

**Impact Assessment of Pro-Poor Policy Interventions
Rural Livelihood Project (RLP) Phase II
Ministry of Agriculture and Forests**



Rural Livelihood Project Phase II
Ministry of Agriculture & Forests
Thimphu Bhutan
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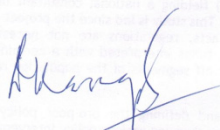
FOREWORD

This report on “Impact Assessment of Pro-Poor Policy Interventions” has been produced by the Rural Livelihood Project Phase II (RLP II) supported by HELVETAS Swiss Inter-cooperation (HSI) fielding a national consultant in February 2014 under the Outcome Four. This study is led since the project feels that some of the present policies, acts, regulations are not necessarily benefiting poor farmers, others are at times interpreted with a certain bias towards enhancing economically better-off segments of the population rather than poorest.

The report starts with introduction and defining the pro-poor policy and explaining various barriers to it. After studying various policy interventions, the report focussed on the three main policy interventions as findings: 1) Agriculture Subsidy 2) Human Wild-Life Conflict and 3) Capture Fishery. The Report was prepared through various consultations and finalized after debriefing to the policy makers, heads of the departments, agencies and the Managers at the National level.

The Rural Livelihood Project Team would like to extend our appreciation to HELVETAS SWISS Inter-Cooperation for kindly providing financial support for the study. We acknowledge the consultant for being able to come up with this report which has been shared to various partners. Also appreciated the kind support and backups provided by the Ministry of Agriculture and Forests specially PPD and line departments. The kind cooperation of the local government and the Dzongkhag RNR of Sarpang and Zhemgang for providing adequate information is also much appreciated.

We are pleased to share this report with the objective that the policy and decision makers shall read and refer to achieve: field based evidences leads to policy, Acts, regulations etc changes that are favourable for poor farmers. It would also create awareness at the community level with proper pro-poor interpretation of existing rules and regulations and share the lessons learned. The soft copy of the report would be made available in www.moaf.gov.bt and www.bhutan.helvetas.org. Should there be any more enquiries, please don't hesitate to contact the Project Management Unit, Zhemgang at 03-741197.



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Abbreviations

BAOWE	-	Bhutanese Association of Bhutanese Women Entrepreneurs
BCCI	-	Bhutan Chamber of Commerce and Industry
BDBL	-	Bhutan Development Bank Ltd.
BDS	-	Business Development Service
CDF	-	Cooperative Development Fund
CF	-	Community Forest
CFMG	-	Community Forest Management Group
CHF	-	Swiss Franc
CHRO	-	Chief Human Resource Officer
DAMC	-	Department of Agricultural Marketing and Cooperatives
DAO	-	<i>Dzongkhag</i> Agriculture Officer
DLO	-	<i>Dzongkhag</i> Livestock Officer
DoFPS	-	Department of Forest and Park Services
DT	-	<i>Dzongkhag</i> Tshogdu
DzFO	-	<i>Dzongkhag</i> Forest Officer
ECR-ADP	-	East Central Region – Agriculture Development Project
FG	-	Farmer Groups
FYP	-	Five Year Plan
GCW	-	<i>Gewog</i> Community Worker
GNH	-	Gross National Happiness
GNHC	-	Gross National Happiness Commission
GT	-	<i>Gewog</i> Tshogde
M&E	-	Monitoring and Evaluation
MDG	-	Millennium Development Goals
MoAF	-	Ministry of Agriculture and Forests
MTR	-	Mid Term Review
NSB	-	National Statistic Bureau
NSC	-	National Seed Centre
Nu.	-	Ngultrum (Currency)
NRM	-	Natural Resource Management

NWFP	-	Non Wood Forest Product
OGTP	-	One <i>Gewog</i> Three Products
PMU	-	Project Management Unit
PPD	-	Planning and Policy Division
PRA	-	Participatory Rural Appraisal
PSC	-	Project Steering Committee
RDI	-	Rural Development Initiative
RDTC	-	Rural Development Training Centre
RLDC	-	Regional Livestock Development Centre
RGoB	-	Royal Government of Bhutan
RLP	-	Rural Livelihood Project
RNR	-	Renewable Natural Resources
RNR-RDC	-	Renewable Natural Resources – Research and Development Centre
SDC	-	Swiss Agency for Development and Cooperation
SLA	-	Sustainable Livelihoods Approach
SLG	-	Support to Local Governance
SLMP	-	Sustainable Land Management Project
SPSS	-	Statistical Package for Social Sciences

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I. Introduction

A. Background

1. Access to high quality poverty analysis, understanding of both national policy process, and more specifically the political economy of poverty related change is a critical pre-requisite for achieving effective pro-poor policy engagement (Bird and Stefanie, 2006).

2. Rural Livelihood Project (RLP) phase II was commissioned in January 2012 for a period of 4 years (to exit in December 2015 but extended till June 2016) with the goal *to contribute towards improvement of livelihood of rural poor in Bhutan through pro-poor, holistic, community-driven, and participatory approaches*. Specifically, the project aimed to reduce poverty in the selected Gewogs of Zhemgang and Sarpang *Dzongkhags* through market chain facilitation skills, capacity building, and promotion of good governance through local decision-making.

3. A market chain facilitation approach was adopted by the project to link primary producers to markets, traders, large consumers, processors, and to establish fair relationships among the market chain actors.

4. The project interventions were implemented in Phangkhar, Ngangla, Bjoka, Goshing, Bardo, Shingkhar (Zhemgang Dzongkhag) and Chhudzom (Doban), Jigme Choeling, Gakiling, Singye (Sarpang *Dzongkhag*)

B. Project's outcome four: Pro-poor policy intervention, subsidies policy, and sharing of lessons learned lead to increased household income beyond the project area.

5. Outcome four is expected to identify some of the bias in the present policies, acts, and regulations towards enhancing the interests of the government actors and the economically better off segments of the population rather than the poorest and make policies, acts, regulations poor friendly.

6. Project's outcome four is expected to deliver the following outputs:

- i Three policy interventions with pro-poor policy interpretation/clarification documented;
- ii Eight experience-sharing events held.

C. Objectives and scope of the assignment:

7. Policies, acts, rules, and regulations are not necessarily benefiting the poor farmers, rather they are often interpreted in favor of the Government actors and the economically well off segments of the society. As specified in the Terms of Reference (ToR), this assignment is aimed:

- i To document and share the lessons learnt from the pro-poor policy interventions that can be replicated by others;
- ii To document issues relating to policies, acts, rules, and regulation that hampers the participation by the poor.

8. To achieve the objectives of the assignment, the consultancy provided expert service to support the RLP management perform the following tasks as specified in the ToR:

- (i) Review and document the impact of three existing Policies, Acts, and Regulations, which are not benefitting poor farmers;
- (ii) Assist PMU to bring such findings to the attention of national decision makers and media;
- (iii) Prepare dissemination of simple interpretation for important rules and regulations with direct impact on rural households;
- (iv) Promote and stimulate discussion on rules and regulation that impact their lives at community level;
- (v) Create awareness and promote community awareness of policies and regulation to their advantage;

- (vi) Provide input for elaboration and revision of relevant policies, acts, rules, and regulations;
- (vii) Document lessons learned; and
- (viii) Organize and engage in experience sharing events.

II. Methodology

9. To adequately address the objectives, scope, and the tasks prescribed in the ToR, a mixed method (i.e. triangulation of the most appropriate qualitative and quantitative methods) approach was used to triangulate information to assess three pro-poor policy interventions, namely the subsidy policy, human wildlife conflict management, and capture fishing. The effectiveness, efficiency, sustainability, and equity of the impacts of these pro-poor policies, strategies, and interventions were assessed from the workings and implementation of the policies and strategies, to provide evidence-based information that is credible, reliable, and useful. Wherever possible the study also exerted efforts to collect information on the effectiveness of other RNR sector policies.

10. Both qualitative and quantitative data were collected through desktop review of relevant policy documents, policy implementation process, project documents, progress reports, and consultations with relevant stakeholders at the national and field levels through case studies which involved focus group discussion to share experiences followed by individual interviews. Information thus generated was synthesized to identify key issues to provide concrete recommendations for elaboration and revision of relevant policies, legislation (Acts, rules, and regulations).

A. Conceptual Framework

11. A credible and analytical framework is required to review a set of current pro-poor policies: to describe what was done, when, and with what stated purpose, and to assess both policy delivery and changes (impacts) in outcomes in relation to the goals government set. Extent and magnitude of understanding of the fundamentals of pro-poor policy formulation, implementation, and hurdles in these processes will determine how good this framework will be at achieving the objectives of the assignment.

12. What is pro-poor policy? The first step in this process is to understand what actually constitutes a pro-poor policy? Bird and Stefanie (2006) defined, “*Pro-poor policies as those policies that aim to improve the assets and capabilities of poor people*”. Such policies include interventions that directly target poor people or focus on poverty reduction in general. They

may be designed with their needs, preferences, and capabilities in mind, or may be targeted either by socio-economic or demographic group or geographically. Alternatively, pro-poor policies may also aim to improve the terms on which poor people engage in society, politics, or the economy. Pro-poor policies more than often fail to achieve its set goals and objectives when such policies are formulated without proper analysis of technical, social, and operational needs and capacities at farm levels.

