

**Government of Nepal  
Department of Livestock  
High Mountain Agribusiness and Livelihood  
Improvement Project (HIMALI)  
(ADB Grant No.: 0248-NEP (SF))**



**Environmental Compliance Monitoring Report  
of  
HIMALI Sub-projects  
(January 2016 to June 2016)**

**Prepared By**  
HIMALI Project  
Project Management Unit  
Harihar Bhawan, Pulchowk  
Lalitpur

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## EXECUTIVE SUMMARY

The High Mountain Agribusiness and Livelihood Improvement (HIMALI) Project being implemented by the Ministry of Livestock Development (MoLD) with grant assistance from ADB intends to increase income and employment of high mountain people through value chain development of their niche agricultural, livestock and MAPs/NTFPs. The HIMALI Project (the Project) has considered environmental component to address environmental issues of sub-project (SP) implementation. The IEE report of the Project has been approved by Ministry of Agriculture Development (MoAD) in August 2014. The sub-projects (SPs) under the Project are category "C" project and do not require EIA/IEE level of assessment.

The environmental safeguard of GoN and ADB is satisfactorily addressed in SPs planning and implementation stages. Out of 136 contracted SPs during the reporting period of January to June, 2016, 11 SPs of medium and large agribusiness are recommended for EDDR preparation as of environmental requirements of the project. Project procedural requirements such as screening of business plans, review of required documents and field verification are considered necessary during SP approval and planning phase. The Project has allocated 4.45 % of the total agreement cost (NRs 174 millions) for environment management related activities such as compost pit, grass cultivation, MAPs/NTFPs cultivation, irrigation management, plastic pond, bio-fertilizer, bio-pesticides, tree plantation, solar light set, solar drier and gloves. The Project has included environment management practice in all approved SPs and grantees are oriented on environmental issues during contract.

Environment compliance status of 384 SPs has been reported till June, 2016. Spoil management, landslide control and drainage management are not the significant issues in SPs. Compost pits are constructed by most of the SPs. It is reported that 5,579 trees were cleared by 384 SPs during construction and implementation stage. These SPs have planted for 9,934 trees as compensatory plantation. According to the available data, 202 SPs of livestock have used 2,614 trees for construction of sheds and these SPs have planted 10,869 fodder trees and 6,918 trees other than fodder trees. It is now reported that 170 SPs have planted about 21,560 trees of different species in private and forest land as plantation program. About 13,988 Uti trees have been planted in 12 SPs of cardamom productions. Grass cultivation is reported in 66 ha of land by 201 SPs (Yak/chauri/sheep/chyangra/cow). From the report from districts, Lokta and Argeli are cultivated on 50 ha of private land by 7 SPs of handmade paper. Occupational health safety measures and work camp facilities are considered by most of the SPs. No social conflicts and impact to indigenous people were noticed due to SP implementation. Till June 30, there are 77 MAPs/NTFPs SPs in which 42 SPs are for MAPs production. About 20 processing SPs are also promoting cultivation of these products. A total of 112,314 of apple, pomegranate, orange and kiwi have been planted in 90 ha of land by 44 SPs of Orchard management. The cultivation of MAPs/NTFPs and fruits on degraded and marginal land has served as a potential climate change mitigation measure. Nursery also sells 26,187 saplings of these plants. About 40 ha of land is cultivated by 12 SPs of cardamom production.

The Project has established GHM in PMU and DPC offices of all working district where the grievances are documented and redressed. Only two grievances such as water use and sheep grazing by 2 SPs of Sankhuwasabha were documented which have been redressed. Proponent of handmade SP of Dolkha has informed that Gaurishankar Conservation Area Project (GCAP) has not given an approved letter for 3280 kg stock of Argeli bark. The issue is under verification.

Few practices such as water resource management, grass land and forest management, degraded land management, additional trees plantation, alternate agriculture practice of MAPs/NTFPs cultivation, bio-briquette production, livestock waste management and integrated pest and nutrient management during agri-business implementation have helped not only to moderate harm of climate change but also to exploit beneficial opportunities for mountain people to adapt changing climate. The Project has been receiving environmental monitoring reports from districts. Now, the Project has focused on statistical information of environmental issues and their quality improvement. The environmental management practices will be considered by the Project/SPs during the toping up of SPs.

## ABBREVIATION

ADB:	Asian Development Bank
AEC:	Agro-Enterprise Centre
BPs:	Business Plans
CF:	Community Forest
CP:	Compensatory Plantation
DADO:	District Agriculture Development Office
DAES:	District Agribusiness Enterprise Specialist
DAM:	District Agribusiness Monitor
DDC:	District Development Committee
DDR:	Due Diligence Report
DFO:	District Forest Officer
DLSO:	District Livestock Service Office
DMC:	District Monitoring Coordinator
DMT:	District Monitoring Team
DPC:	District Project Coordination
EAM:	Environment Assessment and Management
ECMR:	Environmental Compliance Monitoring Report
EDDR:	Environment Due-diligence Report
EMMP:	Environmental Management and Monitoring Plan
GACs:	Grant Assessment Committees
GCAP:	Gaurishankar Conservation Area Project
GoN:	Government of Nepal
GRM:	Grievance Redress Mechanism
ha:	Hectare
HIMALI:	High Mountain Agribusiness and Livelihood Improvement Project
IEE:	Initial Environmental Examination
LNP:	Langtang National Park
MAPs:	Medicinal and Aromatic Plants
MoAD:	Ministry of Agriculture Development
MoLD:	Ministry of Livestock Development
NPWCs:	National Parks and Wildlife Conserves
NR:	Not Reported
NRs;	Nepali Rupees
NTFP:	Non-timber Forest Product
PAM:	Project Approval Memorandum
PMU:	Project Management Unit
The Project:	The HIMALI Project
USD:	US Dollar

