



# PAKISTAN SNOW LEOPARD AND ECOSYSTEM PROTECTION PROGRAM (PSLEP)

(PROJECT ID: 00095191)

## ANNUAL PROGRESS REPORT 2019

Doc. Ref: R19V01PSLEP, Date: January 19, 2019



Author(s)

Tayyab Shahzad<sup>1</sup>, Shafiqullah Khan<sup>2</sup>, Shoaib Hameed<sup>3</sup>, Hussain Ali<sup>4</sup>, Moiz Rafi<sup>5</sup> and Jaffar Ud Din<sup>6</sup>

Prepared for

United Nations Development Programme (UNDP), Pakistan  
4th Floor, Serena Business Complex, Khayaban-e-Suharwardy,  
Islamabad, Pakistan

<sup>1</sup>M&E Officer, <sup>2</sup>RPM-Chitral, <sup>3</sup>RPM-AJK, <sup>4</sup>RPM-Gilgit, <sup>5</sup>Comm. SP, <sup>6</sup>NPM-PSLEP

## CONTENTS

---

1.	PROJECT SNAPSHOT.....	1-1
2.	INTRODUCTION.....	2-2
2.1	BACKGROUND.....	2-2
2.2	PROJECT STRATEGY.....	2-3
2.3	SNAPSHOT OF THE ACTIVITIES 2019.....	2-3
3.	PROJECT PERFORMANCE AND RESULTS.....	3-5
3.1	CONTRIBUTION TOWARDS COUNTRY PROGRAM OUTCOME.....	3-5
3.2	PROGRESS TOWARDS PROJECT RESULTS/OUTPUTS.....	3-7
3.2.1	Progress towards project output I.....	3-7
3.2.2	Progress towards project output II.....	3-1
3.2.3	Progress towards project output III.....	3-7
3.2.4	Progress towards project output IV.....	3-14
4.	CONSTRAINTS, LESSONS LEARNT AND WAY FORWARD.....	4-17
4.1	CONSTRAINTS FACED AND PROJECT STRATEGY.....	4-17
4.2	LESSONS LEARNT.....	4-18
4.3	WAY FORWARD.....	4-18

## ANNEXURES

ANNEXURE I:	SCHEMATIC OF THE LIVESTOCK SUPPORT FUND.....	I-1
ANNEXURE II:	GLIMPSE OF THE COMMUNICATION DRIVE.....	II-2

## TABLES

Table 1 .	Project snapshot 2019.....	1-1
Table 2.	Major project results contributing towards country program outputs ....	3-5
Table 3.	Progress towards output 1.....	3-7
Table 4.	Overall rating of the output 1.....	3-1
Table 5.	Progress towards output 2.....	3-1
Table 6.	Overall rating of the output 2.....	3-6
Table 7.	Progress made to achieve output 3.....	3-7
Table 8.	Overall rating of output 3.....	3-12
Table 9.	Progress made to achieve output 4.....	3-14
Table 10.	Overall rating of output 4.....	3-16

## **FIGURES**

<b>Figure 1. Glimpse of the research activities .....</b>	<b>3-11</b>
<b>Figure 2. Species-habitat integrated approach for PA assessment .....</b>	<b>3-4</b>
<b>Figure 3. Outline of the proposed diploma course in wildlife management .....</b>	<b>3-5</b>
<b>Figure 4. Glimpse of the activities accomplished under project output 3 .....</b>	<b>3-13</b>

## ACRONYMS

AJ&K	Azad Jammu and Kashmir	LCC	Landscape Coordination Committee
AJKRSP	Azad Jammu and Kashmir Rural Support Program	LMP	Landscape Management Plan
AWP	Annual Work Plan	LS	Landscape
CKNP	Central Karakoram National Park	M&E	Monitoring and Evaluation
CMCAs	Community Managed Conservation Areas	METT	Management Effectiveness Tracking Tool
CPD	Country Program Document	MoU	Memorandums of Understanding
DFOs	Divisional Forest Officers	NGOs	Non-Government Organization
DGs	Director Generals	NPM	National Project Manager
DNA	Deoxyribonucleic acid	NTFP	Non-Timber Forest Products
DPC	Direct Project Costs	PA	Protected Area
ESRI	Environmental Systems Research Institute	PSLEP	Pakistan Snow Leopard and Ecosystem Protection Program
GB	Gilgit Baltistan	RFOs	Range Forest Officers
GEF	Global Environment Facility	RPMs	Regional Project Managers
GHGs	Greenhouse Gases	SLF	Snow Leopard Foundation
GIS	Geological Survey of Pakistan	SLIMS	Snow Leopard Information Management System
GLOFs	Glacier Lake Outburst Floods	SLT	Snow Leopard Trust
GPS	Geographical Positioning System	ToRs	Terms of Reference
GSLEP	Global Snow Leopard and Ecosystem Protection Program	UNDAF	United Nations Development Assistance Framework
HWF	Himalayan Wildlife Foundation	UNDP	United Nations Development Program
IGF	Inspector General Forests	VVCCs	Valley Conservation Committees
IUCN	International Union for Conservation of Nature and Natural Resources	WCS	Wildlife Conservation Society
IWT	Illegal Wildlife Trade	WWF-P	World Wildlife Fund for Nature, Pakistan
KKNP	Khunjerab National Park		
KKP	Khyber Pakhtunkhwa		
Lab.	Laboratory		

## 1. PROJECT SNAPSHOT

**Table 1 . Project snapshot 2019**

Title	Description
Date:	31 December 2019
Award ID:	00088620
Project ID:	00095191
Project Title:	Pakistan Snow Leopard and Ecosystem Protection Program
Project Start Date:	1 <sup>st</sup> September 2018
Project End Date:	31 <sup>th</sup> August 2023
Implementing Partner:	Snow Leopard Foundation
Responsible Parties:	Ministry of Climate Change, Forest & Wildlife Departments of Gilgit-Baltistan (GB), Khyber Pakhtunkhwa (KP) & Azad Jammu and Kashmir (AJ&K)
Project Budget (all years):	US\$19,774,521
Core Resources:	
Non-Core Resources:	
Government contribution (In kind):	US\$13,860,000
Non-Government (In kind + In Cash)	US\$1,270,000
Donor GEF	US\$4,644,521

### Project Brief Description and Outputs:

This project is to promote a landscape approach for survival of snow leopard and its prey species by reducing threats and applying sustainable land and forest management in critical habitats in Northern Pakistan.

### Overall Project Quality Rating (mark on the scale of 1 to 5 as per the following criteria):

Exemplary (5) *****	High (4) ****	Satisfactory (3) ***	Poor (2) **	Inadequate (1) *
All outputs are rated High or Exemplary	All outputs are rated Satisfactory or higher, and at least two criteria are rated High or Exemplary	One output may be rated Poor, and all other criteria are rated Satisfactory or higher	Two outputs are rated Poor, and all other criteria are rated Satisfactory or higher	One output is rated Inadequate, or more than two criteria are rated Poor
	✓			
Budget 2019	US\$1,122,847.00			
Expenditure 2019	US\$1,001,899.00			
Delivery %	89%			

## 2. INTRODUCTION

---

### 2.1 BACKGROUND

The high range Himalayan ecosystem in Pakistan is of critical importance for the biodiversity and ecosystems of global significance that harbor and forms an important life-support system for a large number of remote agro-pastoral communities. This region provides a number of essential ecosystem services – a source of freshwater, maintains hydrological functions, reduces erosion and sedimentation downstream, provides food security and maintains land races of food crops grown in much of northern Pakistan. Hundreds of millions of people depend on these ecosystems for water, food, agriculture, forage for livestock, mineral resources, medicinal and aromatic plants and their products, cultural traditions and spiritual values, and inspiration that draws increasing number of people from around the globe to experience these places. This ecosystem also supports many threatened animal and plant species such as snow leopard (*Panthera uncia*), other sympatric carnivores such as brown bear, wolf, and their natural prey (six species of wild ungulates) many of them are of high economic and ecological importance.

The distributional range of the snow leopard in Pakistan is around 80,000 km<sup>2</sup>, spread across the mighty mountain ranges of the Hindu Kush and Hindu Raj in KP and the Karakoram, Pamir and Himalaya in GB and AJK. The project target area is located in northern Pakistan and spans across the snow leopard habitat in GB, KP and AJ&K. This region encompasses permanent snowfields and cold desert in the northern most part, extensive sub-alpine scrub (including juniper), dry temperate coniferous forest (including spruce, Himalayan pine), and mixed deciduous and coniferous forest (Himalayan moist temperate forest, including Himalayan poplar and Indian maple), respectively. The project will establish three 'model' snow leopard landscapes, Hindu Kush, Pamir-Karakoram and Himalayan, covering a total area of 6 million ha. These model landscapes include important PAs (e.g. Central Karakoram National Park or CKNP and Khunjerab National Park or KNP) as well as hunting regions, community lands, unprotected critical wildlife corridors and rangelands that include juniper and birch forest. The three landscapes together include: 676,000 ha of rangelands (including alpine meadows and sub-alpine scrub with juniper), 1.47 million ha agriculture, 67,000 ha of coniferous and mixed deciduous and coniferous forest, with the rest comprising rivers, lakes, rock and snow-covered areas. Collectively, these three landscapes represent critical and contiguous snow leopard habitat that provides trans-boundary connectivity with snow leopard landscapes in Afghanistan, India and China.

The strategic framework for this project is the National Strategy and Action Plan for the Conservation of Snow Leopard, 2014 – 2020. The main goal of the strategy and action plan is to prevent the decline of the Snow Leopard population in Pakistan. The plan defines the following critical areas for intervention: reducing habitat loss and degradation; reducing livestock impact on wild prey base; reducing retaliatory killing of snow leopard; improving institutional capacity; improving awareness; and addressing climate change.

Northern Pakistan has been a major focus of conservation efforts by the government and leading conservation organizations. Although snow leopard was not the prime focus of many projects undertaken in northern Pakistan in the past, yet they have contributed to snow leopard conservation in various ways ranging from enhancing awareness to improving habitat quality and prey base. There are a number of government projects funded through the federal and provincial budgets. The main

focus of conservation efforts through these projects is on controlling wildlife crime, maintaining watch and ward, management of protected areas, and species and habitat management. Existence of the infrastructure and staff of government departments and NGOs impart surveillance necessary to control wildlife poaching, and has promoted awareness on wildlife legislation and conservation efforts in rural communities.