13. RLP's rural development and livelihood program interventions are targeted based on the poverty incidence of Bhutan to reach the poorest of the poor, so it falls within the socio-economic category. Its effectiveness then would be determined by how good poverty incidences are and how well the interventions are targeted. Broad based policy interventions, which are mostly the case in many developing countries, fail to reach the poorer sections of the society. Realizing this, the GNH Commission has formulated and implemented the, *Rural Economy Advancement Program* (REAP phase I) to reach those sections of the communities where broad based policy interventions failed to reach. They are now in the process of implementing REAP Phase II.

14. Understanding of who the poor are, where they live, what makes them poor (*poverty drivers*), what keeps them in poor (*poverty maintainers*), and what are the key exit routes (*poverty interrupters*) is a pre-requisite for ascertaining which policies are important for improving the well being of the poor households.

15. Drivers of poverty are correlated with shocks like ill health, injury, environmental shocks (natural/artificial calamities) violence, breakdown of law, and order and market and economic collapse. Poverty maintainers that trap people in long term poverty include capability deprivation, translating into low levels of human, social, and political capital. In Bhutan's situation, top poverty drivers/maintainers include: i) poor access and limited market possibilities due to small domestic competition from imports from India; ii) mountainous terrain, high production costs, marginal soil fertility, leading to low production and high costs; iii) high cost of service delivery resulting from significant investment in labor to maintain farm roads especially during monsoon; iv) human-wildlife conflicts resulting from crop damage

and livestock losses and investment in guarding infrastructure and labor; v) untargeted subsidy policy.

16. What are the barriers to pro-poor policy? Achieving effective pro-poor policy is not always straightforward and efforts to promote reforms that benefit the poor often encounter considerable difficulties. Bird (2008) and Rocha (2010) attributed the failure to recognize (overlooked or ignored) the interest of the poor to three key stages of public policy making – agenda setting, policy formulation, and implementation (Figure 1).

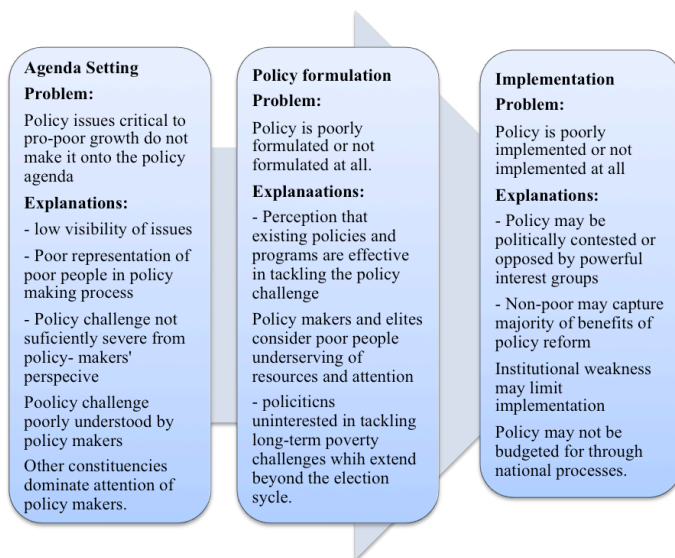


Figure 1. Framework for policy analysis (to be applied to specific policy area: arrows denote steps in the analytical chain and background rectangle denotes the broader universe of other policies, the economy and the society that shapes all stages)

B. Analytical framework for review of pro-poor policies

17. A simple analytical framework developed by the Center for Analysis of Social Exclusion (CASE) was adapted and applied to each of the policies selected for review. The framework starts with identifying broad policy aims for the particular policy area, then documenting actual policies, then recording the resources expended, the inputs and outputs produced, and changes in measurable outcomes (Figure 2).

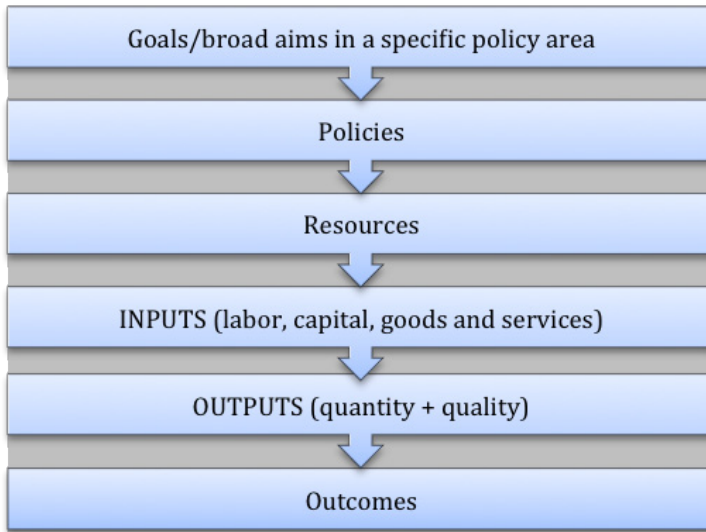


Figure 2. Framework for Policy Analysis (adapted from CASE: to be applied to each specific policy area. Arrows denote steps in the analytical chain and the background rectangle denotes the broader universe of other policies, the economy and society which shapes all stages)

18. The pro-poor policies for actual review and documentation was identified through consultative process involving a workshop at Gelephu where all sectors were represented including PPD and CHRO of MoAF.

C. Data Collection

19. Due to the nature of the assignment, data were collected from variety of sources through desktop review of relevant policy documents, consultation with policy experts at national level, sector and field staff at Dzongkhag level, project management team, and focus group discussion followed by interviews with key stakeholders at community, and local government.

20. Identification of pro-poor policies for review of its impacts: The first step in the review process was to identify three pro-poor policies for review and analysis. The Chronic Poverty Research Center (CPRC, 2004), suggested a list of policies to assist the poor include:

- i Pro-poor, broad based growth;
- ii Slowing down global warming;
- iii Strengthening national and local governance;
- iv Improving the effectiveness of basic service delivery in the public and non profits sectors;
- v Making markets work for all.

21. A review of global experience indicated that pro-poor polices and interventions to specifically tackle chronic poverty are those that:

- i Prioritize livelihood security (preventing and mitigating shocks and insecurities by creating policies/programs which give chronically poor the assets, livelihood security and political voice that enables them to make the most of opportunities and lobby the government effectively;
- ii Ensure that poor people can take up opportunities (by promoting broad based growth and redistribute both material and human assets by using both dynamic and static approaches to ensure that poor people can take up the opportunities created by growth;
- iii Take empowerment seriously (policies needs to address discrimination seriously).

22. In summary, pro-poor policies are those that promote pro-poor economic growth, empower the poor, guarantee their rights, institute pro-poor governance, support basic social services for human development, and address human insecurities, by reducing vulnerabilities and managing shocks.

23. Based on some of the principles and concepts discussed in the preceding sections, the consultant reviewed acts, rules, regulations, strategies, action

plans, interventions, programs, and projects to identify pro-poor farmer policies in Bhutan. Using this list and in consultation with RLP project management/PPD, MoAF, a list of priority policy interventions were generated.

24. The consultant and his team facilitated a local workshop attended by RNR officials from Dzongkhags and Gewogs of Zhemgang and Sarpang which further debated and identified three top priority policy interventions for detailed case studies. These are: i) Subsidy policy interventions; ii) Human Wildlife Conflicts Management Policy Interventions; and, iii) Capture Fishing Policy Interventions.

25. Case studies were then designed and implemented to document major issues, gaps, overlaps, mismatch between policy goals and implementation challenges that are negatively impacting the poor.

26. Primary data collection: Primary data for review and documentation of the impact of pro-poor policies were collected from:

i. Consultation with policy and rural development officials from relevant agencies including, RNR extensions, local governments, district government, line departments, and agencies of the Ministry of Agriculture and Forests. This allowed the consultant to not only flag out issues identified from the review of the policies, but also gain valuable insights into their interpretation thereof. These insights were also used in developing the case study interviews, and the focus group exercise.

ii. Focus group discussion to share experiences was carried out in eight Gewogs, with RNR sector staff (during the RLP annual workshop in Gelephu), and with RNR sector heads of Zhemgang Dzongkhag chaired by Dasho Dzongkdag. This allowed communities and RNR staff to share experiences (community level or community level) with each other and also RNR staff and seek clarifications. The focus group discussion shared experiences on all RNR sector policy interventions and did not restrict to the selected policy interventions.

iii. Individual interviews were carried out with randomly selected respondents representing demographic and village characteristics. The individual interview and life history cases mainly focused on the three case studies to collect empirical information that will provide insights into the pros and cons of pro-poor policies, strategies, and intervention implementation. The case studies focused on issues relating to timber permits, royalty concessions, legislation of catching fish, crop and livestock insurance, human wildlife conflict management interventions, and income generation from rural enterprises. Data thus collected augment the secondary information collected through review of act, rules, regulations, strategies, and interventions with empirical evidences. Focus group discussions/interviews and case studies also generated stakeholder suggestions about good approaches, or mention systems that “more or less” work and could be improved.

D. Data Analysis

27. Information collected from stakeholder consultation, RLP workshop, focus group discussion, and individual interviews were encoded into SPSS data-base (quantitative) and excel database (qualitative) and cleaned. Data was then analyzed using SPSS and Excel within the conceptual and analytical frameworks presented in earlier sections. The assessment of the impact of the pro-poor policies on the rural poor was documented based on their analysis of effectiveness, efficiency, sustainability, and the equity (inputs, outputs, and outcomes of Figure 2).