# Table of Contents

Executive Summary .....	i
Abbreviation .....	iii
1. Background .....	1
2. Environment Safeguard in The HIMALI Project.....	1
3. Overall Environmental Safeguard Status .....	2
4. Compliance Status with Environmental Covenants .....	3
5. Institutional Arrangement .....	3
6. Compliance with Environmental Safeguard Measures .....	4
6.1 During Planning and Approval Phase .....	4
6.1.1 Project Procedural Requirement .....	5
6.1.2 Verification of necessary government's approval .....	5
6.1.3 Environment Screening and categorization .....	5
6.1.3 Public consultation minutes and resource use consent .....	6
6.1.4 Land Ownership .....	6
6.1.5 Environmental Assessment and Management Checklist .....	6
6.1.6 Incorporation of environment management practice .....	6
6.1.7 Budgetary Activities .....	6
6.1.8 Environment benefits by MAPs, Fruits and Cardamom SPs .....	6
6.2 During Implementation Stage .....	7
6.2.1 Soil erosion, landslide control measures, spoil management and drainage management...8	
6.2.2 Tree cutting and compensatory plantation.....	8
6.2.3 Grazing land management .....	8
6.2.4 MAPs/NTFPs and Land management by Orchard management and Cardamom .....	8
6.2.6 Waste generation and waste management system .....	9
6.2.7 Waste water management .....	9
6.2.8 Firewood Management .....	9
6.2.9 Water resource and irrigation management .....	10
6.2.10 Safety measures and public health.....	10
6.2.10 Management of Pesticides .....	10
6.2.11 Organic Farming.....	10
6.2.12 Social Conflicts and adverse impacts to indigenous people .....	11
6.2.12 Work camp facilities.....	11
6.2.13 Child labor .....	11
6.2.14 Employment and wage discrimination .....	11
6.2.15 Violation of laws and regulation of GoN.....	11
6.2.14 Field Visit and Orientation to Field Staff .....	11
6.2.15 Coordination with offices of District Forest, National Parks and Conservation Area....	11
6.3 Grievance handling mechanism .....	11
6.3.1 Institutional arrangement for grievance handling .....	12
6.3.2 Grievances received and addressed .....	12
6.4 Climate change adaptation measures .....	12
7. Corrective action and recommendation.....	13
Annexes	

## **1. BACKGROUND**

The High Mountain Agribusiness and Livelihood Improvement (HIMALI) Project being implemented by the Ministry of Agriculture Development (MoAD) (Now, Ministry of Livestock Development-MoLD) with grant assistance from ADB intends to increase income and employment of high mountain people through value chain development of their niche agricultural, livestock and MAPs/NTFPs. The Project assists farmers and downstream businesses to strengthen linkages and take advantage of the gradual improvement in infrastructure in order to create demand for mountain products. A demand driven approach has been used for mobilization of interested producer groups, provision of support for quality improvement, value adding and product aggregation into quantities of scale sufficient to attract demand-side business, stimulation of private sector agribusiness development and reduction of risk exposure to businesses investing in the high mountain districts. The Project grants is being provided to eligible entities for implementing viable agribusiness plans that demonstrate income and employment benefits in the project districts. The Project has three major components; Mountain Agribusiness Development; Value Chain Capacity Development; and Project Management.

## **2. ENVIRONMENT SAFEGUARD IN THE HIMALI PROJECT**

The major objectives of the ADB on the environment are to incorporate environmental component in development planning and integrate environmental safeguards across ADB operations. The HIMALI project has considered environmental component to address environmental issues of SP implementation. As per Safeguard Policy of ADB (2009), HIMALI Project is classified as environmental category “B” which requires preparing Initial Environmental Examination (IEE). The HIMALI Project had prepared an IEE report which has been approved by Ministry of Agriculture Development (MoAD) in August 2014. All the contracted sub-projects (SPs) are category “C” project and do not require EIA/IEE level of assessment. The agribusiness SPs under HIMALI project if not requiring an IEE study will be subjected to preparation of Environmental Due Diligence report (EDDR). In order to address environmental issues, the Project has developed/adopted formats of environment assessment and management (EAM) checklist with compliance to ADB’s environmental requirements. Environment is considered during all phase of business plans (BPs) approval, agreement and implementation.

The project procedural requirements such as submission of necessary documents (approval letter, recommendation letter and agreement paper), environmental screening of BPs by independent Grant Assessment Committees (GACs), field verification, incorporation of environment management practice during contract are considered during SP approval and planning phase. Similarly, environmental monitoring to ensure the compliance of mitigation measures during implementation stage is also considered by environment safeguard of the HIMALI Project. Besides assessing ADB’s and GoN regulatory requirements during planning and implementation phase, environmental compliance monitoring also assesses the compliances of contractual commitment made on environment, project environmental requirements for awarding grant, and implementation of environmental management practice. Compliance monitoring of SPs will be carried out by PMU, District level project staffs and other line agencies (MoAD, DADO, DLS, DFO, NPWCs, DDC etc.).

### 3. OVERALL ENVIRONMENTAL SAFEGUARD STATUS

The environmental safeguard requirements of GoN and ADB are satisfactorily addressed in SPs planning and implementation stages. The Project has adopted procedural requirements such as environmental screening and environment assessment and management (EAM) checklist review during business plans evaluation. Public consultation meeting minute, land ownership paper, required agreement papers, approval/recommendation letters (from DFO, CFUG, DADO, DLSO and Offices of National Park and Conservation Area) are also carefully assessed during BPs approval process. During evaluation, the project may also require additional documents for public consent for resource utilization, waste management plan, water source/demand, firewood source/demand and raw material source/demand. The field verification is also conducted to assess provided information in BPs and additional information suggested by the Project. Specific to the SPs categories, a simplified environmental management practice has been prepared and included to the SP contract document as recommended by IEE.

About 136 SPs have been contracted during the reporting period of January to June, 2016 out of which 3 SPs are categorized as large agribusiness (cost ranges above NRs. 5 million), 8 SPs medium agribusiness (cost ranges from NRs. 2 million to NRs. 5 million) and rest are categorized as small agribusiness (Cost up to NRs, 2 million). These medium and large SPs are recommended for environmental due diligence report preparation as of environmental assessment requirements of the Project. About 49% of contracted SPs (n=136) are of livestock i.e. goat/sheep/cattle/chaury rearing SPs. The Project has also contracted SPs of vegetable production (17), apple/walnut/citrus/orange production (6), Satuwa/Chiraito cultivation (19), piggery (7), Kiwi production (8), Fruit nursery (2), Bee keeping (3) and Cardamom cultivation (3). There are also the SPs of Rainbow Trout, Allo processing, Seabuck thorn squash production, Chino processing and Saffron cultivation. Till June, 2016, about 587 SPs are contracted, 31 SPs are ready for contract and 54 SPs are in administration process. None of these SPs requires environment assessments (IEE and EIA).

