relevant weighting of each.

• **Strength of Evidence Assessment.** Each element in the causal process mapping exercises was subjected to a 'strength of evidence' analysis. This relates to the quality of the supporting data (quantity and multiple sources) and to an assessment of the strength of plausible, causal contribution. It served as a key tool for populating the causal process maps and interrogating the data.

Furthermore, the approach was framed using one further analytical tool:

• **Differential Impacts.** Differential Impacts were used to frame analysis into intended and unintended consequences and was framed, in particular, in terms of what worked and what did not, of most of the development interventions. Where feasible, comparisons of changes in the four Koshi hill districts were also made with the two adjoining hill districts and the two districts in the southern plains in order to assess differential impacts.

2.3.3 Methodological limitations

The challenges in undertaking a comprehensive study of this kind are numerous. This is an extremely complex and ambitious undertaking at the theoretical level, with huge potential for formative additions to knowledge and understanding about if and how development works; however, this poses several methodological challenges in implementation.

A forthcoming paper on the strengths and weaknesses of this particular methodology in measuring long term impact will further explore detailed methodological limitations. Data availability was arguably the biggest limitation of this study. The lack of data disaggregated by social factors (specifically class-, caste- and gender-disaggregated data) reduced our ability to conduct disaggregated analysis and disentangle the differential impacts of development interventions on these different social groups.

A summary of methodological limitations is included in Annex C.

3. Key Results

3.1 Introduction

Our analysis yielded results at three levels. Firstly, the key features of long term impact, as measured by macro-level trend data. Secondly, the lived experiences of these trends, as articulated through the voices of the poor. Third were the major trends in development interventions and the relationship between these interventions and other contextual and environmental factors that drove change in the region.

3.2 Key Features of Long Term Impact

3.2.1 Koshi hills in 1970

As part of the research process, the research team went through an initial scoping exercise to record the socio-economic characteristics of the Koshi hills region, in the period immediately prior to the study period, to provide a broad historical context. The rationale lay in an appreciation that the development trajectory for the Koshi hills during the 40 years did not occur in a vacuum, nor spontaneously begin at the beginning of the study period; much of the long term impact that was identified was built upon trends already distinguishable in the region prior to 1970.
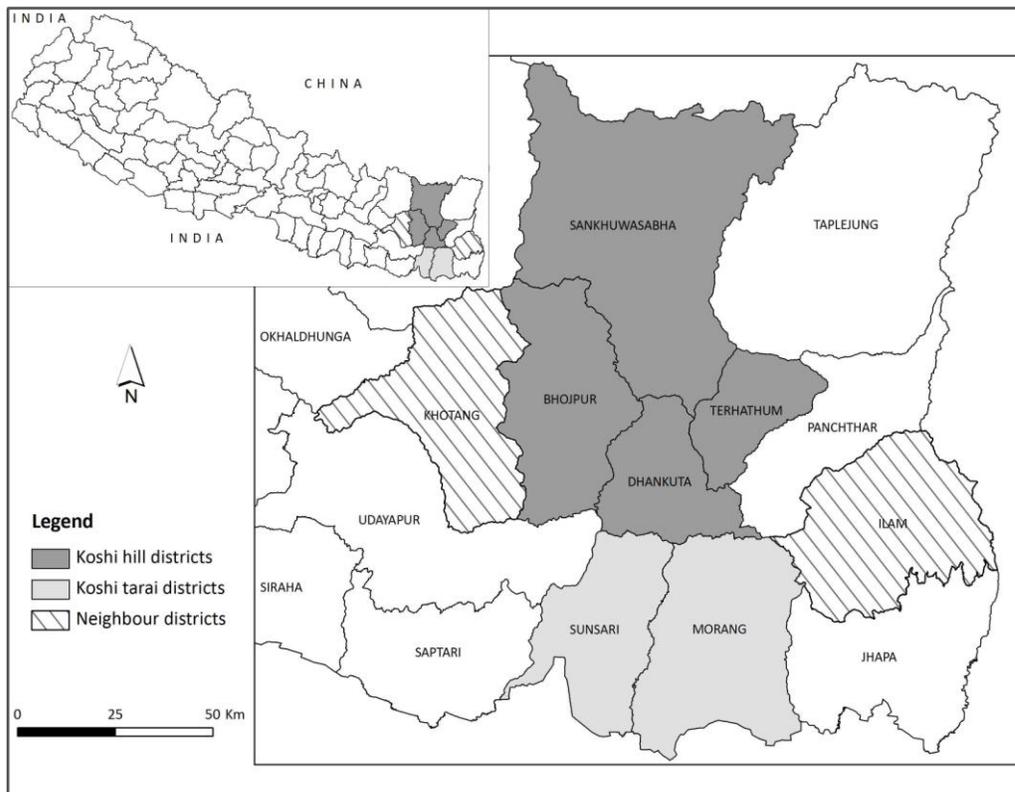
Figure 1: Location of the Koshi hills and surrounding districts

For the purpose of this study, we understand the Koshi hills region of Nepal to comprise four districts of the Koshi zone in the Eastern Development Region (EDR) of Nepal. These districts are Bhojpur, Dhankuta, Sankhuwasabha and Terhathum (Figure 1). The four Koshi hills districts (with area of 6,557 km²) cover 4.4 per cent of the country's total area. Sankhuwasabha is categorised as a 'mountain' district (even though the agro-ecological characteristics of its southern parts closely resemble those of the hills districts), while the other three

districts fall under the 'hills' category. There are four other districts, namely Morang and Sunsari in the Tarai, the southern part of the Koshi zone, and Khotang and Ilam in the western and eastern parts respectively of the Koshi hills region. While the two Tarai districts are only being studied by way of understanding the interrelationships between the hills and Tarai in terms of flows of people, goods and services, the two neighbouring hill districts being for comparative purposes to assess the differential impact due to development interventions in areas that are relatively similar, geographically, to the Koshi hill districts.

The Koshi hills are also predominantly inhabited by Rai and Limbu ethnic groups, which are indigenous to the eastern hills and mountains. In 2001 they constituted 39 per cent of the total population of the Koshi hills, as against 4.4 per cent of the country's total population. Over the centuries, the influx of other caste-based groups have led to the population increases and changing of the caste and ethnic mix of the local population. In 2001, Brahmins and Chhetris totalled 27 per cent of the population, followed by Dalits (10%) and Newars (7%).

Although the focus of this study is on the four districts that, together, constitute the hills areas of the Koshi zone, the reality is more complex than a single geographical, or even administrative, political, social or economic entity. The Koshi hills, in the development context taken in this study, is, in fact, not so much a geographic concept, as a 'project-generated' one, derived from an early foreign aid development intervention— the Koshi Hills Area Rural Development Programme (KHARDEP).

The four districts that constitute the study area have a long history of development and interaction, both internally and with surrounding regions that provide a crucial context to any investigation and analysis included here. While key contextual development characteristics are summarised in Figure 2; a much longer and exhaustive study of the 'Deep History of the Koshi Hills Region' is included in a separate report by that title (Seddon, 2012).

Starting point: life in Koshi Hills pre 1971				
Aid and gov policy: - Aid dramatically increased from 1959 - Community primary schools and rural heath posts constructed - Beginning of a formal development planning process in 1956	**Agri and resource management:** - Legislation on forest conservation - Little crop diversification, small scale diversification of livelihoods; subsistence predominates	**Infrastructure:** - No motorable roads - System of trails linking *haats* and areas of production and consumption - Significant portering industry - Limited formal community water sources and poor sanitation	*Soc development:* - Informal community group formation around communities and occupations - Extended family support structures - Localised regional interaction and communication around haats	**Migration:** -Established labour migration (inc India) - Br and Indian army significant migratory occupation - Large-scale permanent migration to Eastern *Terai* in 1960s after the eradication of malaria in the 1960s

Figure 2: Koshi hills pre-1971

3.2.2 Long term impact: people in the Koshi hills are 'better off now than in 1971'

The key finding when investigating long term impact in the Koshi hills during the study period is that there has been a significant and sustained positive change among the population of the region. Across a range of different measures, people have been getting progressively better off over the past 40 years.

One indicator of this change is the trend in economic growth. Development policy in the Koshi hills, from both Government of Nepal (GoN) and donors, has reflected broader trends in historical development theory. As such, until the 1980s, development policy was framed, largely, in terms of economic growth equating to poverty alleviation. By this measure, the Koshi hills region has seen sustained positive change over the study period, with few instances of retraction. GDP has grown at an average annual growth rate of 2.8 per cent between 1971 and 2010 (Figure 3) and GNDI has grown by an average of 3.0 per cent over the same time period.
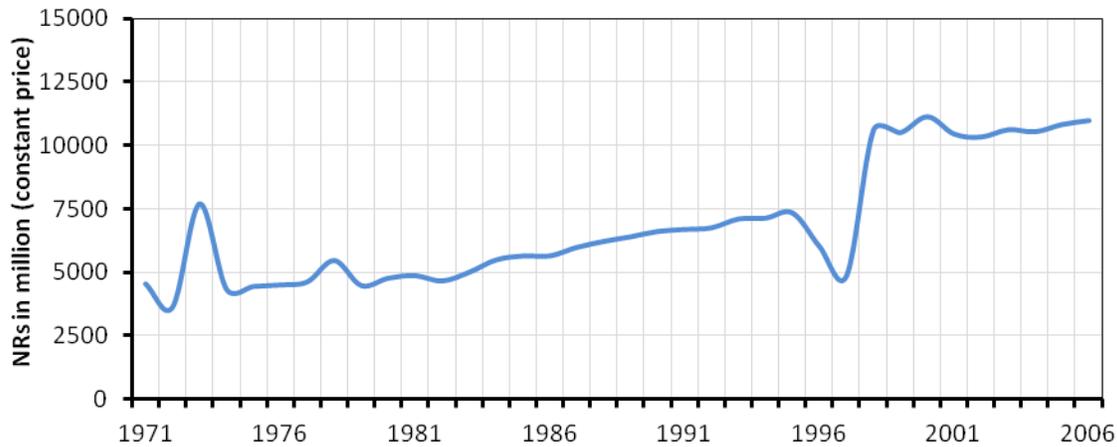
Figure 3: Growth of GDP, Koshi Hills (estimations of GDP are based on Regional Plan 1989, NLSS 1995, Nepal HDR 1998 & 2001, NLSS 2003 and NLSS 2010)

There has been a difference in the rate of GDP growth between the Koshi hills region and its neighbouring districts. Ilam experienced the fastest growth over the entire period (1971-2010) at 7.3 per cent on average a year, followed by Khotang at 3.6 per cent per year, both significantly faster than the other districts in the Koshi hills region (2.8% for Dhankuta, 2.6% for Bhojpur and 2.1% for Terhathum). Only Sankhuwasabha had an average of 3.6 per cent during this period, mainly due to a lower base in 1971.
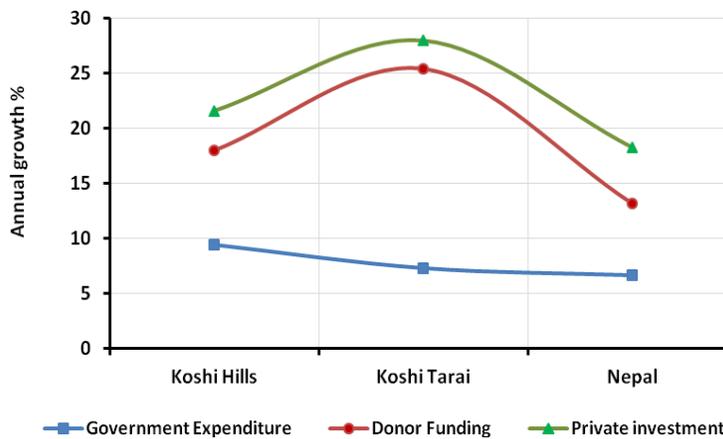
Figure 4: Average annual growth by sources

During the 1980s, and continuing today, development policy and definitions have been characterised by a shift towards a broader definition of development that emphasises basic needs, pro-poor policy and empowerment (a longer consideration of definitions of multi-dimensional poverty is given in Annex B).

We analysed two separate, trend measures of multi-dimensional poverty as part of this study, with both showing absolute decreases in poverty over the study period. The measurement used by the Nepal Living Standards Survey (NLSS), shows that, while poverty (as defined in the study as a composite of a number of indicators – Annex B) increased between NLSS 1 (1995/1996) and NLSS 2 (2003/2004), there was an absolute decrease from the baseline to NLSS 3 (2010/2011) (Figure 5). We investigate the drivers behind the initial rise later in the paper. This takes into account 24 variables, including food and non-food poverty, literacy, health, standard of living, women's empowerment and gender disparity, and remoteness. Similarly, the Human Development Index shows an overall increase of 24 per cent in the Koshi hills between 1996 and 2004, where all four districts were above the national figure in both points of time.
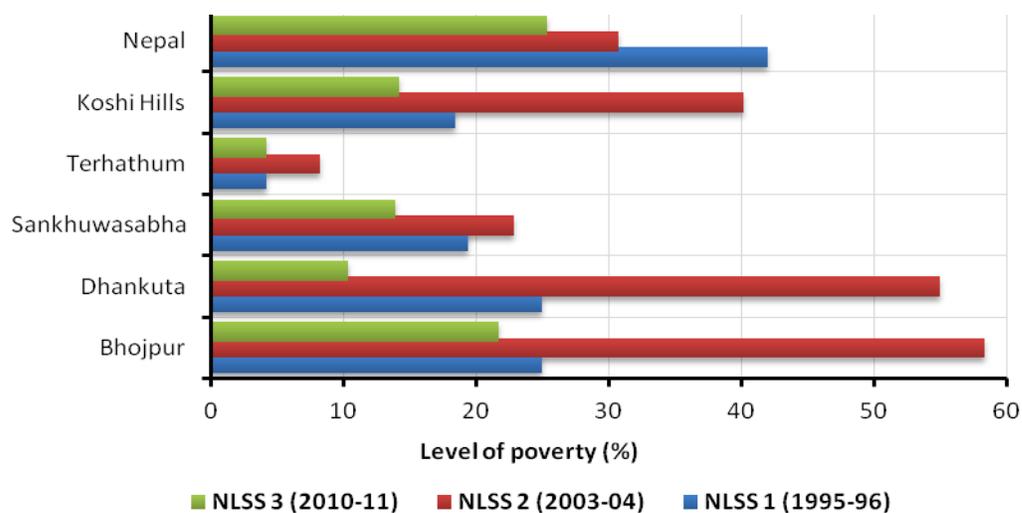
Figure 5: Levels of poverty in the Koshi hills, 1995-96 to 2010-11 (Poverty Analysis Report, 2012)

Disparities in poverty and social outcomes in Nepal (and in the Koshi hills) cut across gender, caste, ethnicity, religion and across geographic regions. Yet the history of the availability of socially disaggregated data is fairly recent. The census of 1991 was the first to identify 103 different caste and ethnic groups in the country, since when, the classification of the population has become a major pre-occupation, with different dimensions of poverty, social discrimination and disadvantage, gender, caste, ethnicity, age, region, etc., all to be considered when devising 'socially inclusive' policies, programmes and projects.

3.3 Long Term Changes Associated With Poverty Alleviation

Our analysis further identified four interconnected and multi-sector, long term changes associated with economic growth and poverty alleviation: (i) new opportunities within Koshi hills, (ii) new opportunities outside of Koshi hills, (iii) better quality of life at an individual level and (iv) better quality of life at a household level. We present our findings on the key descriptive characteristics of each of these long term changes in the remainder of this section.

3.3.1 Opportunity within Koshi hills

In the Koshi hills, there is a long history of its people adopting alternative livelihood strategies as a supplement to core means of generating a living. These strategies have included the sale or barter of forest or river produce, the sale of labour and the sale of surplus produce. The 40 year study period saw amplification and a transformation of this process. Two areas of alternative livelihood strategies can be identified: (i) commercial agriculture and (ii) non-agricultural commerce and industry.

3.3.3.1 Commercial agriculture

Differentiated from small-scale diversification of agricultural production as a resilience mechanism that has a long history in the Koshi hills, changes detected in commercial agriculture during the study period include the regular growth of agricultural surplus for sale, the adoption of new produce and inputs, and specialisation in a saleable product. In relation to this, two separate, significant trends can be identified—the growth in production of high value crops (HVCs) and the growth in commercial utilisation of forest products.

Vegetable production has increased from negligible amounts cultivated for home consumption in the 1970s to over 101,000 MT by 2009/10 (MOAC, 2009/10). This represents 3.3 per cent of nationwide production, amongst which 34 per cent is exported to India (Economic Analysis Report, 2012). The production and cropping areas were found to have risen significantly from 1990 onwards, with cultivation mostly concentrated in Dhankuta, which produced 46 per cent of total vegetables in the region, followed by Terhathum (19%), Bhojpur (18%) and

Sankhuwasabha (17%). Furthermore, GIS maps and the findings from the RCA indicate that production has largely been along the road corridors and near the main bazaars and/or towns, and amongst large and medium farmers.

The area allocated to the growth of large cardamom (*Amomum subulatum*) has also dramatically increased from seven hectares in 1971 to 3,930 hectares in 2009 (representing a 561-fold increase) (MOAC, 2009/10). In 2009/10, the four districts produced 1,603 MT of the spice (31% of nationwide production), with Sankhuwasabha becoming the third largest producer in the country. RCA data recorded households as earning NPR 60,000 to 90,000 from cardamom cultivation in one season.

Private forests are also a source of good income for the households who own them. Data from the most recent report of the Department of Forests show that the total revenue from private, community and national forests, together, from the whole of the EDR was 31 per cent of the national total for FY 2009-2010 and was 3 per cent from the four Koshi hills districts (at NPR 6,635,949 or US$84,266) (DOF, 2009-2010). Of this, the share of revenue from private forests was the highest from the entire EDR at almost 60 per cent of the national total (of which the Koshi hills contribution was 9%).

3.3.3.2 Non-agricultural commerce and industry

Agriculture has remained the predominant activity within the Koshi hills, but, in recent years, the population engaged in the sector has decreased from 98 per cent in 1971 to 76 per cent in 2001. Amongst the four districts, the change has been most notable in Dhankuta with 55 per cent of the population engaged in farm activities in 2001, in contrast to Sankhuwasabha, where agriculture at 92 per cent is still overwhelmingly dominant. National trends show that non-farm (e.g., services, clerical jobs and sales) and off-farm earnings have grown in importance, thus, this is not unique to Koshi hills. Overall national figures for 2004 show that, for rural areas, the main sources of income include farm activities (38%), remittances (15.4%), non-agricultural wages (15.3%), non-agricultural enterprises (15.3%) and agricultural wages (7.3 %) (NLSS II, 2003/04).

Agricultural GDP, as a percentage of total GDP, has decreased from 73 per cent in 1971 to 63 per cent in 2010. The sources of this growth in non-agricultural GDP are associated both with private enterprise and the public sector and development programme growth. Data on the economically active population by major industries show that those engaged in manufacturing and commerce have increased by seven and 27 times, respectively, from 1971 to 2001 (CBS Census 1971-2001).

The trade and service sectors in the Koshi hills have also increased at an annual rate of 3.9 per cent from 1971 to 2010. Moreover, trades and services, as a percentage of total GDP, have risen from 22.6 per cent in 1971 to 29.8 per cent. Figure 6 provides a breakdown of the main industries within the non-agricultural sector in 2001.
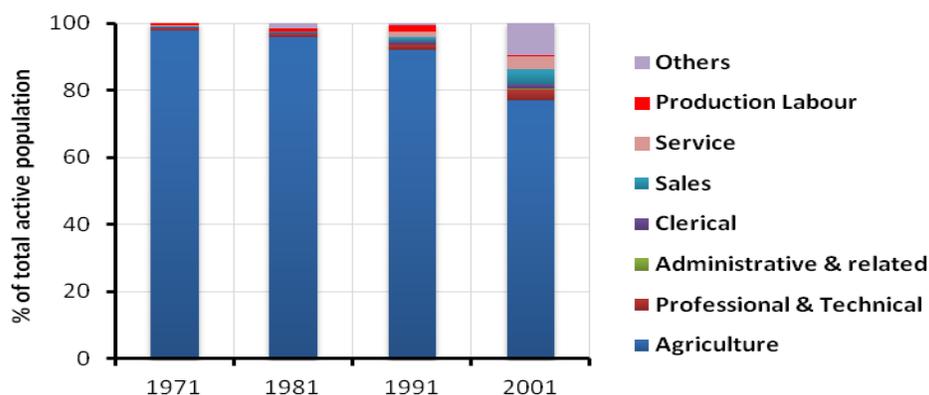
Figure 6: Distribution of economically active population by major industries, Koshi hills 1971 to 2001 (CBS 1971, 1981, 1991, 2001)

There has also been a significant increase in the number of cottage industries within the Koshi hills, although total numbers remain very low; from a handful in 1975 to over 1,700 by 2011 (Industrial Statistics 1975-2011). The CEDA study (1975) found that families were only selling or bartering surplus products during hāt bazaars, as

the majority were being used for domestic purposes. Only a few were being produced solely for markets. This scenario has, however, changed significantly since then, with the proliferation of cottage and small enterprises, and the commercialisation of production (Joshi et al., 1989). The utilisation of family labour has, however, remained dominant. Studies also indicate a gendered dimension to the cottage industries, as production was, and continues to be, generally undertaken by women, the majority of whom are from Janajati communities (Dunsmore, 1998).

The majority of the industries within the Koshi hills are concentrated primarily on textiles (47%), paper products (27%), and food and beverage (20%), with most specialising in products that are chiefly based on local materials, and crops that are indigenous to the districts. For example, tea estates are concentrated in the Dhankuta district, namely the Guranse Tea Estate, the Kuwapani Tea Plantation and the Narayani Tea Plantation, while the industries in Terhathum are focused on producing Dhaka, a traditionally handloom-woven fabric that is distinctive in its pattern and design. In Sankhuwasabha, the industries are based on fabric woven from nettles (*allo* or *Girardinia diversifolia)* and handmade paper, while those in Bhojpur are concentrated on paper production (CBS, 2007).

3.3.2 Opportunity outside of Koshi hills

There is a long history of the interchange of people between neighbouring and proximate regions and countries further afield. This has accelerated during the study period. The significant change addressed here is the increase in the opportunities to migrate from and earn income outside of the Koshi hills region. This has important implications for poverty alleviation in terms of increased disposable income and the more intangible increases in individual agency and personal choice.

Migration has long been a source of alternative livelihood generation, both seasonal labour migration and more long term. Historical evidences show that one of the most fundamental changes took place in the late 1950s, when there was a massive movement of people from the eastern hills to the Tarai after the eradication of malaria and the expansion of farmlands and employment opportunities, as a result of the government's efforts through the assistance of WHO and the USA. Although this does not fall under the study period, it nonetheless has had a long lasting transformative impact on the demography and ecology in the Tarai and the Koshi hills (CEDA, 1975; Hitchcock, 1961; MacFarlane, 1976). In recent decades, census figures show that migration steadily rose until 2001, after which there was a dramatic acceleration, nationally as well as within the Koshi hills. In 1981, the absent population in the Koshi hills totalled 20,091 (3.7% of total population), but by 2011 (CBS, 2011), it had rapidly increased to 51,318 (8.4% of total population), with the highest proportion recorded in Terhathum (9.5%) followed by Dhankuta (8.8%), Bhojpur (8.2%) and Sankhuwasabha (7.6%).

Overwhelmingly, men (93%) are the main migrants from the Koshi hills (Census 2011) although, since 2001, there has been a small rise in the number of female migrants from 5.6 per cent in 2001 to 7 per cent in 2011. Studies also show that out-migration has been mostly skewed towards the wealthy, in terms of being able to afford initial investments and/or secure better paying jobs in more lucrative destinations that require higher payments to manpower service agencies (Seddon et al., 2001; ILO, 2004; WB, 2009). As a consequence, the benefits have accrued to the better-off, but, at the same time, migration has also allowed the less well-off to improve their circumstances.

Another key feature of labour migration in the Koshi hills has been the spatial and social recruitment of young males from Rai and Limbu ethnic groups into British and Indian regiments since 1816 (Caplan, 1970; NPC, 1970). The significantly higher salaries and pensions received by these men, coupled with the high degree of continuity in recruitment from specific villages and even families, have led to greater creation of what Caplan (1995) refers to as the 'new elites' of the villages. In addition, these historical ties have also led to the flow of development assistance, primarily British aid, and the initiation of a number of development programmes, such as the Dharan-Dhankuta road, Pakhribas Agriculture Centre, KHARDEP and NUKCF) in the Koshi hills (Nickson, 1992).

In recent years, the destinations open to migrants from the Koshi hills has expanded beyond the Tarai and northern Indian states, which, historically, were the main destinations, to the Persian Gulf and south Asia. In 1991, only 2 per cent of the migrations from the Koshi hills were going to the Persian Gulf, but, by 2001, this

figure had drastically increased to 38 per cent (CBS, 1991; 2001). This trend was reflected in three of the four study districts, except Bhojpur, where over 70 per cent continued to go to India.