II. Findings

28. Findings from this assignment especially those that are not benefiting the poorest are presented and discussed in the ensuing section A through E.

29. Section A gives a brief situational analysis of the impact of RNR policy interventions especially rural livelihood project interventions on the socio-economic characteristics of households and Gewogs. Section B, C, and D presents analytical discussion on the findings from the case study on the assessment of how the farm subsidy, human wildlife conflicts management, and capture fishing policy interventions helped alleviate poverty for the poor. Section E, presents the findings on the overall effectiveness of the RNR sector policy, awareness, challenges and recommendations.

A. Socio-economic characteristics

30. The study covered 12 Gewogs under Sarpang and Zhemgang Dzongkhags. Socio-economic characteristics of the samples are shown in the Table 1. 69% of the total respondents were members of self-help groups (SHGs = farmers groups formed to embark collectively on farm and non-farm enterprises such as cane and bamboo group for Bjoka Gewog, Fishing Group in Berti, vegetable group, poultry group, or bakery etc.) and committees in the villages while others did not indicate any membership. Gender wise distribution reflects that 51% of the samples were male.

31. Villages under Chuzom and Bjoka Gewogs are located farthest from the market. The proportion of wetland owned by households is almost one fourth of the dry land owned by them. 35% of the households in Bjoka Gewog and 15% households in Chuzom are not electrified as of today. Members of SHGs are twice more educated than the non-members indicating that SHGs are popular amongst the more educated. Non-Members live nearer to the road, market, and other social infrastructure. 11% of the respondents did not have access to credit from financial institutions. This figure is alarming for Goshing and Chuzom Gewogs where over 50% of the households were not able to acquire credit. These households are the poorest with least amount of landholding, livestock or income and are not happy about their situation. One particular farmer said, “ *we are poor, we do not have enough guarantee to get loans from the*

banks, as a result we are unable to venture into any new programs that will help us become rich. The present financing scheme only favors the rich who are getting richer. I am afraid we will continue to have to work for the rich”. Another vocal participant in the focus group discussion mentioned, “we are all citizens of this country, why no loan for people who have no land or other forms of guarantee? “I am poor but should the government deprive me off the opportunity to access loan? This is not fair, only rich are accessible to loans. Government must make incentives for the poorest if poverty alleviation is to succeed”.

Table 1. Socio economic features of the study communities.

Socio-economic variables	Non SHGs Member	SHGs	Total
Education status of the respondent (years)	4.1	8.4	7.1
Distant from the nearest town/market (km)	10.5	13.4	12.5
Distance from the motorable road (km)	1.1	1.3	1.2
Distance from nearest health services (km)	3.6	4.0	3.9
Distance from the animal husbandry services (km)	1.5	6.2	4.8
Wetland owned (acres)	0.7	0.8	0.8
Dry land owned (acres)	3.2	3.8	3.6
Total income before the project (Nu)	58668.4	22371.3	33405.6
Total income after the project (Nu.)	39836.8	55409.7	50675.5

Note: SHG: Self Help Groups

32. Impact on income: RLP seems to have a favorable impact on the lives of people. However, SHG members experienced more than 100% increase in income while the non-members experienced a fall in income (Table 1), confirming that group formation is a winning strategy. Similar results were also reported by other developmental agencies including Tarayana Foundation, BAOWE, NCWC, and GNHC. However, it is observed that poorest of the poor with little capabilities are mostly excluded from the SHG thereby depriving them of the opportunities to gain increased income. This may in the long term exacerbate stratification of communities in the villages increasing economic gaps. Innovative policy strategies need to be implemented to make SHG inclusive.

33. *Gewogs* have experienced differential gains in income during the project period. The Bjoka made highest gain in income mainly attributable to its thriving cane and bamboo industry. The formation of cane and bamboo group with an outlet at Bjoka managed by elected officials has added value to the success of the industry. This is encouraging given that Bjoka still remains to be one of the poorest *Gewogs*.

34. Regression estimates suggest that the members of group or committee are more likely to experience 21% higher gain in the income than non-members. All the *Gewogs* are found to have experienced an increase in savings during the project period (Table 2). Although, linear regression model still holds the logic-changes in savings are positively associated with changes in the level of income. OLS Regression estimates show that for every 1% change in income, savings changed by 0.19%.

Table 2. Mean change in savings during project period.

Income group (Nu.)	Mean value of change in Savings (Nu.)	Std. Error of Mean
Less than 5000	-600.0	1511.2
5001-10000	32250.0	23700.8
10001-25000	1250.0	1681.4
25001-50000	8175.0	5175.5
50001-100000	9887.1	5395.1
Total	6775.9	2486.8

35. If expenditure and savings are a function of income then increased savings further confirm the positive impacts of RLP interventions. However, it is important to point out that the lowest income group (with less than 5000 income) stills holds a negative balance sheet (mean value of Nu.-600). They meet this deficit through loaning from wealthy neighbors and become indebt to them. A lady said, *“I don’t have enough income to last a year, and have to borrow from my well to do neighbors”*, the problem here is that she will have to pay back in terms of labor which is demanded during peak cropping time when she will have to forgo cropping her own land and work on the lenders land. Result, her crop yield suffers leading to lower income, leading to borrowing and the vicious circle continues. If poverty is to be alleviated these social poverty maintainers needs to be removed through government policy interventions.

36. What is even more alarming is that most of the findings of this study confirm such stories. An analysis of income gains made by different income groups suggest that poorest income groups with annual income less than hundred thousand Ngultrums suffered a decline in income, while income gains made by others income groups progressively increased for higher income groups (Figure 3). This is indicative of the fact that poorest segment has been absolutely disadvantaged during the period. It is a crucial issue and its reasons need to be explored further to make the growth process more inclusive.

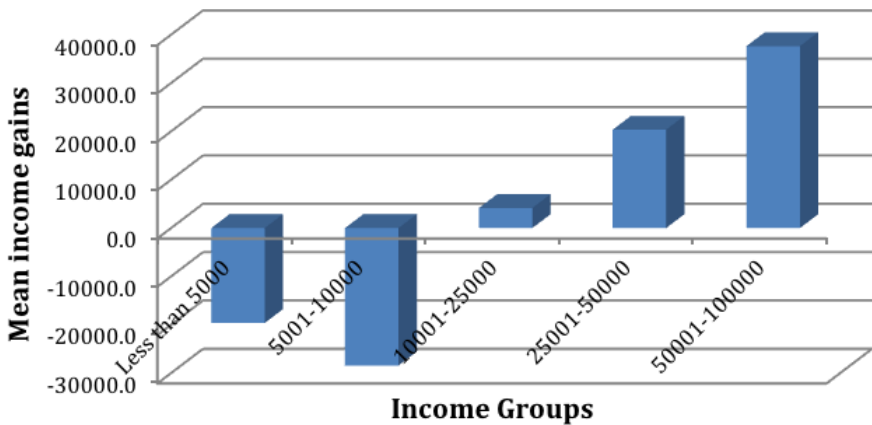


Figure 3. Mean value of income gains made by different income groups.

37. Further analysis using distance from the nearest market reflects some significant trends; income gains tends to be more for those who are farther from the market but if the nearest market is farther than 30 KM, the gain in income is less. This partly reflects success of RLP programs to support livelihood of the people in the isolated areas through formation of SHGs and organized marketing efforts. However, marketing from more than 30km distance is also not a profitable option unless you are dealing with high value cash crops like cardamom as in Chuzom.

38. Those engaged in livestock farming and agriculture as primary economic activity experienced a decline in the income in the last five years (Table 3). Those engaged in trade as primary economic activity experienced highest increase in income. This trend is reflective of shrinking economic opportunities in agriculture and expanding economic opportunities in non-agricultural activities. Similar results were also reported in the evaluation reports of GNHC, NCWC, and RSPN, who attributed these trends to better incomes from micro-enterprises than traditional farming options. This is to be treated with caution as it could encourage our farmers to shift to micro-enterprises where incomes could sharply fall if competition surges. This trend has also been observed with increased individuals with hair

cutting skills and falling income (MoLHR, 2014). The usual culprit cited for these outcomes is the lack of proper farming infrastructure including irrigation facilities. This is if further compounded by wildlife damage and increasing drying of water sources, and erratic rainfalls. The ability of the farmers to adapt to these challenges is highly curtailed by the land policy, which doesn't allow farmers to convert wetlands. These factors have been reported to directly or indirectly force farmers to refocus their livelihood strategies towards non-farming activities.

Table 3. Mean change in income in the last five years.

Main Occupation	Mean change in Income (Nu)
Agriculture	-15962
Livestock	-16466
Forestry	85000
Trade	163500
Others	625

39. Impact on social security and living conditions: Similar to the income findings, the members of SHGs in the community have experienced much greater improvement in their ability to feed their family in comparison with those who are not the members. 63% of the members of SHGs reflected that larger benefits of such membership is greater cash income, while 24% communicated that ability to get better job is the main benefit of joining such membership.

40. During FGD issue related to market accessibility was also identified to be a crucial challenge to RLP. Stakeholders conveyed that they in the absence of assured market and access to it for their products, RLP interventions may not be sustainable for income generation.