The Project has included the environment management related activities such as compost pit, grass cultivation, MAPs/NTFPs cultivation, irrigation management, plastic pond, bio-fertilizer, bio-pesticides, tree plantation, solar light set, solar drier and safety measures in SPs' activities. About 4.45% (i.e. NRs 7.7 million) of total agreement cost of NRs. 174 million has been allocated on these activities. The Project has also included grazing/pasture land management, forage and hay production, additional trees plantation, promotion of MAPs/NTFPs cultivation, compensatory trees plantation, organic farming, balance use of recommended pesticides, use of personal protective wares and use of alternative source of energy for drying/boiling/cooking and improved/modern drying methods in environment management section of contract document. The Project has also emphasized participation of women, local people, dalits, indigenous and deprived communities in SP related activities, resource utilization and social conflict. No violations of local traditions, culture and indigenous people, promotion of local labor, avoidance of under aged workers, written consent for utilizing common resources, slope stabilization through engineering and bioengineering measures, minimizing trees cutting (if unavoidable), adoption of balance cut & fills, provision of first aid kit, spoil management and construction of compost pits, soak pits, septic pits are considered during implementation of SPs. Grantees are also oriented in environmental issues and management during contract. Specific to the SPs, environment management and monitoring plan (EMMP) is also prepared and shared to the SPs during implementation.



PMU office and DPC offices of all districts have started documenting, redressing and reporting of received grievances. Only two issues of water source use related to Sita Cow Farm (01-040) of Khandbari Municipality-11 and sheep grazing by Kalika Sheep Farm (01-057) of Barabise VDC-3 in on neighbor's cardamom land were reported. The project has been receiving environmental monitoring reports from districts. Environment due diligence reports are also suggested for 11 medium and large agribusinesses which are under progress. The project is now focused on strengthening environmental compliance monitoring and reporting by structured formats, follow ups, feedbacks, orientations and training to the district team.

#### **4. COMPLIANCE STATUS WITH ENVIRONMENTAL COVENANTS**

There are 5 loan and grant covenants for safeguard specified for the project. Environmental safeguard related project are in compliance with covenants as regular follow up actions are being taken according to approved PAM and IEE report. (Refer to Annex 2 for Detail)

#### **5. INSTITUTIONAL ARRANGEMENT**

Regarding to the institutional arrangement, the project has established project management unit (PMU) in central level and District Project Coordination Office (DPC) in respective districts to monitor and evaluate SP status including environment safeguard compliance. MoLD has appointed a *Class I* officer from the Department of Livestock Services (DLS) as Project Director to head the project management unit (PMU). The PMU is responsible for overall implementation of both components 1 and 2, and coordination, monitoring and evaluation of the project. The PMU comprises government deputed staffs, contracted staffs and team of consultants to assist PMU and to monitor the SPs. For each of the 10 districts, the MoLD has assigned the Senior Officer of DLSO or DADO as District Project Coordinator depending on the predominant value chains and program profile. The DPCs have the provision of a team of District Monitoring Coordinator (DMC), District Agribusiness Monitor (DAM) and District Agro-enterprise Specialist (DAES) to assist DPC and to monitor from district level. DLS/DoA Regional Directorates of four regions (Mid-western, Western, Central and Eastern) have been assigned limited responsibilities for their coordination in training and technical services, monitoring and evaluation, reporting, in addition to line agency functions between center and district.

For planning stage environmental compliance, the project has the provision of environment and social safeguard specialists in Grant Assessment Committees (GACs) to screen environment requirements, necessary documents, environmental assessment and management (EAM) checklist during evaluation. They recommend SPs to incorporate additional information and suggestions. Along with the field verification format and suggestions provided by PMU, DMTs and DPCs conduct field verification. To ensure the safeguard compliance during planning and implementation stages, the project has also the provision of environment expert in PMU. Besides SPs visit, environment expert also prepares environment monitoring and reporting formats and enhances the capacity of district team for monitoring and reporting. With the help of structured checklist, DMTs are mobilized for environment compliance monitoring of SPs and their reporting to the project. Environment expert in PMU verifies required documents and sets indicators for planning stage during contract. The monitoring team in HIMALI project also includes required environment status during their regular SP monitoring.

The project has established grievance handling mechanism (GHM) in project management unit and district project coordinator offices of all working districts where the grievances from stakeholders are documented, redressed and reported.



Environment compliance monitoring and reporting is given in following chart.