Despite the immense biological, socio-cultural and hydrological values of the Himalayan ecosystems, these natural ecosystems are under severe threat from high dependence of local communities on natural resources, pressures from economic development, selective removal of medicinal and aromatic plants, and the emerging threat of illegal wildlife trade and wildlife crime. Main threats to biodiversity and ecosystem services in the project area include overgrazing within rangelands, illegal timber harvesting, and unsustainable gathering of fuel wood and non-timber forest products (NTFPs), illegal hunting and killing of wildlife and human-wildlife conflict and Climate change impacts. There are four key barriers to conservation and sustainable management of snow leopard landscapes in northern Pakistan, these include: Absence of a landscape-level approach to snow leopard conservation; Inadequate representation and protection of important habitats, including forests, in the existing PA network; Insufficient involvement and support of local communities towards conservation solutions and Lack of knowledge, awareness and skills necessary for wildlife monitoring, wildlife crime detection and effective conservation decision-making.

## **2.2 PROJECT STRATEGY**

To address threats to snow leopard and its mountain ecosystem, the project adopted a landscape approach to conservation and management by ensuring that key biodiversity areas, buffer zones, corridors and areas outside traditional protected areas that are critically important for conservation of endangered snow leopard and associated species and habitats are managed in tandem with the sustainable use of these resources and improvements in livelihoods of local communities living in this region. The project's incremental value lies in promoting the sustainable management of alpine pastures and forests in the high range Himalayan ecosystems to secure conservation of globally significant wildlife, including endangered snow leopard and their habitats. And at the same time ensure sustainable livelihoods and socio-economic benefits for the community in the three high altitude landscapes in the Himalayan region (that consists of alpine pastures, sub-alpine forests and critical watersheds). This will be achieved through the four inter-related components of the project, these are: 1) Landscape level approach for snow leopard conservation; 2) Protected Area expansion and strengthening; 3) Participatory conservation in snow leopard model landscapes through sustainable community development; and 4) Support for international cooperation and conservation and management actions informed by knowledge, awareness and monitoring and evaluation. These actions are aimed at conserving the snow leopards, wild prey and associated species and habitats contained within these landscapes through measures such as maintaining their ecosystem values and ameliorating climate change impacts, enhancing surveillance, monitoring and inter-provincial and trans-boundary cooperation to reduce wildlife crime and related threats, and improving knowledge and communications.

## **2.3 SNAPSHOT OF THE ACTIVITIES 2019**

Landscape management arrangement were made by establishing Landscape Coordination Committees (LCC) in GB and KP during the year 2019. A meeting of the LCC was convened in GB. The establishment of the LCC was initiated in AJK and regular follow up was maintained with state level

authorities. Two meetings of the Project Steering Committee (PSC) were conducted to appraise project progress and envisage support for the National Project management Unit (NPMU) during project execution. Landscape Management Plan (LMP) for the Karakoram-Pamir Landscape was drafted using the GSLEP guidelines. Two camera trapping studies one each in Himalaya and Hindu Kush Landscapes were conducted. Genetic sampling continued in the three landscapes. The data collected through these studies will be pooled and analyzed to validate snow leopard population in the country by the end of the project. Rut season surveys of ibex, markhor, and blue sheep were initiated in 50 valleys of the three project landscapes. The outcomes of these studies will be used to develop Red Data Book of the ungulate species in Pakistan being initiated by the Ministry of Climate Change (MOCC). Prior, initiation of the surveys, more than 150 field staff of the Panjab, GB, KP and AJK Wildlife Departments were trained in “Double Observer” survey techniques. Similarly, agreement was signed with the EvK2CNR for assessment of the rangelands in the model landscapes and data collection started. This study will be completed by the end of 2020 and result in the development of the rangeland management plans and strategies for the three landscapes. Lastly, a two weeks international training in “Design, survey and analysis of wildlife populations” was organized in Islamabad. Four international ecologists facilitated this training attended by participants from all the provinces, research organizations and academia.

Assessment of the existing PAs in the model landscapes for their effectiveness and coverage to support threatened species like snow leopard was initiated. Habitat Suitability Maps (HSMs) of the key species was developed based on the hard evidences collected from the three landscapes. HSMs developed for each species were merged to produce composite map. Composite map was penalized with human impact score to develop final environmental value map. Boundaries of the existing PAs were overlaid on the environmental value map to identify gaps. This map will be further improved in 2020 by repeating the analyzes with new data. To improve wildlife surveillance in the project sites, 100 sets of field gear were procured.

Ecotourism activities were initiated in Hopper Valley, District Nagar in GB. Ecotourism development and business plans were drafted. More than 30 community members were trained as tour guides. Implementation of the ecotourism plan was initiated and construction work on the Tourist Information/Facilitation Centre, Wildlife View Point and Glamping sites was started. Development of the ecotourism plans for Rupal and Bagrote valleys was initiated and first draft will be produced by the end of January, 2020.

Development of tools and plans for the investigation of illegal wildlife was initiated by engaging WWF-P. Equipment/tools required for the investigation of crime and illegal wildlife trade was procured in consultation with the consultant.

Social mobilization and community organization drive launched in the 17 project sites, under component three of the project which resulted in the establishment of 12 Valley Conservation and Development Organizations (VCDOs). This was followed by the drafting of the Valley Conservation and Development Plans (VCDPs) in 13 valleys in consultation and input from the VCDOs. As part of the implementation of the VCPDs, a two week long training in animal health and production was organized for the 33 community members in collaboration with the Islamabad Wildlife Board and National Agriculture Research Council, Islamabad. Vaccines for the prevalent and contiguous diseases were procured and distributed in the communities. The trained community members, hereinafter called Ecosystem Health Workers administered vaccines to ~200,000 animals in their respective valleys. Moreover, Livestock Support Fund was established in 11 valleys to compensate livestock losses due to predators. Construction of the 12 predator proof corrals was initiated. Forty-two (42)



Community Wildlife Guards were engaged in consultation with the communities and provincial wildlife departments in the three landscapes. About 400 hectares of forest patches were protected through social. To reduce pressure on the forests for fuel wood, provision of the LPG was piloted in one valley of AJ&K.

Consultants were engaged to develop guideline for the establishment of revolving fund and identify potential for value chain of crops, NTFPs and local enterprises i.e. handicrafts.

Implementation of the national and regional communication plans was accomplished as per approved work plan. Major interventions under this component included development of the documentary on ecotourism, development and dissemination of resource material, and mass awareness campaigns on the eve of the international environmental days such as Snow Leopard Day, Wildlife Day, Biodiversity Day, etc. Twenty-five (25) Snow Leopard Clubs were established in schools falling in the project sites in AJK, GB and KP and Nature Study Camps were organized for the schoolchildren. Workshop for the journalist in reporting of the environmental issues was organized.

### 3. PROJECT PERFORMANCE AND RESULTS

---

#### 3.1 CONTRIBUTION TOWARDS COUNTRY PROGRAM OUTCOME

This project contributes to the **Outcome 6** of the United Nations Development Assistance Framework (UNDAF)/Country Program Document (2018-2022). The Outcome 6 reads as “the resilience of vulnerable populations is increased by addressing and mitigating naturally and human-induced disasters, including climate change mitigation and adaptation measures, and sustainable management of natural resources”.

The project supports accomplishment of the Country Program Output 6.3 “Legal and regulatory frameworks and policies are in place, and institutions capacitated for the conservation, sustainable use, inclusive access and benefit-sharing of natural resources, biodiversity, chemicals, waste management and ecosystems”.

Description of output level and high/outcome level results achieved in 2019 are summarized in table 2.

**Table 2. Major project results contributing towards country program outputs**

Major results contributing towards country program outputs, achieved during the reporting period (Jan-Dec, 2019) include the following:

- Landscape Coordination Committees (LCCs) were established in GB and KP during the reporting period. A meeting of LCC in GB was convened on May 16, 2019. Similarly, 3<sup>rd</sup> meeting of the PSC was facilitated on June 25, 2019.
- Memorandums of Understandings (MoUs) were signed with the KP Wildlife Department and University of Chitral to get them on board in project implementation.
- Landscape Management Plan of the Karakoram-Pamir Landscape was drafted as part of the accomplishment of the National Goals of the Global Snow leopard and Ecosystem Protection Program (GSLEP).

- Two camera trapping studies one each in Himalaya and Hindu Kush Landscapes were conducted. Genetic sampling continued in the three landscapes. The data collected through these studies will be pooled and analyzed to validate snow leopard population in the country by the end of the project. Rut season surveys of ibex, markhor, and blue sheep were initiated in 50 valleys of the three project landscapes. The outcomes of these studies will be used to develop Red Data Book of the ungulate species in Pakistan being initiated by the Ministry of Climate Change (MOCC).
- Twelve Valley Conservation and Development Organizations (VCDOs) were established.
- Thirteen Valley Conservation and Development plans were drafted for Gurez and Shaunther valleys in AJ&K; Ujnu, Wasech, Shagrom, Lonkoh and Zondrangram valleys in KP; Astak, Lower and Upper Braldu, Hisper, Hoper, Tormik and Basha valleys in GB.
- Ecotourism was initiated in Hopper valley by developing ecotourism development plan and business plan. Implementation of the plan was initiated by arranging training community members as tour guides and development of the Tourist Information/ Facilitation Centre, Wildlife View Point and Glamping sites.
- Thirty-three community members were trained as “Ecosystem Health Workers” and ~200,000 livestock in the 3 project landscapes were vaccinated. Livestock Support Fund was established in 11 valleys to reduce human-snow leopard conflict and enhance public tolerance of carnivores. Twelve (12) predator proof corrals were constructed as part of the human-wildlife conflict mitigation measures.
- Forty-two community wildlife guards were engaged. About 400 hectares of forest patches were protected through engaging community forest guards.
- Support in LPG was provided to communities in one valley of AJ&K as an SFM measure.
- Capacity building of the line departments and other stakeholders continued. Lastly, a two weeks international training in “Design, survey and analysis of wildlife populations” was organized in Islamabad. Four international ecologists facilitated this training attended by 30 participants from all the provinces, research organizations and academia. National and provincial level workshops on assessment of the wild ungulates were attended by 150 participants.
- The awareness raising activities included celebration of International Snow Leopard Day, Biodiversity day, Wildlife day, development and dissemination of resource material, establishment of Snow Leopard Clubs (25) in schools, nature study camps, documentaries on success stories, teachers’ trainings and media workshop, etc.