Improving the lives of the socially and economically marginalised groups

Remittances from migrants working abroad is clearly one of the major influences in improving social and economic conditions for the poor and disadvantaged (such as the Dalits and Janajati) in recent years. The Nepal Migrant Survey (2009) shows that 'hill Dalits' received the highest share of the total remittances coming into the country from both foreign and internal (within Nepal) sources at almost 36 per cent, followed by Tarai and hill Janajati (WB, 2009). This is significant, as the NLSS II (2003-04) indicated that the incidence of poverty was the greatest for hill and Tarai Dalits along with hill Janajati (CBS et al, 2006).

The increased large scale labour migration has resulted in significant remittance flows back into the Koshi hills. From just over NPR one million in 1971, the total value of remittances entering the region increased steadily over the next two decades to reach nearly NPR 30 million by 1990; and by 1995 nearly NPR 80 million—having increased about eight times in the previous decade. By 2005, the total value of remittances entering the Koshi hills had topped NPR one billion, having increased 10-fold in the previous decade. The growth rate over the whole period, from 1971 to 2010, was nearly 20 per cent per year (CBS, 2006; Economic Survey 2007-08 & 2010-11; NLSS I, II & III; Seddon et al., 2001; Elvira & Seddon, 2005; WB, 2009; and ILO, 2004).

Changing gender roles

With large number of men away from home, the RCA notes that it has also become more common to find female headed households. This is supported by the NLSS III, which shows that the percentage of female headed households in the KHs increased from about 10% of all household heads in 1995-96 to over 25 per cent in 2010-11. Women were found to be making active decisions on a day-to-day basis by either taking on the additional burdens because of absent males and/or through the support of their husbands via the advancements and widespread coverage of mobile networks or by collaborating with other adult males in their families. Increased labour shortages (mostly during the peak agriculture seasons), leading to increased burdens on those left behind and more land remaining fallow, is another significant development in recent years. It would, however, be misleading to refer the changes taking place as the emergence of the 'feminisation of agriculture', as women have historically always been active in agriculture due to labour migrations in the past. The study does, however, note that it is, rather, the large scale of absent menfolk for greater periods of time that is changing labour requirements and the economy as a whole, with women, the young and the elderly having to work longer hours and more intensively.

The share of household incomes by sectors shows that remittances now account for a greater share of household incomes. Between 1995/96 and 2010/11 there was a nine-fold increase; from 1.3 per cent in 1995-96 to 12.8 per cent in 2010-11. RCA data show that a majority of the households rely upon remittances as a significant source of household income and have resulted in raised living standards, increased consumption, payment of debts and investments in assets.

3.3.3 Better quality of life (individual level)

In terms of quality of life at an individual level, our analysis yielded findings about changes in individual education and health outcomes. Indicators for both show sustained improvement during the study period in the Koshi hills, although with some important nuances.

3.3.3.1 Education

Key education indicators show increases throughout the study period. For example, student enrolment increased from 48,920 in 1976 to 208,146 in 2007, although enrolment in secondary school remained low (Figure 7).
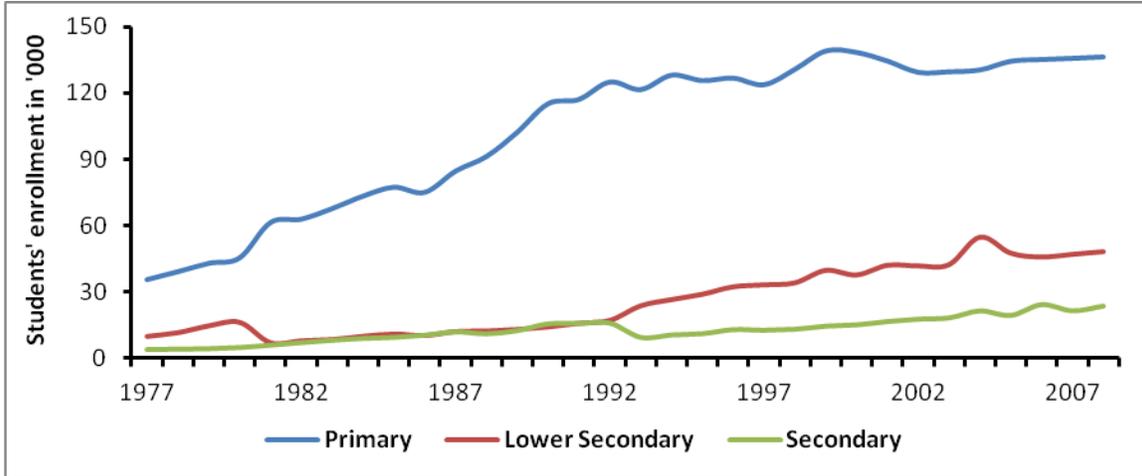
Figure 7: Student enrolment in Koshi hills by school level, 1976 to 2007 (documentary review)

The overall literacy rates in the Koshi hills have increased from 14 per cent in 1971 to 58 per cent in 2001 (68% for males, 47% for females). The literacy rates for males and females in all four districts, in 2001, are higher than the national averages of 65 per cent for males and 42 per cent for women (except for males in Sankhuwasabha). This has showed a continued rising trend with significantly higher rates again in 2011 as per population Census 2011 (Table 1). Within the Koshi hills districts over the past 40 years, Dhankuta and Terhathum have consistently had higher literacy rates for both men and women.

Table 1: Literacy rates in per cent, 2011 (Aged 5 +) (Source: Population Census, 2011)

Districts	Male	Female	Total	Total population
Bhojpur	79.32	61.38	69.34	203,018
Dhankuta	82.40	67.41	74.37	166,479
Sankhuwasabha	77.47	62.20	69.38	159,203
Terhathum	83.53	67.04	74.62	113,111
Koshi hills	80.36	64.20	71.60	641,811
Ilam	84.16	72.05	77.91	282,806
Khotang	77.67	61.10	68.83	231,385
All Nepal	75.14	57.39	65.94	26,494,504

The increasing enrolment of girls and boys in formal schools (whether public or private), and the increasing levels of education that they are attaining, constitute possibly one of the most significant changes in the area, with potentially far-reaching implications. Yet, in Khotang district, a study has shown that there are trends of low rates of retention of boys beyond the eighth grade, after which they are seeking opportunities for work in other countries (Adhikari & Hobley, 2011). The attraction of employment overseas, for which higher educational grades and skills are not currently particularly in demand, has been growing over the last decade or so, particularly for young men. Girls, on the other hand, whose enrolment at primary and even secondary school level is now approaching that of boys, have recently shown better retention rates into ninth grade. Field data from the RCA also reflects the increasing willingness of families to invest in education for girls (and not just their sons), by sending them to local private schools in the hope of getting a relatively better education and increased chances of non-farm employment opportunities in the future. Yet the gender gap in literacy rates has been narrowing very slowly, both in the Koshi hills and nationally.

The establishment of the Uttarpani Agriculture Technical School (UATS) in 1980 (supported by the British government) provided an opportunity for young people to be trained as agriculture extension workers in the hills. A 1992 evaluation concluded that the UATS project was successful; most graduates demonstrated high motivation and performance, and enjoyed a high rate of subsequent employment in the eastern hills (KHDP, 1992). Between 1984 and 1991, 25 per cent of graduates were women and by 2008-09 the share of women graduates reached almost 40 per cent (CTEVT, 2011).

3.3.3.2 Health

Life expectancy rates, within the Koshi hills, have steadily risen and have consistently been higher than national averages. In 1998, they ranged from 61.3 in Terhathum, 61.7 in Sankhuwasabha, 64.3 in Bhojpur and 64.3 in Dhankuta, compared to 55 (national figures). By 2004, they had risen to 63.7 in Sankhuwasabha, 64.6 in Bhojpur, 64.9 in Dhankuta and 67.7 in Terhathum (UNDP, 1998; 2004).

Table 2: Access of people (potential) to roads and health facility locations, KH

Buffer Class (km)	Roads		Health	
	1986	2010	1996	2010
Below 3	9.86	38.86	74.66	84.37
3 − 5	4.74	17.02	21.67	13.37
Above 5	85.40	44.11	3.67	2.26

In 1991, the infant mortality rate (IMR) in the Koshi hills was already below the national rate. Further macro-level data on health outcome trends is limited, however, child malnourishment has also decreased from 1996 to 2006 (Figure 8).
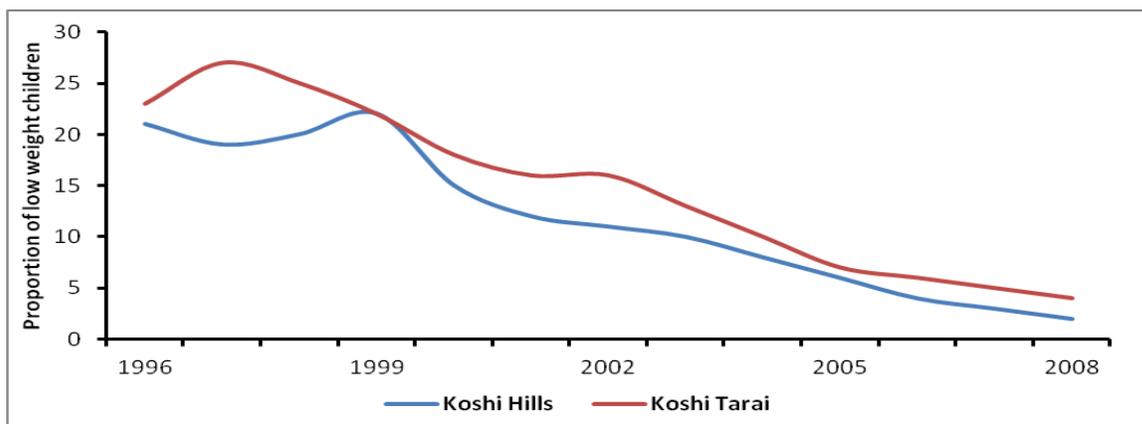
Figure 8: Proportion of malnourished children (low weight) of age below three years in Koshi hills and Koshi Tarai, 1996 to 2009 (documentary review)

But in 1994, Dhankuta had the highest proportion of children who were malnourished (50%), and had two per cent more under-3 year malnourished children than the other Koshi hill districts despite having relatively better socio-economic indicators otherwise. This may reflect growing urban inequality and poverty in the district which has the biggest urban area, Dhankuta Bazaar, compared to the other three Koshi hill districts.

There has been slow yet encouraging progress in selected maternal health indicators in the Koshi hills. The 2007 follow-up from a 2004 baseline study of the Safe Motherhood Innovation Project found that there was an increase in awareness and utilisation of maternal health services (from 22% to 66%). Though deliveries attended by skilled workers had increased from 5 per cent to 30 per cent, the majority of women (over 82%) delivered at home while those using Clean Home Delivery Kits ranged from 36 per cent in Sankhuwasabha to 66 per cent in Terhathum (potentially due to the higher literacy rates in the latter). Yet overall for all Koshi hill districts, delivery by health workers and post natal visits by new mothers have also increased (Table 3).

Table 3: Selected Maternal Health Indicators, KH and Nepal, 1999 and 2004 (CBS, DoHS, NHDR)

Indicators	Years	Nepal	Bhojpur	Dhankuta	Sankhuwasabha	Terhathum
% of delivery by health workers	1999	8.9	3.1	9.9	6.9	3.9
(as % of expected pregnancy)	2004	18.3	9.4	14.4	8.8	15.8
% of first post natal visits (as %	1999	9.0	6.8	16.9	9.0	12.0
of expected pregnancy)	2004	28.3	20.6	45.8	13.8	26.6

3.3.4 Better quality of life at the household level

One of the key changes identified by the study is the extent to which basic needs provision has increased throughout the study period. Defined as access to shelter, water and sanitation, food and some assets, the study found sustained increases in all throughout the early period of the 40 years, with levels plateauing from the 1990s onwards. Additionally changes in the social and institutional structures in the communities have also had an impact on social interactions and relations among households within the communities in the Koshi hills.

3.3.4.1 Shelter

Between 1991 and 2001, there was a small increase in the number of people residing in relatively 'better' housing (Pakki houses), although over half of the population continued to live in semi-Pakki houses and just fewer than 50 per cent in poor quality Kachchi housing (Documentary Review 2012). RCA data suggests that residents of the Koshi hills spend significant sums of money on household improvement, an insight supported by the data from the 2009 Migrant Survey by the World Bank, when 13.5 per cent of respondents used remittance income for household purchase as a primary use, while 16.9 per cent as a secondary use and 10.5 per cent as a third use. During this same period there was also an increase in the number and proportion of people living in rented houses (from 3.5 to 6%) as opposed to living in their own homes. This possibly indicates the changing housing needs of people (primarily the more affluent) that show an increasing rural-urban migration trend. In 2001, 12 per cent of the population living in urban areas within the Koshi hills compared to 2.5 per cent in 1981.

3.3.4.2 Water and Sanitation

Although no comparison data exist, in 2001 in the Koshi hills, 67 per cent of households were using tap water. However, there were important regional variations detected—tap water was available to over 80 per cent of the population in Dhankuta, but only for a little over 57 per cent of those in Bhojpur (Documentary review 2012). RCA data suggested that the most significant change during the period was access to community water systems. In the communities involved in the RCA fieldwork, households that could afford it used private hosepipes to bring water to their own households from the community water systems. According to data from the 2011 population census, approximately 69 per cent of households in Koshi hills had piped water in 2011, slightly lower compared to 73 per cent in Ilam and 78 per cent in Khotang in neighbouring districts, but much higher than the national average of 48 per cent.

Conditions of sanitation have also improved considerably in the Koshi hills, with the proportion of households with toilets in 2001 being higher in the Koshi hills (56%) than the national average (46%), with the largest coverage, again, in Dhankuta (64%) and least in Bhojpur (49%). These improvements are showing signs of having plateaued and the NLSS surveys actually record an absolute drop in water conditions not meeting Millennium Development Goals between 1995/96 and 2011 (Figure 9).
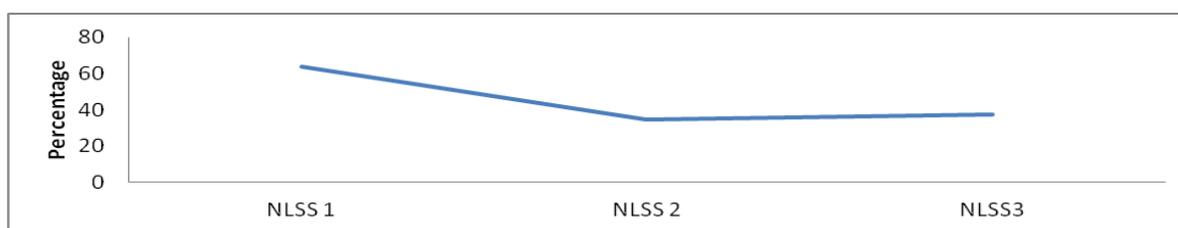
Figure 9: Percentage of households with non-MDG standard drinking water in Koshi hills (NLSS I, II, III)

3.3.4.3 Food

Despite the concerns expressed in the 1960s and 70s that agricultural production would not be able to keep pace with the population growth in the Koshi hills leading to food shortages (CEDA 1975; Conlin & Falk, 1979), those fears to a large extent have not materialised. Data from national census of agriculture in 2009/10 showed that except Sankhuwasabha (gap of 756 MT); all the other three districts had surplus cereal production to their requirements (MOAC, 2009/10). This is in part due to the steady rise in cropped area and production of cereals in all four districts since 1970s, with the highest annual growth rates in production taking place in the 1980s (paddy: 6.4%, maize: 3.9%) compared to the 1990s (paddy: 1.5%, maize: 2.9%) along with the decline in population growth rates, which was negative at a rate of -0.52 per cent between 1981-2011 (CBS 1981, 1991, 2001, 2011).

RCA findings indicate that an increasing proportion of the population have begun to purchase their food from markets to ensure their food security, rather than solely rely on their own production. This is not to suggest that in the past such activities were not taking place, as the baseline study for KHARDEP recorded over 43 per cent of the respondents having less than 0.5 ha in 1970s, with most turning towards wage labour to purchase/buy grains on credit to survive (Conlin & Falk 1979; Cassels et al, 1987). This was the case especially for the occupational Dalit castes, who had the smallest land holdings across all the districts (Conlin & Falk, 1979). Recent changes as shown by the RCA indicate changes in food habits with people increasingly preferring rice (due to taste, social status, easy cooking) and consuming the cereal as the main staple rather than maize (and millet), as in the past.

> 'We used to eat 'dhedo' (maize or millet porridge)... but this is poor people's food now' (woman, Morahang- Terhathum). The study participants further indicated an increasing trend to use alternative sources of income (primarily remittances) to buy food as a matter of choice, not necessity. Even when I was in debt, I still used to eat rice (mother, Yaku-Bhojpur, May 2012). Increased consumption of vegetables was also noted.

Livestock rearing also continues to be an essential component of the farming systems in the Koshi hills, as in other hills of Nepal for nutrition, manure, drought power and as a coping mechanism in times of food insecurity. Between 1981 and 2001, the number of livestock holdings increased by 22 per cent. Milk production has also grown steadily in the Koshi hills from an annual growth rate of 1.4 per cent in the 1990s to 4 per cent from 2000-2009, higher than national average of 3.3 per cent within the same time period.

3.3.4.4 Energy

Access to energy for cooking and lighting, on the other hand, has not changed much for most households in the Koshi hills. Between 2001 and 2011, there was an increase of households using firewood, from 91 per cent to 93 per cent. Use of LP gas had however increased from 2 per cent to 6 per cent, while kerosene as a cooking fuel had declined. Amongst the four districts, the highest usage of LP gas was recorded in Dhankuta (12%), which is not surprising as the higher costs and access to the gas cylinders make it prohibitive to poorer families, especially those residing in rural areas.

Census data also show a dramatic drop in the use of kerosene as a main source of lighting, from approximately three quarters of the population using the fuel in 2001 to 20 per cent of the population in 2011. This is consistent with RCA data suggesting that kerosene is unpopular and considered to be outdated. People prefer torches, because they are seen as safer and cheaper. Although the number of households with access to grid electricity is increasing from 39 per cent of households in 2001 to 53 per cent in 2011 it is much lower than the national average of 67 per cent and its neighbouring district Ilam (66%), but higher than its neighbouring district Khotang (31%). There has been very little development of hydropower energy in the KH over the last decades. In the mid- 1990s a large scale hydroelectric project - the "Arun III" with a capacity of 201 MW – was planned for the upper Arun Valley. But, questions relating to the environmental sustainability and economic viability as well as equitable sharing of the benefits by the local people, and macro-economic risks for the country of such a major investment resulted in the project's being dropped. Today, the four districts in Koshi hills only have a few

small scale and micro hydropower projects which together provide energy to only a small proportion of the population. The bulk of what electricity is available in the area derives from the national grid and is generated elsewhere; it is largely confined to the towns and larger settlements. RCA suggests that households and communities in Dhankuta and Terhathum have even made personal investments in transmission lines in anticipation of expansion in coverage. Areas without coverage have meanwhile turned towards the usage of solar power for lighting and to charge electrical devices (primarily, lamps and mobile phones). As a consequence, this has facilitated the rapid expansion of modern communication technologies (mobiles, internet) and has resulted increased access over information and knowledge.

3.3.4.5 Assets

NLSS data show that a significant majority of Koshi hills' residents now own some form of asset, with a significant increase over the past 15 years. In 2001, 112,936 households owned agricultural implements and 26,193 took out a loan for the purpose of livestock farming.

The 2011 population census showed that the percentage of households *without* assets constituted 23 per cent in Bhojpur and 18 per cent in Sankhuwasabha as compared to 14 per cent in Terhathum and 13 per cent in Dhankuta. The percentage in the Koshi hills region is higher than Ilam (11%) and lower than Khotang (26%) in neighbouring districts (Figure 10). The national average is approximately 14 per cent.
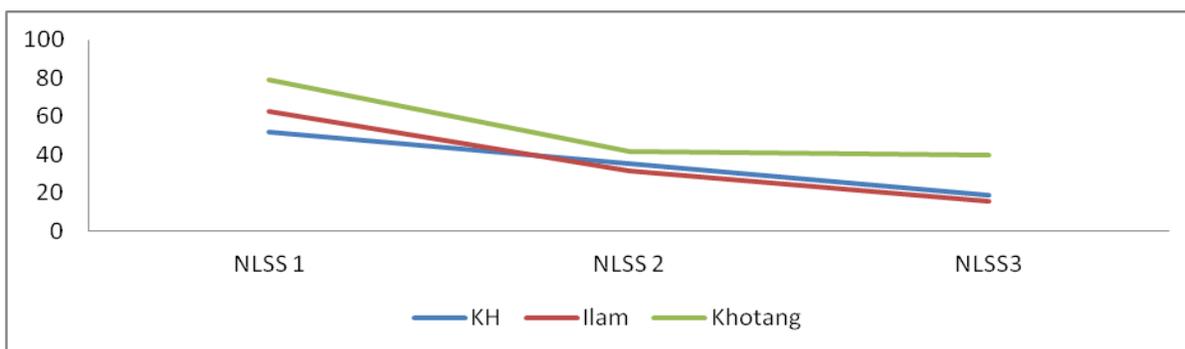
Figure 10: Per cent of inhabitants with no assets in the Koshi hills and neighbouring regions

3.4 Larger Context of Change in the Koshi Hills

The four long term changes described above occurred within a larger context of changes over the study period within the political economy of the region, both macro- and micro-trends at the national and local levels, and changes in overall social structures. This section briefly outlines the major changes though full analysis is included in the 2012 Documentary Review.

3.4.1 Changing roles of local institution and governance system in Nepal

The institutional system in Nepal has evolved through different political changes and subsequent disturbances. Prior to the 1990s, the institutional system was greatly influenced by the centralized or feudal or top-down approach. The current participatory democratic institution system is indeed due to the restoration of democracy in 1990. During the 1990s, the government realised the collective action through forming and mobilising user groups as an innovative concept and included it in the decentralised policy measure for local development. During the insurgency period (1996-2006), NGOs were also being made responsible to continue implementing basic public services in many districts, due to absence of elected local governments (MLD, 2004).

The District Development Committee (DDC), the Municipal Corporation, and the Village Development Committee (VDC) together form the 'local body'. The local bodies have a two-tier governance structure, with DDC on the top tier and municipality and VDC in the second tier. All the local bodies are legislative bodies as they have councils, involving elected representatives to approve budget and programs.

The local governance has also evolved through undertaking several policy measures over the past decades. For instance, the district decentralization policy was formulated for the first time in 1963 and it was revitalized under the 'Decentralisation Act' in 1982. Until now, the Local Self-Governance Act (LSGA) enacted in 1999 can be considered a key to decentralized planning at local level and appears to be very significant in terms of empowering local governments. LSGA is indeed basically to respond to the growing need of participatory planning practices, including local communities, women, deprived and disadvantage groups (DAG), civil societies, and the private sector in the governance. Further, the act has made provisions for institutionalization of the participatory district decentralized development process and strengthening of the local bodies to assume the responsibility and authority to plan and implement development activities, and enabling leadership to take appropriate decisions (MLD, 2004).

Since the early 1990s, efforts have also been made to strengthen building the capacity of the local bodies along with the framework of LSGA to plan, programme, and manage local development as well as in the fields of organisation structure and culture, financial management, working procedures, human resources, and information system at the district level, with the support of development programmes such as Strengthening Decentralized Programme (SDP), Local Governance Programme (LGP), Decentralised Local Governance Support Programme (DLGSP), and Local Governance Community Development Programme (LGCDP).

In spite of all these, the process of decentralized governance in Nepal however is seen to be not effective and remained as half-hearted effort in planning and implementation. Devolution of authority for service delivery at local level also remains to be confusing, inadequately prepared, and hesitation in parting with authority and finance (Shrestha, 2004). Further, ineffective implementation of LSGA has been the most crucial problem due to absence of elected representatives in the local governments since 2002, reducing their accountability and legitimacy (MLD 2004). These issues have significantly affected the momentum of decentralization and public service delivery to the local people.

A more detailed analysis of development planning trends in Nepal is included in Annex E.

3.4.2 The local level planning process for development

In Nepal, district is the main planning and administrative agency at the local level and the district decentralized planning is the current thrust of economic and social development. The district maintains integration and transfer of development and planning activities operating along the hierarchical tiers such as central (national), regional and zonal levels above the district and municipalities and village areas below the district. DDC is being the focal institution of decentralized planning and coordination of development activities at the district level. The planning process for the local development involves preparation and submission of plans and programmes by each VDC and municipality to the DDC, which in turn sends those local plans and programmes integrated with district plans to the National Planning Commission (NPC) to be included in the national plan (Shrestha, 2004).

Some of the key development strategies, such as the Regional Development Strategy of the early 1970s, Integrated Rural Development Programme of the late 1970s, the Agricultural Perspective Plan of the mid-1990s, the LSGA of the late 1990s, and many other programs have been adopted so far for developing areas and reducing poverty across all 75 districts of the country, including the Koshi hills districts. Implementation and coordination of all the national strategies and development programs at local level are operated through the district planning process.