41. During project period, share of cemented house increased from 8% to 20%, stone house increased from 29% to 39%. Share of bamboo houses declined proportionately from 14% to 2.5% and share of mud house declined from 12% to 9%. This is reflective of improved social benefits of

the RLP project interventions. However, the more affluent households and SHG members who experienced larger increase in income enjoyed most of these benefits.

42. 78% of the respondents conveyed that they have enough food to eat all the times, 21% respondents conveyed that they had enough food to eat most of the times but not all the times (Table 4). Only 1% reported to have inadequate food most of the times. Of those who reported that sometimes they do not have adequate food to eat, 71% buy the remaining food from market, 24% reported that they work in nonfarm activities to get additional income. Their children support the rest. Food security is higher for the higher income group. Only 60% of the people in the bottom income group reported adequacy of food all the times as compared to 99% for the highest income group. Sixty seven percent of the people with less than once acre of land reported adequacy of food for all the times as compared to 81% of the people with more than 5 acres of land. Only 75% of the illiterate people have food security for all the time as compared to 100% of the people with secondary and higher level of income. Food security tends to increase with assets, income, and education level.

Table 4. Food adequacy income group wise (%).

Adequacy of food	Income group (Nu)				
	Less than 5000	5001-10000	10001-25000	25001-50000	More than 50000
Not enough	0	0	0	0	0
Mostly enough	40	25	23	1	26
Always enough	60	75	77	99	74

43. Summary: To sum, the RLP have changed the lives of the rural farmers in the two Dzongkhags for the better with increased income, savings, enhanced abilities to feed their families, and improved housing. However, these benefits are not equitably distributed across the socio-economic spectrum. The poorest of the poor have benefited the least requiring RLP

to better target their interventions by stratifying communities according to their wealth and productive capacities.

B. Assessment of Subsidy Interventions

Situational Analysis

44. RNR sector subsidies have been used as a tool in agriculture development and transfer of technology particularly for the remote areas of the country whereby input subsidies have been a means of accelerating food production and generating farm incomes. Draft RNR Subsidy Policy 2010 aims at promoting wellbeing of the farmers and enhance sustainable livelihood, strengthen backward and forward linkages in the supply chain and provide policy support to generate additional employment and income. The policy also delineate the need to incorporate the M&E system as part of the subsidy policy in order to provide appropriate information at the right level of detail corresponding to intended targets.

45. Subsidies within the RNR sector is defined as an additional government support either in kind or cash or both intended to provide meaningful benefit(s) to the farmers and other value chain intermediaries. Subsidy components are concentrated to specified subsector interventions complementing regular development plans and programs of the RNR sector.

Scope of the Subsidy Policy

46. The scope and coverage of the subsidy interventions as specified in the Draft RNR subsidy policy include the following elements:

- A central focus on farmer well-being and RNR production factors to enhance livelihoods;
- Particular attention to the linkages between backward and forward integration in the supply chain and markets;
- Policy support to avert or avoid adverse poverty and environment

impacts from natural calamities and disasters;

- Policy support towards on-farm agriculture enterprise development production system generating employment and additional farm income;
- Recognition of the intrinsic value of conservation, biodiversity, ecosystems, and payment for environmental services.

Case study results:

47. Over 50% of the households received subsidy on seeds and 39% samples received subsidy on saplings. Less than 10% of the samples received other subsidies. Further, the data reveals that the non-poor population has greater access to the subsidies. This could be attributed to affordability (as in cost sharing), capabilities of the farmers, and sometimes nepotism. Except for the subsidies on agricultural machines and piglets, higher percentage of non-poor¹ received the subsidies (Figure 4). Only 35% of poor people received seed subsidy as compared to 52% of the non-poor population. Thirty nine percent of the non-poor and 35% of the poor received subsidy on the saplings.

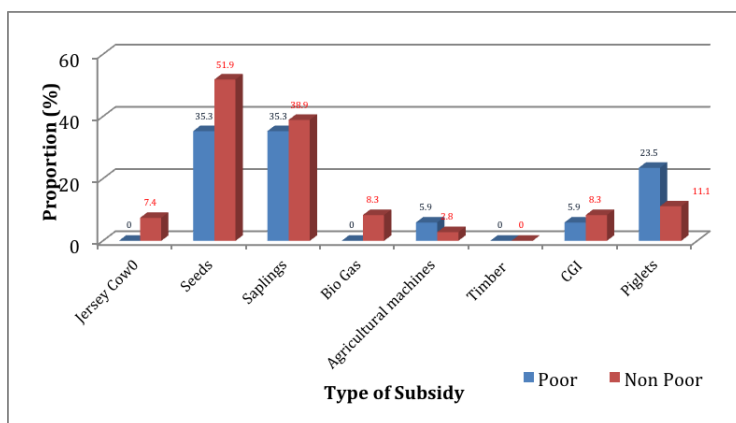


Figure 4. Percentage of households received subsidies.

¹ Poverty is defined in terms of the average monthly per capita income of Nu1708.4. This criterion is borrowed from BLSS 2014.

48. Jersey and biogas subsidy: None of the poor received subsidy on the jersey cow and biogas (Table 5). Since subsidy on the jersey cow is only partial, those who received such subsidies paid between Nu.18,000 to Nu 30,000 for each cow. It is obviously beyond the ability of poor to avail such subsidy. For example, Zhemgang Dzongkhag has planned to distribute 10 to 14 jersey in Bjoka Gewog but there are no takers. During the focus group discussion, farmers submitted that they couldn't afford this subsidy. One representative said, "*we don't have enough money to buy tea, salt and oil, how can we pay such a huge amount for jersey*". Table 5 also shows that jersey cows were availed by higher income groups (>25000). This subsidy however came with additional benefits such as free materials (CGI, Cement, and sometimes bricks) to construct jersey sheds. The flip side of the subsidy is that the poor who could not afford to cost share jerseys missed these free incentives. The reality is that the jersey sheds are better built than the dwelling houses of some of the poor farmers.

49. Availability of jersey cows with the well to do households also set them in a more favorable position to avail biogas subsidy thereby benefiting with a double jeopardy. Biogas has many social and economic benefits to the rural households including savings from purchase and transportation of LPGs, bio fertilizers, etc. However, in contradiction to the pro-poor goals, all the nine households who availed subsidy on biogas were non-poor who received a partial subsidy of about Nu.11,500 to share the cost of biogas plant.

50. From the above findings it is clear that cost sharing acts as an exclusionary device and prevents the poor from availing such a subsidy. Cost sharing when implemented as a pro-poor policy intervention clearly favors the advantaged. Further regression estimates (as discussed in next paragraphs) indicate that those who use biogas experience more rapid growth in income (partially resulting from monetary savings from not having to purchase LPG, transportation, and labor saving). This implies cost-sharing nature of such subsidy cannot be justified for two reasons; it prevents poor from availing it and helps non-poor with faster income growth resulting into greater inequality. There is no justification for the continuation of such subsidy in its current form if the goal is to help the poor.

Table 5. Change in income during project period related to subsidy on jersey cows.

Income group (in Nu.)	Subsidy received	Mean value of change in Income
Less than 5000	No	-19633
5001-10000	No	-28425
10001-25000	No	4138
25001-50000	No	19770
	Yes	27333
50001-100000	No	37574
	Yes	38000

51. While those who received jersey subsidy earned higher increase in income, the difference in the increase in income for highest income group between those who received subsidy and those who did not is statistically not significant. This finding is attributable to the lack of proper infrastructure for marketing dairy products.

52. Seeds and saplings: As far as subsidy on seeds is concerned there is differential welfare effect for different income groups. For the lowest income group (less than Nu 5000), the income declined for both who received subsidy and who did not, but for those who received the seed subsidy experienced decline in annual income by three and half times more than those who did not receive such subsidy (Table 6). In contrast to this, in the top two income groups those who received subsidy experienced twice as much increase in income than who did not. It requires a separate systematic study to examine the cause of such mixed results.

Table 6. Change in income during project period related to subsidy on seeds.

Income grou (in Nu.)	Received subsidy	Mean value of change in income (Nu)
less than 5000	No	-9611
	Yes	-34667
5001-10000	No	-37733
	Yes	-5000
10001-25000	No	6500
	Yes	-322
25001-50000	No	14393
	Yes	23538
50001-100000	No	26625
	Yes	49367

53. Impact of subsidy on saplings is evidently more consistent to draw conclusion. The benefits of this subsidy is far more greater to lower income groups and with the increase in income the richer income group tend to benefit more in terms of income gains.

54. Farmers and extension agents reported availability of land, irrigation, interest to grow, and manpower as some of the factors that influenced the success of the seeds and sapling subsidies. Seeds and saplings were distributed from Gewogs for all the households irrespective of their interest to grow or availability of land. This not only contradicts the subsidy policy's need to assess the capacities and needs of the farmers but has also created secondary markets where they were sold.

55. Based on existing evidence, this subsidy is inefficient when dealing with the poor and doesn't qualify to be a pro-poor policy intervention as it benefits the higher income groups more. It should either be discontinued or be targeted to the poor income groups with support on technological knowhow on efficient use of seeds.