**Means of Verification:**

Workshop reports, Survey reports, Field visit reports, Photos, Habitat Suitability Models & Maps, Draft Valley and Landscape management Plan, Documentaries, Resource Materials

## 3.2 PROGRESS TOWARDS PROJECT RESULTS/OUTPUTS

PSLEP project has four broad but interrelated components including 1) Landscape level approach for snow leopard conservation; 2) Protected Area expansion and strengthening; 3) Participatory conservation in snow leopard model landscapes through sustainable community development; and 4) Support for international cooperation and conservation and management actions informed by knowledge, awareness and monitoring and evaluation, respectively. Description of the progress made under each project component during the reporting period is summarized below.

### 3.2.1 Progress towards project output I

Output 1 of the project read as “Improved management of snow leopard landscapes that integrates sustainable forest and land management and compatible conservation practice”. Progress made under this output during the year 2019 is tabulated below.

**Table 3. Progress towards output 1**

Indicators	Baseline	Targets	Achievement (s)
1.1 Extent to which Institutional frameworks are in place for integration of conservation, sustainable natural resource use, control and management of wildlife crime and illegal wildlife trade and improved livelihoods into landscape planning and management	Multiple use sustainable landscape planning and management approaches absent or limited within Northern Pakistan	Multiple use landscape frameworks agreed with key stakeholders and functioning	MoUs were signed with the KP wildlife department and University of Chitral; LCC was notified in KP, while already in place in GB; Pursued notification of LCC in AJK; Meetings of the LCCs convened
1.2 Area of snow leopard habitat under integrated landscapes management	Approximately 10,000 hectares currently managed effectively in protected areas	Landscape management Plan developed for Karakorum Pamir landscape	Landscape Management Plan (LMP) of the Karakoram-Pamir Landscape was drafted. Baseline developed for the Hindu Kush and Himalaya Landscapes. The three landscapes cover 5,918,800-hectare area and constitute 74% of the snow leopard range in the country

Indicators	Baseline	Targets	Achievement (s)
1.3 Status of snow leopard and associated endangered species populations in the landscapes	Snow leopard population estimate at + 200 individuals in Northern Pakistan with associated species baselines as: Karakoram-Pamir LS: Ibex-4,900; Markhor 230; blue sheep – 750; Ladakh urial -50 Hindu Kush LS: Markhor-3,400 Himalaya LS: musk deer, brown bear	Snow leopard (4 valleys) and associated species (16 valleys) baselines validated and monitoring showing stable or improving population trends	Camera trapping study was conducted in CGNP and Astore District of GB over an area of >4,000km <sup>2</sup> . Snow leopard was captured in Astore but not in CGNP. Similarly, another study initiated in the markhor belt in lower Chitral  Rut season survey of wild ungulates was initiated in 50 watersheds in the three landscapes as part of the support to the MOCC to develop Red Data Book of ungulate species in Pakistan.  Genetic sampling was conducted in core and buffer zones of CKNP, 12 valleys in GB and three valleys in buffer zones of Chitral Gol National Park in KP.
1.3b Number of additional people benefiting from strengthened livelihoods through solutions for improved management of natural resources and provision of ecosystem services	Fragmented and stand-alone community managed activities currently exists in the 3 landscapes (scale 1)	(scale 2): At least 500 households are directly benefiting from improved sustainable grazing management and diversified and alternative livelihoods and incomes	Activists from four valleys in GB and KP were trained in pasture assessment. Baseline data for the activity was collected from four valleys.  ~200,000 livestock vaccinated  Eleven Livestock Support Fund and 12 predator proof corrals constructed benefiting >500households

## 1. Description of output level results achieved in 2019:

### 1.1.Functional multi-sector and multi-stakeholder coordination and governance mechanisms developed, discussed with stakeholders and supported

The Landscape Coordination Committee (LCC) in KP was established and notified. The Deputy Commissionaire, Upper Chitral will Chair the LCC meeting with representation from the relevant line departments, academia and communities. The establishment of the LCC for AJ&K is in process. Similarly, LCC in GB had been notified in 2018. The first meeting of LCC in GB was held on June 25, 2019 under the Chairmanship of the Secretary, Environment, Forests and Wildlife. The meeting was attended by 25 members of the committee. Progress and future plan of PSLEP was appraised in the meeting.

## **1.2. Landscape level spatial zoning and management agreements that integrates biodiversity, ecosystem services, climate mitigation, sustainable community resource use and socio-economic considerations developed, approved and implemented**

Landscape Management Plan of Karakorum-Pamir landscape was drafted using the GSLEP guidelines. Outline of the LMP is as under.

- i. Foundation for Developing Management Plan for the Karakoram Pamir Landscape Context
- ii. Background Information and Attributes of Karakoram-Pamir Landscape
- iii. Socio Economic and Cultural Setup in Karakoram-Pamir Landscape
- iv. Stakeholders in Karakoram-Pamir Landscape
- v. Threats to Snow leopards and Associated Biodiversity
- vi. Obligations for Karakoram-Pamir Landscape Management
- vii. Management Vision and Objectives for the Karakoram-Pamir Landscape
- viii. Identifying socio-ecologically Important and Suitable Landscape Units in the Karakoram Pamir Landscape
- ix. Management Interventions to Address Threats to Wildlife
- x. Framework for Cooperation, Coordination and Governance Mechanism for the Management of Karakoram-Pamir Landscape
- xi. Research, Monitoring and Capacity Building in the Landscape
- xii. Education and Awareness
- xiii. Promotion of Conservation tourism
- xiv. Funding Mechanism
- xv. Summary of Prescriptions and Budgets

Furthermore, baseline of the Hindukush and Himalaya landscapes was developed. Data was analyzed and background chapters were drafted.

## **1.3. Participatory monitoring for snow leopard, other endangered species and prey species developed and implemented to inform management responses**

### a) Assessment of snow leopard and sympatric carnivores

A research study was completed in Chital Gol National Park in collaboration with the KP Wildlife Department, University of Chitral and local community members to assess the occurrence and abundance of snow leopard and other wildlife species. Another study is underway in the markhor belt of lower Chitral to assess snow leopard occupancy, distribution and abundance. A total of 70 trap stations will be set across 3,000 km<sup>2</sup> area. These trap stations remained operational for 40-50 days to allow construction of Spatial Capture Mark Recapture Models to estimate snow leopard abundance and occupancy. A study launched in Astore District of GB in 2018 was completed in 2019. Photos of the major species captured are listed in table 4.

Non-invasive genetic sampling has emerged as a promising tool to understand ecology of elusive species such as snow leopard. Genetic samples (scats) were collected from most part of the project

landscapes in AJK, GB and KP (Chitral) during the reporting period. These samples will be analysed in the commercial Genetic Lab in France.

b) Assessment of mountain ungulates

Rut season surveys of ibex, markhor, and blue sheep were initiated in 50 valleys of the three project landscapes. The outcomes of these studies will be used to develop Red Data Book of the ungulate species in Pakistan being initiated by the Ministry of Climate Change (MOCC). Prior, initiation of the surveys, more than 150 field staff of the Panjab, GB, KP and AJK Wildlife Departments were trained in “Double Observer” survey techniques. These surveys are season bound and were initiated in mid-December 2019 and will be completed by the end of February 2020.

Besides, lambing surveys were conducted in Neelum District of AJK and in June-July 2019, Astore District and buffer zone of CKNP in GB in May 2019. Major ungulates counted during the surveys included markhor, ibex and urial. Ibex was most abundant ungulate species followed by markhor and urial.