3.4.3 Changes in social structures

Local communities in the Koshi hills have been introduced to new social and institutional structures due to (i) new economic structures and livelihood patterns, (ii) external interventions in the form of development programmes, and (iii) the growing recognition of the need to address gender equality and social inclusion particularly since the 1990s. These new 'institutions', for instance, community forest user groups (CFUGS), water users' groups (WUGS), savings and credit groups, and other community based organisations (CBOs) and cooperatives have reinforced collective management and governance of natural resources, and increased

involvement of households in decision making in local development efforts. In recognition of the value of such collective local action the GoN explicitly included the forming and mobilizing of such groups in the decentralised policy prescriptions for local development in the early 1990s. Such prescriptions include the mandatory inclusion and representation of women and locally marginalized caste and ethnic groups as members and in decision making positions.

Many of these newer institutions have brought real (if limited) changes in the social dynamics and structures of the Koshi hills, particularly in the lives of women, poor and disadvantaged groups. Field data from the Koshi hills show that though many of these community based initiatives have been supportive in establishing (or re-establishing) local control over important natural resources, or increasing access to cash, households and individuals have often experienced 'group fatigue' as working in such new forms of organisations have tended to become not only the norm for involvement in any social or economic development activities, but a prerequisite (Documentary Review Report 2012).

3.5 Key Changes through the Voices of the Poor

This study used the RCA to provide a crucial insight into how people experienced change over the study period, which of these changes they considered as significant and what they perceived as the most important characteristics of poverty alleviation. Change was discussed by study participants within a wide context, rather than with a project or sector lens, helping to understand the relative importance of different changes and the significance of change within complex and diverse lives over a long time horizon. The information provided had unique value, as it was obtained through spontaneous conversation with individuals led by an interviewer or researcher, which avoided some of the biases associated with conventional evaluation and group processes.

During the RCA, all study families said that they were better off now than before, even in the poorest households in the poorest village included in the study (Table 4). They pointed specifically to their improved eating habits, that their life involved less hard work and increased disposable incomes, which allow them to make household improvements, provide more clothes for the family, mobile phones and pay for education and healthcare. Study families universally indicated that the younger generation has more leisure time nowadays than before, even though the team observed that some still seem to be continually busy with chores and work.

Table 4: Characteristics of poorer/better-off communities noted in the RCA

Poorer communities	Better-off communities
Low food production	Own paddy production
Limited access to roads	Good access to roads and market hub
Little commercial/high value crops	High value crop production (e.g., cardamom)
Less education (primary level attainment)	High value put on continuing education to higher levels
Migrant workers in low income jobs	Migrant workers often with good wages (related to social networks and better education levels)
Basic household assets	Solar panels, TV, dish antennae, water tanks plastic, GI sheet roofs
Highly indebted	Disposable income for land purchase, assets, education, payment of loans, consumption, etc.
High alcohol consumption and feelings of frustration/hopelessness	Mixed levels of alcohol consumption, optimism and entrepreneurship

This mix of perceptions and material improvements highlights the complexity of individual experiences of poverty and the importance of avoiding simplification through the overuse of indicators and macro-level quantitative data. For example, the fact that time and agency feature highly for participants is indicative of the extent to which traditional quantitative data cannot always capture the full diversity of a situation.

4. Drivers of Long Term Change

4.1 Introduction

As described in Section 3, our analysis indicated overall positive changes in economic growth and poverty alleviation in Koshi hills during the study period as overall development impact and further identified four interconnected and multi-sector long term changes associated with this impact: new opportunities in Koshi hills, new opportunities outside of Koshi hills, better quality of life at the household level and better quality of life at the individual level.

In this section, we present the results of further analysis into the key drivers of these long term changes. First, we present the findings of econometric analysis which determined the resources and other investments in Koshi hills during the study period, broadly categorised as development interventions and other contextual factors, which were most associated with long term changes (Section 4.2). We then present the results of key nodal analysis using causal process mapping (Figure 11), which identified the main drivers of change – the short term changes brought about by these resources and investments which drove the four separate, but connected, long term changes in the region (Section 4.3)
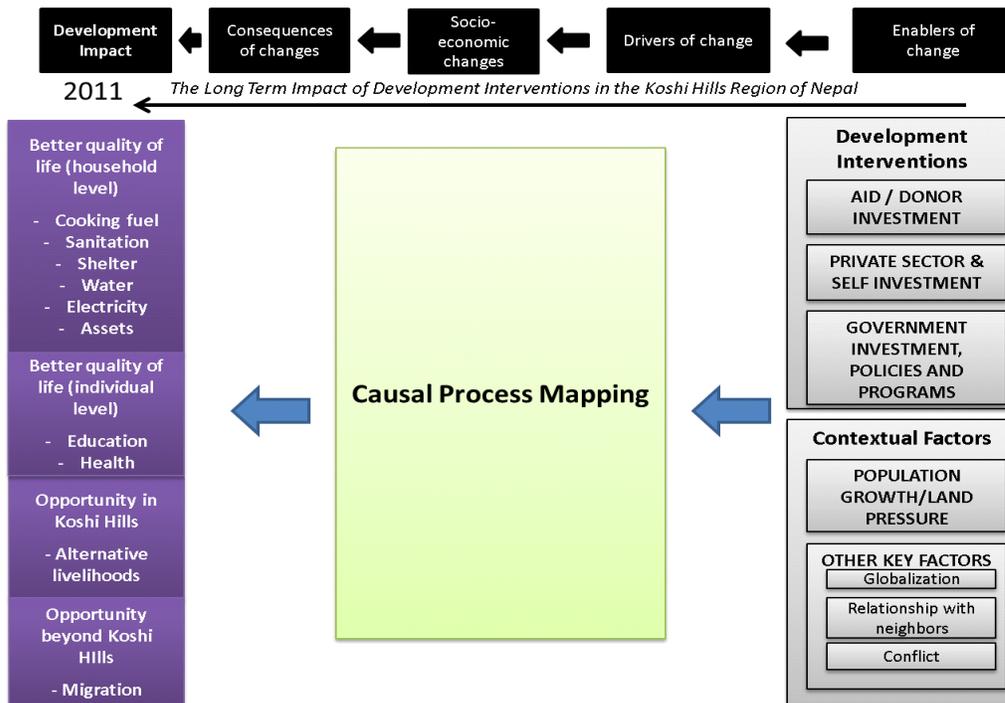
Figure 11: Long term impact: four elements of poverty alleviation

4.2 Factors including Aid Contributed to Changes in KH

Our econometric analysis of GDP growth and poverty reduction found that private investment, population growth and donor investment all had a positive impact on economic growth. Remittances, government expenditure and donor spending had a positive impact on poverty reduction.

4.2.1 Government of Nepal and donor funding

Total government investments on development interventions, including both the capital and recurrent expenditures, have been growing continuously and rapidly, and at the current price such investments have increased by 838 times during the period. The annual average growth is about 9-10 per cent for the Koshi hills, which is similar to the nationwide trend, as well as in the neighbouring districts.

It is estimated that, since the 1970s, around £130 million have been invested in the Koshi hills by various donor agencies, which, when adjusted to 2008 values, amounts to about £239 million (Coffey & Metcon, 2010), with the largest share of the total investments (70%) borne by DFID (EDG/GRM, 2011). Others include the Asian Development Bank (ADB), United Nations Development Programme (UNDP) and Netherlands Agency for Development (SNV). Approximately 42per cent (GB£102 million) of this amount has been utilised for the construction and maintenance of roads.

The total resource flow from the donor communities was not constant, but fluctuated over the study period. It ranged from 0.15 per cent of GDP in 1998 to 3.61 per cent of GDP in 2010; however, the earliest donor-supported development intervention can be traced back to the United Kingdom (UK), which set up the Gurkha Reintegration Service (GRS) in 1968. Since then, various other programmes/projects in various sectors, such as agriculture, transportation, health and natural resource management, have been implemented, largely in partnerships with government line agencies, but also through local NGOs. Altogether, 31 donor-supported projects (Annex F) have been implemented in the Koshi hills area (Coffey & Metcon, 2010).

4.2.2 Econometric analysis

The study team used multi-level regression analysis to estimate the contribution of a number of factors, to both economic growth and poverty alleviation, using the following definitions for the dependent variables: estimation of district and sector-wise GDP and poverty indicators, based on NLSS (I, II, III), Nepal Human Development Report, 1998, Nepal Human Development Report, 2004 and the Regional Plan Report, 1989.

4.2.2.1 Private investment and development aid had a positive impact on economic growth

The contributory factors considered in the explanatory model for economic growth included the following: remittances (Remit), private investment (PI), population growth (POP), donor investment (DON), government expenditure (GE), technology development (TR) and lagged GDP (GDP). The model encompassed data from 1991 to 2010. For a more complete description on methodology and results see our Economic Analysis, 2012. The regression result, improved with a Kalman filtering algorithm estimation method, is given in Table 5.

Table 5: Regression results of GDP as dependent variable after autocorrelation for the Koshi hills

$\text{Log (GDP)}_{it}=$	B_0	$+\beta_1 \text{Log (Remit)}_{it}$	$+\beta_2 \text{Log (PI)}_{it}$	$+\beta_3 \text{Log (POP)}_{it}$	$+\beta_4 \text{Log (DON)}_{it}$
	1.894*	0.015	0.398*	0.071***	0.030***
t=	(3.225)	(0.915)	(5.641)	(1.261)	(1.528)
			$+\beta_5 \text{Log (GE)}_{it}$	$+\beta_6 \text{Log (TR)it}$	$+\beta_7 \text{Log (GDP)}_{it-1}$
			0.045	-0.163*	0.364*
			(0.950)	(-3.372)	(4.839)
			(0.048)	(0.048)	(0.075)
	$R^2=$	0.875		F=146.64	
	DF	146	No. of Obs.=	154	

*Note: * Significant at 0.01 Level; ** Significant at 0.05 Level; *** Significant at 0.10 Level*

Our analysis reveals that private investment has the greatest positive impact on GDP growth, followed closely by the lagged GDP variable. Population growth has a weak positive relationship, while technology development has a negative relationship. Remittances and government expenditure are found to have statistically non-significant relationships to GDP growth.

Donor interventions are found to have a significant, but small, positive impact on GDP growth at 0.030. This shows that donor interventions are contributing in improving the economy of Koshi hills. Keeping other factors constant, a one per cent increase in donor investment has led to the growth of 0.03 per cent in Koshi hills GDP.

4.2.2.2 Government expenditures and development aid positively impacted poverty reduction

The contributory factors considered in the explanatory model for poverty reduction included the following:

remittances (Remit), private investment (PI), population growth (POP), donor investment (DON), government expenditure (GE), technology development (TR) and lagged GDP (GDP). The model encompassed data from 1971 to 2010. For a more complete report on methodology and results see our Economic Analysis, 2012. The result of the regression model, improved by using the Prais-Winsten estimation method, is given in Table 6.

Table 6: Regression results of poverty as dependent variable after autocorrelation improvement for Koshi hills

Log(Pov)$_{it}$ =	B$_0$	+β$_1$ Log(Remit)$_{it}$	+β$_2$Log(PI)$_{it}$	+β$_3$ Log(POP)$_{it}$	+β$_4$Log(DON)it
	-37.512*	-0.328***	+0.180	+3.599*	-0.031**
t=	(-8.290)	(-1.317)	(1.270)	(9.354)	(-1.923)
Se=	(4.525)	(0.076)	(0.142)	(0.385)	(0.016)
			+β$_5$ Log(GE)$_{it}$	+β$_6$ Log(GDP)$_{it}$	+β$_7$ Log(TR)$_{it}$
			-0.345*	-0.274	-0.447*
		t=	(-3.077)	(-0.597)	(-5.308)
		Se=	(0.112)	0.158	(0.084)
				R^2=0.7256	F=22.842
				DF =73	No of Obs = 80

*Note: *Significant at 0.01 Level; **Significant at 0.05 level; ***Significant at 0.10 Level.*

The analysis has found that population growth has the greatest positive impact on poverty. As such population growth has also led to a significant increase in poverty. Meanwhile, government expenditure and donor investment have shown a significant inverse relation with poverty. This indicates that the increase in the government expenditure and donor investment has led to reduction in poverty. Their contribution is significant. Similarly, remittances have also a strong inverse relation with poverty, which indicates that increase in remittances has contributed to poverty reduction. In the case of technology development too, it has a strong inverse relationship, indicating also contributing to poverty reduction.

Donor interventions are found to have a significant, but small, inverse impact on poverty reduction at -0.031, which indeed is not large. Keeping other factors constant, a one per cent increase in donor investment has led to the reduction of 0.03 per cent in poverty.

4.3 Complex Narratives into Drivers of Long Term Change

The figures above provide a top line indication of the primary resources and investments associated with economic growth and poverty alleviation. But no one resource or investment worked independently; it is rather a series of complex interrelationships that drove these long term changes over the study period. The interaction of programme activities, government policies and expenditure, private investments/initiatives and other environmental factors combined to drive these observed changes. Figure 12 provides a snapshot of the key interventions and environmental factors, which provided the context for an analysis of the drivers of change. It illustrates the complexity of the project and frames the process of understanding the cumulative effect of each on sequential developments.

The remainder of this section addresses these inter-relationships and drivers within the four long term changes described in Section 3. Two preliminary points should be highlighted:

• The causal processes are non-linear and often cyclical/reinforcing. To the extent possible, key processes have been highlighted non-linearly through key nodal analysis, as many of the key nodes identified in each map are part of a reinforcing cycle. Thus, for example, migration is both an end point in poverty alleviation by way of economic opportunity and increased agency, but also a key node in the process, as increased money from remittances is spent on further migration opportunities.

• The four separate causal process maps are not discrete, but are fundamentally interrelated. For visual clarity and analytical framing, four key stories have been identified, however, each story is connected and reinforcing cycles are again a significant part of the story on the ground. For example, economic diversification, and the increase in disposable income this may imply, is a key node in all of the other causal processes.

Key Milestones

Kiput Abolish'd | D-D Road built | Decent. Acts | Terh Hosp. | Register'd NGOs | Nepal-India Trade Treaty | Decent. Reforms | SAPs | Paris Declaration | Gov migration policy | Agriculture Perspective Plan | PRSP 1 | WTO Member | cell phones

Data sources

Census | Census | Census | NLSS | Census | NLSS | Census
N-DHS | N-DHS | N-DHS | N-DHS | NLSS

Dev Projects: Roads

WB – Rural Infrastructure Project | ADB –Feeder Roads | UK – Feeder Road upgrade
UK – Dharan - Dhankuta Road Project and Maintenance Project | UK – Eastern Road Maintenance | UK – RAP 1 | UK – RAP 2

Agro-forestry & rural dev projects

UK – Koshi Hills Livestock Project | DANIDA – CEPREAD (NGO) Veg Market Project | UK – Seed Sector Support Prog | SNV – HVCs
UK - KHARDEP K1-3 | UK – Koseveg | ADB – Comm Ag Dev
UK - KH Community Forestry Project | UK – Nepal-UK Comm Forest | UK - Livelihood Forestry Programme
UK - Pakhribas Agriculture Center | UK - PAC Inst'l Strengthening

Health dev projects

UNICEF – Drinking Water | SCF – MCH Project | GWS – Rural Water Supplies Project
British Nepal Medical Trust: TB, Leprosy, Community Health & Safe motherhood + TB, HIV/AIDS & Malaria

Education dev projects

WB- Primary Ed Program | Multi-Donor – Basic Primary Ed Project (BPEP) 1 | Multi-Donor – BPEP 2 | SwAP – Ed for all | SwAP School Sector Ref.
ADB- Primary Ed Dev Proj | WB- Comm School Support

Governance dev projects

UNDP – LGP → Decentralized LGSP → PDP → LDGSP (ongoing)
ADB – Civil Service Reform in Nepal
SwAP - LGCDP

Int'l Dev Priorities

Focus on Group-based services | ToCs , Business case, etc
Adoption of linear logic for project planning
Food Security | Integrated rural development (IRD) | Moving from IRD towards sub-sectors | Shifting focus to NGOs & private sector support | Rights-based appr, "demand from below" | Increasing focus on governance – account & responsibiility

Gov 5-yr Dev Plans

Transport, Ag, Industry | Big shift to Ag & Social Sectors, Subsidies | Addressing "Basic Needs" | Basic Needs, Decentralization | Reducing absolute poverty, Market-focused | Sectoral contribution to Pov Red / Econ; Focus on NGO | EG & Basic Serv, Inclusion, Good Gov | Pov Allev, Recons. | Sus Peace & Pov allev

Political timeline

Panchayat Raj | Jana Andolan 1 | Maoist Insurgency | Jana Andolan 2 | New constitution

1971 | 1981 | 1991 | 2001 | 2011

Figure 12: Key development interventions and contextual factors

4.3.1 Organisation of key narratives

Each section opens with a summary of the key socio-economic changes most associated with each long term change. This is followed by the results of the causal process mapping that illustrate the key nodes, as identified through primary and secondary research. These key nodes are considered the drivers of change as they are the short term changes that plausibly link the resources and investments made in the region to the key socio-economic changes most associated with long term change.

Data and analysis are then presented in support of these key driver relationships and linkages. This process is deliberately selective to address only the most significant drivers of change that we identified. Finally, each narrative includes a section on intervention types that were not successful.

4.3.2 Drivers of long term change: Opportunities for alternative livelihoods within the Koshi hills

As described in Section 3.3.1, the main changes at this level include commercial and non-commercial agriculture and commerce. Figure 13 presents the findings of key nodal analysis which establish plausible links between key socio-economic changes and resources and investments in the region.
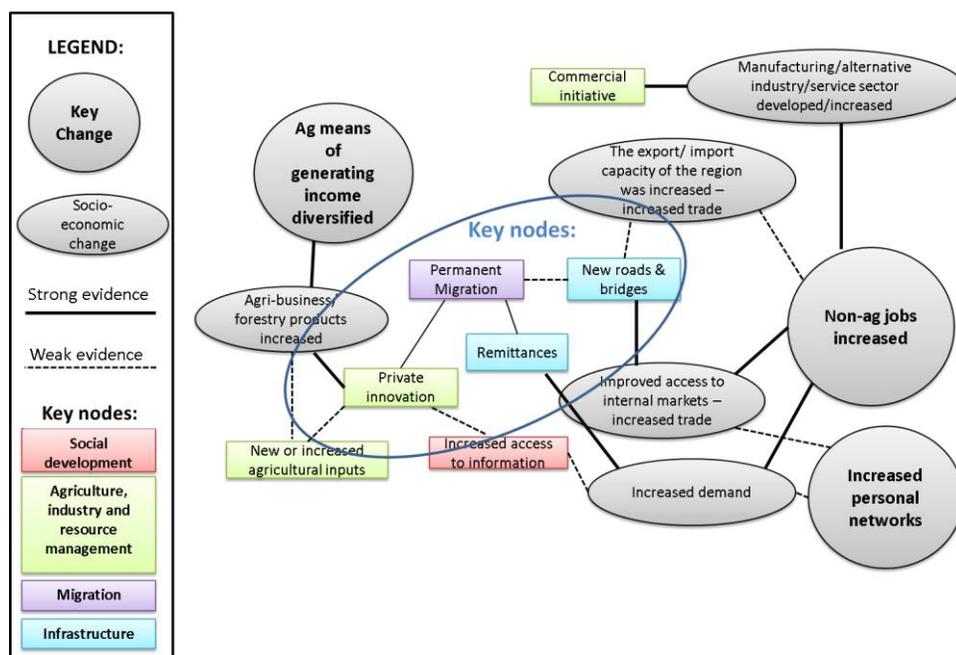
Figure 13: Causal process map: Opportunity (alternative livelihoods)

4.3.2.1 Summary of key socio-economic changes

The key socio-economic changes that led to alternative livelihoods are growth in agricultural and non-agricultural commercial livelihoods, based on two factors—scale and transformative impact. In terms of scale, commercial agriculture and agri-business are the more significant. Even by 2001, 78 per cent of the Koshi hills population was still engaged primarily in agriculture. Though its relative share to the GDP has declined from 73.3 per cent in 1971 to 63.4 per cent in 2010, this is still higher than the sector's contribution to the nation's GDP, which stands at 36 per cent (MoF 2011/12). Growth in agricultural GDP has been around 2.4 per cent a year since 1971, which significantly outpaces net population growth; meaning that per capita growth in agricultural GDP has probably been at around 2 per cent a year. Agriculture contributed on average 54 per cent of total household income in the Koshi hills in 2010-11. Any substantial increase in alternative livelihoods generated through this sector is likely to impact on a greater number of people.

More distally linked, our analysis identified further socio-economic changes that facilitated the increased diversification of livelihoods. First, the commercial sale of high value crops (HVC) and forest products in the agricultural sector increased during the study period. Data on total exports from the Koshi hills indicate the importance of HVCs in commercial agriculture. Medicinal herbs, fruit, potatoes, cardamom and vegetables feature highly in terms of value of exports and show significant increases over the study period. Cardamom export increased over a 100-fold during the study period. In the non-agricultural sector, we see the growth of the service and manufacturing sectors.

Trade inflows and consumer service provision indicate the extent to which the internal market in the Koshi hills also grew during the study period. The study found that the flow of goods into the region increased three-fold from 1981 to 2011. Equally, by 2012, there were well over 4,000 commercial enterprises in the region. This represents significant growth. RCA participants remembered a period when very few commercial enterprises existed for consumer goods/services. This has fundamentally changed in the Koshi hills in the past 40 years.

4.3.2.2 Key drivers of alternative livelihoods

Utilising key node analysis, three key drivers of change were identified: new roads and bridges (mainly due to donor investment), private innovation (mainly due to private investment/self-investment), and a feedback loop of increased disposable income (of which migration and remittances are also a part).

New roads and bridges

One of the primary drivers of long term changes in alternative livelihoods and opportunities within Koshi hills is the dramatic increase in the number and coverage of roads, reducing the time and monetary cost of transporting produce and other goods. In 2011, the Koshi hills had 694 km of road networks compared to 0 km in 1970s (Figure 14); with Dhankuta having the largest road network (243 km), followed by Terhathum (200 km), Sankhuwasabha (135 km) and Bhojpur (116 km) (GIS Mapping Report 2012).

The construction of road networks began with the Dharan-Dhankuta road in the 1980s. This road and its subsequent extension to Hile and Basantapur, which was built through the assistance of British aid, laid the foundations for geographical change and spatial reorganisation within the region. Effectively this opened the Koshi hills to the rest of the country. Prior to road construction, traveling by foot and portering were the main means of transportation. Traffic flows showed that daily foot traffic to Dharan (the regional gateway) was over 3,000 per day during the peak seasons while porters numbered 800 per day (Marsh, 1984).

One significant consequence of the roads was the growth of settlements and market centres that 'fit' the orientation of the new roads such as Hile (Dhankuta) and the stagnation or decline of others that were 'by-passed' such as Taksar (Bhojpur). Later both strategic and feeder road networks were further extended through the Rural Access Programme (RAP) (in the 2000s) and by the local governments. As a consequence the NLSS III indicate that the percentage of households that are more than 1 hour from roads has decreased from 78 per cent to 31.4 per cent (Figure 15).

There is strong evidence to indicate that the extension of road networks had a major impact on encouraging the production of off-seasonal vegetables as a cash crop in the 1990s. Studies suggest that as transport improved and farmers became more confident about markets and prices (with the support of projects such as CEAPRED and KOSEVEG) production grew along road corridors (Banskota & Sharma, 1999; Sugden, 2004). A study by Sugden (2004) based on three market towns in Dhankuta showed how different types of road access and commuting times impacted on agriculture production. Sidhuwa (a town along the Koshi highway with an all weather road) had the highest incomes from vegetable sales compared to Leguwaghat (earth road under construction) and Pakhribas (complemented earth road). This link is supported further by the fact that vegetable production has not been uniform throughout the four KH districts, with production primarily concentrated along road corridors in districts which have the highest road densities - Dhankuta (46% of total vegetables in the KH), Terhathum (19%), Bhojpur (18%), and Sankhuwasabha (17%).