56. Agricultural machinery: In case of subsidy on agricultural machines, bottom two income groups (less than 10,000) experienced ten times higher decline in income than those who did not received subsidy. This subsidy was obviously counterproductive to the lower income group. For income groups higher than Nu 10,000, this subsidy benefitted more to those who received subsidy. Overall picture conveys that those who received subsidy experienced a fall in income and those who did not receive experienced an increase in income. Hence, this subsidy has not only been ineffective but also counterproductive. These findings are interesting but sound, the lower income groups either take loans or borrow money to avail agricultural machinery facilities, without actually doing the math of how they will earn from their yields as compared to how much they input (including the machinery costs). The hard reality is that whether you take as loan to purchase a machine or hire one, the benefits are not as high especially when you have to pay back huge loans. This demands a cost benefit analysis of such subsidies and farmer investments versus returns.

57. Subsidy on poultry

Only 14.5% of the samples received subsidy on poultry products and those who received such subsidy experienced three times higher increase in income than who did not. It is quite evident such subsidies have been effective but its coverage is limited and consequently its benefits are not equitably shared. This is evidenced from the findings that only 14% of the poor against 17.6% of the rich received this subsidy. The poor who received this subsidy experienced six times larger income gains as compared to those poor who did not (Table 7). While such difference is relatively small for non-poor. In absolute terms, the non-poor who received subsidy experienced seven and half times greater gains in income (Nu. 1,50,000) as compared to poor (Nu. 20,000) who also received subsidy. This subsidy is perhaps one of the few that has brought immediate and significant economic benefits to the households especially the poor. This subsidy can allow the poor to gain enough resources and increase their capabilities to access bigger subsidies such as jersey cows and agricultural machineries. However, increased growth of larger farms by the non-poor (as indicated in the scale of income gains) can jeopardize this golden opportunity for the poor households. This issue has already been voiced

in Eastern Bhutan (Kuensel which reported that backyard poultry by small holders are losing out to larger semi-commercial farmers indicating that larger and richer farmers are gaining more evicting poor farmers from this opportunity).

Table 7. Change in mean income from subsidy on poultry.

Received subsidy on Poultry	Mean change in income (Nu)
No	13239.25
Yes	41230.00
Total	17269.92

58. Other subsidies: Subsidy on piglets, and fisheries reflects mixed trends but overall impact of this subsidy on the income of those who received this subsidy has not been significantly different from those who did not receive the subsidy.

59. Proximity to market: Distances from the nearest market also have differential impact on the gains made by people who received subsidies. For all the subsidies, the major trend conveys that the places between 10-20 km from the nearest market place had yielded greater benefits to those who received various subsidies than between 0-10 and 20 and more km from the nearest market places. It is obvious that places relatively close to market place have already realized larger potential benefits and farther places are too remote and have greater geographical disadvantage to make subsidies potentially gainful. It has important policy implication- target subsidies to the areas 10-20 km from the market places so that its benefits can be maximized.

60. A majority of the people holds a perception that all these subsidies have positive impact on the socio economic conditions of the recipients. Evidence emerging from the data using OLS linear regression estimates suggests that only two subsidies; on biogas and seeds have statistically significant impact on income. Those who receive subsidy on biogas are likely to experience about 27.8% increase in income. Those who receive

subsidy on seeds are likely to experience 21% increase in income. Although a majority of the respondents believed that subsidies on saplings had positive effect on the income of poor but it is not proven by regression estimates. This difference can be explained by the fact that such subsidy is given without any follow up services on the proper use of saplings.

61. About 60% of those who responded to the question on the effectiveness of the subsidy on jersey cow conveyed that such intervention could become more effective if it is 100% subsidized. In some instances, in the event of death of the jersey, farmers are not able to repay loan and fall into deep debt trap. For rest of the subsidies, a majority of those who responded conveyed that subsidy in its current form as effective. About 97% of the respondents conveyed that subsidies have adversely affected the welfare of the households. The underlying reasons for this impression is probably due to greater access to such subsidies to non-poor, absence of a package of related subsidies, its cost sharing nature, and limited benefits in terms of impact on income gain. It follows that there is a need to provide targeted and complete subsidies to the poor and such subsidies should be provided as a package to ensure its fruitfulness and use of effective knowledge dissemination so that poor have greater capacity to use such subsidies effectively.

Summary

62. On the basis of above discussions and relating them with different objectives of the draft subsidy policy 2010, we can make following comments:

63. First objective of the draft policy is to ensure equitable access and promoting more productive use of agricultural inputs. This objective is not realized, as lower income groups do not have equal access to these subsidies. Higher income groups garnered most of these subsidies as well resultant gains in income. If this aspect is not addressed, subsidies may only exacerbate inequality of income and assets distribution.

64. Second objective of the draft subsidy policy is to reduce vulnerability to food insecurity, which is also partially realized. People with higher

income, larger land, and more education are less vulnerable to food security as compared to those in the lower income group, have less land, and are less educated.

65. Cost sharing aspect of the subsidy needs a review. Because of cost sharing condition, many subsidies (especially, on Jersey Cow) are not within the reach of the lower income groups (less than Nu10,000). Higher cost sharing also has danger of expanding indebtedness, if the subsidies fail to contribute to rapid growth of income of its recipients. This might make people more vulnerable and would act against the overall objective of subsidy policy, i.e.-reduce vulnerability of the farmers.

66. Analysis shows that these subsidies have not resulted into significant gain in income for its recipients and in some cases they have been counterproductive. Draft policy aims to enhance the productivity of the agriculture sector but in reality this is happening on a wider basis. There is a need to align subsidy policy with overall support framework- better infrastructure, knowledge dissemination, and provision of marketing support.

67. Stakeholders have commented that implementing agencies do not adequately follow up and there is little communication with them. In the current framework, Monitoring and Evaluation (M&E) is not strong. This aspect is one of the major hurdles in the effective use of subsidy for productivity and income growth on a sustainable basis especially for the lower income group. An independent study is necessary to evaluate the current roles and capacities of extension agents to deliver their roles, as well as indentify strategies to improve their performance (efficiency and effectiveness).

68. In the existing framework, there are no proper guidelines on the effective use of subsidy. In the absence of implementation guidelines, subsidies are not put to effective uses.

69. To sum it all, the current farm subsidy system is struggling to succeed and is in dire need of reform. A lack of a subsidy policy for one of the largest and oldest subsidy Ministry is a serious indicator of how loosely the much-needed subsidies that are supposed to make differences in the lives

of the rural farmers have been executed.

70. Study findings support the fact that current farm policies are so poorly designed that they actually worsen the conditions they claim to solve. For example:

- Farm subsidies are intended to alleviate farmer poverty, but the majority of subsidies go to richer farmers with average incomes of over Nu. 100,000 or semi-commercial farmers.
- This could have further spin off impact on kicking the small family holders out of business or selling their farms and migrating.
- Farm subsidies are intended to raise farmer incomes by remedying low crop prices. There is no proper mechanism to avoid overproduction and therefore lower prices further, which could make farming unprofitable and unattractive.
- Farm subsidies are intended to help struggling family farmers. Instead, they harm them by excluding them from most subsidies, financing the consolidation of family farms. For example: Cost sharing subsidies are only affordable by the more affluent families: Jersey cows come with cost subsidy, goodies for construction of their sheds (CGI, Cement, Bricks), and now biogas, all unreachable to the poorest of the poor.

Recommendations

71. Based on the findings presented above, it is critical that our policy experts and lawmakers should first determine what subsidies are intended to accomplish.

72. For Bhutan, the emergency is the collapsing farm incomes that afflict the 69% of the population living on farms. Thus triggering the sometimes-romanticized abandonment of rural farms. Farm subsidy formulas should be designed in a stratified manner to benefit all sections of the farming community with special focus on the poorer

farmers if the policies are to be tagged as pro-poor, rather than large agribusinesses.

73. Subsidy distribution guideline (also mentioned in the draft subsidy policy) requires that a proper assessment of needs and capacities prior to distribution of seeds and saplings. On the contrary the method of distribution is rudimentary with no proper assessment of needs and capacities of the farmers or their willingness to use them. These are like fixed goodies that are given and taken. Seed and sapling subsidies including transportation alone costs the Government Nu. 24 million a year? A more stringent implementation of the policy followed by rigorous monitoring and evaluation at the field level can drastically reduce this wasteful practice and save valuable resources that can be re-directed at providing full subsidies to the poor, thereby qualifying subsidy policy as pro-poor.
74. Subsidy policy and other regulations must incorporate pro-poor safeguards so that subsidies do not adversely impact the poor. For instance, semi-commercial and commercial poultry farms should not jeopardize opportunities for small backyard poultry farmers.
75. While farming can be very profitable under a well-defined policy framework, farmers are always one weather disaster away from losing their crops. These risks are compounded by wildlife damages. For example, a Guar (endangered high profile wildlife species protected under FNA) has damaged large areas (7acres) of maize in Goshing Gewog, however, to this day farmers have not received any compensation in spite of filing a report. These kinds of episodes can not only devastate farm economies especially for the vulnerable groups, but also increase animosity between nature and humans. Government must make compensation packages available in such circumstances especially when damages are natural in origin or high profile wildlife. Government must explore subsidized crop insurance markets, as well as futures and options markets, that have the potential to balance good and bad years in a way that is cost-neutral over the long run.