c) Procurement of Research Equipment

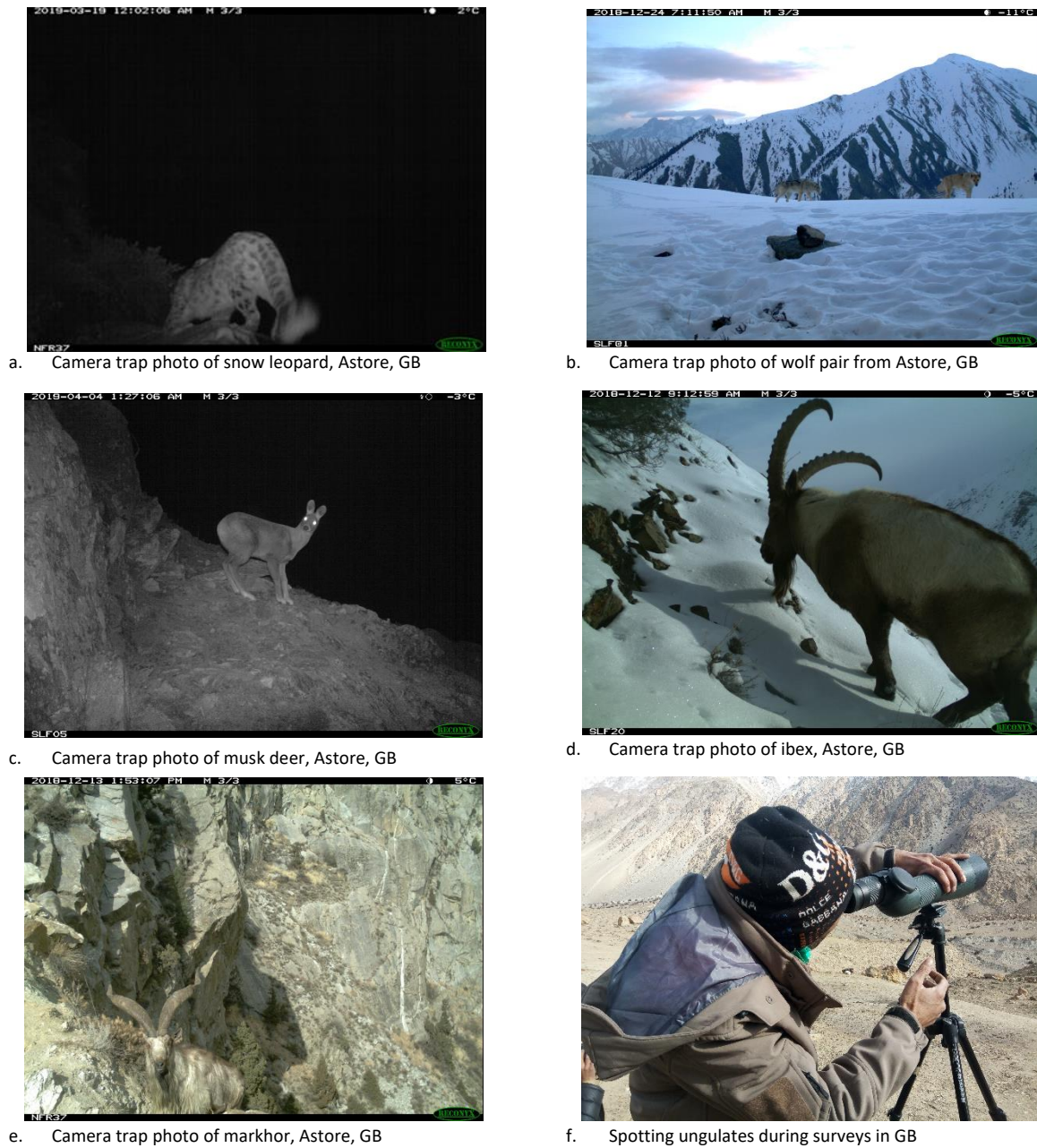
Research equipment including 4 spotting scopes, 43 binoculars (Bushnell 20x50 and Nikon 22x50), 11 GPS, 25 memory cards and batteries were procured. One Telemetry Receiver, one Dart gun to sedate animals for capturing were also procured to facilitate training and research.

d) Assessment of Rangelands

A study to assess resilience and carrying capacity of rangelands, pasture and retrogressive factors such as climate change impacts on the fragile mountain ecosystems & develop rangeland, pasture & livestock management strategy and plans was awarded during the reporting period. As per LoA, the rangeland management specialist (consultant) will develop rangeland, pasture & livestock management strategy and plans for 17 valleys and representative areas in five national parks including Qurumbar, Khunjerab, Broghil, Chitral Gol and Ghamot. During the reporting period, the consultant visited four valleys: 3 in GB and 1 in KP and trained community activists in pasture assessment. List of edible forage species near villages and high pastures were prepared with the help of experienced herders and data was analysed to bifurcate highly, medium and low palatable forage species. Furthermore, information on the pasture occupation pattern was collected. A questionnaire for household livestock survey was developed and tested for data collection about herd composition and dynamics.

e) Liaison with stakeholders:

Consultative meetings were organized to give awareness to the national, provincial and district level stakeholders regarding project structure, planned activities / outputs and get their support for project implementation.



**Figure 1. Glimpse of the research activities**

**Table 4. Overall rating of the output 1**

Exemplary (5)	High (4)	Satisfactory (3)	Poor (2)	Inadequate (1)
The project is expected to over-achieve targeted outputs and/or expected levels of quality, and there is evidence that outputs are contributing to targeted outcomes	The project is expected to over-achieve targeted outputs and/or expected levels of quality	The project is expected to achieve targeted outputs with expected levels of quality	The project is expected to partially achieve targeted outputs, with less than expected levels of quality	Project outputs will likely not be achieved and/or are not likely to be effective in supporting the achievement of targeted outcomes
	✓			

### 3.2.2 Progress towards project output II

Output 2 of the PSLEP project is “Increased representation of priority snow leopard ecosystems in the Protected Area network”. Major accomplishments against the targets set under this output are described below.

**Table 5. Progress towards output 2**

Indicators	Baseline	Targets	Achievement (s)
2.1 Increase in extent of snow leopard habitat under PA network	3,100,000 ha of snow leopard areas under existing PA network (national parks, sanctuaries, game reserves and community managed conservation areas, but with exception of around 10,000 ha under National Parks and/or CMCA, other areas lack appropriate management	At least 100,000 ha of additional priority snow leopard habitat, including 2,000 ha of high conservation value forests legally defined and included in PA network	<p>Assessment of the existing PAs in the snow leopard Landscapes was initiated. Composite Habitat Suitability Maps key species developed and translated into Environmental value maps. Existing PA boundaries were corrected and overlaid on the environmental value map to identify potential area to be declared as PAs. The findings will be further updated in 2020 and will be submitted to the respective wildlife depts in GB, KP and AJK for declaration new PAs.</p> <p>Establishment of CMCA in Rattu valley (56,180 ha) was initiated. VCC of Tormik valley was registered and Valley Conservation plan drafted. Next, it will be presented in the LCC to declare the valley as CMCA.</p>



Indicators	Baseline	Targets	Achievement (s)
2.2 Number of management and financing plans for protected areas with adequate financial resources developed and approved by the provincial government	Four PA management plans approved, but lack adequate budgetary provisions.	Guidelines for improved management of CMCA developed and approved by government and at least 5 additional management and financing plans agreed with local communities	<ul style="list-style-type: none"> <li>- Guidelines for improved management of Five CMCA drafted in collaboration with local communities.</li> <li>- Community based Ecotourism Plan including business plan was developed for Hopper valley, GB. Field data was collected to develop Ecotourism plans for Bagrot and Rupal valleys in GB.</li> <li>- Community meetings were held for planning and execution of Ecotourism plan. Construction work on the Tourist Information/ facilitation Centre, View Point and Glamping site in Hopper valley continued as per approved designs.</li> <li>- Training workshop was organized for 28 tour guides.</li> <li>- The one-day training on Ecotourism Promotion (ETP) in Snow Leopard Habitat” was organized in Gilgit in April 2019. The workshop was attended by 45 community members from four selected valleys of PSLEP (Hopper, Bagrot, Rupal &amp; Haramosh).</li> </ul>

Indicators	Baseline	Targets	Achievement (s)
2.3 Number of forest and wildlife staff and community members actively engaged in wildlife crime monitoring and surveillance to reduce incidence of wildlife crime.	Limited and uncoordinated training programs currently implemented and incidents of wildlife crime in landscapes	(i) At least 30 forest and wildlife trained and actively enforcing environmentally friendly management practices and wildlife crime prevention measures in snow leopard habitats; (ii) At least 10 community members actively engaged in wildlife crime monitoring and surveillance in community battalions	<ul style="list-style-type: none"> <li>- Conducted training on “Double Observer Survey method for Mountain Ungulates” for 50 surveyors from stakeholder organizations in October 2019. The workshop was organized in collaboration with the MOCC and was aimed to develop informed resource base to survey Panjab urial as part of the development of Red Data Book on wild ungulates of Pakistan.</li> <li>- One hundred field staff of the KP and GB Wildlife Depts (40 from KP and 60 from GB) were trained in Double Observer Survey method and genetic sampling.</li> <li>- Conducted international training course in “design, survey and analysis of wildlife populations” in collaboration with the Pakistan Museum of Natural History, Islamabad from July 1-12, 2019. The training was attended by of 30 participants from stakeholder organizations.</li> <li>- Training modules and manuals are being developed as TNA outcomes and involving international institutions and experts.</li> </ul>
2.4: Effectiveness in Management of protected areas within the landscape as measured by METT (Management Effectiveness Tracking Tool).	Current METT baseline scores for PAs are as follows: Chitral Gol NP=30; Broghil NP=12 Central Karakorum NP =22  Qurumbar NP=13 Khunjerab NP=25 Musk Deer NP=18 Ghamot NP=16	Average increase by at least 2 points in METT from the baseline	<p>In addition to provision of training in wildlife survey and management, 43 field gears were provided to the staff of Wildlife departments stationed in the NPs in the three landscapes to increase the METT score. Fifty-seven field kits were procured and will be distributed in the PA staff in Jan 2020.</p> <p>Equipment has been procured for PA staff to improve monitoring of the IWT.</p> <p>Community guards engaged in the buffer zone of the CKNP and MDNP have helped improve the surveillance system.</p>

## 2. Description of output level results achieved in 2019

Under this output, support is provided to foster conservation and management of snow leopard and associated species through the identification of new PAs and extension of existing PAs (in particular CMCAs) by identifying and addressing gaps in the three model landscapes.

### 2.1. Protected area network in the snow leopard range expanded through identification, mapping and gazettal of new protected areas

Assessment of the existing PAs in the model landscapes for their effectiveness and coverage to support threatened species like snow leopard was initiated. Habitat Suitability Maps (HSMs) of the key species was developed based on the hard evidences collected from the three landscapes. HSMs developed for each species were merged and translated into Composite Habitat Suitability Map. Composite HSM map was penalized with human impact score to develop final environmental value map. Boundaries of the existing PAs were overlaid on the environmental value map to identify gaps and potential areas to be designated as PAs. This map will be further improved in 2020 by repeating the analyzes with new data. Description of the process followed in presented below.