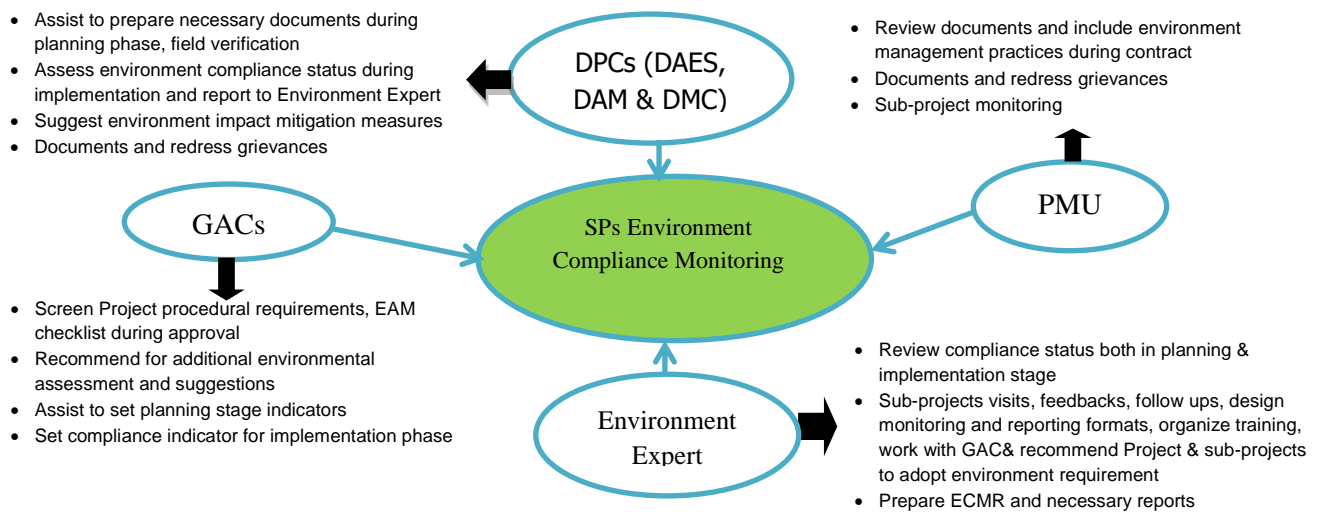


Fig 1: Chart showing institutional arrangement for environmental compliance monitoring and reporting

## 6. COMPLIANCE WITH ENVIRONMENTAL SAFEGUARD MEASURES

Compliance status of environmental safeguard measures for both planning and implementation stage is provided in Annex 1a and Annex 1 b (as prescribed by ADB). Planning stage compliance status is given for the reporting period of January to June, 2016 whereas Implementation stage compliance status is reported till June, 2016. District Monitoring Team of the respective districts use the formats to collect the information of trees cut/used during SPs implementation and compensatory plantation, additional plantation by SPs, fodder trees plantation and grass cultivation in livestock SPs, raw material used, their cultivation status and firewood demand for MAPs/NTFPs processing SPs, number of fruits trees, area of cultivation in fruits cultivation SPs and Utis plantation and area of cultivation in Cardamom SPs. The information are updated and sent to the Environment Expert of PMU in quarterly basis. Environmental expert verifies this information and compiles/updates them to produce semiannual environmental compliance monitoring report.

### 6.1 DURING PLANNING AND APPROVAL PHASE

The Project has followed the project and the government's procedural requirement during planning stage. The format of environmental compliance status during planning phase includes environment screening, environment categorization of SPs, EAM checklist, public consultation minute, resource use consent and budget for environment management related activities. 136 SPs are contracted during the reporting period of January to June, 2016. Environmental screening is carried out for all the contracted SPs. It is found that all the contracted SPs are "category C" project and DDR preparation is undergoing for 11 SPs of medium and large. All the SPs have submitted resource use consent paper, public consultation minute, EAM checklist along with the proposal. Environmental management practice are included and oriented to proponents during contract. 119 out of 136 SPs are allocated environment management related activities such as grass cultivation, bio-fencing, water conservation, solar use, bio-fertilizer, compost pit etc. A summary of environmental safeguard status during planning stage is given in the following table and detail status is provided in *Annex 1a*.

Table 1: Environmental safeguard status during planning stage

District/Code	Nos of SP contracted	Total Cost in NRs.	Nos of SP carried out environmental screening (%)	Environment category of the SP (A/B/C/FI)	Nos of SPs getting Permits from Forest/National Parks	Permits from DADO/DLSO (%)	Resource use consent received (%)	Public consultation minute included (%)	EAM is included in BP (%)	EMP included in contract (%)	Nos of SPs undergoing EDDR preparation	No of SPs with EM Related activities	EM Cost in Budget Agreement (NRs)	EM budget (%)
Sankhuwasabha (01)	11	12,011,846	100	c	5	100	100	100	100	100	1	7	263,300	2.19
Solukhumbu (02)	20	16,201,109	100	c	10	100	100	100	100	100	1	14	912,487	5.63
Dolkha (03)	37	48,843,495	100	c	18	100	100	100	100	100		33	1,512,917	3.10
Rasuwa (04)	24	20,840,638	100	c	21	100	100	100	100	100		23	673,000	3.23
Manang (05)	5	13,727,956	100	c	1	100	100	100	100	100	1	4	727,550	5.30
Mustang (06)	9	9,814,499	100	c	7	100	100	100	100	100		9	353,250	3.60
Dolpa (07)	17	34,042,068	100	c	11	100	100	100	100	100	6	17	2,472,559	7.26
Jumla (08)	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mugu (09)	11	14,846,014	100	c	5	100	100	100	100	100	1	10	754,466	5.08
Humla (10)	2	3,600,941	100	C	2	100	100	100	100	100	1	2	62,000	1.72
<b>Total</b>	<b>136</b>	<b>173928566</b>			<b>80</b>						<b>11</b>	<b>119</b>	<b>7731529</b>	<b>4.45</b>

### 6.1.1 Project Procedural Requirement

Environmental screening of BPs by environmental safeguard specialists of GACs as per the Project environment requirement and field verification by DPCs and district team are regular and on-going activities for grant approval phase. GACs also suggest type and level of environment assessment reports (IEE/DDR) required to be submitted by SPs. The project procedural requirements are assessed for all 136 contracted SPs.

### 6.1.2 Verification of necessary government's approval

Agreement paper, necessary permits and approval letter from government agencies such as DFO, CFUG, Office of National Park and Conservation Area, recommendation letter from DADO/DLSO are pre-requisite for the project evaluation and grant approval. These documents are carefully screened by DPCs, GACs and PMU as per need. Potential impacts such as deforestation, loss of grazing land, resource use issues and social conflict are being mitigated through such documents. The SPs such as chiraito/satuwa cultivation, forest grazing dependent livestock husbandry, seabuck thorn juice processing have submitted the permit from forest, national parks and conservation areas.

### 6.1.3 Environment Screening and categorization

All the contracted SPs were screened with reference of environment aspect. All SPs are found under "category C", thus do not require IEE and EIA level of assessment. However, the project has planned to prepare environment due diligence reports (EDDR) of 11 medium and large agribusiness SPs. The SP of Ayurved Medicine Production (Lumbini Ayurved Pharmacy Pvt. Ltd, Tilottama Municipality-20, Rupendhi) is a large SP of cost NRs. 43 Million which is requested to submit EDDR. The proponent of this SP is also agreed to prepare and submit an IEE report if requires in future.