76. Expand market support to the SHGs by developing supply chains and strengthening forward and backward linkages with industries.
77. From untargeted subsidies the focus of subsidy policy should shift to targeted subsidy to the lower income groups and especially poor. From one product subsidy the policy focus should shift to a package of subsidy on related products. Such subsidy would not only promote social justice but also would ensure effective use of public money for maximizing social welfare. Such targeted subsidy will reduce pressure on public resources by reducing inefficiencies.
78. Subsidy to lower income groups should be complete so that poor people can avail such products and services, which have positive impact on the sustainable livelihood of poor and low income groups.
79. Subsidies should be complemented with knowledge dissemination on the use of modern inputs. Better knowledge on the proper use of technology can only help to increase productivity. Proper guidelines on the use of subsidized inputs should be prepared and shared.
80. Subsidy should be linked to productivity growth as target indicator.
81. Implementing agencies should undertake effective monitoring and evaluation through follow up actions. They need to communicate more often with the beneficiaries.
82. Some contend that food markets would fluctuate wildly without farm subsidies. This is true especially if the subsidies are not targeted based on capacities and equitably distributed. For Bhutan, there is another confounding problem created by major factors impeding the advancement of farm economics are cheap imports from India with no legal/regulatory framework in place. Indian farmers have multitude of advantages over their counterparts in Bhutan. They have easy land, better technology, and excellent subsidy with convenient transportation. Thus they are able to sell their products at relatively cheaper rates compared to products from Bhutanese farms. This remains a major threat to advancement of Bhutanese farm economy.

It is recommended that the government explore options to address this threat through taxation, import quota, or subsidy etc.

83. It is recommended that a cost benefit analysis study be carried out on all subsidies especially farm machineries.
84. A study is also recommended to evaluate the performance of extension agents (capabilities of extension agents to deliver their duties, how to improve efficiency and effectiveness) and identify strategies to improve their performance.
85. To avoid this tragic situation, it is recommended that communities be stratified starting from Chiwog level, Gewogs, and Dzongkhags. Basic wealth as in income, land ownership, productive labor, number of livestock, etc, should be used to stratify households. These data should easily be available at the Gewog office and it is best done through GYT. Subsidies then should be targeted based on these information, and where necessary technical help must be ready.
86. To sum, if the present method of broad based subsidy which we have been implementing for the last many decades, with no proper assessment of needs coupled with lack of monitoring continues, with no proper system to compensate farmers for losses from natural disaster or wildlife, and no regulation of cheap Indian imports, our farmers would be impoverished, near bankruptcy, or replaced by imports, and both the supplies and prices of fruit, vegetables, beef, and poultry would fluctuate wildly.

C. Assessment of Human Wildlife Conflict Management Interventions

Situational Analysis:

87. *National Strategy to Resolve Human-Wildlife Conflicts (HWC) in Bhutan* highlight the interdependency between local people, rural livelihoods, and conservation. Aside from having to live with restrictions on traditional resource uses that come with the establishment of parks and protected areas, farmers often must also bear heavy losses in terms of property damage by wildlife; crop loss by direct feeding and destruction; the loss of use of arable land due to fear of crop damage; livestock depredation by wildlife; and harassment, injury, or death of local people. To reduce the risks of HWC, the government has decided a multipronged strategy with the objective to reduce crop damage, reduce predation, and promote alternative sources of income and initiation of crop and livestock insurance. Main components of this strategy are-support and subsidize solar and electrical fencing materials, alternative crop cultivation, and multiple cropping and farm mechanization. Electric/solar fencing and community based compensation schemes are implemented in Zhemgang and Sarpang *Dzongkhags*.

Case study results:

88. A predominant majority of the respondents (98.5%) conveyed that major issue with human wildlife conflict is crop damage and harassment by wild elephants. Wildlife species including elephants, guar, wild pig, deer, birds, and monkeys have been reported as frequent crop raiders. On average, each household suffered damage on about two acres of cultivated land by the wildlife. Less than 1% respondents found livestock predation as a problem. No one reported disease transmission as a problem related to human wildlife conflict.

89. Respondents conveyed that electrical fencing was undertaken to prevent damages from human wildlife conflict. Electrical fencing was provided through public intervention and beneficiaries had to contribute equivalent of two days of labor which is considered to be a fair practice by all. Subsidy on electric fencing was provided only in Shompangkha,

Singye, Umling, Tarathang, and Chuzergang *Gewogs*.

90. Residents and Gewog officials from Shompangkha Gewog reported that electric fencing has reduced crop damage by elephant to almost zero, although monkey continues to take their share. Likewise, crop damage by elephants has been drastically reduced in Singye, Umling, and Taraythang Gewogs. On the contrary, crops, property, and lives of residents in Gewogs where there is no electric fencing continue to be threatened especially by elephants along the southern boarder. In addition, wildlife species such as wild pig, deer, and monkeys continue to damage crops across all *Gewogs*.

91. None of the respondents in the bottom two-income groups (less than Nu 10000) benefited from electrical fencing (Figure 5). About 50% of the people who got electrical fence belong to the highest income group (more than Nu 100000), 30% belong to income group of Nu. 50000-100000 and remaining 20% belong to the income group Nu. 25000-50000. There is need to expand the base of this subsidy to lower income groups which are so far completely excluded. The lower income group is more dependent on nature and is more vulnerable to HWC but their exclusion from this intervention is likely to expand the income and assets based inequality. Figure 5 conveys that percentage of people receiving help in resolving HWC problem increases with the increase in economic status measured in term of income group.

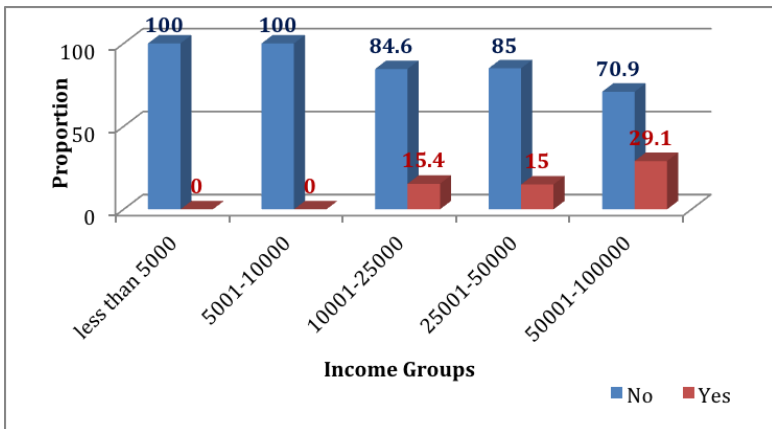


Figure 5. Help in solving HWC problem, income group wise (%).

92. Coverage of this intervention measure is very limited. About 98% of the respondents face crop damage problem due to human wildlife conflict but only 16% have got electrical fencing through subsidy. All those who received electric fencing communicated that they have highly benefitted from such intervention.

83. Findings from the study on cost benefit analysis of crop damage and fencing indicate that electric fencing is successful in saving communities large amount of crop and guarding times, thereby achieving the original goal of reducing conflicts and alleviating poverty. Overall, communities harvested 9770 kg of crops (mainly rice) with a mean increased yield of 976 kg for each household reporting an increase. Using local selling prices, each household gained an equivalent of Nu.25, 454 from increase crop yield. With the fence in place, communities saved a total of 12, 570 nights with each of the household on average saving 110 nights. As a result communities are better off and happier. 72% of people who benefitted from electric fencing conveyed that it resulted into increased yield and 92% said it reduced their guarding time. These gains are in line with the human wildlife conflict management strategy. However, the gains as mentioned above are reaped by the beneficiaries who are already on the higher income quartet within the communities.

94. Electric fencing cost per km varies significantly from Nu. 37,220 to Nu. 718,554 in different places. Such high variance in the cost of providing such fencing requires attention so that cost effectiveness can be improved. Officials have also reported electric fencing to be expensive; however, given the savings that farmers reap (about Nu. 25,000) cost of electric fencing will be recovered in couple of years, it still remains as a cost effective intervention. Further, reducing HWC will result in a win-win situation where farmers will benefit from increased yield and enhanced eco-system services. These benefits are priceless.

95. There is no community based insurance scheme implemented in the studied Gewogs, however, experience from other Gewogs where such program has been implemented state that community based insurance scheme is a viable option if: 1) a large enough seed fund is made available, 2) if the premium is affordable, 3) if the compensation scheme can be

attached to a local savings schemes or financial institutions. However, experience also show that premiums can unintentionally exclude lower income groups from joining such schemes thereby only benefiting the more affluent. At present, farmers are not given any compensation for the crop damage. There is a need to expand crop insurance schemes along with the electrical fencing. The most viable and sustainable option is to explore subsidized crop insurance markets, as well as futures and options markets, that have the potential to balance good and bad years in a way that is cost-neutral over the long run.

96. The intervention strategy needs to be brought in line with National wildlife conflict management strategy by incorporating and expanding the intervention measures such as- high yielding livestock, improved shelter, and compensation for the loss of livestock and crops.

Summary

97. Given that Environmental Conservation is one of the pillars of GNH and that Bhutan is a nature dependent country, it is worrying to note that not enough resources has been pumped into adapting and mitigating human wildlife conflict. Human Wildlife Conflict if not addressed in a timely fashion with adequate technical and financial resources could exacerbate to unmanageable levels. This is dangerous as we will need much more resources then to manage HWC and the damages will take million years to recuperate.

98. It remains a surprise that in the wake of increasing outcry from farmers, the only effective intervention to reduce Human wildlife conflict issue is confined to constructing subsidized fences.