> 'We used to walk to Hile at night with the potatoes to sell. It took eight hours and we would have to get there in time to be selling at 10 am. Most important are the feeder roads built by us three years ago so tractors can carry the vegetables.' (RCA man, Parewadin-Dhankuta, April 2012)
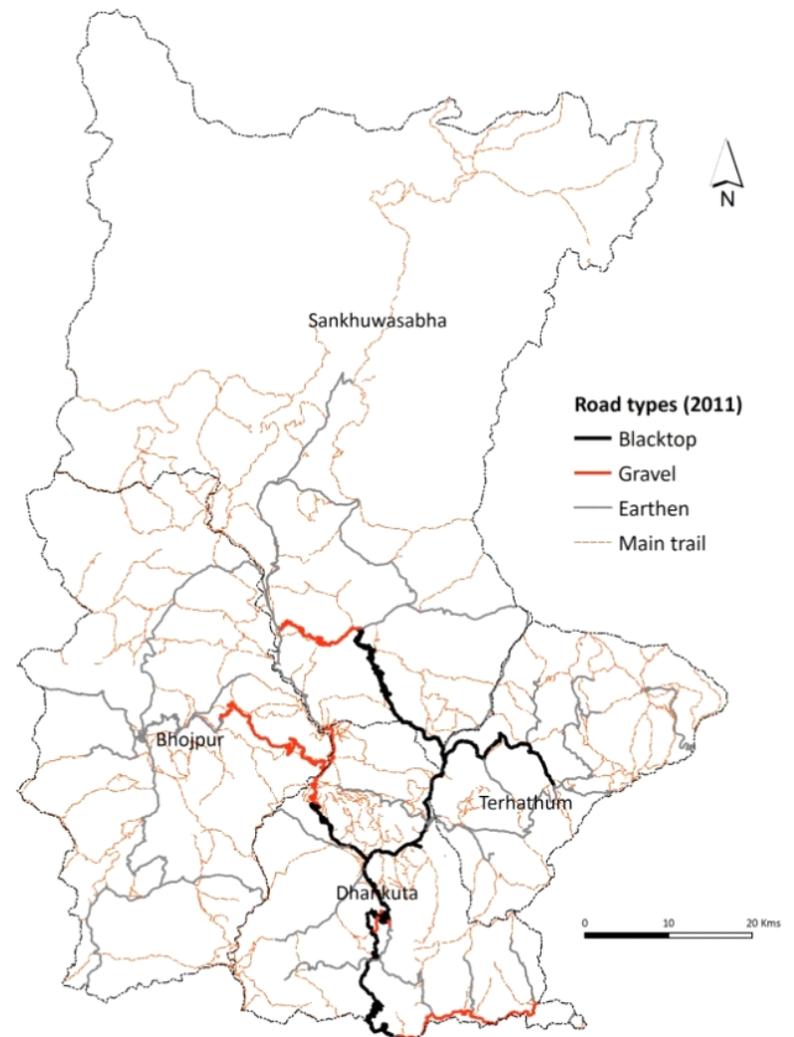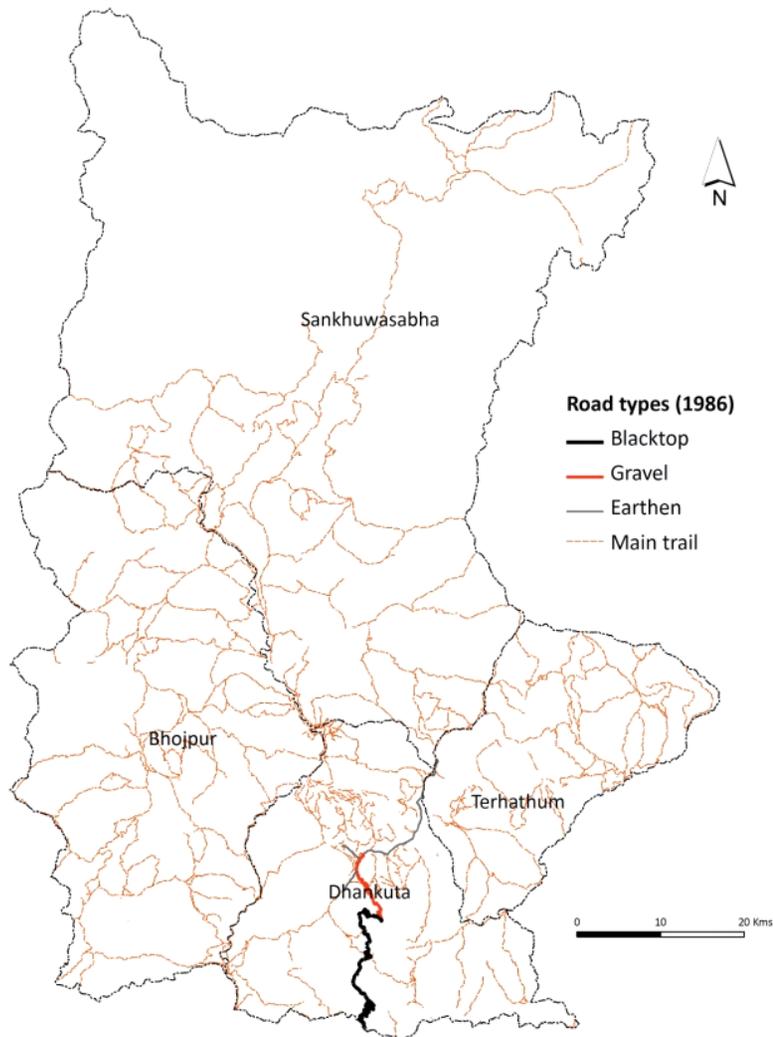
Figure 14: Road networks (GIS 1986 & 2011)
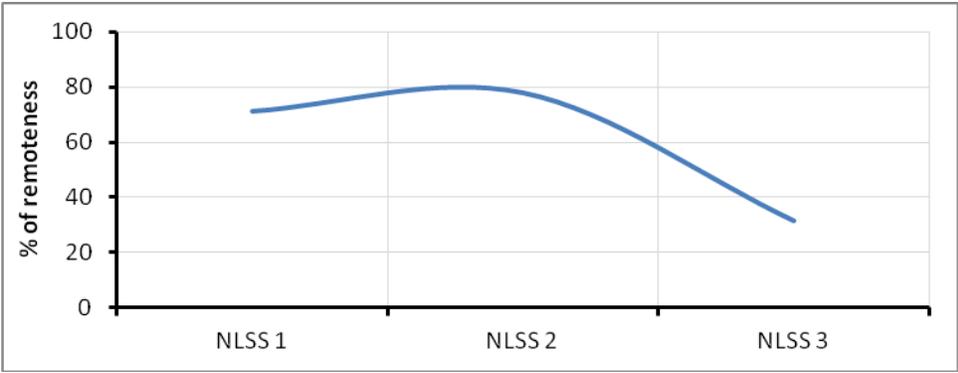
Figure 15: Remoteness from road head > 60 minutes (%)

The rapid growth of cardamom production also correlates, to a remarkable extent, with the construction of the road. In terms of land holdings dedicated to cardamom production, the data indicate that Ilam and Koshi hills as a region both began production of cardamom before the roads in the late 1800s (Fitzpatrick, 2011). This suggests that cardamom became an important crop before construction of the road, likely as a result of diffusion of information linked to cyclical migration patterns. However, the rapid acceleration of production only began after the completion of the roads (Figure 16) and coincided with price increases as a result of higher market demand when production collapsed in Bhutan and Sikkim (Fitzpatrick, 2011). This strongly suggests that the construction of the road had an amplifying effect on cardamom production.
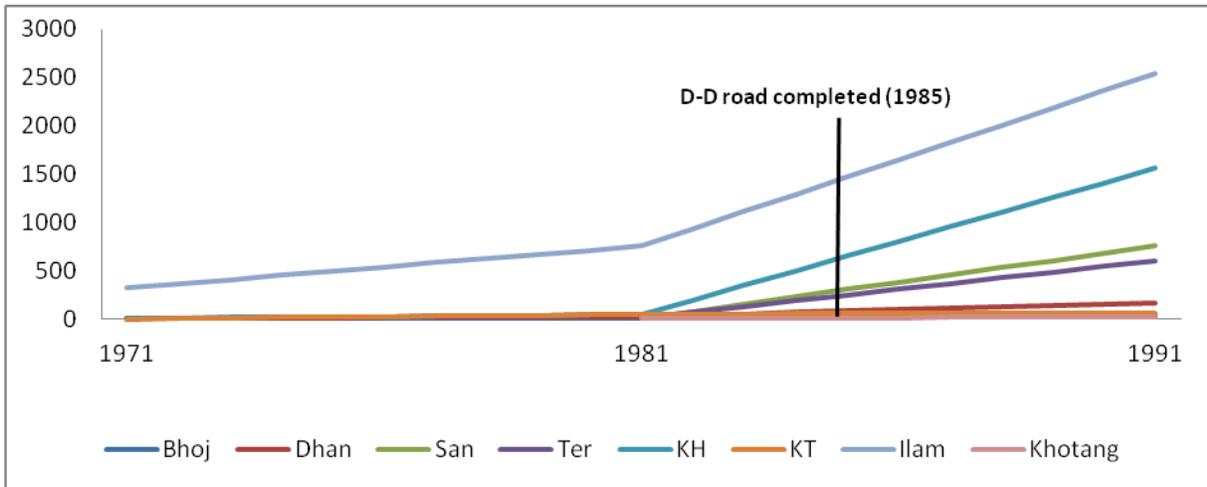
Figure 16: Cardamom growth mapped to road construction

Trade and, therefore, demand, both internally and externally, that have sustained the growth in alternative livelihood strategies, would simply not exist in the same way or same volume without the standard and range of roads that are now a feature of the Koshi hills region.

> 'I think the road is the most important development. Without a road, people have to carry their goods and this increases costs and reduces profits. When there are vehicles running around, it is easier and more profitable.' (RCA man, 30s, Siddheshwor-Bhojpur, June 2012)

The very process of building roads by the Rural Access Programme (RAP) aimed at improving the livelihoods of poor and disadvantaged groups of people through the use of a 'labour-based and environmental friendly and participatory' (LEP) approach to road construction (RAP, 2012). The RAP I impact study suggests that changes have occurred in the well-being and livelihood of the communities along the road corridors, including Bhojpur and Sankhuwasabha, presumably to a large extent as a result of their involvement in the programme. RAP was deliberate in its strategy of recruiting poor and disadvantaged households who were living along or near the alignment of the planned road and they were mobilised into local community-based Road Building Groups (RBGs). Fifty-four per cent of the road beneficiaries who were engaged in the construction and maintenance works came from poor and disadvantaged groups and 32 per cent involved were women. A combination of diversification of income sources – employment from the roads, income from non-farm enterprises, and remittances from migrants – contributed towards an increase in their household income by an average of 218 per cent (from NPR 33,515 to NPR 106,652). Subsequently household expenditure also increased four-fold during the period during and after road construction.

Privately financed innovation in response to locally identified opportunities and migrant networks

On the supply side, the study identified the importance of the diffusion of new ideas, leading to the use of new agricultural inputs. The most significant driver for this seems to have been the spread of ideas through personal networks, travel and individual agency.

Illustrative of this diffusion is the spread of cardamom cultivation. In addition to the sharp increase associated with the construction of the Dharan-Dhankuta road, the uptake of cardamom cultivation across the four Koshi hills regions and the neighbouring regions can be plausibly mapped to a geographical transmission, as individuals transmitted inputs and technology back to their homes. Ilam, bordering Darjeeling and Sikkim, is by far the largest producer of cardamom, and the earliest. The two most proximate regions to Ilam in the Koshi hills, Sankhuwasabha and Terhathum, have seen uptake significantly increasing from 1981, and Bhojpur, the most distant from the Ilam and Darjeeling, has seen only limited uptake since the early 1990s. Field data attributed the marginally positive growth in population (of 0.03%) in Sankhuwasabha, to the local perception of a decline in the number of people migrating out of the district and increased in-migration, due to the increase in opportunities for cash crop production (primarily cardamom) in the last decade. Dhankuta has seen only poor uptake throughout, although this may be indicative of the size and ecological nature of this region, closest to the Tarai (Figure 17).
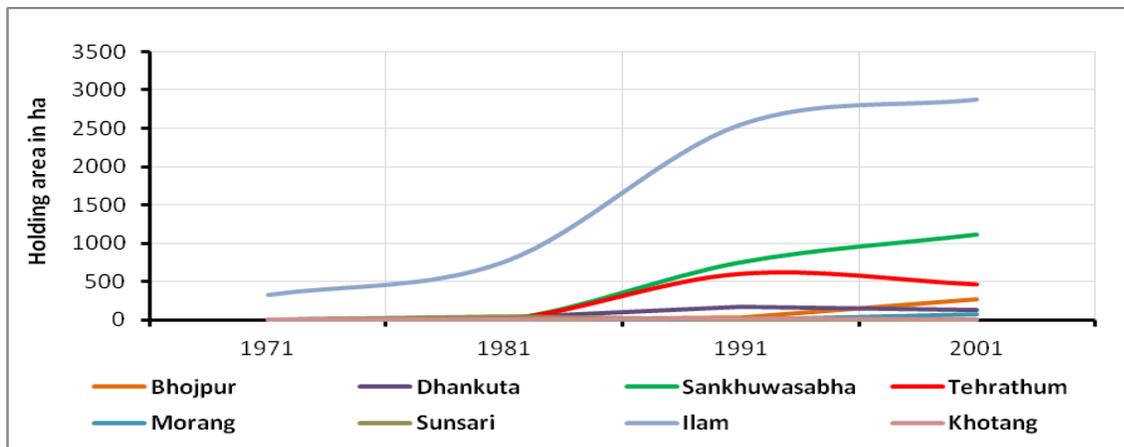
Figure 17: Cardamom holding areas (ha)

This importantly correlates with a boom in international prices, largely due to the collapse of production in India, which also attracted farmers (Fitzpatrick, 2011) to cardamom production. While this has been a significant factor in the development of prospects for a large number of people it is worth mentioning that presently there is growing concern about the spread of viral disease in the hills (*Chirkey, Rhizome Rot*) with the potential to decimate production as has occurred in Sikkim.

It should, however, be noted that commercial agriculture does not seem to have supplanted cereal crop production, except in highly isolated situations (black-top road corridors). Figure 18 demonstrates the extent to which the relative land area given over to each remains broadly similar.
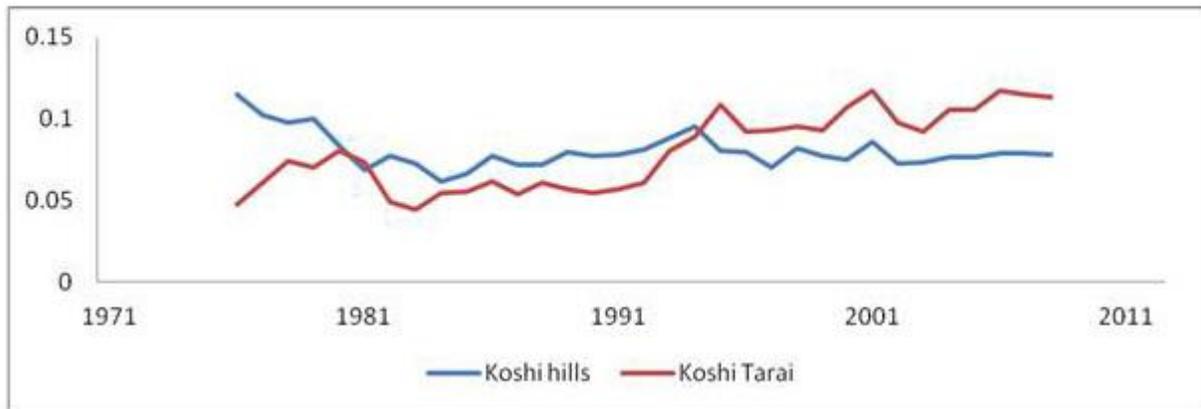
Figure 18: Percentage of HVC holding area out of total area in Koshi hills and Koshi Tarai, 1976 to 2009

'Cardamom is our identity; no cardamom, no life.' (RCA man, 20 years, Num-Sankhuwasabha, June 2012)

Mon Singh Rai is credited with bringing cardamom from Ilam to Num in 1983. He grew it as an experiment on his own land and over the next 10 years the entire neighbourhood adopted the practices so that it is now the main income source. We are told that, nowadays, every household grows a minimum of 200 kg and many grow ten times this amount.

Disposable income

Demand for the services and produce that facilitated the increase in alternative livelihoods (both agricultural and non-agricultural) was driven both by an increase in the purchasing power of people within the Koshi hills and by an attendant change in attitudes toward consumption.

Macro-level per capita GDP increase supports RCA data that suggested significant increases in disposable income across caste/ethnic groups in the Koshi hills. As discussed above, this was a primary driver of internal demand for goods and services that ultimately facilitated the diversification of livelihoods.

Numerous data sources indicate that the primary driver for this was remittances as of the late 1990s. Figure 19 shows the contribution by sector and remittances to GDP. The rise in remittances, private investment and the service sector most closely correlate with the increase in disposable income.
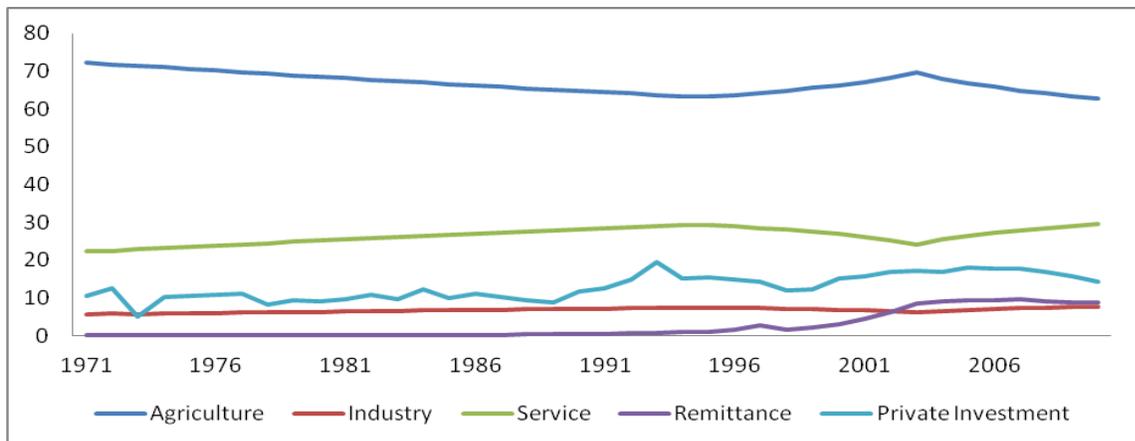
Figure 19: Sector-wise contribution to GDP in Koshi hills

This was accompanied by a shift in people's habits towards consumption. Evidence on the use of remittance finance is illuminating (Table 7). The largest type of expenditure by far is food and clothing—consumption. While the data for the causes of this is limited, RCA data suggest that this was a product of widening horizons and experiences through migration, trade networks and education.

Table 7: Usage of remittances (in %) (NLSS III, WB, 2009)

Purposes	NLSS III	Nepal Migrant Study 2009		
		1st purpose	2nd purpose	3rd purpose
Food and clothing	79.0	54.19	11.57	13.49
Payment of loan/Interest	7.1	23.16	27.89	44.47
Household property	4.5	13.50	16.90	10.50
Children's education	3.5	3.27	28.56	15.05
Capital formation	2.4	3.11	4.07	3.45
Medical treatment	-	0.61	2.44	8.73
Business	-	0.59	0.18	-

4.3.2.3 Development interventions: Lack of clear, long term impact

A number of further development interventions have targeted the increase in the opportunity to partake in alternative livelihood strategies. Throughout the 40 year study period, there have been projects aimed at supporting and increasing cottage industries, promoting the growth and marketing of cash crops, and resource exploitation in the form of forest conservation and community ownership. The impacts of these are more equivocal.

Overall, development interventions in Koshi hills possessed a key failing assumption that quality of life in itself was an end goal, and overlooked the importance of transformational change for communities; for example, an assumption that people would want to stay in farming or foresting when other options exist. As a result, interventions aimed at commercial agricultural diffusion possessed limited impacts (e.g. vegetables only near roads/urban centres) and did not transform communities on a whole.

Non-agricultural commerce and industry

Since the 1980s, there have been two main programmes/projects, which have actively sought to develop cottage industries within the Koshi hills: Cottage Industry Support during KHARDEP (1980-1985) and the Micro-Enterprise Development Project (1998-2012). The results, though, have been mixed and much focussed on a small sector.

Biggs, et al (2005) point out that the successes and contribution of 'unintended consequences' often get obscured and ignored by development agencies and professionals, who want to attribute 'successes' to externally 'planned' interventions. In the case of cottage industries, what we see is that, while remarkable, organic growth has taken place since the initial support provided through KHARDEP in the mid-1980s, the sector has, since then, been overlooked by development agencies. This is even though the potential for reducing poverty is great, especially for women who are primarily involved in the sector.

Experiences show that many of the innovations made for the improvement of the sector, such as time and labour saving equipment, communication linkages to allow for rapid responses to market opportunities/challenges and marketing skills, require sophisticated skills and better linkages, which are, in most cases, beyond the capacity of individuals and cooperatives. This can be considered something of a lost opportunity.

Agricultural innovation

Assessments carried out on the impact of agricultural interventions and programmes such as the Pakhribas Agriculture Centre (PAC), Koshi Hills Area Development Project (KHARDEP), Koshi Hills Agriculture Programme (KHAP), Koshi Seed and Vegetables (KOSEVEG), Vegetable Production through Centre for Environment and Agricultural Policy Research Extension and Development (CEPREAD), Seed Sector Support Project (SSSP) show mixed messages and is indicative of the impact of donor programmes targeting agricultural change.

The MASDAR study, led by Hocking et al. in 1995, and the study by SEADD were in agreement that technology transfers in the 1970s and 1980s related to fodder trees, maize and wheat were the most successfully adopted due widespread applicability and high priority for food concerns. The introduction of new livestock breeds (such as the *Pakhribas pig*) also had high (67%) adoption rates (ODA, 1989). While other inputs, such as Angora rabbits and vegetable seeds, had the lowest adoption levels, primarily as they had limited relevance and are dependent on access to inputs, technological know-how and markets.

Studies also showed that adoption of new technology was strongly correlated with food sufficiency, ethnicity and access to extension services, with non-occupational caste households (Brahmin/Chhetris and Janjatis) having greater food sufficiency and access, displaying higher adoption (Hocking et al, 1995; SEADD, 1989). On average, the Dalits were found to have adopted 1.24 technologies less than other groups (Hocking et al, 1995). This is not surprising, as poorer households, with limited land and resources, are predictably reluctant to bear the risks of new varieties and practices. Cultural and religious perceptions were found to have implications with the types of livestock reared, especially in the case of pigs, which were popular amongst Rai and Limbu ethnic groups but not the higher castes which considered pigs to be un-clean (Conlin & Falk, 1979).

Women were also found to be largely ignored by the development programmes. Most studies indicated that participating farmers were largely male (NRI, 1993; Hocking et al, 1995). Later projects however did seek to actively incorporate women into their programmes. For instances within SSSP, 32 per cent of the seed growers were women. A notable effort was by KHAP which took efforts to train women as Junior Technical Associates (JTAs) at the then newly established Uttarpani Agriculture Technical School (UATS) which was set up through KHARDEP. In 1992, 25 per cent of the graduates were women (WS Atkins, 1993). The training provided by the UATS, coordinated by the Council for Technical Education and Vocational Training (CTEVT), was also considered as a success due to the technical enhancement of extension workers, who till then lacked knowledge relevant to the soil and climatic variations of the hills as most had been trained in the Tarai (WS Atkins, 1992).

More recently, projects such as the High Value Crops (HVC) Project and Commercial Agriculture Development Programme (CADP) are now focussing on 'value chains' of HVCs (in particular, cardamom and tea) largely in reaction to low and underdeveloped commercialization levels and to take advantages of individual enterprises, as discussed earlier.

Forestry programmes

Forestry programmes are one of the few areas where there has been a consistent and sustained programmatic approach throughout the study period, based on community ownership and conservation.