### **6.1.3 Public consultation minutes and resource use consent**

The Project has assessed the community consultation minutes for all BPs during evaluation. The BPs without these minutes were either rejected or recommended to submit. Thus, all the contracted SPs have included community consultation minute. Besides few suggestions, these minutes also include resource utilization consent from community. Few SPs have submitted separate resources utilization consent of water and public grazing land from user groups.

### **6.1.4 Land Ownership**

The Project requires land ownership paper for construction activities. The activities such as grass/MAPs/NTFPs cultivation, vegetable production also requires land ownership document or written agreement for land lease. There is no land acquisition issue due to SPs implementation.

### **6.1.5 Environmental Assessment and Management Checklist**

It is found that EAM checklists are included in all submitted BPs. Questionnaires have been developed/adopted during field verification and SPs monitoring since the environment management practices in the submitted EAMs were not explained clearly and insufficient. The BPs without the EAM checklist is rejected.

### **6.1.6 Incorporation of environment management practice**

The screening questionnaires of the matrix and mitigation measures proposed initially are insufficient to address the potential impacts and their mitigation measures. Project has now started adopting SP's specific environmental management practice as contractual document. All 136 contracted SPs during this reporting period are provided an environment management practice. The environmental issues were discussed with the grantee during contract. The Project has also provided environmental management and monitoring plan (EMMP) to the SPs like of Nepali Handmade Paper, MAPs Processing and Slaughter Slab during implementation.

### **6.1.7 Budgetary Activities**

The Project has allocated about NRs. 7.4 million for activities of grass cultivation, compost pit, organic fertilizer, bio-pesticides, solar drier, solar set, irrigation management, tress plantation, NTFPs cultivation and plastic ponds etc. according to the nature of SP. Irrigation management such as reservoir, intake construction is considered for 22 SPs and a major amount (up to NRs 6,56,895) has been allocated in irrigation management in apple and vegetable cultivation SPs. 28 SPs of livestock has allocated about NRs. 15,00,000 for grass cultivation during the planning stage of this reporting period (January to June, 2016). Most of the SPs have allocated budget for compost pit construction.

### **6.1.8 Environment benefits by MAPs, Fruits and Cardamom SPs**

During the reporting period of January to June, 2016, The Project has contracted 16 SPs of apple production, Kiwi and fruit nursery which add environment benefits by increasing the number of trees, greenery in project areas. There are 19 SPs of Chiraito, Atis and Saffron production contracted under MAPs cultivation which also helps to manage the land. Besides planting Utis trees, cardamom production/nursery SPs has helped to utilize degraded land.

## 6.2 DURING IMPLEMENTATION STAGE

Physical, biological and socio-economic aspects are considered during implementation phase. The compliance status of 384 SPs has been reported till June, 2016. A summary of compliance status of implementation stage is given in Table 2 and detail status is provided in Annex 1 b.

Table 2: The summary of compliance status of implementation stage

District/ Code	Implementation Status of 375 SPs of 10 District							Trees Plantation status of 170 SPs from 8 districts		Grass cultivation status of 201 Livestock SPs from 10 district				Raw material & Firewood demand of 14 NTFP/MAPs processinf SPS of 4 district			Orchard Status of 44 orchards SPs from 8 districts					Status of 12 SPs of cardamom of 2 districts			
	Cut Trees	CP (Target)	CP (Planted)	Additional Plantation	Nos of grievances documented	No of grievances resolved	No of grievances under processing	Trees Plantation	Survived Plant Trees	Grass cultivation Area (Ropani)	Fodder Tree planted	Trees used for shed construction	Trees planted by SPs	Raw material (Lokta/Argelli /wintergreen / Jadibuti) demand/day	Area of cultivation of raw material (Ropani)	Quantit y of firewood	Number of fruits plant planned	Number of fruits plant planted	Other Plantation	Sapling sold	Area of fruit cultivation (Ropani)	Area of cultivation (Ropani)	Number of Utis Plantation	Firewood required /yr	
Sankhuwa sabha (01)	280	0	250	960	2	2	0	979	946	121	889	321	0	114	50	100	500	600	0	0	26	NR	NR	NR	
Solukhum bu (02)	306	3650	700	350	2	2	0	2020	1835	305	500	24	130	250	25	350	1600	1300	0	0	80	306	2398	5000	
Dolkha (03)	673	0	0	7878	0	0	0	NR	NR	184	3308	297	1604	3090	876	737	19539	21686	0	7661	210	486	11590	800	
Rasuwa (04)	641	284	169	140	0	0	0	235	134	333	3811	522	1751	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Managng (05)	1712	1600	5000	600	0	0	0	349	281	7	0	36	0	NR	NR	NR	50000	60742	0	7000	735	NR	NR	NR	
Mustang (06)	36	900	314	35	0	0	0	NR	NR	62	42	52	359	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Dolpa (07)	305	2744	536	11364	7	5	2	6862	4564	39	631	198	413	NR	NR	NR	37281	10180	526	526	526	NR	NR	NR	
Jumla (08)	810	0	300	300	1	1	0	1140	1140	48	879	564	803	115	120	450	11067	10110	436	9000	111	NR	NR	NR	
Mugu (09)	721	0	1220	307	5	3	2	8560	7974	28	344	535	953	NR	NR	NR	6425	7316	203	0	0	NR	NR	NR	
Humla (10)	95	2390	1445	1469	0	0	0	1415	917	142	465	65	905	NR	NR	NR	700	380	130	2000	102	NR	NR	NR	
<b>Total</b>	<b>5579</b>	<b>11568</b>	<b>9934</b>	<b>23403</b>	<b>17</b>	<b>13</b>	<b>4</b>	<b>21560</b>	<b>17791</b>	<b>1269</b>	<b>10869</b>	<b>2614</b>	<b>6918</b>	<b>3569</b>	<b>1071</b>	<b>1637</b>	<b>127112</b>	<b>112314</b>	<b>1295</b>	<b>26187</b>	<b>1790</b>	<b>792</b>	<b>13988</b>	<b>5800</b>	

### **6.2.1 Soil erosion, landslide control measures, spoil management and drainage management**

Soil erosion and landslide issues occur during construction and land preparation by SPs. As there are no major construction activities in HIMALI SPs, the landslide and soil erosion issues are not reported yet. However; the Project has encouraged SPs to adopt preventive measures to cope with those issues. Spoil generation is not the significant issue due to SP construction activities. All the generated spoils from minor construction activities are managed by SPs themselves. Drainage is considered for liquid waste and waste water from processing (Dairy/MAPs/NTFPs) and few livestock SPs which is managed by these SPs.