99. Even more surprising is the fact that the coverage of electric fencing has remained so small when it has been proven that it greatly reduce the losses and increase incomes, and crop yield. The electric fencing interventions are also not targeted to protect the most vulnerable groups more as has benefitted the middle and higher income groups more. While the risk and vulnerability from HWC is more to the lower income groups due to limited diversification of economic activities. In this current form this subsidy will

only exacerbate economic inequality and fail to significantly address the issue of HWC. There is a need to address the issue of crop damage whose impact would be more serious on lower income groups and make them more vulnerable to food insecurity. The community should also be made aware of the need to maintain the fencing as it is created for their benefits. High cost of fencing is a hurdle to expand the coverage of this subsidy. Some research is required to be done of this aspect.

Recommendations

100. The current Human Wildlife Conflicts Management Strategy is old and probably outdated in many places. It is recommended that a new strategy be developed based on a detailed review of the present strategy as well as findings from the interventions.
101. The New Strategy if it's to be a pro-poor strategy must address the needs of the poor as a priority. This calls for a stratification of communities based on common criterion such as wealth (income, landholding), number of productive labor, etc.
102. Like other subsidy, outreach of electrical or solar fencing should be expanded to cover lower income groups. There is a need to examine the case for differential rates of subsidy for different income groups such that lower income groups gets progressively higher subsidy.
103. Experiences from Singye Gewog show that it is best managed by the community themselves. However, a proper community bylaw to manage such expensive intervention must be formulated to improve effectiveness and efficiency. Currently farmers have voiced complaints against the caretakers saying that they are not monitoring and taking care of the electric fences.
104. The gap between two fencing posts should be decreased, wire strands should be increased and wire between two poles should be kept loose to make fencing more secure against attack from wild animals. Caretakers should be given better compensation to motivate them to take their work seriously. Such steps would reduce the cost of construction of fence as well as cost of its maintenance.

105. Crop insurance schemes should be introduced and expanded and compensation should be paid to uninsured crop damages from wild life attack.
106. Where necessary the current land policy for conversion must be made flexible to convert wetland into cash crop orchards. This can also help farmers adapt to water scarcity by shifting to dry-land cropping which is probably going to be most profitable in the wake of climate change and drying water sources and weak irrigation support from the government.
107. The rule on killing of wildlife in and around the settlement and agricultural field must be amended for effectiveness. Currently, it is doing more harm than good, where farmers have to face unnecessary harassment from forest officials due to the animal dying in forest although hit in the field. Further, farmers use traditional weapons to deter wildlife, which are not effective allowing the animal to run away and die in far off forests, attracting investigation from forest officials.

D. Assessment of Catch Fishing Interventions

Situational Analysis

108. Fishing in Bhutan is allowed by permit only mainly for conservation and also religious feelings. However, it is ironic that some communities who are traditionally depended on fishing are deprived of this right while one including foreigners can fish by obtaining permits at a fee. This not only contravenes religious sentiments but also takes away the source of livelihood from the poor. Frequent incidences of illegal fishing and availability of local fish in the market are evidences that this policy has not received the approval of the Bhutanese population especially those who were traditionally dependent on fishing.
109. On the other hand large amounts of fish are imported from India on a daily basis for individual consumption or for serving at occasions. Import of fish adds to the problem of balance of payment.

110. Realizing these, the Government of Bhutan has not only advocated fisheries but also started to pilot community based fishing from rivers. Berti a traditional fishing village under Zhemgang is one such village where communities are given the right to fish for both self-consumption and sale to earn income. To control excessive fishing especially during the breeding seasons and to equitably share the benefits, a fishing self-help group was formed for Berti with a commonly agreed bylaw in place. This assessment looked at how this intervention has fared and if this practice could be replicated to other areas in Bhutan. In addition, households from other Gewogs were also interviewed to assess their attitudes towards fishing and gauge potentials for introducing capture fishing in their communities.

Case study findings

111. Only 26% of the respondents conveyed that they are members of traditional fishing communities. In Berti, four fishermen were identified to catch fish for personal consumption of the households or for sale. A permit has to be obtained from the group committee chairperson before fishing is allowed. During the focus group discussion at Berti, many complained that the four fishermen did not comply with the bylaws and that fishing has become highly unregulated. The participants called for a serious intervention from the Dzongkhag Administration for a review of the by law and strict implementation of the bylaw especially penalties for defaulter. Discussion at the Dzongkhag level also revealed similar issues and Dasho Dzongdag has instructed responsible sector to look into this urgently.

112. These issues are reflective of the study findings, where majority (53%) of such members reflected that they are not able to catch any fish. 30% of such members conveyed that they catch 2-4 kg of fish every month, 13% catch about 5-10 kg fish a month. Only 3% persons catch more than 10 kg fish a month.

113. While 93% respondents believe that there is a profitable market for the fish in Bhutan only 68% respondents conveyed that existing

ban on fishing should be lifted. One elderly man said that, “*eating fish kept us strong and well*”, he added, “*today’s children are weak and fall sick easily because they cant afford to eat fish*”. Religious sentiment of killing is a sin has been cited as the main reason for those who did not support lifting the ban.

114. Catching fish also depends on availability of skills and resources. Where fishermen were to fish, only the rich can pay them to fish thus excluding the poor from this facility. Data from the study also supports this finding, where lower income group catches less fish than the higher income group (Figure 6). Lowest income group on average caught about 3kg fishes, while the highest income group caught 13 kg fishes. Farmers with lower land size caught less fish and farmers with higher land caught more fish. The benefits of fishing are available to richer segment. However, opening free fishing could also trigger a tragedy of the commons. So community based regulated fishing is the most viable option.

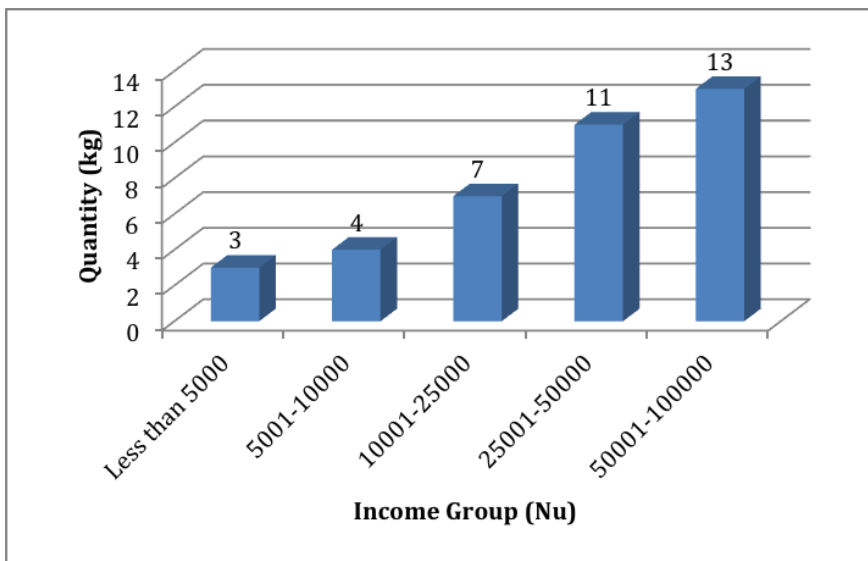


Figure 6. Average quantity of fish caught by income group (Kg).

Summary and Recommendations

115. Policy to fish on permit not only excludes the poor but also hypocritical in religious terms. Ban on fishing is an exclusive policy decision favoring only the economically affluent. However, free fishing by all may also trigger a tragedy of the commons.
116. Community based fishing with strong regulatory framework is the most viable and sustainable option. It can help improve nutrient intake for poor families and enhance their income and also avoid tragedy of the commons problem.
117. Fishing policy therefore needs to be reviewed and catch fishing be legalized through community groups with strong bylaws.
118. Study potentials for allowing fish farming in rivers and streams.
119. To avoid exclusionary impacts of legalized community based fishing poorer households must be encouraged and given support to join such a community group.
120. Technical and marketing support must be provided for selling of fish.
121. Berti fishing by law must be reviewed and technical and administrative support made available to implement the bylaws strictly.
122. Berti pilot must be used to as a basis to scale up fish farming in other parts of the country.

E. Sectoral Issues

123. Policy framework that supports sustainable livelihood of the farmers and promote agricultural growth constitutes an important element of institutional support. RNR sector consist of three major areas- agriculture, livestock, and Forest. Number of policy initiatives has been undertaken in the past to take care of specific issues. This section provides an analysis of the institutional and policy framework.

124. Challenges to RLP also come from administrative issues (Table 8). Almost 45% of the staff was not clear about relevant and specific performance indicators. About 55% of the staff was fully aware and 22% were partially aware about of their organization's policies. Remaining staff was not at all aware of it. About 55% of the staff believed that such policies are not adequately reviewed at the organizational level. Multiplicity of policies also creates difficulty to understand and comprehend the policies and lack of involvement of the staff in the policy making is also found to be a major issue. Policy implementation is found to be the major issue as only 11% staff reported that policies are well implemented. A detailed summary of policy challenges, gaps, and recommendations are given in Table 9.
125. On the policy front, almost all the staff finds all the policies as either confusing, too broad, and/or inadequate (Appendix 1). This a serious challenge, as the implementers do not rate the policy framework as effective.

Table 8. PPD’s policy assessment framework.