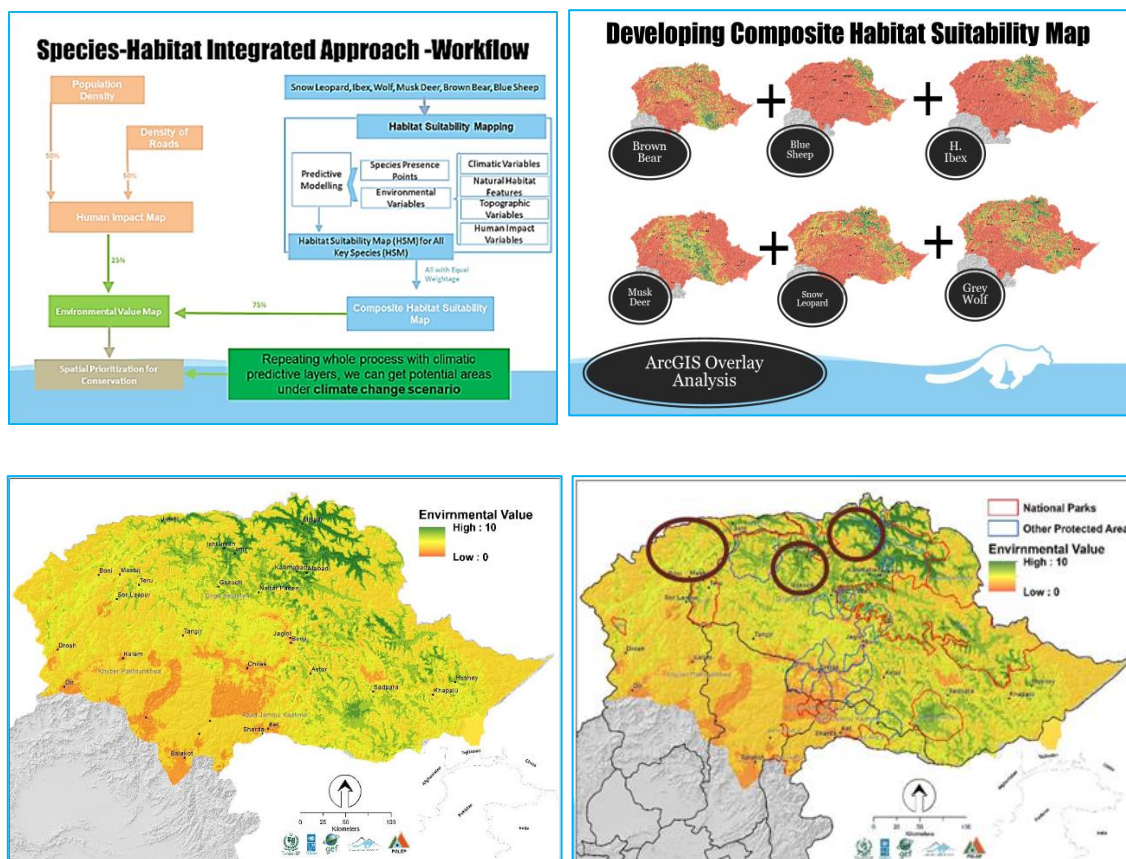


Figure 2. Species-habitat integrated approach for PA assessment

One hundred sets of field gear for the PA staff in the three landscapes were procured. Each set contained necessary field items such as rucksack, sleeping bag, mattress, snow gaiters, swiss army knife, water bottle, trekking stick, shoes, jackets, ski paints, head lamps, gloves, base layer/ body warmers, tents and binoculars. Out of the 100-field kit, 43 were handed over to the Wildlife Department staff in GB. Rest will be distributed in the field staff of Chitral (n=40) and AJK (n=17) in January 2020.

**2.2. Create CMCA, develop new and update existing management/ Ecotourism plans for 3 CMCA & test various governance management and enforcement regimes**

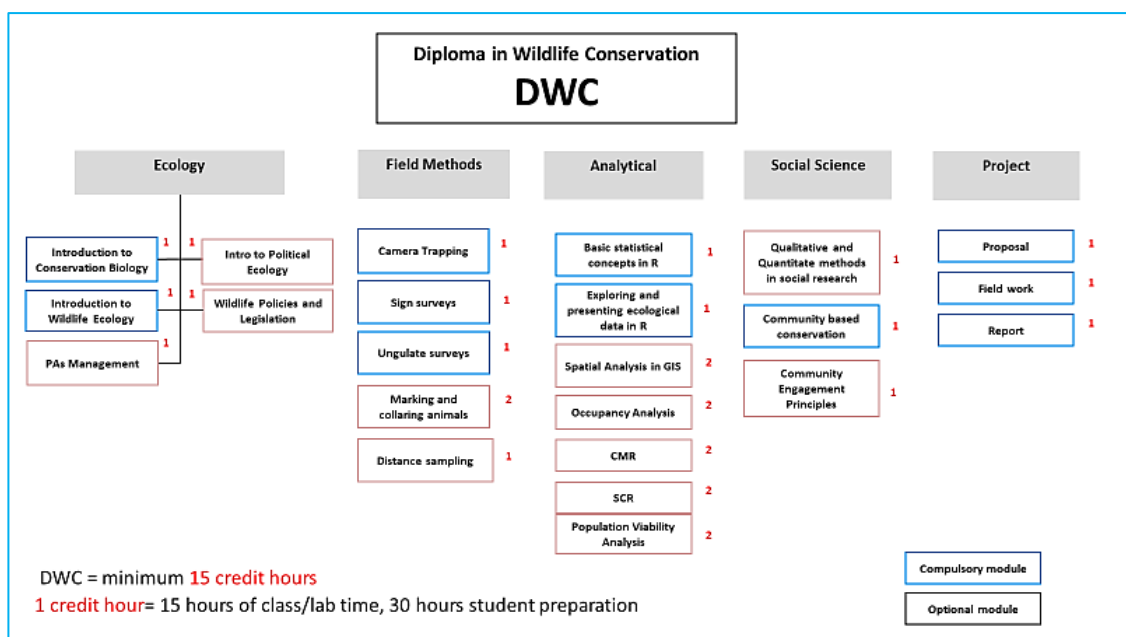
Rattu valley (56,180 ha) in Himalaya landscape was declared as CMCA. VCC of Tormik valley was registered and Valley Conservation plan drafted. Next, it will be presented in the LCC to declare the valley as CMCA.

Ecotourism activities were initiated in Hopper Valley, District Nagar in GB. Ecotourism development and business plans were drafted. More than 30 community members were trained as tour guides. Implementation of the ecotourism plan was initiated and construction work on the Tourist Information/Facilitation Centre, Wildlife View Point and Glamping sites was started. Development of the ecotourism plans for Rupal and Bagrote valleys was initiated and first draft will be produced by the end of January, 2020.

Socioeconomic data of Khunjerab National Park (KNP) was collected and analysed and a concept note and PC-1 for promotion of Ecotourism in KNP was initiated with the collaboration of GB Wildlife Department.

**2.3. Capacity of forest and wildlife staff in the demonstration sites enhanced to improve conservation outcomes and combat wildlife crime**

- a) The process of capacity need assessment was initiated by developing and sharing the format with the management of the Wildlife and Forest Department staff of respective provinces/state. The data collected for capacity/ training need assessment from provincial/ State Forest and Wildlife departments was analysed and report was prepared.
- b) The task of development of modules and manuals for conducting training courses related to wildlife management was outsourced to Centre for Research into Ecological and Environmental Modelling, University of St Andrews, Scotland. The Centre will provide the report in 2020. Furthermore, a draft report on “Designing scalable study design protocols to estimate snow leopard (*Panthera uncia*) population size using non-invasive sampling” and the outline of subjects to be taught in 15 credit hour Diploma in Wildlife Conservation were received from the University of Massachusetts (UMASS), Amherst, MA, USA (Fig. 2).



**Figure 3. Outline of the proposed diploma course in wildlife management**

c) An international training workshop on “design, survey and analysis of wildlife populations” conducted from July 1-12, 2019 in Islamabad. The training course was attended by 30 participants from stakeholder organizations. The workshop covered the following five major components:

- **Theoretical concepts in wildlife conservation:** Distributions, species interactions, population, density, measuring density, biodiversity, geographic patterns of diversity, factors that make species vulnerable to extinction;
- **Designing wildlife survey:** Sampling design for density estimation and occupancy. Statistical considerations in data collection, sample size;
- **Field survey techniques:** Basic field equipment uses and maintenance, capturing and handling wild animals, chemical immobilization, marking wildlife, telemetry and remote monitoring of wildlife, Genetic sample collection, estimating abundance of ungulates, surveying large carnivores.
- **Ecological data analysis:** Introduction to ecological statistics, data exploration, descriptive statistics, linear models, generalized linear models, density estimation (CMR and SECR) and occupancy estimation.
- **Software training:** R for Statistical Analysis, CPW for camera trap data analysis and management.

The workshop main resource persons included: (i) Dr Orjan Johansson, Grimso Wildlife Institute, Sweden; (ii) Dr. Byron Weckworth, Director Snow Leopard Program, Panthera; (iii) Ms. Justine Shanti Alexander, Regional Ecologist, Snow Leopard Trust; (iv) Dr. Muhammad Rafique, Director General Pakistan Museum of Natural History; and (v) Dr. Muhammad Ali Nawaz, Quaid-i-Azam University Islamabad.

**d) Develop wildlife monitoring tools focusing crime investigation**

The task of “designing and operationalizing community-based surveillance, developing monitoring tools for wildlife crime investigation, wildlife crime detection strategy, plan and prevention mechanisms” was outsourced to WWP-Pakistan. Inception report of the consultancy assignment and list of technical equipment required for crime investigation were received from the consultant during the reporting period.

**e) Procure technical equipment required for crime investigation**

The technical equipment required for crime investigation was purchased. The main equipment in this respect included smart mobile phones Nokia 3.1 plus 3GB RAM 32 ROM, computer, laptop etc.

**Table 6. Overall rating of the output 2**

Exemplary (5)	High (4)	Satisfactory (3)	Poor (2)	Inadequate (1)
The project is expected to over-achieve targeted outputs and/or expected levels of quality, and there is evidence that outputs are contributing to targeted outcomes	The project is expected to over-achieve targeted outputs and/or expected levels of quality	The project is expected to achieve targeted outputs with expected levels of quality	The project is expected to partially achieve targeted outputs, with less than expected levels of quality	Project outputs will likely not be achieved and/or are not likely to be effective in supporting the achievement of targeted outcomes
	✓			

### 3.2.3 Progress towards project output III

Output 3 of the PSLEP project is “Participatory conservation in the targeted landscape enhanced to reduce human-snow leopard conflicts and improve livelihoods of community”. Progress made under this output during the reporting period is narrated in the following lines.