### **6.2.2 Tree cutting and compensatory plantation**

During the land preparation and to meet the requirement of firewood and wood for construction activities, trees are cleared by few SPs. It is reported that 5,579 trees were cleared by 384 SPs during implementation of which 2614 trees are used by 202 livestock SPs for shed construction. These 384 reported SPs have planned for 11,568 trees plantation as compensatory plantation. It is recommended that about 1,39,475 trees should be planted as the Project has the provision of compensatory plantation of 1:25 for cut trees. It is reported that 23,403 additional plantation (Annex 1b), 112,314 fruits cultivation (Annex 6) are done by the SPs. It is reported that 188 SPs of livestock (goat/sheep/chyangra/chauri/cow) have planted 10,869 fodder trees and 6,918 additional trees other than fodder trees (Annex 4). Similarly, 170 SPs have planted about 21,560 trees of different species in private and forest land. Tree plantation activities are provided in *Annex 3*. 12 SPs of cardamom has also planted about 13,988 Utis (*Alnus nepalensis*) trees for cardamom shade (Annex 7). Similarly about 1600 pine and apple trees are cleared by Agro-manang during land preparation and 600 utis trees are used by vegetable sub-projects of Solukhumbu during tunnel construction are two major sub-projects for tree clearance and tree use. Besides planting 50,000 high density apple trees, it is also reported that Agro-manang has planted 5000 trees of Bhote pipal, Dhupi and Salla in private land.

### **6.2.3 Grazing land management**

Besides getting prior approval from district forest office, community forest user group, national parks and conservation areas for livestock grazing, the SPs have also practiced few grazing land management practices. The SPs have allocated budget for grass cultivation in public and private land. Few SPs of livestock have also cultivated land in pasture land. The Project has supported for forage cultivation and encourage for hay production for winter feeding to livestock. Among 201 visited SPs of Yak/chauri/sheep/chyangra/cow, 107 SPs are reported their own grazing land and 20 SPs are under stall feeding. Grass cultivation on 66 ha (1269 Ropani) of land and plantation of 10,869 fodder trees plantation are reported till date. Proponents are encouraged for forage cultivation in marginal or waste land without compromising food security issues i.e. no forage cultivation at prime agriculture land. The coordination with district forest office/National Park and Conservation Area is also made to assess carrying capacity of forest grazing land. The details of grazing land (ownership/approval), fodder tree plantation and grass cultivation in livestock sub-projects are provided in *Annex 4*.

### **6.2.4 MAPs/NTFPs and Land management by Orchard management and Cardamom**

Sustainable harvestings of forest products (MAPs, NTFPs) are applied to maintain natural regeneration capacity of products. For the SPs especially MAPs/NTFPs processing, proponents

are encouraged to cultivate these products in marginal/waste land to meet the raw material demand and to reduce the pressure on forest. From the available report from districts, Lokta and Argeli are cultivated on 50 ha (1016 ropani) of private land by 7 SPs of Nepali handmade paper. Aromatic plant (*Gaultheria fragrantissima*-wintergreen-Machhino in Nepali) is cultivated on 35 ropani of land by 2 SPs (*Annex 5*). These SPs have received written approval for the raw material collection if the source is forest or community forest. District Forest and HIMALI team have agreed to assess sustainable yield of these products. Besides, the Project has also supported 77 SPs for MAPs cultivation.

The project has supported various SPs of Apple, Walnut, Pomegranate, Orange, Kiwi and cardamom cultivation which add the greenery. About 50000 apple plants in 28 ha by Agro-manang and 10,000 pomegranate plants in 2 ha by Tamakoshi agriculture farm of Dolkha are two major SPs in fruits cultivation. As of the report of 44 SPs of Orchard management, a total of 112,314 of apple, pomegranate, orange and kiwi have been planted in 90 ha (1790 Ropani) of land. Nursery also sells 26,187 saplings of these plants (*Annex 6*). About 40 ha (792 Ropani) of land is cultivated by 12 SPs of cardamom production SPs. The Project has also recommended bio-fencing (i.e. use of vegetation) if needed.

#### **6.2.6 Waste generation and waste management system**

According to the nature of SPs, wastes such as urine/manure from livestock, unused parts of vegetables, used plastics/bottles, date expired material and degraded products are generated. Compost pits are proposed for most of these SPs. Few SPs such as piggery, cattle farming have taken self-initiation for urine/manure and waste water collection pit. Organic degradable wastes are composted by pit or pile method. It is reported that few livestock SPs have practiced selling of manure and urine from which they are generating revenues. According to record book, Kaka Khatri cow farming SPs of Sankhuwasabha generates NRs 20,000 per month by selling 2 Tractor manure and urine. About 99,749 kg of animal manure and 25,660 Liters of urine were sold per month. The waste management and revenues from selling of manure and urine are also provided in *Annex 4*. A separate pit/practice for non-degradable waste (plastic, bottles etc.) management is suggested to the SPs.

#### **6.2.7 Waste water management**

Water is commonly used in processing and cleaning activities. Waste water is common in processing activities (Milk, Meat, NTFPs/MAPs and Juice) and livestock SPs. SPs are now paying attention to waste water management even though not considered initially or lacking in the SPs. Besides encouraging individual waste management practice, soak pits and septic tanks are also considered for processing SPs such as handmade paper, MAPs processing, fruit processing, dairy, slaughter slabs and livestock. It is reported that all Nepali handmade paper production SPs have constructed soak pit for waste water management.