In terms of the second objective, conservation, they can be considered a success, particularly in the regeneration of forests, with well-defined policies, institutions and practices, which encompassed government, NGOs and local communities. The data in Figure 20 show that, while the area under forest and the area under grassland (pasture) declined significantly in the decade from 1986 to 1996, the area under scrub remained much the same while the area under arable land increased, as did the area under other land uses. In more recent years, the GIS data and other sources point to a reverse in the trends, where forest coverage in 2010 actually exceeds that in 1986. Figure 21 indicates the protection of forest land in particular in the north of the Koshi hills.
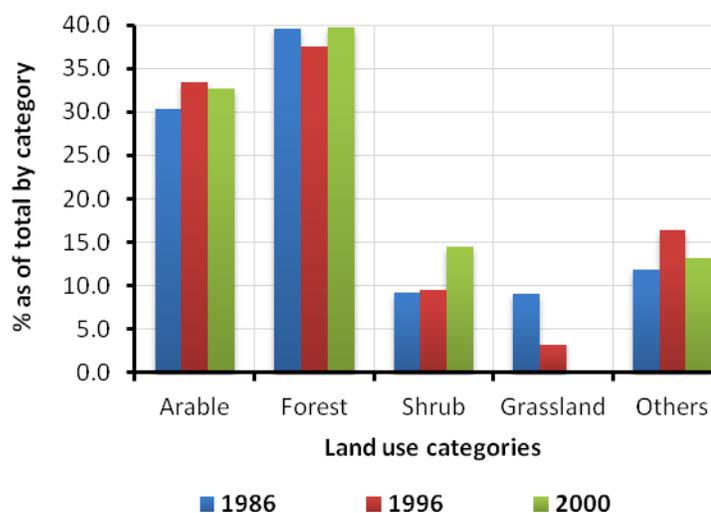

Figure 20: Land use change trend, Koshi Hills
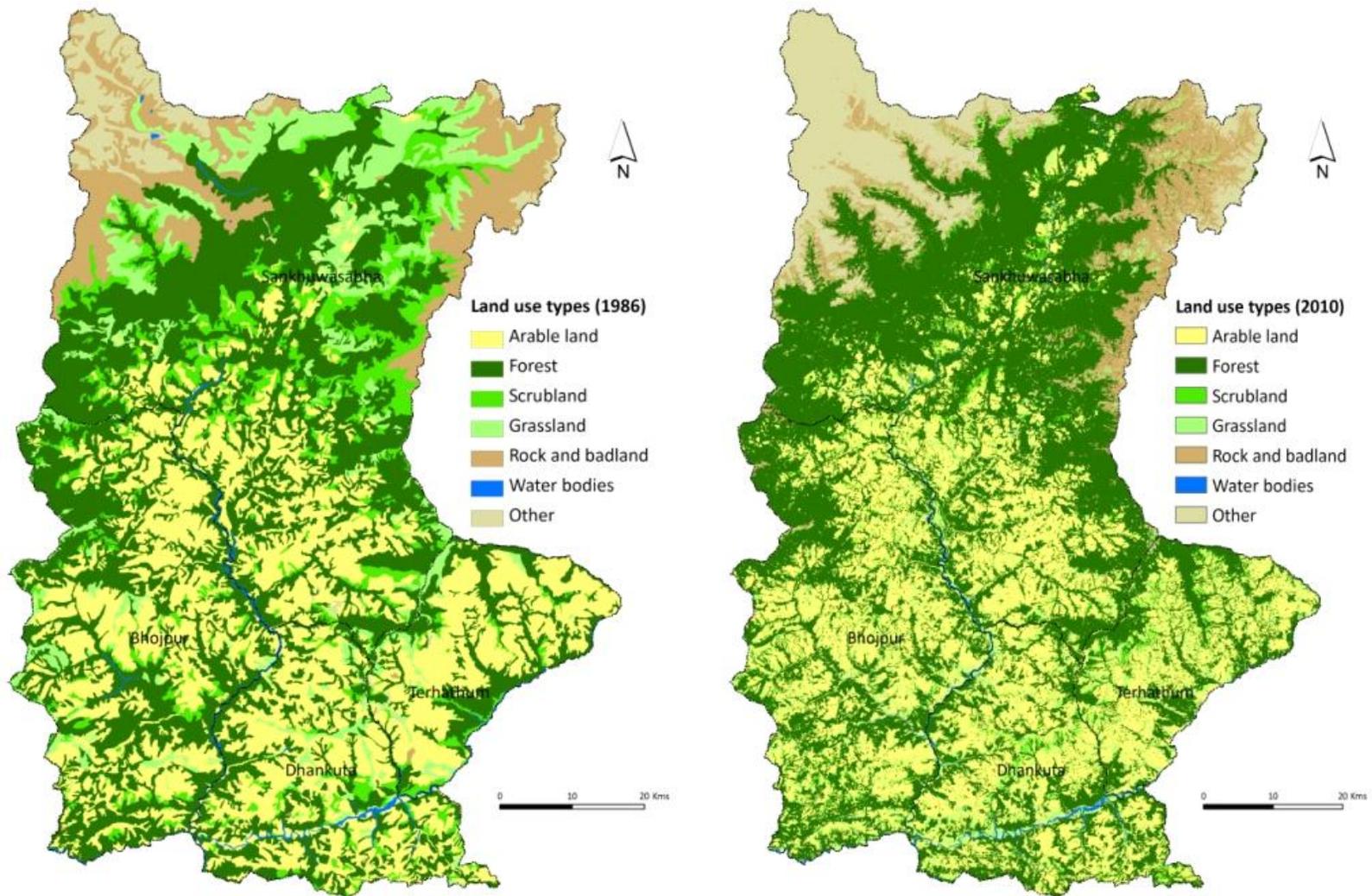
Figure 21: Land use change in the Koshi hills, 1986 and 2010

As of 2011, over 115,000 ha of forests have been handed over to a total of 1,449 Community Forests User Group (CFUGs) in the Koshi hills. They comprise memberships of almost 142,000 households, many of whom are likely to be members of multiple CFUGs (Table 8).

Table 8: Community Forests (CFs) in the KHs and Nepal

CFs as of 2011	Nepal	Koshi hills
Area handed over as CF as a % of total forest area	28.35	44.16
CFUG member households as a % of total HHs	38.48	102.64 (membership in multiple CFUGs)
Number of CFUGs	17,685	1,449

The community forest programmes in the Koshi hills (as in other rural hill areas of the country) have supported communities with conserving and using their forests sustainably; the revenue generated from CF has supported multiple social and economic activities, some of which focus on the poor and disadvantaged; have provided an opportunity for instituting local governance practices; and has provided opportunities for CF members to advocate for their rights to natural resource use through the Federation of Community Forest User Groups in Nepal.

> **Community Forestry and the Inclusion of Poor, Women and Disadvantaged Groups**
>
> Many studies show that the participation of women in general, and poor and disadvantaged group members in decision making capacities in CFUGs has been a slow process due to social and structural barriers. This realisation led to better targeting with a pro-poor and social inclusion focus in forest programmes such as LFP. A 2006 mid-term review of LFP found that in the Koshi hill districts 71 per cent of the beneficiaries of the income generation activities were women and 53 per cent of the total beneficiaries were from disadvantaged Janajati groups. The 2008 study also documented an increase in the representation of women and poor in executive committees of CFUGs from almost none to 36 per cent and 52 per cent, respectively. Provisions for poor and excluded groups were also legally ensured by government policies which led to CFUG constitutions and operational plans being updated. Thus, there is evidence that CF has been able to provide improved access by the poor to resources and has been able to increase equity among excluded groups in many cases.

This being said, the success of forestry programmes in terms of poverty alleviation is more qualified. A 2008 impact study identified that CF and the DFID supported Livelihoods Forestry Programme (LFP) income generating activities accounted for 25 per cent of increase in household income (from the 2003 baseline). Yet increased remittances accounted for 54 per cent of the total change (Documentary Review 2012).In general, this study found that increases in income and sustainability, as well as community engagement through Community Forestry User Groups (CFUGs), was not indicative of long term change, as its impact was limited to programme beneficiaries and, generally, within a programme time frame. Yet it is also important to note that due to the strong forestry-farming linkage in rural Nepal, with high interdependence on land cultivation, raising livestock and forest products, community forestry programme also covered a majority of households in the rural areas of the Koshi hill and other hill districts.

4.3.3 Drivers of long term change: Opportunities outside of Koshi hills

As described in Section 3.3.2, the main changes at this level include changes to cyclical and permanent migration. Figure 22 presents the findings of key nodal analysis which establish plausible links between key socio-economic changes and resources and investments in the region.

LEGEND:

Key Change

Socio-economic change

Strong evidence

Weak evidence ----

Key nodes:
- Social development
- Economic development
- Migration
- Infrastructure

Key nodes (diagram labels): Increased personal networks; Increase in remittances; New wealth & investment capacity; Permanent migration; Increased assets /wealth; Improved access to diversified credit; Cyclical / seasonal migration; Shared info and community decision making; Increased access to information; Supplementary/ diversified livelihood strategies; Finance; New roads & bridges; Increased education; Schools + health centres; Increased awareness / education

Figure 22: Causal process map 2: Opportunity (outside of Koshi hills)

4.3.3.1 Summary of key socio-economic changes

Our analysis identified two key socio-economic changes that facilitated increased opportunities outside of Koshi hills through migration: the increase in disposable income, and limited opportunity and population pressure in the Koshi hills. A third change, related to the latter, was the increase in awareness of and desire for alternative lifestyles.

In terms of disposal income, studies have shown that out-migration, for both domestic and international employment, is skewed towards the wealthy (Conlin & Falk, 1979; Seddon et al., 2001; ILO, 2004; WB, 2009). This is primarily due to the initial investments that must be incurred by the individual, either through official or informal channels. It has been estimated that the cost of working in a foreign country (except India) ranges between NPR 70,000 and 1,90,000 (WB, 2009; ILO, 2004), with the costs increasing for developed countries, such as the USA, Japan and South Korea, compared to India, which on average costs NPR 6,500 (WB, 2009). Thus increases in disposable income are closely linked to increases in permanent migration.

A combination of push and pull factors also become relevant here. There is evidence that land and food limitations, as well as opportunities for alternative livelihoods and lifestyles, are closely linked to changes in migration. GIS mapping activities from 1986 to 2006 identifying locations of patches of abandoned arable land are associated with increased trends of migration of adult population abroad in the same time period.

At the same time, the attractiveness of more lucrative destinations learnt about through increased contact and knowledge of the world beyond the Koshi hills is highly significant.

4.3.3.2 Key drivers of opportunities outside of Koshi hills through migration

Utilising key node analysis, we identified three key drivers of change: private investment, increased awareness of push factors and pull factors linked to access to information, migrant networks and cyclical migration.

Private investment through diversified livelihood strategies

Three primary sources of income are evident from data collected in the World Bank's Nepal Migrant Study (2009), supporting that private investment contributed to driving migration patterns. A plurality of funding has been through local moneylenders, and significant amounts from a migrant's own income and that of friends and relatives (Table 9).

Table 9: Sources of funding for foreign labour employment (in %) (WB, 2009)

Source of Loans	Nepal Migrant Survey 2009	
	AMA	RMA
Money lenders	46.7	45.6
Banks	5.5	2.9
Own income	21.7	19.8
Selling land	4.4	-
Friends/relatives	21.7	24.8

Note: AMA = Absentee Migrant Abroad; RMA = Returnee Migrant Abroad

We presented results in Section 4.3.2 on the growth in disposable income generated through diversified, commercial livelihoods and remittances. This can be seen to have a reinforcing, cyclical impact on migration.

GoN policies and interventions on land and labour have also helped to facilitate migration. As earlier discussed, one of the most significant was the eradication of malaria in the Tarai and the encouragement by the state for relocation of hill people to the plains in response to concerns over population pressure on the highlands (Ojha, 1983). State sanctioned military recruitment into British and India armies is also important and has consequently led to spatial and social concentration of assets amongst the preferred Rai and Limbu castes. It has been noted that Gurkha families who have been socialised about the potential of foreign employment and have the necessary connections have been migrating to the more lucrative destinations (such as Singapore, Hong Kong) while others have gone to India and the Gulf states (WB, 2009). Historically, the open boarder with India has been significant for sustaining temporary labour migration to make up for the low incomes in Nepal. More recently, the government's liberal policy with regards to foreign travel after 1990 and the boom in construction and manufacturing growth in the Gulf States has attracted many Nepalese abroad (WB, 2009).

Push factors leading to cyclical and permanent migration

Primary among these is the failure of the agricultural sector to experience progressive growth. Low productivity, coupled with underemployment (the slack period in the agricultural season) and rising food shortages, have been documented as being integral to forcing people from the Koshi hills to migrate in search of work (Conlin & Falk, 1979; Cassells et al., 1987; CEDA, 1972; 1975).

Between 1970 and 1980, the average agricultural production growth was 0.2 per cent and, although this increased to 2.7 per cent per annum in the 1990s and remained at 2.8 per cent in the early 2000s, this simply kept pace with population growth. The study by Conlin & Falk (1979) showed that small and marginal farmers in the Koshi hills were increasingly under stress for food. Households that cultivated 0.5 to 1 ha produced 70 per cent of their household requirements, while those with less than 0.5 ha produced merely 38 per cent of their needs. Figure 23 shows the trend in holding size and numbers, and indicates the worsening situation on this basis.

The extent to which multi-location livelihood strategies are now a crucial part of the development narrative is illustrated by the data on remittances. The share of household incomes by sectors between 1995/96 and 2010/11 shows that there has been a nine-fold increase in the contribution by remittances, from 1.3 per cent in 1995/96 to 12.8 per cent in 2010/11. RCA field data found that a majority of the households were dependent upon remittances as a source of household income.
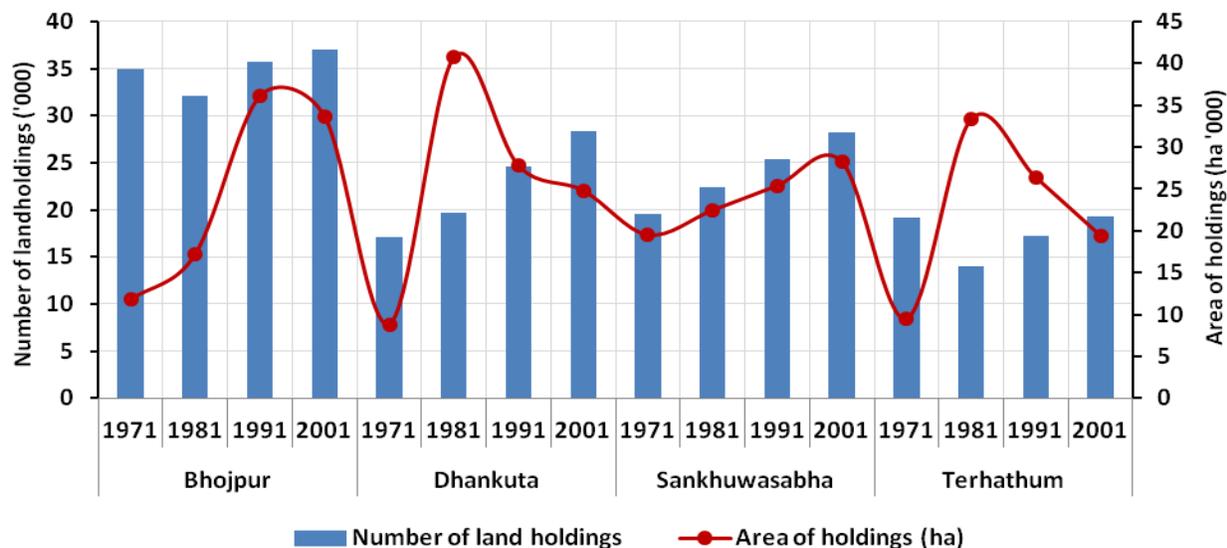
Figure 23: Change in number and area of land holdings in the Koshi hills (1971 to 2001)

Pull factors through increased access to information

Migrant networks have played a significant part in the dispersion of knowledge and expectations about migrant destinations.

> 'We heard in the bazaar in 2002 that there were foreign employment opportunities. Every family here has a son in the Middle East mostly working in construction or as painters.' (RCA man, Morahang-Terhathum, June 2012)

An insight into these migrant networks that facilitate further migration is provided by the trends in popular destinations. Greater employment opportunities and the potential for earning higher salaries have 'pulled' young men and, more recently, women across the border into India for decades (Caplan, 1970; Sharma, 2011; Kollmair et al, 2006; Davis, 1951). The Census figures for 1991 show that the destination of over 82 per cent of the migrants (17,751) from the Koshi hills was to India (CBS, 1992).

By 2001, the figure remained high at 81 per cent, but, interestingly, it has been noted that the Gulf States have increasingly emerged as the preferred destinations for a growing number of migrants. In 1991, 5.6 per cent were travelling to the Gulf, whereas, by 2001, the number had more than doubled to 12.9 per cent. The potential of earning higher wages is also greater, with a household with a migrant in the Gulf countries receiving up to US$2,120, compared to US$800 for those with members in India (WB, 2009).

> 'The eldest son of my Dalit HHH family is 34 and first went to Qatar for construction work in 2005. He managed to pay off the 1.5 lakh loan in about six to seven months. He sent money back for his father to buy bullocks. Later he spent a further five lakhs building a new two-storey house for his parents and his two children (12 and 10) who live with them.' (RCA Field Notes May 2012, Morahang-Terhathum)

RCA findings support this notion of pull factors. Reasons for migrating relate to new aspirations and a rejection of working in agriculture. In less than 10 per cent of host household families did either the parents want for their children or the children themselves want to remain in agriculture. Work abroad is widely considered as easier and incomes are better. There is also a perceived status associated with working abroad and a prevalent perception that households with migrant workers are more likely to own assets such as solar panels, improved CI sheet roofs, plastic water tanks, TVs, dish antennae and other electrical goods, and send their children to 'boarding schools'.

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Changing aspirations of the youth

The increase in the levels of education among young people in the KHs along with an increased exposure to national and global communities, through modern technologies, has greatly influenced ideational changes, particularly with respect to their aspirations regarding livelihoods and standards of living. RCA field visits indicated that the youth were increasingly turning away from agriculture. Field data suggests that there is a growing desire to look for opportunities that give better material returns to their labour compared to working in agriculture, with most turning to migration. An ambition that is increasingly supported by their parents, though they are all too aware of the contradictions involved in investing in their children's education as far as their own futures and that of the family farm or local enterprise was concerned. Furthermore, increased educational levels were regarded as investment in better migrant job opportunities for the future. As a consequence there were low retention rates of boys after the 8 grade, when they are eligible for acquiring their citizenships and passports.

</div>

4.3.3.3 Development interventions: Lack of clear long term impact

The primary point to be raised here is not interventions that failed to contribute to long term change, but more a missed opportunity to intervene at all. The lack of programmes focussing on ways of leveraging and supporting migration to achieve poverty alleviation goals is indicative of a key failing—the assumption that people would want to remain in agriculture when other options exist (Static rural development model). It is clear from the study that, unless there were all of the conditions for significantly increased incomes within the confines of limited labour/land input, many people would prefer to pursue alternative livelihood strategies elsewhere.

Moreover, there have been significant and negative unintended consequences of migration. Impact on households, the agrarian economy and the impact of changing aspirations should all be noted.

4.3.4 Drivers of long term change: better quality of life at individual level

As described in Section 3.3.3, the main changes at this level include changes to individual education and health outcomes. Figure 22 presents the findings of key nodal analysis which establish plausible links between key socio-economic changes and resources and investments in the region.

4.3.4.1 Summary of key socio-economic changes

Our analysis identified two key, socio-economic changes that facilitated increases in health and education outcomes: increased desire to use social services and increased access to them.

Increase in desire to use social services is closely linked to changes in attitudes and values around health and education. The RCA found that education status and the perception of education has changed enormously in the last 20 years in particular. Examining the education levels of study participants found that grandparents (60+), often with little or no education, parents (40-60 yrs) with some education (often only to primary level, and men more than women), but their children (20-40) with secondary education and the current school-going numbers, were very high, with parity between boys and girls. There was a clear appreciation of the value of education for its own sake and also as an improver of future job prospects.

Although there is little regional, quantitative data to corroborate this, RCA participants also consistently referred to the regular use of private schools and health clinics. They referred to 'voting with their feet' and money, demonstrating the value that is placed on quality service provision in both sectors. This is consistent with national trends, where private expenditures are the highest source of funding nationally between 2000 and 2003 ranging from 59.7 per cent in 2000 to 62.5 per cent in 2002 (MoHP, 2012).

This is further strengthened by the evidence on remittance usage (Table 7). In 2009, 28.56 per cent of those in the WB study stated children's education as the second purpose of remittance income and 15.05 per cent as the third purpose. Access to social services also increased significantly during the study period through both private and public provision of infrastructure and services.
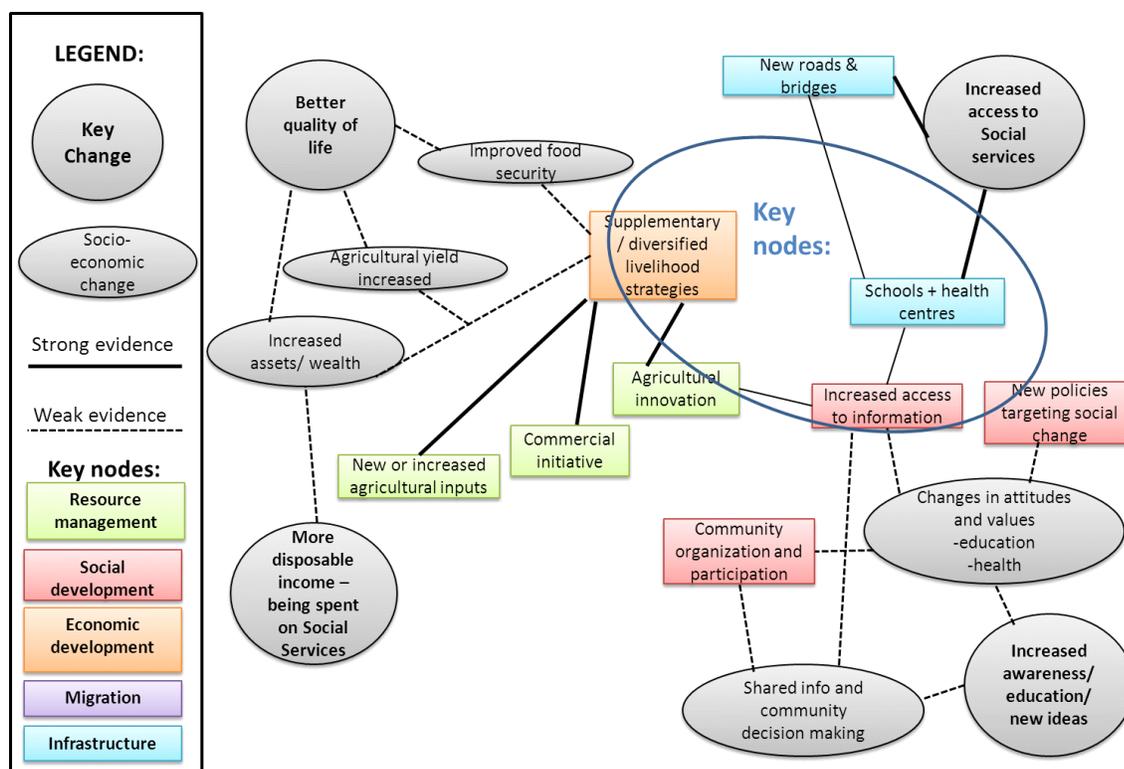
Figure 22: Causal process map 3: better quality of life (at individual level)

4.3.4.2 Key drivers of better quality of life at an individual level

Through an analysis of key nodes, we identified three key drivers of this change: the development of health and education infrastructure; increased disposable income through diversified livelihood strategies, and increased information associated with attitudinal change.

Health and education infrastructure

During the 1950s and 1960s, there was substantial construction of service centres—community schools, health centres, hospitals and agricultural extension services. The distribution of public health services within the Koshi hills districts has not changed much since the mid-1980s, by which time the government had already established different levels of decentralised and integrated health service centres (such as sub-health posts, health posts, Primary Health Care Centres, and hospitals) as part of the national health plans (Justice, 1986).

In 2009-10, there were 173 Health Service Units within the Koshi hills, with one centre serving approximately a population of 3,523 (CBS, 2010). The number of people serviced by one Health Service Unit in the regions of the Koshi hills ranges between 2,031 in Terhathum, 2,872 in Sankhuwasabha, 3,014 in Dhankuta and 3,578 in Bhojpur.

Private health services in the forms of pharmacies and clinics have been growing rapidly since the 1990s in the Koshi hills, in response to a growing demand from the local population, despite the additional cost often incurred. Field data suggest that such private service providers are filling a gap in terms of relatively better services, improved outreach of those services and the better availability of drugs. Examples were given of how private service providers would ride their motorbikes for over an hour to reach households needing support during delivery of babies; in contrast there were stories of how public health facilities often had no staff when expecting mothers arrived for delivery support.

Significant growth was also seen in public school construction. The trend in the growth of different levels of schools (primary, lower secondary and secondary) nationally, in the Koshi hills and in the Koshi Tarai all show a similar focus on the growth of primary schools until the 2000s. It is only from the 1990s that increases in the number of lower secondary and secondary schools can be seen (Figure 23).
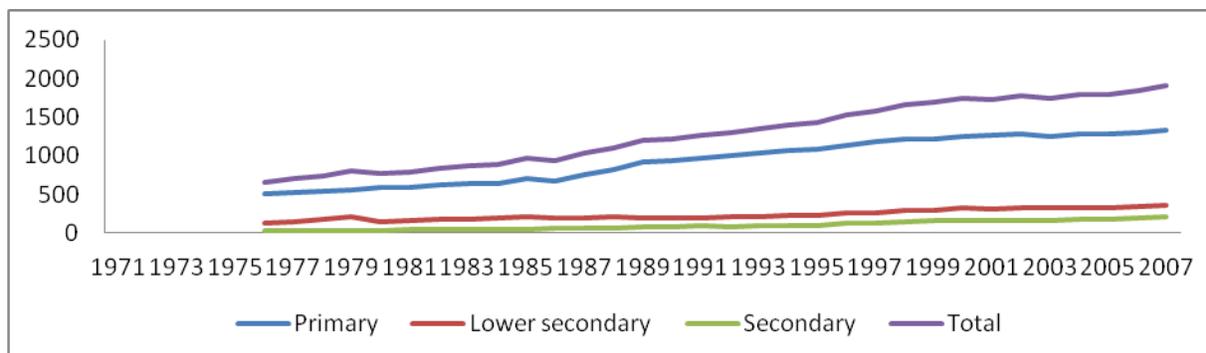
Figure 23: Number of schools in the Koshi hills

This correlates clearly to the increase in school enrolment, which correlates to an increase in education outcomes—literacy rates.

In addition to health and education infrastructure, data also suggest that overall infrastructure increased access. As households gained better access to roads, either through the construction of the road itself or a wilful choice to relocate closer to roads, they had better access to schools and health services, contributing to better education and health awareness.