**Table 7. Progress made to achieve output 3**

Indicators	Baseline	Targets	Achievement (s)
3.1 Number of Valley conservation plans developed and under implementation	Lack of integrated landscape planning approaches and the current planning process is mostly at sectoral level	At least 17 valley conservation plans developed and approved	<ul style="list-style-type: none"> <li>- Guidelines for the development of the VCDPs developed.</li> <li>- Twelve (12) out of the seventeen (17) valley conservation and development plans (VCDPs) were drafted during the reporting period.</li> </ul>
3.2 Average increase in income of communities from sustainable livelihood and resource management activities	Baseline average monthly income of target area population is <10,000 PKR per household	At least 2% increase in average incomes from sustainable livelihoods, natural resource management and business activities	<ul style="list-style-type: none"> <li>- Social mobilization and organization drives were launched in the target valleys and valley organizations were developed/strengthened.</li> <li>- Forty-two (42) Community Wildlife Guards and 8 Community Forest Guards were appointed which are getting monthly remuneration.</li> <li>- Livestock vaccination training was provided to 33 community health workers and vaccines were provided to vaccinate ~200,000 animals and fund was established.</li> <li>- Livestock Support fund was established in 11 valleys as insurance to compensate for animal died due to snow leopard attacks.</li> <li>- Twelve predator proof corrals were constructed.</li> <li>- About 400 hectares of forest patches were protected through engaging forest guards.</li> <li>- Support in LPG was provided to communities in one valley of AJ&amp;K.</li> <li>- Support for Landslide stabilization work at 3 sites in AJ&amp;K and water supply scheme by introducing solar pump at one site in Chitral were provided.</li> </ul>

Indicators	Baseline	Targets	Achievement (s)
3.2 Decreased incidences of human-wildlife conflict as indicated by: (i) Decrease in livestock lost to snow-leopard and other predators; (ii) Reduce incidence of retaliatory killing of snow leopard and other predators	(i) Average livestock lost to wildlife estimated at 0.6-2 heads/HH/Year (ii) Number of incidents of retaliatory killings of snow leopard are 8-10 per Year	(i) At least 2% decrease in livestock lost/year to wildlife (ii) At least 5% decrease in retaliatory killings of snow leopard and other predators	- More than 90% of the livestock in the program sites were vaccinated. Since, its inception, SLF developed a systematic vaccination program in the SL range in GB and Chitral (other than the PSLEP sites). Monitoring reports of the vaccination program in SLF sites revealed up to 60% decrease in disease caused mortality of livestock over a period of 3-5 years. We expect similar results in the PSLEP sites as this project has replicated the SLF program model. Monitoring reports of the vaccination program in PSLEP sites will be generated in the subsequent years to gauge the impact of the program on local livelihoods. - Despite of the predation incidences reckoned, no report of retaliatory killing of snow leopard and other predators was recorded in the project valleys during the year 2019.

### 3. Description of output level results achieved in 2019

This Output supports improving conservation outcomes, improved protection of forest and grazing areas, reducing human-wildlife conflicts by enhancing incentives for conservation by primarily focusing on livestock-based and agricultural-based options for economic development and rangeland improvements; improving resilience to climate risks; reduction of human-wildlife conflicts and improving and diversifying rural livelihoods as a means to strengthen agricultural and non-agricultural based incomes. Seventeen valleys in total including 10 valleys in GB, 5 in Chitral, KP and 2 in Neelum district of AJ&K were visited and local communities were consulted to collect the relevant primary data, identify need and sign agreements for supporting conservation initiatives through community-based organizations/ VCDOs.

#### 3.1. Site-specific integrated valley conservation plans developed and implemented

Community mobilization, organization and participation is essential for the successful implementation of the community-based conservation projects. PSLEP project site communities were taken onboard in project implementation by interacting with the communities and arranging learning sessions. Communities were sensitized to own and implement the conservation agenda and establish and/or strengthen existing VCCs/ Valley Conservation and Development Organizations. Twelve Valley Conservation and Development Organizations and women-based Community organizations at village level were established.

Guidelines including formats for development of site-specific integrated Valley Conservation and Development plans (VCDPs) were prepared.

Twelve VCDPs were drafted in Gurez, Shounther valleys of AJK, Ujnu, Washich, Zondrangram, Lonkoh and Shagrom valleys KP and Hopper, Hisper, Astak, Tormik, Basha-Arandu and Braldu valleys of GB in consultation with the community organizations and provincial wildlife departments.

### **3.2. Pilot projects on sustainable community based natural resources management, sustainable livelihoods and reduced HWC**

Human-carnivore conflict has been a challenging conservation issue for the wildlife managers worldwide. The mountain communities in the PSLEP project sites are largely dependent on livestock farming as source of family income. Livestock losses to large carnivores such as snow leopard are always hard to tolerate for the effected families and they retaliate and kill precious species in retribution. PSLEP project has strategic interventions to reduce human-wildlife in the project sites. The following activities were undertaken to reduce HWC and improve livelihood of the communities during the reporting period.

#### **3.1.1. Livestock Support Fund as Insurance Schemes**

Livestock Support fund was established in 11 valleys (2 in AJ&K, 2 in Chitral, KP & 7 in GB) as insurance to compensate for animals killed by snow leopard. An enforceable agreement as per program model was signed with each community. Joint bank accounts were opened with three signatories, one each from the PSLEP staff, community and wildlife department. PSLEP contributed 900,000PKR per site. Description of the program structure is provided in annexure 1.

#### **3.1.2. Livestock Vaccination Program**

Systematic Livestock Vaccination Program as a conservation and livelihood improvement tool was launched in the project sites. Back to back meetings were held with the local communities of PSLEP sites and agreements highlighting role and responsibilities of the communities and PSLEP to execute the program were signed.

Thirty-three community members (21 from GB, 6 each from KP & AJ&K), nominated by their respective Community Organizations were provided two-weeks long training on animal health and production at NARC, Islamabad. PSLEP established Livestock vaccination fund managed by the VCDOs and provided vaccines against Hemorrhagic septicemia, Black quarter and Enterotoxaemia as per vaccination calendar to the trained community members hereinafter called Ecosystem Health Workers (EHWs). In addition, PSLEP provided a stipend to each EHW as per agreement. Although the unexpected snowfall hampered the vaccination drive yet about 200,000 animals were vaccinated during the fall vaccination campaign.

#### **3.1.3. Development of Predator Proof Corrals**

Predator proof corrals have proven to be an affective tool in mitigating mass killing of livestock by snow leopard. The traditional corrals are open and are prone to predator attacks. PSLEP using the experience of the SLF helped the communities built well-structured and predator proof corrals in 11 project sites in GB (n=7), AJK (n=2) and KP (n=2). Assessment of sites was done by engaging civil engineer. Contracts with the VCDOs were signed, PSLEP contributed its share in the respective community accounts, procurements were made and construction work started. Construction work will be completed by the end of May 2020.



### 3.3. Community Conservation/Sustainable NRM and Diversified Livelihoods

The PLSEP project supports limited activities within a broader range of potential investments for: (i) improved rangeland, pasture and livestock management to improve productivity and reduce human-wildlife conflicts; (ii) environment friendly community land and forest protection and resource use; (iii) sustainable livelihood improvement and diversification practices such as improved farm and non-farm productivity, conservation tourism, value chains, etc. Through the implementation of the 17 valley plans, the project intends to improve the sustainable management of rich biodiversity areas within the snow leopard habitats. Livelihood initiatives assist ensuring gender balanced approach in project implementation.

#### 3.3.1. Promote social fencing to protect high altitude forest

Forest enclosures were established in eight valleys (4 in GB, 2 in KP & 2 in AJ&K). Free and unrestricted grazing, increased population of livestock specially goats, fodder harvesting, unsustainable collection of medicinal plants and deforestation activities to meet timber and fuel-wood needs are amongst the major factors hindering natural regeneration especially in the high mountainous regions of Pakistan. Rehabilitation of degraded high-altitude forest is very difficult as the plantation drive is very expensive and time consuming, therefore, protection of the depleted forests from grazing, lopping and cutting through social fencing is the most economic and effective way of promoting natural regeneration. Due to favourable climatic conditions and availability of sufficient seed source, i.e. mother trees, the closure of the area for natural regeneration is the appropriate and most cost-effective option. The degraded forest area will be closed against grazing for consecutive 3-5 years to support the recovery of landscape, where the most endangered species (both plants and animals) will also be the focus to achieve integrated natural resource management. In PSLEP project valleys in Chitral, KP, two closures of 30 hectares each were established after the consultation and signing of ToP with the respective communities. Two community forest guards were hired one for each closure who were nominated by the local communities through resolution.

Forest closure will be established at community land; at Taobat in Gurez Valley and Kalaloat in Shouther Valley in AJ&K, to protect nature forest and biodiversity. Agreements have been signed and sites have been selected for the implementation of forest protection measures in AJK.

#### 3.3.2. Fruit and Forest Plantation

Fruit and forest plants will be purchased and planted at suitable sites selected in consultation with provincial/ State Agricultural department in spring 2020. Agreement were signed and purchasing process was started in 2 valleys each in AJ&K and KP during the reporting period. The PSLEP sites in Chitral falls in dry temperate ecological zone and have dry climate which is good for fruit production. Apple, Pear, walnut, cherry, apricot, grapes and mulberry are the main fruit grown in these sites. In PSLEP project, establishment of fruit orchards in the project sites is designed as part of the implementation of the VCDPs. Meetings with local communities were held and sites were identified in Ujnu and Washich valleys. Good quality and grafted fruit plants were procured from agricultural research station, Chitral. A total of 5 hectares of land will be brought under fruit orchards. Agriculture research station ensured its full support in orchard layout and on field training on fruit planation and orchard management techniques.