#### **6.2.8 Firewood Management**

SPs such as Handmade Paper, Milk and Jadibuti processing, demand more firewood for cooking/drying activities. Other SPs of milk production, livestock, cardamom drying, also requires firewood for cooking activities. 1637 kg of firewood is daily needed by 14 SPs of MAP/NTFPs processing. This firewood is derived legally from community forest and private forest. SPs also require firewood for cardamom drying. According to proponent, about 30 kg of

firewood is required for drying 1 kg cardamom. It is reported that up to 2000kg/yr firewood is required by Namuna agriculture farm of Dolkha. 5800 kg/yr of firewood is used for cardamom drying SPs. SPs are encouraged for solar drier, modern cooking stoves and trees plantation to reduce the dependency on forest for firewood. Tora Juice SP of Mustang has been using electricity instead of firewood. Dairy of Mustang, they are demanding electric machinery for pasteurization process due to high cost of LPG gas and shortage of firewood. Dry fruits processing SP of Marpha has installed solar drier for fruits drying. The Project has recommended SPs to plant fast growing trees and additional plantation in private or marginal land to meet firewood demand. During the visit, it is found that the proponents have also managed their private forest for trees and wood, thus reducing the pressure on forest.

### **6.2.9 Water resource and irrigation management**

Written consent of water source utilization from user groups has mitigated the potential social conflict. SPs have allocated budget for construction of intake, reservoir tank, plastic ponds especially for apple cultivation and vegetable production. The water used for Trout SPs does not compete with community drinking water purpose. The trout SPs of Rasuwa have received approval from Langtang National Park (LNP) for water source utilization. It is recommended that the conservation of water source, assessment of alternative sources of water, water availability and water requirement are needed for sustainable use of water.

### **6.2.10 Safety measures and public health**

The Project has made the provision of protective gears like helmet, mask, gloves, shoes, apron etc. during SPs contract. Few processing SPs of lokta, milk and MAPs during machinery operation have also provided these safety gears to the worker. Few SPs have also allocated budget for gloves, mask and boots. Use of gloves and mask while handling and applying pesticides is recommended by SPs. In addition to the compulsory use of safety measures during performing work, it is suggested that first aid box should be made available at the site.

### **6.2.10 Management of Pesticides**

The SPs of vegetable and fruit production use the chemical pesticides to kill unwanted pests. Pesticides also kill the beneficial organisms like spiders, ladybird, beetles that are the predators of plant pests. Residual effect of chemical pesticides may remain in environment for long period and hence have harmful effects to the human health. So, SPs are suggested to use only prescribed dose of recommended chemical pesticides and sell their products only after pesticides effect is over. SPs have also allocated budget for bio-pesticides. It is also suggested to keep pesticides safely in a closed cabinet away from the reach of children.

### **6.2.11 Organic Farming**

Priorities have given for using compost, animal manure and bio-fertilizers as far as practicable. Soil and nutrient conservation techniques like cyclic cultivation, planting of nitrogen fixing leguminous plants, mulching, plantation of hedgerows etc. are also suggested to lower the use of chemical fertilizers. Awareness and training for composting and organic farming are also provided to the farmers. The use of pesticides is not noticed during visit as the SPs are located in high altitude and cold region.



### **6.2.12 Social Conflicts and adverse impacts to indigenous people**

No major social conflict issues and negative impact to the life of indigenous people were observed or reported yet. It is found that the indigenous people are also benefitted positively in terms of employment; entrepreneur and economic growth. The Project has the provision public consultation minute and source utilization consent which has reduced such impacts.

### **6.2.12 Work camp facilities**

Few SPs have constructed a guard room, store house or house for workers which should have toilets and drinking water facilities. Temporary labour camp with these facilities will be considered. Thus SPs are suggested to construct toilets and provide drinking water.

### **6.2.13 Child labor**

No children below 14 years are employed as labours in any project activities.

### **6.2.14 Employment and wage discrimination**

No wage discrimination for women performing similar nature of work is reported yet.

### **6.2.15 Violation of laws and regulation of GoN**

The Project/SPs have followed the rules and regulation of GoN during their implementation.

### **6.2.14 Field Visit and Orientation to Field Staff**

Total 384 SPs of implementation stages have been visited and compliance status has been incorporated/updated (*as given in Annex 1b*). Environment expert also visited 50 SPs of 3 districts (Rasuwa-12, Humla-16, Dolkha-22) during January to June, 2016 and field report of these visit were submitted to PMU. A summary of major environmental issues, mitigation measures and recommendation for visited SPs is given in *Annex 8*. A workshop is organized with PMU team, District Monitoring Team and environmental findings are shared. The photos during visit is provided in Annex 8.

### **6.2.15 Coordination with offices of District Forest, National Parks and Conservation Area**

Aide Memoire Review Mission of May, 2016 has also recommended the project's environment expert to coordinate with District Forest Offices to assess the availability of raw material of MAPs/NTFPs SPs and firewood requirement in these SPs. Environment expert has also visited offices of Makalu Barun National Park of Sankhuwasbha, DFO of Sankhuwasabha, DFO of Dolkha, and Lagngtang National Park were visited during SPs monitoring. Representatives of these offices have appreciated the project's activities. They also suggest to assess carrying capacity of grazing land, raw material availability in coordination with respective stakeholders.

## **6.3 GRIEVANCE HANDLING MECHANISM**

The Project and DPC offices of all districts have started documenting, redressing and reporting of received grievances. Grievances are also received during the SP monitoring.

### **6.3.1 Institutional arrangement for grievance handling**

DPC coordinator is the main responsible person in district to redress the grievances received. In Project, Project Director takes the responsibility for overall grievance handling. The HIMALI team of districts and PMU will receive the grievances. DPCs, DMCs, DAESs, DAMs and other stakeholders jointly deal the issues.