Enduring Preferences and Practices

Despite the proliferation of the 'modern' health services people of the Koshi hills regions continue to seek services of the 'traditional' healers – *shamans, dhamis, jhankris* – who often play the role of "mental health workers". This reveals a continuing gap in the cultural contextualization of preventive measures and health service provision which still lacks a holistic framework for improving the health of the local people. The impact evaluation of RAP I suggested that though overall utilization of the public health services had increased over the years, more than one third women still preferred the services of the 'traditional' healers and that in Sankhuwasabha, almost half of those surveyed regularly visited them (RAP, 2011: 22).

There is also evidence of continuing discriminatory practices in health service delivery as detailed in the Documentary Review. The 2003 'Health Improvement Assessment' conducted in 16 eastern districts, (including the four Koshi hill districts) reports that 38 per cent of the survey respondents showed only 'partial satisfaction' with the health services due to the unavailability of medicines and service providers, and the poor quality of medical treatment (DoH & BNMT, 2004). Women reported their hesitation to visit the health institutions due to the lack of female health workers, while caste discrimination was another reason given for members from disadvantaged groups ***not*** going to health institutions.

Government policy (donor support)

Health and education have consistently been target development areas for the GoN. During the 1950s and 1960s, it undertook, with the assistance of donors, a significant investment in schools, health centres and hospitals.

A further significant development in connecting Koshi hills residents to health services was the Female Community Health Volunteers (FCHVs) programme that started in 1988 under the Family Health Division of the Ministry of Health to enhance its primary health care network, through community participation, and expanded outreach, through the voluntary work of a cadre of local women across all districts of Nepal, including the Koshi hills. The

FCHV programme was implemented in 27 districts (of the central region and mid-western region) and later expanded to 56 districts in 1990 and to all 75 districts by 1995. In the mid-1990s, additional FCHVs were recruited according to a 'population based' ratio and the programme was also expanded to urban areas (WHO, 2007). There were 1,600 FCHVs in the Koshi hills in 2009/10.

Increased information leading to attitudinal change

RCA data suggest a fundamental shift in the way in which these services are perceived. Community school policy was identified as a clear driver of this by the people themselves, but also through an expanded view of the world.

> 'If farming was the form of employment before, education is the new form of employment now.' (RCA man, 60, Jorpati-Dhankuta, April 2012)
>
> 'We grew up with the tools of agriculture, but our grandchildren grow up with pencil and book.' (RCA grandmother, Chainpur-Sankhuwasabha)
>
> 'In the past people used to say what is the use of education for ploughing? Now they think education is even needed for a farmer. Girls need to be educated to bring up their children properly.' (RCA man, 80+, Jorpati, Dhankuta)

Disposable income through diversified livelihood strategies

To make the decision to use private medical and educational services, people need money. The final key driver identified by the research team was the increase in disposable income/assets. This is closely associated with results reported above around how remittances have been used for education expenditure and how growth in disposable income was generated through diversified commercial livelihoods and remittances. This can be seen to have a reinforcing cyclical impact on migration.

4.3.4.3 Development interventions: Lack of clear long term impact

A series of individual programmes have implemented activities with varying degrees of success. A final evaluation of the Safe Motherhood Innovation Project (SMIP) stated that SMIP had been successful in increasing access to quality maternal health services, including increasing awareness and the utilisation of those services, as well as in establishing a regional maternal health network (ADRA, 2007). However, the evaluation states that, despite the specific successes, the project was not able to achieve the overall objective of reducing maternal morbidity and mortality (ibid, ix). This final point is, perhaps, indicative of the challenges in converting programme activity to impact on macro-level trends. There is little evidence to tightly link health programmes to macro-level health trends, though the fact that they have been implemented at the same time that we have seen improvements provides plausible temporal associations.

Similarly, in education, it was not possible to plausibly link the programme-specific interventions to macro-level trends outside of temporal associations.

> **Increasing Visibility and Voice, and Decreasing Discrimination**
>
> Like many other studies, field data from the Koshi hills show that over the years, overt caste discrimination, practices of untouchability and commensality rules have been diminishing, particularly in urban areas. Increased mobility and migration to urban areas, increasing instances of travelling in public transport, eating outside of the home, increased education and exposure to other cultures, and increasing advocacy by a range of groups, including specifically gender, ethnic and caste based groups, for equality of life conditions and opportunities are all factors that have contributed towards diminishing overt caste discrimination in the Koshi hills as elsewhere in Nepal. More targeted development programmes from the late 1980s that focused on the poor and marginalized caste and ethnic groups, and on women, have also, however, encouraged the increasing visibility and 'voice' of these groups and have promoted an increasing demand for equal rights for them.

4.3.5 Drivers of long term change: better quality of life at household level

As described in Section 3.3.4, the main changes at this level include changes to basic needs provision. Figure 24 presents the findings of key nodal analysis which establish plausible links between key socio-economic changes and resources and investments in the region.
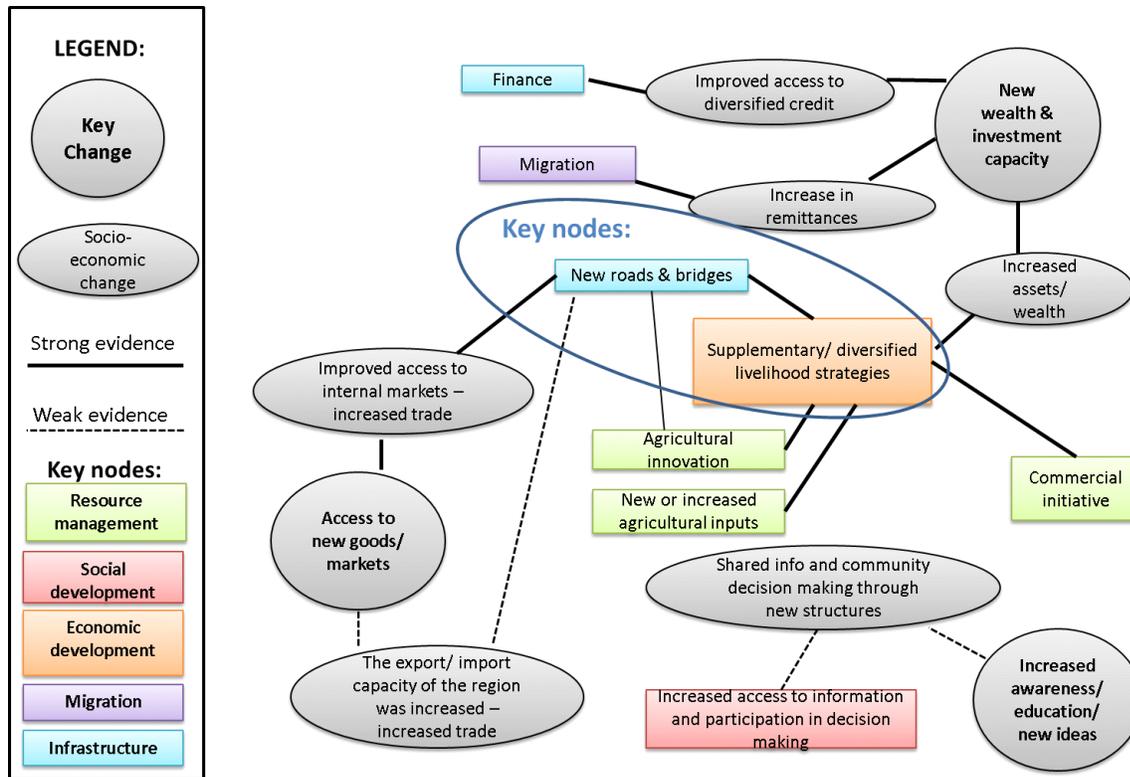
Figure 24: Causal process map 4: Better quality of life (at household level) Key relationships

4.3.5.1 Summary of key socio-economic changes

Our analysis identified two key groups of socio-economic changes that facilitated increases in the standard of living for people living in the Koshi hills—an increase in assets, wealth and disposable income, and improved access to internal and external markets for consumption goods. A third attitudinal element was also identified: a desire for self-improvement. Finally, changes in the social structures and local institutions at the community level have also had an impact on increased access to information and local level decision making which contributed to increased well-being.

Costs and availability are two of the most significant factors associated with almost all of these indicators of quality of life, for example, the type of fuel used. In rural areas, it is not surprising that many families continue using wood compared to other available fuels, such as kerosene. LPG provides a cleaner alternative; however, the higher costs make it prohibitive to poor families and, as a result, are mostly only seen in urban areas. The affordability of consumer goods and materials for improving quality of life is clearly a determining factor in the capacity of people to improve the quality of their lives. The accessibility of affordable consumer goods for improving quality of life is also clearly a determining factor in the capacity of people to improve the quality of their lives.

Personal initiative also played an important part here. People in the Koshi hills desired to improve their lives. RCA participants spoke of emulating neighbours' innovations or improvements. Indicative of the desire to and awareness of initiatives to improve quality of life, the Nepal Migrant Study 2009 finds that 13.5 per cent of respondents stated household property as the first purpose of remittance use, 16.9 per cent as the second purpose and 10.5 per cent as the third purpose (WB, 2009).

Finally, limited success by development programmes to reach poor and disadvantaged households (Dalits and marginalized Janajati – ethnic groups) and their efforts at including them in new community structures and institutions have helped in increasing equitable access to natural resources and credit for instance, as well as increasing their voice and visibility at local levels.

4.3.5.2 Key drivers of better quality of life at a household level

Through an analysis of key nodes, we identified two key drivers of this change: new roads and bridges and diversified livelihoods.

New roads and bridges

The significant driver of this is the dramatic increase in the number and coverage of roads, reducing the time and monetary cost of transporting produce. As reported earlier, in 2011 Koshi hills had 694 km of road networks compared to 0 km in 1970s (see Figure 14). This, in turn, led to substantially higher inflows of goods and materials at lower process than were previously available (RCA data).

Diversified livelihoods

This study has already addressed the growth in disposable income generated through diversified commercial livelihoods and remittances. This can be seen to have a reinforcing cyclical impact on migration.

An important indication of the extent to which increased disposable income is being used to improve the quality of life of people in the Koshi hills is indicated by the fact RCA data which suggest that residents of the Koshi hills spend significant sums of money on household improvement, an insight supported by the data from the 2009 Migrant Survey by the World Bank, when 13.5 per cent of respondents used remittance income for household purchase as a primary use, while 16.9 per cent as a secondary use and 10.5 per cent as a third use.

Essential Service Delivery – Local NGOs and Local Governments

Since the 1990s NGOs in the Koshi hills, as in the country, have been important in the expansion of basic services, in supporting income generating opportunities, and initiating targeted programmes for the poor, women and individuals from marginalized communities such as the Dalits. This is particularly true during the period of the Maoist insurgency (1996-2006) when government service delivery had been severely compromised due to the political conflict. Sources indicate that prior to 1990 there were only three NGOs, including one in Dhankuta and two in Sankhuwasabha. The number of NGOs in the Koshi hills grew rapidly with 35 in 2000 and 266 in 2009, most of which are nowadays working in forestry, sanitation, women empowerment, non-formal adult literacy, and micro credit programmes. A recent case study of NGOs in the eastern region documents a growing concern among stakeholders about the "growing unaccountability, lack of transparency and political interference in many NGOs" working at district level (UNRCHO, 2012).

On the other hand, since the dissolution of the locally elected governing bodies in 2002 at the district, VDC and ward levels, a vacuum in political representation and local governance has seriously compromised the local planning, implementation and monitoring of social and economic development activities in the Koshi hills, as in throughout the country. The GoN's 1999 decentralization initiative of Health Facility Operation and Management Committees (HFOMC) and School Management Committees (SMC) were constituted throughout the country as the key local body responsible for operating and managing the local health facilities and the public or 'community' schools. These governing bodies have quotas for representation of women and Dalits and/or other marginalized group members. Yet field data reveals a very mixed picture with regard to the local management of health and education services, due to the gaps in well-developed institutional systems of local governance.

Changing Social Structures and Local Institutions

Field data shows a mixed situation with regard to 'traditional' forms of collaboration within communities and between households. Some communities were experiencing difficulties in maintaining 'traditional' forms of collective support such as the reciprocal labour exchange system – *parma* – due to the changing demographics and

changing work aspirations of the population, However, in other communities there was increased use of *parma* especially by women heads of household as a means of combating labour shortages resulting from a high level of absenteeism among their menfolk and/or exorbitant wages for hired labour.

The various studies (detailed in the Documentary Review), particularly in relation to the conservation and management of community forests, document how the social organisation of households into 'committees' to manage natural resources, for instance, created new social relations and gave opportunities to member households to be part of the process of local management, governance and decision-making. Though additional studies have pointed out that poor and disadvantaged (from a caste and ethnicity perspective) households still do not always receive equitable access and benefit sharing, explicit government policies are in place to ensure that poor and disadvantaged groups are not left behind.

4.3.5.3 Development interventions: Lack of clear long term impact

Tangible development interventions here are difficult to measure. Targeted interventions generally focussed on developing outreach and information services, though some like RAP, community forestry and commercial vegetable production projects/programmes, for example, focused on specific groups of households and people with tangible wealth creation activities. The impact of interventions designed to increase wealth are difficult to attribute quantitatively to the increase in standard of living. Changes in household wealth and basic needs have limited direct link to development interventions especially when some of the relatively more successful were not able to scale up to create wider impact.

4.3.6 Voices of the poor

The following section provides insight from the RCA into the perceptions of the people of the Koshi hills about the most significant developments over the study period and the primary drivers that impacted on them. It is designed to provide a final element to the causal process mapping and key nodal analysis undertaken above—to give a qualitative understanding of what was perceived as important and how people lived out the realities of the trends described above.

The most significant developments for the study families are ranked as roads, increased remittances, production and marketing of high value crops and access to water for drinking and irrigation. Less mentioned, but nevertheless significant developments are education, livestock improvements and a range of social changes (improved women's development and inter-ethnic/caste relations). There was more ambiguity around developments in healthcare, the importance of electricity and improved stoves.

The driving forces for change were not always clear cut. Major roads were seen as crucial and were attributed to the government and British Aid, but local roads were regarded, largely, as community efforts. Increasing migration was seen as a result of new employment opportunities emerging (particularly in the Persian Gulf and S.E. Asia) and the (mostly) positive experiences reported by migrants. The growth of the cardamom industry, the major high value crop that has created considerable wealth in areas of the Koshi hills in recent years, was attributed, by study families, to enterprising migrant workers who brought back cuttings from the cardamom gardens in Sikkim, and buyers searching for new sources to meet growing demand. Water programmes (drinking and irrigation) comprise a mix of attribution by study families to development aid, to charities such as the Gurkha Welfare Trust and school alumni associations, to small grant provision through local government and to self-help initiatives.

Education status was noted by study families to have changed significantly in the space of three generations and this is said to be initially due to the Government provision of primary schools at ward-level in the 60s. Community schools now face mixed reaction from communities with some good ones, but most regarded as worse than private sector provision. Similarly, a growing trend over the last five to seven years for people to '*vote with their feet*' by using private pharmacies, rather than Government health posts, for health problems that are not addressed through traditional means. Study families noted an increase in numbers of privately owned pharmacies catering to this demand.

The private sector is also attributed with the significant penetration of mobile phones (Figure 25), solar panels and agricultural inputs. Despite Government subsidies, people said that they prefer the efficiencies and better access

provided by the private sector. Agricultural extension was regarded as useful during the 80s, but people say it provides little help nowadays. Similarly, early programmes of micro-credit were useful as an alternative to the traditional sources of loans, but were more lauded for the accompanying education/information programmes (income generation, health, hygiene, immunisation, family planning, etc.) and opportunities for social capital accumulation, than the loan *per se.* Now, these group-based arrangements are said to have been reduced to loan management only and people miss opportunities to access information and advice. Generally, people complain of a lack of information and advisory services, whereas there were a range of better sources before.

Commercial growing of cabbage, KH   *Use of mobile across remote rural region, KH*

Figure 25: Technological developments: agriculture and communication in the Koshi Hills

It is significant that neither migration, nor the production and marketing of high value crops, received much attention from either development partners or Government until very recently. The fact that people in the Koshi hills have been highly mobile for generations is an important element, noted by the study participants, contributing to the diffusion of ideas and innovations and the development of aspirations beyond agriculture. Study families often attributed the innovations they had made to 'word of mouth' from experiences gathered from abroad or in market centres, or from individual 'entrepreneurs' within their communities whose self-propelled experiments led to the uptake by others.

Another important distinction is changes to the lives of women. Due to absence of working males in the families for reasons such as migration, women have taken on an extra burden at the household level: taking care of their children, schooling, health, household chores, farming activities and caring for elderly people. Though women in general were more aware about health, education and other lifestyle choices (modern amenities), the workload of women headed households is significant.

In the final instance, this self-help, agency and initiative is an enduring feature of the long term impact in the Koshi hills over the past 40 years. Interventions that tap into, mobilise, support and channel this are generally the ones most remembered by the inhabitants themselves.

5. Conclusions and Recommendations

5.1 General Conclusions

The key conclusion of our analysis is that Koshi hills region is better now than in the 1970s across a range of indicators: quality of life has improved, living standards have increased and poverty has reduced. Macro-trends indicate that Koshi hills as a region has experienced positive change when compared to neighbouring districts. For instance, the average economic growth rate of the Koshi hills region is approximately 1.6 times higher than the average in the Koshi Tarai; however this is lower than the national average economic growth rate.

The main driver of change has been the energy and initiative of ordinary men and women struggling to protect, maintain and enhance their livelihoods and improve the quality of their lives and that of their children. They have been the main source of investment and expenditure driving the growth of the local economy and generating improvements in local society. They have often been the sources of innovations and catalysts for change in agriculture. They have also taken the initiative in seeking out employment and other income generating opportunities: through moving to areas away from home on a seasonal, temporary and also permanent basis; they have increasingly invested in improvements in their living standards (house construction, improved diet) and in education.

Economic analysis indicated that poverty reduction is strongly explained by government investments and remittances and partly explained by donor funding in general. Economic growth is mainly explained by private investments and partly by donor assistance, government investments, and remittances. Development interventions by government and the donor community have made a significant contribution to this change, but perhaps not as much as development practitioners would have liked or even expected.

Our analysis suggests that the most effective development interventions were those that helped individuals to meet their desire for change, providing an enabling and supportive environment. The most sustained changes were those that were driven by individuals: people desiring to change and help themselves according to their different capabilities, resources and needs.

The construction of the road network, for example, though a costly investment in the short run, was the most significant contributor to change over the long run – both intended and unintended change. In terms of intended change, it was assumed that road construction would lead to economic growth through a reduction in transport costs. Indeed our economic analysis demonstrated that improvement in roads network connection had a strong influence on the improvement of economic activities. The key nodal analyses we conducted to identify drivers of change associated the construction of the road with each of the four long term changes we identified in this study. Households who participated in the reality check also identified roads as the most significant driver of change.

At the same time, the construction of the road network also facilitated sustained impact which was more widespread. For instance, though interventions in cash crop production, the improvement of animal breeds and the provision of extension services by government and donor interventions contributed to long term impact in general, they had a more substantial impact for households along roads and trails where marketing had developed.

The story of cardamom as a high value crop in Koshi hills is a specific example of this. Cardamom production took off when the roads and marketing structures were in place and when the price rose because of the collapse of production in India, Sikkim and Bhutan following the spread of disease there. The construction of major roads and agricultural support programmes (such as PAC) were associated with increases in cardamom production as a high value crop, as small holders and farmers had better technology and information. This increased technology and information as well as access to and confidence in markets, at the same time as cardamom prices rose, was the right combination to make cardamom an important cash crop in the Koshi hills.

Forestry programmes is another area where there has been a consistent and sustained programmatic approach throughout the study period, based on principles of community ownership. Conservation efforts can be considered a success, particularly in the regeneration of forests, with well-defined policies, institutions and practices, which encompassed government, NGOs and local communities. Community forestry programmes overall covered a

majority of households in the rural areas of the Koshi hill and other hill districts contributing to poverty reduction in the region.

Our GIS mapping analysis shows that, during 1986-2010, while the forest area increased by 18.4 per cent, the arable land decreased by 1.5 per cent, but the intensification of commercial vegetables, practices of intensified cropping patterns, and inter-culture of different crops, fruits, trees, broom grass, ginger and cardamom are observed particularly in the areas where there are roads and other facilities.

It could be thus argued that less should be attempted and key interventions identified which might create an enabling environment for development led by private investment and innovation. These "enabling environment" interventions could include: infrastructure, representative local government to provide more of a say in local planning and development, responsive "funds" for local development, girls' education (and education more generally), and encouragement for private initiatives. Critically, these interventions require provision of a basic framework: democratic, transparent and responsive government; effective legislative structures; accessible financial services; and infrastructure support to improve roads, telecommunication and education.

Further, many missed opportunities were detected where development interventions could have contributed to larger change had there been adequate engagement with beneficiaries. For example, the importance of permanent and seasonal migration overseas and the impact of remittances were completely overlooked by the donor community in the 1990s when this phenomenon really began to take off. The changes in remittances and the diffusion of new information that followed changes to migration have transformed the Koshi hills region. If donors had understood this trend early and the potential impact of remittances as a catalyst of change, many effective interventions could have been developed to assist households in leveraging remittances to better lift them out of poverty and increase their quality of life.

Last, previous models for the rural poor need constant interrogation, taking into account the dynamic aspects and determinants of poverty to ensure that this enabling environment effectively and adequately supports all individuals. Though poverty has improved, the definition of poverty has changed in the three national poverty surveys conducted during the study period. Development interventions overall demonstrated an inadequate analysis of the multi-dimensionality and changing causes and manifestations of poverty. Though class, caste and ethnicity both continue to play the major part in defining poverty, they are not the only determinants. However, the ability of this study to disentangle the complex impacts on social exclusion factors and gender are a major limitation of this study.

5.2 Recommendations

- People need more of a voice and a say in their own development, with representative local government at village and district levels, and government and donor and private sector interventions providing responsive services to meet peoples' needs.

- In the foreseeable future remittances will continue to play a role as a key driver of change, so GoN and donors must get ahead of the curve, providing technical/vocational training to build capacity of the people so that they can earn higher wages both domestically and abroad. Also measures should be taken to invest remittances more in the production sector at the local level.

- Based on perceived capabilities and needs, development support could usefully focus on proven traditional areas of investment: roads, education, health, and telecommunications; in addition to supporting policy to provide an enabling environment for production, for export, and to encourage inwards investment, diversification of tourism and particularly energy development.

- A wider lens is needed that looks at the deeper, broader qualitative and quantitative changes without reference to specific projects. There is a need for evaluations like this one which look holistically at change – multi/ combined methods, cross sectoral and include people in qualitative approaches.

- The pace of change is accelerating and thus outcome level data must be more accessible on a 4-5 year horizon. There is a need for local government to become more responsive which includes more frequent assessments of trends and tendencies by local technical and other staff, including a proper range of data

collection and analysis.

- Impact on improving social and economic conditions of the people has been little due to a mode of isolated development interventions by the agencies, including both government and development partners. It is therefore essential that the development strategies and interventions should be devised of an integrated manner among the development agencies, including both the government and all development partners in a particular geographical area.

- Execution of development programmes and projects has not been so effective because of the poor coordination between the sectoral or development agencies as well as within a particular sector. So, efforts should be paid on devising mechanism that would enable to happen a sound and strong coordination between (inter) sectors or development agencies, as well as within a sector.

- Establishment of information systems which capture cross-sector outcomes should be given priority in the government policies and programmes in the Koshi Hills (at a local – district and village level), including data on basic services and infrastructure, with disaggregation of different sectors of the economy. This includes better local research capacity. Links with schools and colleges, technical institutes and universities could be improved, so that Nepal's research capacity is improved and increased.

- Based on this system, collaborative efforts at the national, district and VDC levels should be adopted for developing and implementing regular monitoring, particularly among concerned ministries and government services to be properly reflected in the national and district planning and accounting. This should be done more and continued in the future in consultation with the people's elected representatives and members of civil society organisations as well as concerned agencies so that the contribution of each sector and social group may be captured in the national and district accounts and their role be clearly understood in assigning the priority.

6. Bibliography

6.1 Works Cited

ADRA. (2007). *Safe Motherhood Innovation Project Final Evaluation Report*. Kathmandu: ADRA Nepal.

Adhikary, S. (1982). R*ural Development in Nepal: Problems and Prospects*. Kathmandu: Sajha Prakashan.

Adhikari, J. & Hobley, M. (2011). *Everyone is Leaving – Who Will Sow Our Fields? Effects of Migration from Khotang District to the Gulf and Malaysia.* Kathmandu: Swiss Agency for Development and Cooperation/HELVETAS

Biggs, S.D., Gurung, S.M. & Messerschmidt, D. (2004). *An Exploratory Study of Gender, Social Inclusion and Empowerment through Development Groups and Group-Based Organizations in Nepal: Building on the Positive (Version 2)*. Kathmandu: DFID and World Bank.

Blaikie, P., Cameron, J. & Seddon, D. (1977). *Centre, Periphery and Access: Social and Spatial Relations of Inequality in West Central Nepal.* Norwich: Overseas Development Group, University of East Anglia.