### 3.3.3. Fodder Improvement

Agreements were signed with the VCDOs in 9 valleys (4 in GB, 3 in KP & 2 in AJ&K) for the fodder improvement through cultivation of alfalfa. The local communities of the PSLEP sites depend on their livestock as primary livelihood option. In summer season, they take their livestock to the alpine pasture for grazing while, in winter they bring their animals back to villages and nourish them with stall feed. The dependency of local people on alpine pastures for grazing livestock and fodder collection is deteriorating the pastures. Other effects of overgrazing are soil erosion, flash flood and landslides. To overcome this ecological threat and minimize the effect of overgrazing on rangelands, the Agriculture Research Station Chitral recommended the project team to cultivate alfalfa in the valleys. Sites were identified in the Ujnu, Washich and Zanglasht valleys. Alfalfa seed was procured from the Agriculture Research Station, Chitral. A total of 10 hectares of land will be brought under fodder cultivation in spring season in 2020. Similarly, agreements were signed with two VCDOs in AJK and initial working on purchase of alfalfa fodder, recommended by AJ&K Agricultural Department was initiated during the reporting period.

### 3.3.4. Gabion Walls

To protect community land from damage gabion walls will be established at least at three different sites of Gurez and Shounther valleys in AJK. Sites were identified in consultation with the communities, cost estimates were developed and agreements were signed during the reporting period. PSLEP deposited project share in the joint bank account of the project.

### 3.3.5. Alternatives for Fuel Wood

Provision of LPG cylinders to the community to reduce their dependency on forest resources was identified as one of the conservation measures during the community need assessment session in AJK. PSLEP project materialized the notion by signing agreement with the VCDO for the implementation of the activity. The villagers of Domail Bala in Shounther Valley will benefit from this activity. PSLEP project provided grant to the community for the implementation of the activity during the reporting period.

### 3.3.6. Rehabilitation of waste/barren land by installing solar pumps for drinking & irrigation in one site in Chitral, KP)

In Chitral Local communities in PSLEP sites mostly depend on stream water for irrigation and drinking. In Ujnu valley, the community through a resolution expressed their need for a water supply scheme by installation of solar pump. PSLEP project conducted feasibility study of the project by involving a civil engineer. Based on the feasibility report, an agreement was signed with community/ VCDO of Ujnu. The grant was deposited in VCSDO Ujnu joint account. Procurement of the equipment and materials was made during the reporting period, while installation and civil work will be completed till end May 2020. A total 14 households will benefit from this project and 8 hectares of agricultural land will be brought under irrigation.

### 3.3.7. Identify potential for value chain of crops & enterprises

PSLEP project strives to tap avenues to empower women through promotion of livelihoods and value addition of local products. Some of the proven initiatives started by SLF prior the inception of the PSLEP are snow leopard enterprises, livestock management, kitchen gardening and fruit

processing, respectively. A study to explore potential for value chain of crops, fruits, NTFPs and enterprises in the project sites was awarded to a consultancy firm. The consultant will identify major livelihood options, especially for women and help test one best measure during the year 2020. First draft of the report was furnished by the consultant during the reporting period.

#### **3.4. Community-based surveillance, monitoring and wildlife crime prevention systems developed and implemented**

Data on livestock depredation due to snow leopard and other sympatric carnivores in the project sites was collected from the project sites. The project team in coordination with the respective range province wildlife departments remained vigilant to monitor any loss of snow leopard or other carnivores by the communities in the project sites. However, no incidence of killing of snow leopard or any other predator was reported from the project sites during the reporting period. Moreover, a study was awarded to WWF-Pakistan to develop system/strategy to reduce human-wildlife conflict by involving government and local communities in wildlife surveillance, monitoring and crime detection and prevention measures. Inception report of the consultancy assignment and list of technical equipment required for crime investigation were received during the reporting period.

#### **3.5. Support for community members to protect the ecosystem**

PSLEP is committed to provide support for community members to protect the ecosystem as temporary measure until sustainability plan developed and launched. In consultation with the provincial wildlife departments and local communities, 42 community wildlife guards (30 from GB, 6 from KP & 6 from AJ&K) were engaged. The Community Wildlife Guards will work in close coordination with the field management and staff of the Wildlife and Forest departments. PSLEP is providing them a monthly stipend of 7,000 PKR through community accounts.

**Table 8. Overall rating of output 3**

Exemplary (5)	High (4)	Satisfactory (3)	Poor (2)	Inadequate (1)
The project is expected to over-achieve targeted outputs and/or expected levels of quality, and there is evidence that outputs are contributing to targeted outcomes	The project is expected to over-achieve targeted outputs and/or expected levels of quality	The project is expected to achieve targeted outputs with expected levels of quality	The project is expected to partially achieve targeted outputs, with less than expected levels of quality	Project outputs will likely not be achieved and/or are not likely to be effective in supporting the achievement of targeted outcomes
	✓			



g. Livestock vaccination in Neelum District



h. Meeting with women folk in AJK



i. VCDO formation in AJK



j. Community meeting in Ujnu, Chitral



k. Community meeting and LSF Cheque Dist.



l. Ecotourism initiatives, Hopper Valley



m. Predator proof corral, GB



n. Training in Animal Health and Production

**Figure 4. Glimpse of the activities accomplished under project output 3**

### 3.2.4 Progress towards project output IV

Implementation, up-scaling and replication of project approaches supported by effective knowledge management and gender mainstreaming constitutes component 4 of the PSLEP project. Progress made under this component in 2019 is explained below.

**Table 9. Progress made to achieve output 4**

Indicators	Baseline	Targets	Achievement (s)
4.1. Increase in the level of awareness of communities in the target landscapes on conservation and sustainable use and threats to snow leopard and biodiversity.	Awareness of conservation, sustainable natural resource use and wildlife crime prevention benefits are known to a very limited number of households in the project area	At least 10% of participating households (at least 20% women beneficiaries) have good awareness of conservation benefits	- About 10,000 persons attended various awareness raising sessions organized by PSLEP, which is about 10 per cent of the population of the 17 project valleys in Hindu Kush, Himalayas and Karakoram Pamir Landscapes.
4.2. Number of knowledge products reflecting best practices and lessons learned documented and disseminated and up-scaled	No concerted effort exists in promoting best practice	Best practice and lessons identified and at least 2 under documentation	- Lessons learned were identified in the Annual progress report 2018 and also in this report for 2019. Snow Leopard Enterprise (SLE) in Chitral and Ecotourism initiative in Hopper valley were identified as best practices implemented by SLF. Documentaries on SLE and Ecotourism in hopper valley were prepared as part of the documentation of good practices. - Best practices and lessons learned were reflected in Calendar 2019 and 2020 as well as online monthly Newsletter of the SLF.
4.3. Number of effective inter-provincial/trans-boundary collaboration mechanisms negotiated and implemented	No concerted efforts at trans-boundary and inter-provincial collaboration exists	At least one effective collaborative inter-provincial agreement initiated and negotiated	- Efforts were made to establish an interprovincial collaboration mechanism between the SL range province governments. Meetings were held with the senior management of the wildlife depts in KP, GB and AJK. PSLEP collaborated with WWF-P to materialize this initiative and submitted a concept note to the Secretary, MOCC through the IGF office.

#### **4. Description of output level results achieved in 2019**

This output focuses on improving knowledge and developing information systems to enhance awareness on the benefits of landscape approach for conservation of snow leopard and their associated biodiversity and ecosystems and enhance inter-provincial and international cooperation by establishing links with relevant global and regional initiatives such as the GSLEP.

##### **4.1. Communication, gender mainstreaming and monitoring and evaluation strategies developed and implemented at national, provincial and local levels**

PSLEP project formulated communication plans for the three landscapes. The overall goal of these plans was to enhance public awareness in the communities of the target landscapes for conservation, sustainable development, threats to snow leopard and biodiversity. The landscape communication plans for 2019 were developed with the consultation of respective RPMs and NPM. The three plans consider and have targeted activities to enhance public tolerance of snow leopard and other wildlife in the project landscapes.

Implementation of landscape level communication plans continued during year 2019. The activities designed to implement the communication plans are as follows.

##### **4.1.1. PSLEP Inception workshop, Gilgit**

Project launch workshop was arranged in Gilgit on 19<sup>th</sup> January 2019. Secretary, Agriculture, Livestock and Fishers, honoured the workshop as a Chief Guest. Fifty-two participants from different government departments, non-governmental organizations (NGOs), Print and Electronic media and local community from program sites participated in the workshop. Print and electronic provided coverage to the workshop.

##### **4.1.2. Monthly online newsletter**

Monthly newsletters highlighting project activities, lessons learnt and best practices were developed and circulated online to the wide range of stakeholders.

##### **4.1.3. Year Calendar 2020**

Printed and disseminated thematic Calendars for year 2019 and 2020. The theme of 2020 calendar is "Ecotourism in Hopper valley" developed under PSLEP.

##### **4.1.4. Celebration of International Days and awareness sessions in 2019**

PSLEP project celebrated international environmental days such as Snow Leopard Day, Wildlife Day, and Biodiversity Day at national and regional levels to raise awareness in the masses of the need and importance of nature conservation. These events were attended by officials from the government, NGOs, education institutions, diplomatic community and general public.

##### **4.1.5. Project Website Development**

The SLF/PSLEP website is been updated. The SLF/PSLEP social media remained active during the reporting period and provided avenue to post regular updates about the project activities.

##### **4.1.6. Capacity building of communities in Conservation Tourism**

Meetings were held with the communities of the ecotourism sites in Hopper, Bagrote, Haramosh and Rupal to identify tourism potential in the valleys. A workshop on community sensitization was organized in Gilgit in April 2019 which attended by 45 community members from the four selected valleys. Similarly, 28 community activists from 4 valleys were trained as tour guides by arranging

a training workshop in June, 2019. At national level, an introductory workshop for tour operators was organized in Islamabad in March 2019.

#### **4.1.7. Develop flyers, posters, brochures and booklets to promote wildlife conservation**

Printed flyers on “ecotourism” and training course on “design, survey and analysis of wildlife populations” for the awareness of stakeholders. Three story books for schoolchildren were developed, printed and disseminated. A thematic educational poster on “Threats faced by snow leopard” was designed.

#### **4.1.8. Develop module for teachers training in Environmental Education**

A training module on conservation education was drafted. The module will be taught in the training workshops for school teachers to be organized in 2020.

#### **4.1.9. Nature/ Snow leopard clubs & nature study camps**

Twenty-five Snow leopard clubs were established in the project sites in GB, AJ&K and KP. Three Nature study camps for natural club members were arranged in the three landscapes.