Sl. No	Assessment variables	Agree (%)	Disagree (%)	Partially agree (%)
1	I am clear with my Organization’s vision	81.8	Nil	18.2
2	I am clear with my Organization’s mission	100	Nil	Nil
3	I am clear with my Organization’s key mandates and functions	63.6	Nil	36.4
4	I am clear with my Organization’s key performance indicators	63.6	Nil	36.4
5	I am aware of all the policies that are relevant to my organization	54.6	18.2	27.3
6	I am consulted in formulation of at least one of the policies	18.2	63.6	18.2
7	The existing policies are adequately discussed at my level	Nil	45.5	54.5
8	Adequate awareness/education is provided on the existing policies	Nil	36.4	63.6
9	The existing policies are well implemented	18.2	9.1	72.7
10	The existing policies are reviewed regularly	18.2	18.2	63.6
11	There are too many policies for the Ministry	44.4	11.1	44.4
12	I am satisfied with the current policy formulation processes	27.3	9.1	63.6

Table 9. Review findings on policy issues and gaps and recommendations.

Policies	Issues	Recommendations
RLP	<ol style="list-style-type: none"> 1. Income gains for SHG group is more than others. 2. Income gains from SHGs are limited to non-agriculture sector. 	<ol style="list-style-type: none"> 1. Expand the coverage of SHG groups by covering lower income groups 2. Integrate SHG with the agriculture sector by giving greater focus to productivity.
Subsidy	Benefits of subsidy are largely available to higher income group, people with more land and higher education.	<ol style="list-style-type: none"> 1. Need to make subsidies targeted so that its benefits are available only to lower income groups. This can be done by: i) determining a income ceiling beyond which subsidy shall not be made available; ii) stratifying the communities into different wealth groups including capacities and needs to undertake certain activities resulting from subsidy. 2. Provide subsidies as a package rather than one subsidy to one person. A comprehensive package is more likely to bring significant income gains to the beneficiary. 3. Introduce subsidy at source to maximum benefit.
Human wildlife conflict	Electrical fencing is limited to some region and not significantly available to lower income group.	<ol style="list-style-type: none"> 1. Need to expand the coverage of electrical fencing so as to manage human wildlife conflict. 2. Provide insurance coverage to damage caused by wild life.
Catch Fishing	Ban on fishing.	<ol style="list-style-type: none"> 1. Lift ban on fishing and institute community fishing groups with simple, clear and strict bylaws. 2. Allow farmers to use streams and rivers for fish farming.

Policies	Issues	Recommendations
National Irrigation Policy, 2012	No proper irrigation channels in <i>Gewogs</i> .	Need to create and strengthen irrigation infrastructure.
Bio Security Policy, 2010	Scope for Bio piracy.	<ol style="list-style-type: none"> 1. Strengthen intellectual property rights. 2. Strengthening of biodiversity register,
National Forest Policy 2011	<ol style="list-style-type: none"> 1. No proper information on privately owned trees on private land. 2. Perceived existence of biases in the allocation of timber permit against poor. 	<ol style="list-style-type: none"> 1. Govt. should allow use of private trees without any formal process. 2. Uniform treatment in the allocation of timber permit. 3. Fencing poles in rural areas should be given free especially for lower income groups. This is like a proxy compensation for wildlife damage.
RNR Research Policy 2012	Lack of research infrastructure and dedicated research based human resources.	<ol style="list-style-type: none"> 1. Need to develop R&D infrastructure and employ dedicated research staff. 2. RNR research must become detached from bureaucracy to maintain its integrity.
Agriculture Marketing Policy (Draft)	<ol style="list-style-type: none"> 1. Non-existence of sale counters for SHGs. 2. No existence of proper marketing strategy for rural products. 	<ol style="list-style-type: none"> 1. Establish sales counter at <i>Gewog</i> level. 2. Develop producer – consumer linkage through middleman.

Policies	Issues	Recommendations
Agriculture Development Policy (Draft)	<ol style="list-style-type: none"> 1. No insurance or compensation for any crop damage by wild animals. 2. Group subsidy on agricultural machines such as tractors is not benefiting the poor because they cannot pay hiring charges. 3. Seeds and saplings are given without any training on its proper use. 4. Improper timing of the supply of seeds and saplings. 	<ol style="list-style-type: none"> 1. Need to start crop insurance/compensation for crop damage. 2. Reduce hiring charges for agricultural machineries. 3. Target agricultural seeds and sapling subsidies. 4. Training should be initiated. 5. Vegetable seed subsidy needs to be reviewed.
Livestock Development Policy (Draft)	Low subsidy (30%) on the purchase of jersey cow restricts access to poor.	<ol style="list-style-type: none"> 1. Completely subsidize purchase of jersey cow by the poorest after stratifying the households. 2. For this buying jersey on loan, institute an insurance mechanism to replace a jersey incase it dies.

Policies	Issues	Recommendations
Agriculture Subsidy Policy (Draft)	<ol style="list-style-type: none"> 1. It's a reconstruction of existing guidelines and recommendations from select officials. 2. It is not representative of the views and experiences from the bottom. 	<p>A thorough research be undertaken for each category of subsidy</p> <p>Interventions to assess what is still valid and identify what needs to be deleted to make the policy pro-poor.</p>
Timber Pricing and Marketing Policy	<ol style="list-style-type: none"> 1. Private trees are not allowed to be traded even within the country. 2. Difficult to get timber for making community Lhakhang. 	<p>Need to review the policy.</p>
National Land Policy (Draft)	<p>Conversion of wetland to dry land.</p>	<p>Households facing shortage of water be allowed to convert wetland into other land categories.</p>

IV. Conclusion

126. One reason why growth has been more successful in some developing countries than others in reducing poverty is because policies have been in place to better connect up poor people and the growth process and to deal with the risks, vulnerabilities, and market failures, which hold back their participation. Subsidy remains to be an important player in building farm economies and poverty alleviation especially for the poor. Absence of a well-grounded formal subsidy policy for Bhutan's agricultural sector has perhaps led to some level of confusion and ineffective delivery of subsidies. Rural Livelihood program is found to be effective as its beneficiaries experienced greater rise in the income and savings as compared to others. The members also experienced greater food security. Socio economic conditions of the beneficiaries have also improved during the period. Yet, the benefits this program is not considered to be sustainable due to limited marketing support.

- i) The change in income has not translated into proportionately greater savings to all the groups and this would restrict their ability to invest and expand their business and asset base. There is need to embed policy framework within the RLP to promote small savings. This would make this program more sustainable.
- ii) Agriculture and livestock is rapidly becoming inefficient and has experienced decline in the income due to deep-rooted issue of lack of complementarity between public and private investment in this sector and resultant productivity decline.
- iii) The impact of subsidies is not in consonance with the overall objective, as it tends to favor and benefit the richer segment. Some of the most promising subsidies (in terms of their impact on income) are partial in nature and costs need to be shared, which makes it exclusive in nature. All the current subsidies in their present form promote inequality and benefit rich. This defies logic of subsidy, which aims to benefit the poor. There is a need to make these subsidies targeted, comprehensive, and combined with dissemination of technical knowledge. Losses related agriculture is also related to crop damage caused by wild life.

- iv Human wild life conflict causes crop damage and adversely affects the poor more due to limited coping alternatives. Electrical fencing is found to be an effective intervention but its coverage is highly limited. This intervention needs to be extended to cover wider population. Public resources saved from moving towards targeted subsidization can be used to finance extensive electric fencing.

- vi) Catch fishing is not very popular due to policy regulation but many view it as with great potential and a majority believe that ban on fishing should be lifted. It will not only boost the economy but also help to address the food self-sufficiency.

127. To sum it, RNR policies are all broad based policies and not pro-poor policies. This is perhaps one of the many reasons for stunted growth in the agricultural sectors especially for the poorest after almost 55 years of planned development. Future policies need to be targeted if they are to address poverty gaps and equity.

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APPENDIX 1. Summary of issues and challenges with existing policies as indicated by the RNR sector staff.

Existing Policy	Inadequate (%)	Too Broad (%)	Confusing (%)	No clear implementation modalities (%)	Do not reflect the present realities (%)	Do not reflect the needs of the users (%)	Not aligned to the mandates of the Ministry (%)	Is duplicating with other policies (please provide an example) (%)
National Irrigation Policy, 2012	Nil	20	60	20	Nil	Nil	Nil	Nil
Bio-Security Policy, 2010	25	25	25	25	Nil	Nil	Nil	Nil
National Food and Nutrition Security Policy, 2014	28.6	14.3	28.6	14.3	14.3	Nil	Nil	Nil
National Forest Policy, 2011	50	Nil	25	Nil	25	Nil	Nil	Nil
RNR Research Policy , 2012	25	25	25	Nil	25	Nil	Nil	Nil

Agriculture Marketing Policy (Draft)	50	16.7	Nil	33.3	Nil	Nil	Nil	Nil
Food Safety Policy (Draft)	33.3	16.7	Nil	33.3	Nil	16.7	Nil	Nil
Agriculture Development Policy (Draft)	60	Nil	20	Nil	Nil	20	Nil	Nil
Livestock Development Policy (Draft)	33.3	33.3	33.3	Nil	Nil	Nil	Nil	Nil
Agricultural Subsidy Policy (Draft)	25	Nil	50	Nil	25	Nil	Nil	Nil
Timber Pricing and Marketing Policy (Draft)	75	Nil	Nil	Nil	25	Nil	Nil	Nil
National Land Policy (Draft)	20	Nil	60	Nil	Nil	Nil	20	Nil