Calpan, L. (1970). *Land and Social change in east Nepal: a study of Hindu Tribal Relations*. Berkeley: University of California Press.

Caplan, L. (1995). *Warrior Gentlemen: Gurkhas in the Western Imagination*. Berghahn Books.

CBS, World Bank, DFID and ABD. (2006). *Resilience amidst Conflict: As Assessment of Poverty in Nepal, 1995-96 and 2003-04*. Kathmandu: Central Bureau of Statistics (CBS)/World Bank/Department for International Development (DFID)/Asian Development Bank (ADB).

CDG. (2001). *Study of Physical Planning of Human Settlements and Emerging Towns along the Banepa-Bardibas Highway Corridor.* Kathmandu: Central Department of Geography (CDG)/TU.

CEDA. (1972). *Regional Analysis of Koshi Zone, Eastern Nepal: Working Method for Regional Planning in Nepal.* Vol. II. Kathmandu: Centre for Economic Development and Administration (CEDA).

CEDA. (1975). *Regional Development Study (Nepal): Part IIIa Koshi Zone*. Kathmandu: Centre for Economic Development and Administration (CEDA).

Classels, C., Wijga, Atv, Pant, M. & Nabarro, D. (1987). *Coping Strategies of East Nepal Farmers: Can Development Initiatives Help*? Dhankuta: KHARDEP.

Coffey & Metcon Consultants. (2010). *Research into the Long Term Impact of Development Interventions in the Koshi Hills: Data Collection Phase.* Kathmandu: Department for International Development (DFID).

Conlin, S. & Falk, A. (1979). *A Study of the Socio-economy of the Koshi Hill Area: Guidelines for Planning an Integrated Rural Development Programme*. Vol. I, KHARDEP Report 3. UK: KHARDEP.

Connell, J.P. & Kubisch, A.C. (1998). Applying a theory of change approach to the evaluation of comprehensive community initiatives: progress, prospects, and problems. In: A. C. Kubisch & J. P. Connell, *New Approaches to Evaluating Community Initiatives, 2: Theory, Measurement and Analysis.* USA: The Aspen Institute.

Davis, K. (1951). *The population of India and Pakistan*. Princeton: Princeton university press.

DoHS & BNMT. (2004). *Health Improvement Programme (HIP): HIP Assessment 2003 Summary Report*. Kathmandu: Department of Health Services (DoHS)/British Nepal Medical Trust Nepal (BNMT)/ERHD.

FAQs: Oxford Poverty and Human Development Initiative. (2013). Retrieved 04 02, 2013, from Oxford Poverty and Human Development Initiative: http://www.ophi.org.uk/multidimensional-poverty-index/mpi-faqs/#1

Fitzpatrick, I.C. (2011). *Cardamom and Class: a Limbu Village and its Extensions in East Nepal*. Kathmandu: Vajra Publications.

Garner, E. & Seddon, D. (2005). *Nepal's Remittance Economy: A Decade of Change*. Kathmandu: Central Department of Economics, Tribhuvan University.

Gurung, H. (2005). Nepal regional strategy for development. *ADB Working Paper Series*.

Hitchcock, J.T. (1961). A Nepalese hill village and Indian employment. *Asian Survey* 1(9): 15–20

Hocking, D., Hocking, A., Subedi, B., Feldman, D. & Mathema, S. (1995). *Social & Economic Impact of Research done at Lumle & Pakhribas Agricultural Centres, Nepal*.

ILO. (2004). An Overview Paper on Overseas Employment in Nepal. Series 4. Kathmandu: International Labour Organisation (ILO).

Jha, Satish C. (1987). Rural development in Asia: issues and perspectives*. Asian Development Review*. Vol. 5, No. 1:83 – 99.

Joshi, Y.R. and Mitchhill, B.K. (1989). Baseline Survey in the Seven New Districts of the PAC Research Command Area. Dhankuta: PAC.

Justice, J. (1986). *Policies, Plans & People: Culture and Health Development in Nepal* (Comparative Studies of Health Systems and Medical Care). USA: University of California.

KHDP. (1992). *The Koshi Hills Development Programme: An Overview*. Kathmandu: Koshi Hills Development Programme (KHDP).

Kollmair, M., Manandhar, S., Subedi, B, & Thieme, S. (2006). *New figures for old stories: migration and remittances in Nepal. Migration Letters*, Vol. 3 No: 2.

MacFarlane, A. (1976). *Resources and Population: A Study of Gurungs of Nepal*. London, UK: Cambridge University Press.

Marsh, D. K.V. (1984). *The Effect of the Opening of the Dharan-Dhankuta-Hile Road on the Movement of Goods and People in the Koshi Hills: Results of the Third Traffic Survey*, KHARDEP Report No. 43.

Misra, I.R. & Satyal, M.R. (1981). *Development of Agricultural Marketing and the Improvement of Rural Markets in Hill Areas.* Kathmandu: Ministry of Food and Agriculture.

MLD. (2004), *Policy Paper on Decentralization in Nepal (NDF-2004)*, Ministry of Local Development (MLD), HMG Nepal.

MoHP. (2012). *Nepal National Health Accounts: 2006/2007-2008/2009*. Kathmandu: Ministry of Health & Population (MoHP), GoN.

Nickson, A. (1992). *Foreign Aid and Foreign Policy: The Case of British Aid to Nepal*. UK: University of Birmingham.

Overseas Development Administration (ODA). (1989). Submission to ODA Projects and Evaluation Committee Nepal:

No-Frills. (1989). *Importance of Trails and Central Places for Nepal's Hill Economy: a Geographical Perspective.* No-Frills Development Consultants.

NRI. (1993). *Nepal District Profile*. Kathmandu: National Research Institute (NRI).

NPC. (1956). *The First Plan.* Kathmandu: National Planning Committee (NPC), HMG.

NPC. (1970). *Fourth Plan (1970-1975).* Kathmandu: National Planning Committee (NPC), HMG.

NPC. (1974). *The Fifth Plan (1975-1980) in Brief.* Kathmandu: National Planning Committee (NPC), HMG.

NPC. (1980). *The Sixth Plan.* Kathmandu: National Planning Committee (NPC), HMG.

NPC. (1985). *The Seventh Plan.* Kathmandu: National Planning Committee (NPC), HMG.

NPC. (1997). *The Ninth Plan (1997-2002).* Kathmandu: National Planning Committee (NPC), HMG.

NPC. (2002). *The Tenth Plan (2002-2007).* Kathmandu: National Planning Committee (NPC), HMG.

Ojha, D.P. (1983). History of land settlement in Nepal Tarai. *Contribution to Nepalese Studies*. 11:21-44.

Pradhan, Bharat B. (1985). *Integrated Rural Development Projects in Nepal: A Review*. ICIMOD Occasional Paper No.2 (December). Kathmandu: ICIMOD.

Pradhan, P.K. & Routray, J.K. (1992). *Market Centre and Rural Development in Chitwan District, Nepal.* Bangkok: Asian Institute of Technology.

Pyakuryal, Kiran N. (1980). T*he concepts and operation of rural development, Strategies Elements of Rural Development in Nepal, Kathmandu*: Centre for Economic Development and Administration (CEDA): 1-29.

RAP. (2012). *Impact Assessment Report, Rural Access Programme (RAP) Phase 1*. Kathmandu: IMCI Worldwide and Helvetas Nepal.

Sachs, J. (2005). *The End of Poverty: Economic Possibilities of Our Time.*

Schroeder, M.C. & Sisler, D.G. (1980). *The Impact of the Sunauli-Pokhara Highway on the Regional Income and Agricultural Production of Pokhara Valley, Nepal.* Ithaca: Department of Agricultural Economics: Cornell University.

SEADD. (1989). *Review of the Koshi Hills Development Programme.* South East Asia Development Division (SEADD), Overseas Development Administration. Kathmandu: KHDP.

Seddon, D. (2012). *Deep History of the Koshi Hills Region*. Kathmandu: GRM/DFID.

Seddon, D., Adhikari, J., & Gurung, G. (2001), *The New Lahures: Foreign Employment and Remittance economy in Nepal.* Kathmandu: Nepal Institute of Development Studies.

Sen, A. (1999). *Development as Freedom.* Oxford: Oxford University Press.

Sharma, R.J. (2011). Culture of migration in the middle hills in Nepal. *Sustainable Mountain Development.* No. 59 ICIMOD, Kathmandu

Shrestha, D.M. (2004), Role of local communities and institutions in integrated rural development, Nepal. In: Wijayaratna, C. M. (ed.), *Report on Role of Local Communities and Institutions in Integrated Rural Development*. Tokyo: Asian Productivity Organization: 194-207.

Sill, Michael and Kirkby, John (1991). *The Atlas of Nepal in the Modern World*. London: Earthscan Publication Ltd.

Tuladhar, A. (1972). *Notes on Rapti Valley Development Project.* Kathmandu: USAID.

UN (1995). Retrieved 04 02, 2013, from Department of Economic and Social Affairs, United Nations (UN): http://social.un.org/index/Home/WorldSummitforSocialDevelopment1995.aspx

UNDP. (1998). *Nepal Human Development Report 1998*. Kathmandu: United Nations Development Programme (UNDP).

UNDP. (2004). *Nepal Human Development Report 2004*. Kathmandu: United Nations Development Programme (UNDP).

UNRCHO. (2012). *United Nations Resident and Humanitarian Coordinator's Office, Monthly update June 2012*; http://un.org.np/sites/default/files/2012-07-06-monothly-update-june.pdf (Downloaded August 2012)

Upreti, S.R. (1985). *Farmers' Perceptions of Middle Men's Performance in Agricultural Marketing: A Case Study of Duhubi Adarsha Village Panchayat, Sunsari District, Nepal.* Bangkok: AIT.

Walters, H. (2007). *Capacity Development, Institutional Change and Theory of Change: What Do We Mean and Where are the Linkages. A conceptual background paper.* Retrieved from http://portals.wi.wur.nl/files/docs/successfailuredevelopment/Walters_CapacityDevelopmentConceptPaperFIN.pdf.

WB. (1979). N*epal: Development, Performance and Prospects*. Washington DC: World Bank.

WB. (2009). Nepal Migrant Study. Kathmandu: World Bank (WB).

Weiss, C.H. (1995). Nothing as practical as good theory: exploring theory-based evaluation for comprehensive community initiatives for children and families. In: J. Connell, *New Approaches to Evaluating Community Initiatives: Concepts, Methods and Contexts.* DC: Aspen Institute.

WS Atkins. (1992). *Koshi Hills Development Programme: Programme Management Office Terminal Report*. WS Atkins in association with Overseas Development Group, International Forest Science Consultancy and Metcon Consultancy. Dhankuta: KHDP.

6.2 Databases

Agriculture

CBS. (1994). National Sample Census of Agriculture Nepal, 1991/92: Analysis of Results. Kathmandu: Central Bureau of Statistics (CBS)/GoN.

CBS. (2001). National Sample Census of Agriculture Nepal 2001/02: Morang District. Kathmandu: Central Bureau of Statistics (CBS)/GoN.

CBS. (2001). National Sample Census of Agriculture Nepal 2001/02: Terhathum District. Kathmandu: Central Bureau of Statistics (CBS)/GoN

CBS. (2001). National Sample Census of Agriculture Nepal 2001/02: Dhankuta District. Kathmandu: Central Bureau of Statistics (CBS)/GoN

CBS. (2001). National Sample Census of Agriculture Nepal 2001/02: Sankhuwasabha District. Kathmandu: Central Bureau of Statistics (CBS)/GoN.

CBS. (2001). National Sample Census of Agriculture Nepal 2001/02: Bhojpur District. Kathmandu: Central Bureau of Statistics (CBS)/GoN.

CBS. (2001). Population Census 2001. Kathmandu: Central Bureau of Statistics (CBS)/GoN.

MOAC. (2009). *Statistical Information on Nepalese Agriculture*. Kathmandu: Ministry of Agriculture and Cooperatives (MOAC), GoN.

MOAC. (2005). *Statistical Information on Nepalese Agriculture.* Kathmandu: Ministry of Agriculture and Cooperatives (MOAC), GoN.

MOAC. (2008). *Statistical Information on Nepalese Agriculture 2007/2008 (2064/2065)*.Kathmandu: Ministry of Agriculture and Cooperatives (MOAC), GoN.

MOAC. (2007).*Statistical Information on Nepalese Agriculture 2006/2007 (2063/2064).* Kathmandu: Ministry of Agriculture and Cooperatives (MOAC), GoN.

MOAC (2006).*Statistical Information on Nepalese Agriculture 2005/2006 (2062/2063).* Kathmandu: Ministry of Agriculture and Cooperatives (MOAC), GoN.

MOAC (2010). *Statistical Information on Nepalese Agriculture 2009/2010 (2066/2067).* Kathmandu: Ministry of

Agriculture and Cooperatives (MOAC), GoN.

MOAC (2005).*Statistical Information on Nepalese Agriculture 2004/2005 (2066/2067)*. Kathmandu: Ministry of Agriculture and Cooperatives (MOAC), GoN.

Central Bureau of Statistics (CBS)

CBS & UNFPA. (2003). *Population Projections for Nepal 2001 – 2021*. Kathmandu: Central Bureau of Statistics (CBS)/UNFPA.

CBS. (1974). *Statistical Pocket Book of Nepal.* Kathmandu: Central Bureau of Statistics (CBS), HMG/N.

CBS. (1981). *Population Census 1981*. Kathmandu, Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1982). *Statistical Pocket Book of Nepal*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1986). *Statistical Pocket Book of Nepal 1986*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1987). *Statistical Year Book of Nepal 1987*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1989). *Statistical Year Book of Nepal 1989*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1990). *Statistical Pocket Book of Nepal 1990*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1991). *Population Census 1991*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1992). *Statistical Pocket Book of Nepal 1992*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1994). *Statistical Pocket Book of Nepal 1994*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1996). *Nepal Living Standards Survey (NLSS 1) 1995/96*. Kathmandu: Central Bureau of Statistics (CBS).

CBS). (1996). *Statistical Pocket Book of Nepal 1996* Kathmandu: Central Bureau of Statistics (CBS).

CBS. (1997). *Statistical Year Book of Nepal 1997*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2001). *National Sample Census of Agriculture Nepal 2001/02*: *Sunsari District*. Kathmandu: Central Bureau of Statistics (CBS)

CBS. (2002). *Population (Eastern Development Region)*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2002). *Population (VDC/Municipality)*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2002). *Statistical Pocket Book of Nepal 2002*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2003). *Population Monograph of Nepal*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2004). *Nepal Living Standard Survey (NLSS 2) 2003/04*. Vols. 1 & 2. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2004). *Statistical Pocket Book of Nepal 2004*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2005). *Statistical Year Book of Nepal 2005*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2006). *Statistical Pocket Book of Nepal 2006*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2008). *Nepal Labour Force Survey 2008*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2008). *Statistical Pocket Book of Nepal 2008*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2009). *Distributive Trade Survey of Nepal, 2008: a Statistical Report*. Kathmandu: Central Bureau of Statistics.

CBS. (2009). *Statistical Year Book of Nepal 2009*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2010). *Statistical Pocket Book of Nepal 2010*. Kathmandu: Central Bureau of Statistics (CBS).

CBS. (2011). *Preliminary Results of the National Population Census 2011*. http://census.gov.np/images/pdf/Preliminary%20Leaflet%202011.pdf.

Education

DOE. (1981). *Nepal ko Saichik Tathanka Pratibaydhan 2038*. Kathmandu: Department of Education (DOE), GON.

DOE. (1985). *Nepal ko Saichik Tathanka Pratibaydhan 2042*. Kathmandu: Department of Education (DOE), GON.

DOE. (2001). *School Level Educational Statistics of Nepal*. Kathmandu: Department of Education (DOE), GON.

DOE. (2005). *School Level Educational Statistics of Nepal*. Kathmandu: Department of Education (DOE), GON.

DOE. (2006). *School Level Educational Statistics of Nepal: Consolidated Report 2005*. Kathmandu: Department of Education (DOE), GON.

DOE. (2009). *Flash I Report 2066 (2009-010)*. Kathmandu: Department of Education (DOE), GON.

DOE. (2009). *Flash II Report 2065 (2008-09)*. Kathmandu: Department of Education (DOE), GON.

DOE. (2009). *School Level Educational Statistics of Nepal: Consolidated Report 2069*. Kathmandu: Department of Education (DOE), GON.

DOE. (2010). *Flash I Report 2067 (2010-011)*. Kathmandu: Department of Education (DOE), GON.

DOE. (2008/9). *Flash I Report*. Kathmandu: Department of Education (DOE), GON.

Finance

MOF. (2009). *Economic Survey: Fiscal Year 2009/10 (Vol 1)*. Kathmandu: Ministry of Finance (MOF)/GoN

MOF. (2009). *Economic Survey: Fiscal Year 2009/10 (Vol 2)*. Kathmandu: Ministry of Finance (MOF)/GoN

Poverty

CBS. (2005). *Poverty Trends in Nepal (1995-96 and 2003-04).* Kathmandu: Central Bureau of Statistics (CBS), GoN.

CBS. (2006). *Resilience amidst Conflict: an Assessment of Poverty in Nepal 1995-96 and 2003-04*. Kathmandu: Central Bureau of Statistics (CBS), GoN.

CBS. (2001). *Poverty Trends*. Kathmandu: Central Bureau of Statistics (CBS), GoN.

Annex A: Summary of Archival Programme/Project Documents

Programmes/ Projects	No. of documents reviewed	Summary descriptions
Koshi Hills Rural Development Programme (KHARDEP)	25	**Baseline studies** were carried out during 1978/79. This included Socio-Economic surveys of 1,683 households in the four hill regions, as well as an Agricultural Survey of 1,393 households.
		Impact studies were initiated from 1980 to assess the overall effects of the programme. These were carried out for 5 continuous years (till 1985) at 6 project locations. 270 Households were sampled. During these surveys extensive data with regards to socio-economic conditions and nutritional status of family members through structured interviews and anthropometric measurements.
		Thematic studies were undertaken at various periods: Land resource (Dunsmore, 1987); Livestock (Marsh, 1985); Coping strategies (Cassels et al, 1987)
		Review and progress report: for understanding the context and project interventions
		Monitoring and Evaluation: Summary information of impact studies carried during 1980/81
Koshi Hills Development Programme (KHDP)	8	**Annual reports** were conducted by *Atkins Land & Water Management* on seven components: Agriculture, Livestock, Community Forestry, Pakhribas Agricultural Research, Uttarpani Agricultural Technical School, Local Development Support and Roads. Each detailing the activities planned and implemented.
		Terminal reports were also undertaken by *Atkins Land & Water Management* in 1992 after the completion of the KHDP (1987-1992). Four reports on Livestock project, Local Development Project, Programme Management, and Community Forestry were obtained and reviewed. These included assessments of activities, finances and coordination with government counterparts.
		Thematic Studies were also conducted Milk Collection Scheme (Maunder,1992), Evaluation of Koshi hills Community Forestry(1987-1991)
Pakhribas Agriculture Centre (PAC)	7	**Baseline studies** across seven districts, including the four Koshi hills study districts, were conducted in 1989 to provide a basis for the development of a Six-Year Plan. This involved, collecting information related to land usage, share cropping patterns, livestock holdings, and consumption patterns.
		In addition, two **Baseline studies** were also later conducted in 1997 at outreach stations at Terhathum and Sankhuwasabha through Participatory Rural Appraisal (PRA) and Household surveys. Primarily they focused on food availability and socio-economic conditions of the area.
		Case studies on various thematic issues: Cardamom (Shrestha et al, 2001)
Nepal UK Community Forestry programme (NUKCFP)	12	**Annual reports** present the activities conducted vis-à-vis the log frame.

		A multitude of **Case studies** were carried out on various thematic issues: Social Processes and Institutionalization (Pandey, 1995); Social Development considerations (Loughhead et al, 1994).
		Assessment Studies looking at changes in community forest condition and management (1994-98). Forest resource information for resource mapping in 1994 and 1997. For socio- economic information PRA tools and interviews.
Livelihoods and Forestry Program (LFP)	13	Sub Sample from Baseline study Community Forestry for Poverty Alleviation: How UK aid has increased household incomes in Nepal's middle hills.
		Effectiveness of community forestry in multi-sectoral activities
		Assessment studies: technical issues of change in use of forest resources
Rural Access Program (RAP)	3	**Master Plan:** District Transportation plan
		Completion reports of certain road sections.
British Nepal Medical Trust (BNMT)	8	**Annual Report**: BNMT was able to deliver its service during the time of insurgency. All the distance is covered by foot as many places lack transportation facilities (2003/04). 29% of BNMT's staff works with FCHVs to raise awareness and human rights (2006)
		Summary Report: Based on 8061 HH survey from 203 VDCs of 16 districts. CFHVs, TBAs are very effective at community level. However, numbers of female health workers are not sufficient. Information on demography, morbidity, tuberculosis, family planning, safe motherhood, HIV/AIDS/STI and about infectious disease. Caste discrimination is one of the reasons for not going to health facilities
		Analysis of Hospital and Public Health Section: information on various types of resources in hospital (Human, equipment, supplies), services and its use frequency, storage and management of drugs of 18 district hospitals of the region
KOSEVEG	1	**Project Overview:** General Overview
Seed Sector Support Project (SSSP)	2	**Final Report:** (i) 1999-2000. Participatory Impact Monitoring of SSSP Producer Groups, Tech Rpt. 20. - first baseline; (ii) Impact study of groups in East, Tech. Rpt. 28; (iii) individual farmer level database exists (App. C)
Makalu Barun National Park	6	**Project Evaluation:** Based on outputs on project achievements such as cultural conservation, eco-tourism, park management, community forestry, agro forestry and sustainable agriculture
		Final Assessment : Overall assessment of project objectives and achievements
		NGO Analysis: Study to determine the effectiveness of NGOs in the situation of conflict; challenges they face; and how service delivery and monitoring capacities can be enhanced during conflict

International Centre for Integrated Mountain Development (ICIMOD)	2	**Thematic Study:** Arun Watershed (covers Bhojpur, Sankhuwasabha, and Dhankuta). Aggregate information of Arun Basin, critical review of KHARDP efforts, mostly deals about environmental aspects of the valley. **Indicators of Development:** 39 indicators addressed various dimensions of the socio-economic conditions, level of development, availability of natural resources. Districts are ranked as worst, intermediate, best according to various issues from drinking water, IMR, road density etc. **A Review of Forest Users Groups:** Historical perspective, issues of forestry issues, Case studies from Eastern Nepal
Community Support Program(CPS)	3	**Case Studies** of success stories of different thematic areas such as trainings, people's participation for community development, education. Education is getting priorities.
Deurali Society, Terhathum	1	**Annual Report** - Various activities done at community level by the organization
Dalit Awareness Society Nepal	1	**Annual Report:** Activities conducted uses Right Based Approach. Focuses mostly on skill development and social awareness.
Safe motherhood innovative Project (SMIP)- ADRA Nepal, Britain Nepal Medical Trust, GoN	1	**Endline Survey Report**- based on baseline study carried on 2004 Increase awareness among women about safe Motherhood (percentage reveals from comparison from baseline and endline survey). Comparison of maternal morbidity, types of complication, status of treatment, place to seek treatment, visit to health facility by foot.
Safe motherhood innovative Project (SMIP)- MITRA Samaj, Organization Development Centre	1	**Final Evaluation Report**- based on SMIP Endline report. Safe Motherhood Project is successful in making impacts in the areas of 1. Access to quality maternal health service 2. Increased awareness and utilization of maternal health services 3, establishment and strengthening of a regional maternal health network. The report recommends handing over responsibilities from project to government and community. Detail evaluation about effectiveness, efficiency, impacts, community mobilization, and sustainability.
Health Improvement Programme (HIP)	1	**Assessment Report** of Bhojpur. Analysis of District/Public health Section, Private Clinic, drugs retailers, NGOs.
Rural Access Program Nepal/ Helvetas	1	**Thematic: Infrastructure**- Road building as effort to reduce poverty: diversification of income through road construction, program was affected by conflict, Promotion of capacity building and institutional development
Rural Road Forum	1	**Comparative study** of Labour Based Green Roads and Mechanisation and Bulldozer roads. Labour based green roads are sustainable, environmental friendly, helps in poverty reduction, encourages community participation
National Planning Commission (NPC)	1	**Preliminary Report** on Regional Development Area Based on Field survey carried on 1969 Section II covers basic background data for

		the Koshi hills, aggregated by districts.
German Development Institute	1	**Regional Analysis** for Regional Planning. Traffic Survey which shows traffic flow between Tarai and Hill.
Centre for Economic Development and Administration (CEDA)	1	**Regional Development Study-** Koshi Zone Information about data on population, regional economy, agriculture, transport, trade/ markets, industry & institutions – by district.
Siraha Commercial Agriculture Development Project (CADP)	1	**Proceeding document** Interaction Program with NGOs and trainings
Central Bureau of Statistics (CBS)	1	**Assessment:** Assessment of poverty with good information on socio-economic change in the country **Census Reports**
Statistics Office Dhankuta	2	**Report:** Impact of foreign remittance, remittance is used for consumption, indigenous economic situation **:** Their income, agricultural productivity, access to faculties
Department of National Parks and Wildlife Conservation	1	Information on the socio-economic conditions of the inhabitants of Sankhuwasabha with brief outline of caste/ethnic composition, list of infrastructures. Focus is however on the projects that were implemented in the Panchayats.
Land Resources Development Centre (LRDC)	1	**Analysis and Review:** Based on secondary data of sectoral and projects implemented by KHADEP along with the changes brought by these interventions
The Mountain Institute	1	**Analysis:** Study to determine the effectiveness of NGOs in the situation of conflict; challenges they face; and how service delivery and monitoring capacities can be enhanced during conflict
Business Agriculture Development Project	1	**Plan**: Commercial agricultural development. Information on Japanese Fund for poverty reduction (JFPR)
United Nations International Children's Fund (UNICEF)	2	**Analysis:** Federation process of Production Credit for Rural Women (PCRW) **Case Studies:** Success stories of PCRW
UNIFEM/MLD	1	**Impact study:** Overview and List of trainings provided by MLD's Women's Development Division
Department of Women's Development	2	**Lessons Learnt**: From selected 15 federations about how women are able to uplift themselves by being a part of federation. **Annual proposed Plan:** National Report about programs and plans

Annex B: Multi-dimensional Poverty

Defining the multi-dimensional aspects of poverty

Absolute poverty reflects a state of subsistence normally below a pre-determined amount of per capita income or consumption deemed necessary to achieve an adequate standard of living. The international absolute poverty line currently stands at USD 1.25 per day. The enduring attraction of income poverty measures is that they lend themselves to precise analysis over time and across groups or regions. National statistics in developing countries use absolute poverty indicators to draw their poverty lines. These differ significantly from the international absolute poverty threshold of USD 1.25 per day. National poverty lines are normally considered to be more accurate measures of what it means to be poor in a country.