#### **4.1.10. Training workshops/exposure visits for local and national journalists**

A media orientation workshop on snow leopard conservation was conducted in Chitral in September 2019. The workshop was attended by 30 journalists from print and electronic media.

#### **4.1.11. Documentary on PSLEP landscapes**

Two documentaries, one each on Karakorum-Pamir Landscape and Potential of Ecotourism in Hopper valley were initiated. The landscape documentary is in post-production phase. The documentary on ecotourism was screened at various forums.

#### **4.1.12. Instalment of signage to promote Ecotourism and wildlife conservation in the Ecotourism sites in GB**

Signages on ecotourism were designed. These signages will be installed after the completion of the ecotourism site.

#### **4.1.13. Social Enterprise Development Program**

Punaar brand was launched as part of social enterprise development program. The program offers skill enhancement opportunities for women of the local community and provides alternate source of income to enhance their livelihood.

**Table 10. Overall rating of output 4**

Exemplary (5)	High (4)	Satisfactory (3)	Poor (2)	Inadequate (1)
The project is expected to over-achieve targeted outputs and/or expected levels of quality, and there is evidence that outputs are contributing to targeted outcomes	The project is expected to over-achieve targeted outputs and/or expected levels of quality	The project is expected to achieve targeted outputs with expected levels of quality	The project is expected to partially achieve targeted outputs, with less than expected levels of quality	Project outputs will likely not be achieved and/or are not likely to be effective in supporting the achievement of targeted outcomes
	✓			

## 4. CONSTRAINTS, LESSONS LEARNT AND WAY FORWARD

---

### 4.1 CONSTRAINTS FACED AND PROJECT STRATEGY

The project team faced various challenges during the year 2019. Some of the bottlenecks experienced are highlighted below.

- PLSEP project promotes science-based research and research-based conservation of snow leopard, sympatric carnivores, their wild prey and habitat by adopting landscape approach for snow leopard conservation. Consequently, socioecological research to develop and validate baseline and enhance our understanding of conservation issues under the umbrella of snow leopard conservation constitutes backbone of the project. The project team faced challenges in securing NoCs from the security agencies for the implementation of research activities of the project during the reporting period.
- ✓ To overcome the issue, the project team developed the case and actively pursued it with the concerned quarters. As a result, the KP government provided restricted NoC to the project, valid for a period of six months. In AJK and GB, the respective Wildlife Departments supported the project activities. As an alternate option, the project team signed MoU with the universities falling in the project landscapes and assigned research activities to the universities following the standard operation procedures and policies.
- As per project document, the IGF had been designated as NPD of the project. The IGF retired and the Secretary was transferred and MOCC appointed Joint Secretary (Admin) as NPD of the project. It took quite long for the new management to understand the rational and implementation modality of the project and this transition period badly effected the delivery of the project.
- ✓ The project management actively engaged the MOCC through written and verbal communications. Back to back presentation sessions were held with the NPD and Secretary to enhance their understanding of the project modality and activities.
- Security situation in AJ&K deteriorated during the year 2019 which hampered delivery of field activities in AJ&K.
- ✓ The RPM and his team courteously faced the situation while following the security protocols and ensured accomplishment of the major tasks besides the unfavorable working environment.
- In Chitral, the communities of the all five valleys have been hostile to conservation initiatives for decades. The valleys have been considered as “no go area” for the conservationists. Before the inception of the PSLEP project, many conservation organizations and even the government departments failed to mobilize the community to own the conservation agenda.
- ✓ PSLEP project is developed based on the scientific data and these valleys constitute the last stronghold of snow leopard in the Hindu Kush Landscape falling in KP and hence, considered as pilot sites. The RPM and his team with support from the NPMU were able to mobilize and organize two of the five project sites during the reporting period. This can be taken as major spotlight of the project in 2019. The project team is ready to face the challenge in the other three sites in 2020.
- An unexpected heavy spell of snowfall resulted in the blockage of the project sites and restricted mobility.
- ✓ Alternate strategy for such a situation cannot be formulated.



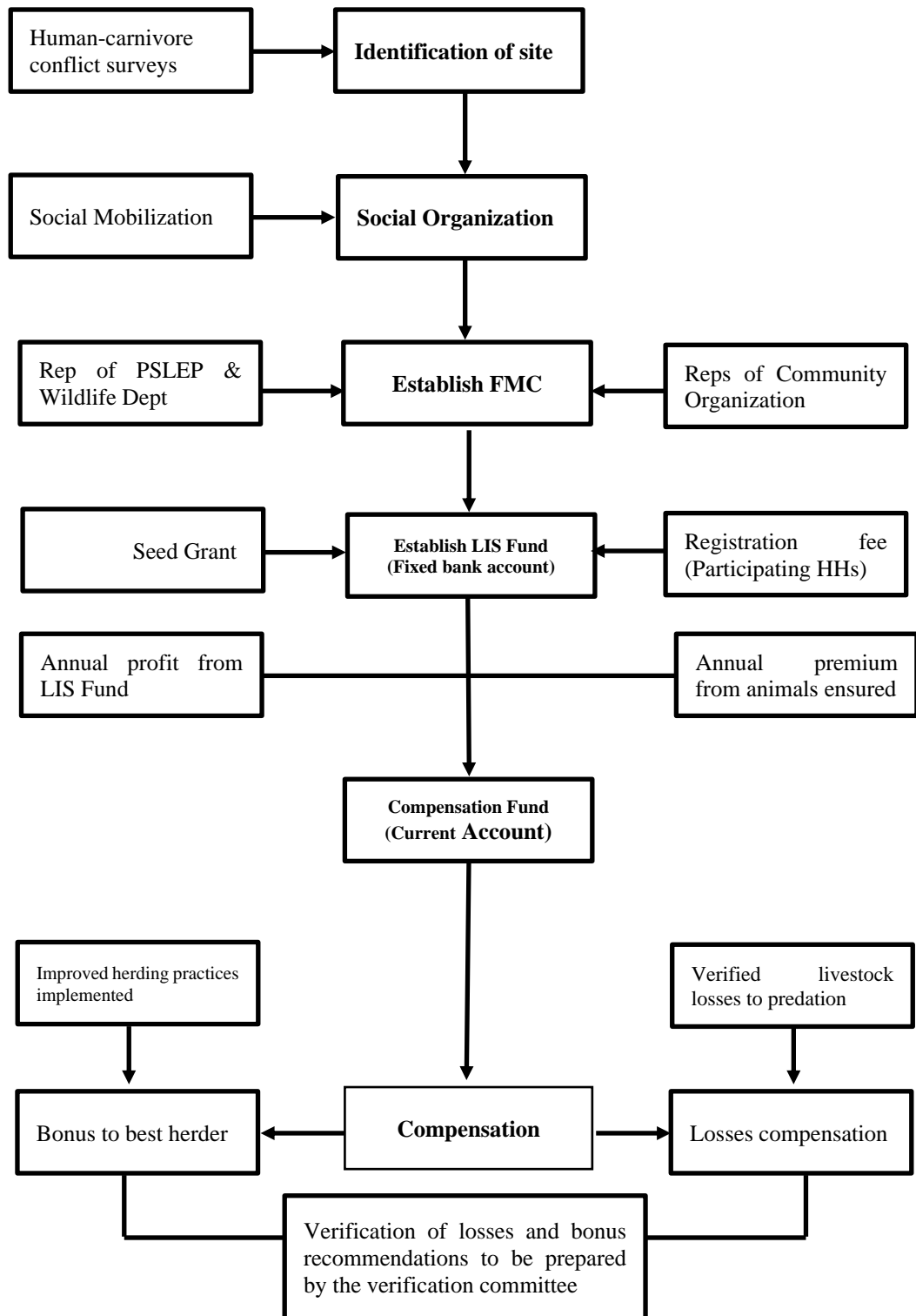
## 4.2 LESSONS LEARNT

- Systematic assessment of the natural resources using robust survey tools is prerequisite to formulate informed management and policy measures. Natural resource managers have to get rid from the outdated protocols and adopt advanced techniques to keep them abreast with the developed world.
- The project area of the PSLEP falls in remote region of northern Pakistan and implementation of the project requires motivated and physically fit team members and abiding by the field safety protocols.
- Strengthening and sensitization of the stakeholders particularly, the local communities is essential for the successful implementation of the project.
- Respect for the culture, traditions and norms of the communities, in turn, earns veneration and makes the mobilization drive impactful.
- Climatic conditions in the project sites are harsh and unpredictable and calls for adoptive management.

## 4.3 WAY FORWARD

- Efforts will be made to ensure timely accomplishment of the targets planned in 2020 provided the sociocultural and political environment coupled with the climatic conditions are favorable and financial releases are on schedule.
- Coordination will be strengthened with federal and provincial governments to enhance their support for the project.
- Launching of the ecotourism project in Hopper valley, completion of the ecotourism projects in other three sites, completion of the PA assessment, endorsement of the KPL management plan and successful execution of the research activities constitute key priorities of the project for 2020.

**ANNEXURE I: SCHEMATIC OF THE LIVESTOCK SUPPORT FUND**



## ANNEXURE II: GLIMPSE OF THE COMMUNICATION DRIVE



o. Wildlife Day celebration in Islamabad



p. Wildlife Day celebration at regional level



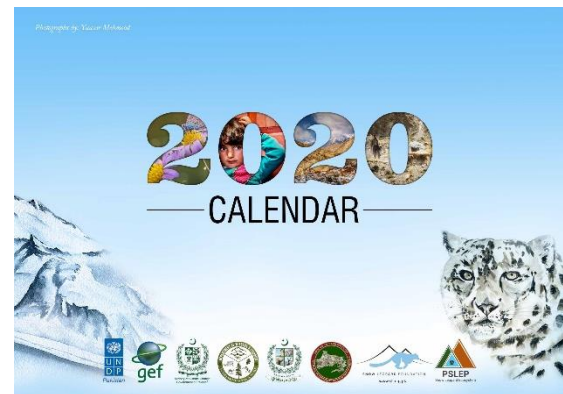
q. Media orientation workshop, Chitral



r. Nature study camp, Chitral



s. Project launching workshop, GB



t. Calendar 2020