### **6.3.2 Grievances received and addressed**

Only two issues such as water use related to Sita Cow Farm (01-040) of Khandbari Municipality-11 and sheep grazing on neighbor's cardamom land by Kalika Sheep Farm (01-057) of Barabise VDC-3 were received during January to June, 2016. As we could not compromise water use to drinking purpose, assessment for water availability and water demand by SP and an alternate water source is recommended for SP. Besides getting public consent for water resource use grantee will contribute for water source conservation as well. For grazing Issue, it is recommended to prohibit sheep grazing in others private cardamom land. Make grantee to submit the clear plan for grazing area and compensation to the neighbor as well. The SP has also allocated budget for grass cultivation. Now these two issues are already redressed. The Grievances such as delay in reimbursement, partnership problem and tax clearance issues during implementation are locally resolved. Similarly during the visit by environment expert of HIMALI, Pahadi Nepali Bastu Udhyog Pvt. Ltd., Syama-7 (03-072) has complained about not receiving the approval letter for stock (3280 kg) of Argeli bark from Gaurishankar Conservation Area Project. According to the proponent, the area is now under GCAP. The Project is verifying the issues. Till date, the PMU/DPC has received 17 grievances, of which 14 grievances are redressed and 3 grievances are under verification and process of redress. According to the report from districts, most of the grievances are for agreement delay, budget reduction and financial release.

## **6.4 CLIMATE CHANGE ADAPTATION MEASURES**

Few practices during agribusiness implementation have helped not only to moderate harm of climate change but also to exploit beneficial opportunities for mountain people. Besides considering poverty reduction and food security of mountain people, water resource management, grass land and forest management, degraded land management, additional trees plantation, bio-briquette promotion, livestock waste management and integrated pest and nutrient management are few major practices adopted in agribusiness activities of the project which add mountain people to adapt changing climate. Improved crop and grazing land management to increase soil carbon storage, restoration of cultivated peaty soils and degraded lands, improved livestock and manure management to reduce CH<sub>4</sub> emissions, improved nitrogen fertilizer application techniques to reduce N<sub>2</sub>O emissions, improved energy efficiency, mulch farming, cover cropping, conservation tillage and water management are considered important for of climate change mitigation. The project has considered organic farming, use of compost and animal manure, organic fertilizer and bio-pesticides for the agriculture SPs.

Till June 30, there are 82 MAPs/NTFPs SPs in which 60 SPs are for MAPs cultivation and 22 processing SPs are also promoting cultivation of these products. These agriculture practices of MAPs cultivation and processing are also considered as an alternate agriculture practice to manage agriculture land and to reduce climate change impacts for mountain people. Among 302 contracted livestock SPs, there are 280 SPs of cow farming, goat farming, sheep rearing

and yak rearing which require forage cultivation or grass land management. The projects has also considered for forage production to reduce the pressure on forest and grass land. These activities have reduced the pressure on forest. There are 44 SPs of apple/orange/pomegranate/walnut cultivation production have increased the number of plants and helped combating soil erosion and land degradation. 27 SPs of Kiwi fruits production/nursery of Solukhumbu and Dolkha district have attracted the local people for cultivation which could be the alternate agriculture practice to increase their income. 17 SPs of cardamom has also helped to manage degraded land. 55 SPs of vegetable production (within Tunnel) and water management and source conservation may also help to adapt climate change impact. The Project has supported to construct water reservoir tank, drip irrigation, use of sprinkles, water source protection have helped as adaptation measures for potential water scarcity. The DPCs have established 199 (MAPs/fodder/fruits) nurseries. Similarly, the Project has also supported for the SPs such as bio-briquette production, incense production and rainbow trout farming as climate change and adaptation measures.

As the agriculture and forestry are the major potential for GHG mitigations, the project will emphasize the agribusiness activities with biological diversity, ecosystem service and forest and grazing land management to reduce vulnerability to climate change. The project has coordinated with district forest office, district soil conservation office, national park and conservation office for activities such as afforestation, reforestation, forest management, reduced deforestation rate, forage management, land management, water source/watershed management and conservation pond. The Project will give priorities on topping up of the SPs for increasing forest area, protecting watershed, managing degraded land, forage nursery management and plantation activities. The HIMALI project should consider the autonomous, the anticipatory and the planned climate change adaptation measures.

## 7. CORRECTIVE ACTION AND RECOMMENDATION

The project has been receiving environmental monitoring reports from districts. The project has focused on statistical information of environment related issues such as grazing land area, grass/fodder cultivation, tree loss, compensatory/additional plantation, waste/waste water management, firewood demand, raw material (NTFPs/MAPs) requirement etc. Besides monitoring environmental issues, suggesting mitigation practices and regular compliance reporting, the Project has considered a mechanism for quality information for coming day's plans. Issues and corrective action is given below:

**Table 1: Issue, corrective action, recommendation and responsible agency**

SN	ISSUES	CORRECTIVE ACTION & RECOMMENDATION	RESPONSIBLE AGENCY
1	Improving the quality on environmental monitoring and reporting	<ul style="list-style-type: none"> <li>Quality of environment monitoring and reporting will be enhanced through follow ups, feedbacks, orientation, training and workshop.</li> <li>Increasing field monitoring, regular environment reporting by district and providing feedbacks</li> </ul>	PMU/Environment expert
2	Adopting environment management practices those not	<ul style="list-style-type: none"> <li>Project/SPs will also focus on Environment management activities which are not included in budget.</li> </ul>	PMU/Proponent/DP C/Environment Expert

SN	ISSUES	CORRECTIVE ACTION & RECOMMENDATION	RESPONSIBLE AGENCY
	included in budget	<ul style="list-style-type: none"> <li>• Besides promoting and allocating budget (if needed) on Trees plantation activities, Forage cultivation, pasture management, Waste management plan, Electricity, solar energy to minimize firewood demand, safety measures, first aid box, Organic farming, bio-pesticides by SPs,</li> <li>• The Project (HIMALI) will consider environment management activities during topping up of the SPs.</li> </ul>	

# **Annexes**

Annex 1a: Status of Environmental Safeguards during Planning Stage (January to June, 2016)

Annex 1b: Implementation stage environmental compliance status (Till June, 2016)

Annex 2: Status of compliance with loan and grant covenants (As of June 30, 2016)

Annex 3: Monitoring Status of Plantation by SPs (Till June, 2016)

Annex 4: Environmental Status of Livestock SPs (Till June, 2016)

Annex 5: MAPs/NTFPs Processing SPs (Till June, 2016)

Annex 6: Fruits Orchard and Fruit Nursery SPs Status (Till June, 2016)

Annex 7: Cardamom SPs (Till June, 2016)

Annex 8: Summary of environmental status of visited SPs by Environmental Expert

Annex 9: Photographs