One of the weaknesses of absolute poverty lines is that they imply a 'break off point'. Thus those below the line are considered poor and those just above are not poor and somehow have an adequate standard of living. To address this, some countries for example have upper and lower poverty lines to distinguish between the poor and the extreme poor. Another approach is to construct a food poverty line which estimates the minimum amount of money required so that a household can purchase a basic needs food bundle. The food poverty line together with the non-food line equals the overall poverty line.

Multidimensional poverty measurement

Moving beyond monetary based measures of welfare attempts have been made to capture the full range of deprivations that constitute poverty. A more expanded understanding of absolute poverty was captured by the definition which emerged from the 1995 World Summit on Social Development, stating that absolute poverty is "a condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services." The importance of including different deprivations into measurement of poverty is that they can paint a very different and more robust picture of what it means to be poor.

In recent years, it is now increasingly accepted that poverty is multidimensional. Although a lack of income may adversely affect livelihoods, people can still suffer acute deprivations even if they possess adequate incomes. Multidimensional approaches therefore set out to capture a fuller range of deprivations (physical, economic, social, cultural etc.) that constitute poverty. For instance, Oxford University's Oxford Poverty & Human Development Initiative (OPHI) has developed the Multidimensional Poverty Index (MPI), a new measure designed to capture the severe deprivations that each person faces at the same time. The MPI can be used to create a comprehensive picture of people living in poverty, and permits comparisons both across countries, regions and the world and within countries by ethnic group, urban/rural location, as well as other key household and community characteristics. A measure such as this offers a valuable complement to traditional income-based poverty measures and has been used to measure changes in multi-dimensional poverty in Nepal. .

Our study has adopted a similarly multi-dimensional definition of poverty, including some common measures used in many developing countries to quantify and qualify the amount and depth of poverty as well as Nepal specific measures. The aspects of multi-dimensional poverty included in our definition are as follows:

- **Income poverty**: measures of the total poverty line, the food poverty line and the non-food poverty line;
- **Severity**: monetary measures around household well-being, particularly food and non-food expenditures, but also remittances and adult illiteracy;
- **Health**: health of household members measured through child mortality and child immunisation;
- **Standard of living and remoteness**: measures of amenities and assets, including safe drinking water and sanitation;
- **Remoteness**: measures around the time it takes to reach a health post, road head and a market.
- **Agency and Opportunity**

Annex C: Methodological Limitations

- **Data availability:** Data reporting improves throughout the 40 year study period as more and more variables are recorded; however, due to the retrospective nature of the study we are limited by what is available. Many variables such as key poverty indicators are only collected from 1995/96. To compensate for this limitation, we attempted to interpolate trends to the extent possible between key data points, identifying "best fit curves" for major data sets.

  It is also important to recognise here the lack of gender, ethnicity and caste disaggregated data. While gender disaggregated census data was available to some extent from the 1990s, caste/ethnicity disaggregated data has only been available from the 2001. Whatever disaggregated data/studies that were available tended to be project/programme based studies that focused either on specific sectors and/or on specific geographic locations within the Koshi hills.

- **Data comparability and quality:** The data that were collected vary considerably, with relatively few consistent and comparable datasets available. Repeat surveys were very limited, and when they did occur often did not collect data in a consistent and comparable manner between surveys, reducing our ability to compare trends over time. In addition, though we were able to gather several different data sources to inform analysis at the change level of communities, the actual variables collected tended to differ significantly, reducing our ability to compare data collected from different datasets. As such, we relied on triangulation and the identification of plausible associations to draw conclusions from the existing data.

- **Strength of long term evidence:** At the project level, short project horizons lead to an emphasis on input-output relationships and thus expectations of results at this level; rather than emphasis on long term processes of attitude, behaviour and relationship change (outcomes). This presented a challenge to link programmatic outputs to longer term population level changes. Furthermore, much outcome-level data that were collected were collected with a sectoral lens, without the purposeful objective of looking at broader population-level outcomes. The triangulation and analytical process was heavily relied upon to isolate key trends in the data noise; draw plausible conclusions from complex interconnected interactions; and isolate key drivers from diverse externalities and interactions.

Annex D: List of Indicators

THEMES	INDICATORS (Disaggregated by sex, caste/ethnicity, where possible)	Secondary Data Available	Level of Disaggregation	Time Series	Gaps in Data	Other Data Sources
DEMOGRAPHY	Population disaggregated by sex, age groups, caste/ethnicity	Population Census	District/VDC	1981, 1991, 2001, 2011		
	Average household size	Population Census	District/VDC	1981, 1991, 2001, 2011		
	Number of households headed by female	Population Census	District			
	Number and rates of in/out migration	Population Census	District			
ECONOMIC CONDITIONS	Household income and per capita income	NLSS	Regional	1995, 2003	No data at district level	
	Shares of household income by sources	NLSS	Regional	1995, 2003	No data at district level	
	Unskilled wage rates by sector and sex	NLSS	Regional	1995, 2003	No data at district level	Primary source (RCA)
	Number of households receiving remittance income	Nepal Labour Force Survey, 1998/99, 2008	National	1998/9, 2008	No data at district level	
	No. of households with female ownership of land/house	Population Census	District	1981, 1991, 2001, 2011		
	No. of households by type of house (Pakki, Ardha-pakki, Kachchi/others)	Population Census	District	1981, 1991, 2001, 2011		
	No. of households by ownership of house (owned, rented, rent-free, others)	Population Census	District	1981, 1991, 2001, 2011		
	Average households per house (dwelling size)	Population Census	District	1981, 1991, 2001, 2011		
	No. of households by sources of drinking water	Population Census	District	1981, 1991, 2001, 2011		
	No. of households by type of toilet facility	Population Census	District	1981, 1991, 2001, 2011		
	No. of households by sources of fuel for cooking and lighting	Population Census	District	1981, 1991, 2001, 2011		
	Households access to facility (school, health post, market, road) within 30 minutes travel time	NLSS	Regional	1995, 2003	No data at district level	Primary source (RCA)
	No. of households access to drinking water source within 15 minutes travel time	NLSS	Regional	1995, 2003	No data at district level	Primary source (RCA)
	No. of households sharing toilet	Population Census	District	1981, 1991, 2001, 2011		

	Physical assets: possession of car, motorcycle, bicycle, mobile phones, others	Population Census	District	1981, 1991, 2001, 2011		
	Perceptions of people on changes in the economic conditions				NA	Primary source (RCA)
AGRICUTLTURE	No. and area of holdings by tenure	Agriculture census, Statistical Year Book	District	1981, 1991, 2001, 2011		
	No. of holdings and area under cereal and cash crop	Agriculture census, Statistical Year Book	District	1981, 1991, 2001, 2011		
	Yield of cereal and cash crops	Agriculture census, Statistical Year Book	District	1981, 1991, 2001, 2011		
	No. of holdings with agriculture credit	Agriculture census	District	1981, 1991, 2001, 2011		
	Amount of agriculture credit for crop, fruits, livestock	Agriculture Development Bank	District			
	Accessibility of agriculture credit				NA	Primary source (RCA)
	No. of holdings and area under irrigation with source	Agriculture census, Statistical Year Book	District	1981, 1991, 2001, 2011		
	No. of holdings and area used improved seeds/chemical fertilizers/technology	Agriculture census	District	1981, 1991, 2001, 2011		
	Accessibility to improved seeds/chemical fertilizers/technology (i.e., instrument)				NA	Primary source (RCA)
	Food sufficiency from own agriculture production/livestock	Agriculture census	District	1981, 1991, 2001, 2011		
	No. of holdings by manner of coping with insufficiency	Agriculture census	District	1981, 1991, 2001, 2011		
TRADE	Number of industrial establishments by type and number of employees	Census of Manufacturing Establishment, Statistical Year Book	District	1988/89-1990/91, 1996/97		
	Number of cottage and small scale industries	Department of Cottage and Small Scale industries, District Office	District	2003		
	No. of market centres				NA	Primary source (RCA)
	Accessibility to market centres				NA	Primary source (RCA)
	Amount of income				NA	Primary

	generated by CFUGs					source (RCA)
	Utilisation of CFUG resources – proportion used for welfare programmes				NA	Primary source (RCA)
INFRA-STRUCTURE	Length of road networks built, by type	Department of Road	District	1981-2011		
	Number of trails bridges, cable cars, etc.	Trail Bridge Support Unit/Helvetas	District	1981-2011		
	Accessibility to nearest motorable road head				NA	Primary source (RCA)
EDUCATION	No. of educational institutions by type (primary, lower secondary, secondary, higher secondary)	Education Management Information System (EMIS), Statistical Year Book	District	1981, 1985, 1991, 1995, 2001, 2005, 2011		
	School enrolment by type (private, public) sex, caste, ethnicity	(EMIS), Statistical Year Book	District	1981, 1985, 1991, 1995, 2001, 2005, 2011	No data at district level	Primary source (RCA)
	Literacy rates by type (general, adult) and sex, caste, ethnicity	EMIS, Statistical Year Book	District	1981, 1985, 1991, 1995, 2001, 2005, 2011	No data by ethnic groups	Primary source (RCA)
	Dropout rates by sex, caste, ethnicity with reason	EMIS, Statistical Year Book	District	1981, 1985, 1991, 1995, 2001, 2005, 2011	No data by ethnic groups	Primary source (RCA)
	Teacher/pupil ratio by sex	EMIS, Statistical Year Book	District	1981, 1985, 1991, 1995, 2001, 2005, 2011		
	Accessibility to nearest private and public school				NA	Primary source (RCA)
HEALTH	Number of health centres	Health Management Information System (HMIS), Department of Health	District			
	Accessibility to nearest health services (private, public)				NA	Primary source (RCA)
	Distance to health services (public/private)				NA	Primary source (RCA)
	Infant mortality	HMIS, NDHS	District	1995, 2003, 2011		
	Child mortality	HMIS, NDHS	District	1995, 2003, 2011		
	Place of delivery				NA	Primary source (RCA)

	Delivery by skilled birth attendant	HMIS, NDHS	District	1995, 2003, 2011		
	Contraceptive prevalence rate	HMIS, NDHS	District	1995, 2003, 2011		
RESOURCE FLOW	Total financial flow (government/donor/NGO/ private sector)	Financial Controller General Office	District	1996-2011		
	Sector-wise financial flow	Coffey Report		1968-2010	Donor supported programs	

Annex E: Development Planning Trends in Nepal

Development planning—putting the human and environmental resources together to build a sustainable future—in Nepal dates from 1952 when the government focus on economic growth was initiated by the multi-sectoral 'Village Development Programme' (VDP), also known as 'Tribhuvan Village Development Model'. This was a first step to improve living condition of overwhelming rural population with over 95 per cent of the total population. In 1953 *Udyog Parishad*, an institution of 'Development Board' intended to promote improvements in agriculture and manufacturing and to encourage the development of resources such as minerals had been founded (Joshi 1985).

The development efforts in Nepal have been initiated through adopting periodic plans. The first national plan began in 1956 and the one currently running is the twelfth plan (2010-2013). Since the First Plan, the predominant strategy has been to increase gross domestic products (GDP), to create infrastructure necessary for development, and to raise standard of living of the people (Annex Table 1). Some of the key features of the national development plans are as follows:

First, increase in GDP has been a fundamental aim of development plans to achieve balanced growth, and so benefit the whole population by a series of sectoral programmes based on transport, agriculture, industry and social services. An increase of GDP would allow savings which could be reinvested in the more productive activities. Poverty would be abolished through the trickling down of the benefits from development to the whole population. Because resources are scarce, there is an inevitable tension between the needs of efficiency and of equity (Pyakuryal, 1980).

Secondly, the most urgent requirement for alleviating rural poverty is undoubtedly to improve agricultural productivity and generate employment opportunities (Adhikary, 1982). Can these be complementary and mutually reinforcing? If so, the twin objectives of growth and equity could well be simultaneously achieved. But this would entail the adoption of appropriate production technologies and policies and the provision of inputs. Improvements in productivity imply that there could be savings in resources which may be allocated for other production activities, thereby generating employment and improving incomes in rural areas (Sill & Kirkby, 1991).

Thus, the top priority has been accorded to the agriculture sector ever since the first national plan. Improvements have been sought through adopting policies of land reform, land act, increase in physical inputs and so on. But however, the agroeconomic condition of the country has not adequately improved and performance of agricultural sector has been below expectation. Such failure to achieve significant growth in agriculture could be attributed to a number of agricultural issues, such as lack of irrigation and road, inadequacy of farm inputs supply, inefficiency of marketing system, lack of agricultural research and so on. To address these issues, the long term Agricultural Perspective Plan was adopted in 1995. Further, land reform programme has been introduced to remove land tenure constraints and modernize agriculture. But the land reform measures also did not achieve their objectives. The failure of land reform could be attributed to four factors (Pradhan, 1985). First, the land reform measures did not form an integral part of the socio-political and economic structure of the country. Second, the technology base and institutional system of the rural sector was not adequately prepared to absorb the measures. Third, the administrative system was too weak for the effective implementation of land reform. Fourth, it took considerable time to implement the reforms. Meanwhile, the politically and economically advantaged landlords were able to organise themselves and thwart the land reform effort.

The experiences of many Asian developing nations including Nepal suggests that the innovations in technology and the policies adopted were not conducive to expansion of the production base and to widespread participation of the rural poor (Jha, 1987). Unlike several Asian developing nations, Nepal has not adopted the Green revolution programme involving modern practices programme to bring about faster increases in farm productivity. Therefore provision of irrigation, fertilizer, high-yielding varieties of seed, credit insecticides, and extension services has been limited. While such programmes may also result in better use of land and increases in output, thereby necessarily absorb more labour or improve labour productivity.

Thirdly, the securing of political control was in fact probably the most pressing need. To this end, considerable emphasis was placed on improvements to transport and communications systems (Blakie, et al 1980). Such improvements were coincidentally the classical prerequisites of local, regional and external trade. They have always

remained a central element of development plans and the construction of road, bridge and airport has been maintained up to the present. It is emphasized by developers simply because it produces something tangible and measurable – unlike broader, less visible improvements in other areas of the economy.

Fourthly, the process of decentralization in Nepal was initiated with the formulation of Decentralization Act in 1982. Since then a number of efforts have been made to find appropriate models of decentralization. Of all, the Local Self-Governance Act (LSGA) 1999 has been recognised as the most comprehensive one in terms of power delegation, revenue generation, governance, provision for revenue sharing between local and central government, among others. In spite of all these, the process of decentralization in Nepal, however, is seen to be not effective and remained as half-hearted effort in planning as well as implementation (Adhikary, 1982). Among many, implementation of LSGA has been hurdled due to the absence of elected authorities at the local government bodies.

Nepal has achieved some success, but that is far below of par of satisfaction. The constraints lie in the structure of the overall economy, the relatively higher population growth rates and the weak linkages between agriculture and the other sectors. Studies indicate that in an economy that is primarily agricultural, the share of the labour force in agriculture will decline slowly even when growth in employment in the industrial and service sectors is very rapid. Also, the size of the agricultural sector relative to the rest of the economy limits the rate at which workers can be shifted to non-agricultural employment.

Most writers stress the very limited success in attempts to break out of vicious circles of under-development and poverty in Nepal. A number of specific factors have been suggested as causes of the limited progress: corruption – "the major hurdle on the road to development"; the power of the "feudal" system and the restrictions caused by the traditional Hindu social structures; the destructive effects of cheap imports; rising population; expatriation of profits; environmental difficulties; lack of skilled labour, limited physical infrastructure and so on (WB, 1979). One suspects that if road systems had not been extended, lack of roads would be cited as a limiting factor – yet when roads are improved development does not occur. It would, of course, be valuable to identify the key limiting factors to development, rather than a list of variables. Certainly the failures in both agricultural and industrial sectors can be taken as evidence that development planning has failed.

Annex Table 1: Summary of aims, growths, strategies and policies and programs of national plans

Plans	Major Aims	Key strategies and ideas	Key policies and programmes	Remarks
1st plan: 1956–61	• Increase production, create jobs, improve standard of living	• Village Development Plan approach	• Village Development Programme (VDP) through development blocks; with each block containing 200 villages on average • Programmes focusing on infrastructure in roads, transportation and communication	• Lack of database of the economic and social conditions across the country • Inadequate administrative machinery to execute the plans and programmes
2nd plan: 1962–65	• Increase production, institutional development, social mobilisation	• Panchayat system based VDP development	• Initiated surveys of population census, sample agricultural, and national income estimation • Initiated decentralisation approach, 1963 • Initiated Rapti Valley Multipurpose Project	• Limited coverage • Lack of participation of people • Conflict between VDP and Panchayat programme in rural development
3rd plan: 1965–70	• Achieve 4.7% annual growth, increase in agricultural	• Panchayat system development model	• Decentralisation policy at three levels, viz. zone, district and village Panchayats	• Persistence of feudal social system • Centralised economic system

			Initiated pilot hill area development project • Introduced Panchayat development and land tax (PDLT) on experimental basis	Lack of basic infrastructure and economic inequality across the country
4th plan: 1970– 75	• 4% annual growth, increase international trade	• Regional planning approach to development • Small Area Development Programme (SADP)	• Created growth centres as polyfunctional settlements at three levels along the growth axis in each of four development regions across the country • Initiated the District Administration Plans (DAP)	• Weaknesses in administrative decisions for projects implementation • Lack of integration of the growth centres with dispersedly located small towns by transport & communication
5th plan: 1975– 80	• 5% annual growth, increase people oriented production, use of the human resource	• Integrated rural development approach (IRDP) • Integrated Panchayat Development system for rural development	• District level plans for formulation and implementation of district level projects and programmes • IRDP for enhancing multi-sectoral programmes • Small Area Development Programme (SADP) for rural development	• Inefficient organisations for IRDPs • Lack of coordination among the sectoral agencies for execution of integrated projects • Inefficiency monitoring and evaluation mechanisms of the projects
6th plan: 1980– 85	• 5% growth, creates jobs, increase production, satisfy basic needs	• Adopted Service Centre strategy - induce growth from below • Initiated Basic Needs approach	• Initiated bottom-up planning approach through local Panchayats: district, municipality & village • Decentralisation Act 1982 • People's participation policy— mass people including women in development works	• Lack of coordination among the sectoral agencies for execution of integrated projects • Inefficiency monitoring and evaluation mechanisms of the projects
7th plan: 1985– 90	• 4.5% annual growth, raise production, create jobs, satisfy basic needs	• Basic Need Planning approach • Continued Service centre strategy	• Identified seven basic needs– food, clothing, wood fuel, drinking water, basic health services and sanitation, primary and skill-oriented education, and minimum rural transport facility • Established nine service centres in each district for the execution of development programmes	• Ignored the potential importance of market centres as service centres in terms of linkage and functional hierarchy for rural development • Ineffective provision of the basic needs particularly in remote districts
8th plan: 1992– 97	• 5% annual growth, sustainable economic growth, poverty alleviation and reduce regional disparities	• Agriculture led growth strategy for poverty reduction and overall economic	• Agricultural Perspective Plan, 1995 with a long-term vision (1997-2017) • Liberalisation of economic policies • Initiated mobilising private	• Basic needs being replaced by reduction of poverty • Lack of clear cut economic policy • Changed in the

		development • Poverty alleviation • Structural adjustment plan	sector and non-governmental organisations (NGOs) in implementing poverty alleviation programmes • Small farmer development programme	Panchayat political system with Multi-party democratic system
9th plan: 1997–2002	• 6% annual growth, poverty alleviation, employment generation, raise production & productivity	• Poverty alleviation based development strategy • Decentralised local governance	• Long-term programme for alleviating poverty • Local Self Governance Acts, 1999 – local governments (district, municipality and village) empowerment and decentralisation	• Low satisfactory in macro-economic performance due to poor investment • Worsening law and order situation
10th plan: 2002–07	• 4.3 - 6.2 % annual growth, poverty reduction, broad based sustainable growth, social inclusion, improved governance	• Poverty alleviation based development strategy • Decentralised local governance	• Poverty Reduction Strategic Plan (PRSP) • Rehabilitation programmes for the conflict affected areas	• Increase in labour flow in abroad and in inflow of remittance flow • Signed for comprehensive peace agreement between the government and the CPN (Maoists), 2006
11th plan: 2007–10	• 5.5% annual growth, poverty reduction, MDGs achievement by 2015 • foundation for economic and social transformation	• Poverty Reduction Strategic Plan • Pro-poor and broad-based economic growth	• Inclusive development- women, Dalits, Adibasi Janajatis, and Madhesi communities • Reconstruction, rehabilitation and reintegration of physical, economic and social infrastructures	• Devolved the local bodies, causing absence of responsibility for delivering services to the local people • Focused on elections for a Constituent Assembly in 2008
12th plan: 2010-13	• 5.5% annual growth, poverty reduction, raise living standard of people • and achieve MDGs by 2015	• Poverty alleviation and sustainable peace • Inclusive and equitable development	• Poverty alleviation and sustainable peace through employment centric, inclusive and equitable economic growth • Create development framework considering future federal states	• Political instability due to frequent change of governments, people unrest • Ineffective investment in productive infrastructure • Failure of writing the constitution

Source: NPC: Different National Plans, 1956-2013.

Annex F: Donor Supported Development Interventions

(Coffey & Metcon Consultant, 2010)

SN	Sector	Funding Agency	Implementation
Agriculture, Forestry and Rural Development			
1	Gurkha Reintegration Centre	UK Military	1968-72
2	Pakhribas Agriculture Centre	DFID	1972---
3	Pakhribas Agriculture Research Centre (Under HARP)	DFID	1997-2001
4	Koshi Hills Area Development Programme- K1	DFID	1976-79
5	Koshi Hills Area Development Programme- K2	DFID	1979-80
6	Koshi Hills Development Area- K3	DFID	1987-92
7	Vegetable Marketing Project	DANIDA	1990-94
8	Koseveg Project	DFID	1994-97
9	Seed Sector Support Project	DFID	1997-2004
10	High Value Crops	SNV	2008-2013
11	Commercial Agriculture Development Programme	ADB	2007-2012
12	Nepal-UK Community Forestry Project	DFID	1994-2000
13	Livelihoods and Forestry Programme	DFID	2001-2009
Roads			
14	Dharan-Dhankuta Road	DFID	1972-77
15	Dharan-Dhankuta Maintenance	DFID	1979-89
16	Eastern Region Road Maintenance	DFID	1990-2002
17	Rural Access Project (RAP 1)	DFID	2004-08
18	Rural Access Project (RAP 2)	DFID	2009-12
19	Rural Infrastructure Project	WB	1998-2003
20	Basantapur-Khandbari Feeder Road	ADB	2003-06
21	Basantapur –Terhathum-Athrai Feeder Road	ADB	2003-2006
22	Hile-Basant-Khandbari Feeder Road Upgrade	DFID	2007-09
Health			
23	Terhathum hospital	NL Gov	1983-84
24	British Nepal Medical Trust: TB, Leprosy, Community Health and Safe Motherhood	DFID	1968-2010
25	British Nepal Medical Trust: TB, HIV and Malaria Programme	DFID	2004-10
26	Child and Maternal Health	SCF	1980-88
27	Drinking Water Supply Project	UNICEF	1972-79
28	Community Aid	GWS	1969-2010
29	Rural Water Supplies Projects I, II and III	GWS	1989-2012
30	British Nepal Medical Trust: National TB Programme	DFID	2003-06
National Parks			
31	Makalu-Barun National Park	GEF	1986-90