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Mountain Landscapes and Communities:
Work Plan*

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Acronyms and Abbreviations

AHM	WWF Asia High Mountains Project
CARE	Cooperative for Assistance and Relief Everywhere
CBAPO	Community Based Anti-Poaching Operations
DNA	Deoxyribonucleic Acid
DNPWC	Department of National Parks and Wildlife Conservation
FNCA	Forest and Nature Conservation Act
FPED	Forest Protection and Enforcement Division
FEWMD	Forest, Environment and Wildlife Management Department
GB	Gilgit-Baltistan
GIGO	Garbage In Garbage Out
GLOF	Glacial Lakes Outburst Flood
GSLEP	Global Snow Leopard and Ecosystem Protection Program
ha	Hectare
HCDO	Hoper Conservation and Development Organization
ICIMOD	International Center for Integrated Mountain Development
ITMS	Institute of Traditional Medicine Services
KCA	Kangchenjunga Conservation Area
KCAMC	Kangchenjunga Conservation Area Management Council
KP	Khyber Pakhtunkhwa Province
NOLS	Naitonal Outdoor Leadership School
NTFP	Non-Timber Forest Products
NTNC	National Trust for Nature Conservation
SAEPF	State Agency of Environment Protection and Forestry
SLCC	Snow Leopard Conservation Committee
SLF	Snow Leopard Foundation
SLT	Snow Leopard Trust
SMART	Spatial Monitoring And Reporting Tools
SRF	State Reserve Forests
TAL	Terai Arc Landscape
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
UWICE	Ugyen Wangchuck Institute of Conservation and the Environment
WCNP	Wangchuck Centennial National Park
WMD	Watershed Management Division (Ministry of Agriculture and Forests)
WWF	World Wildlife Fund

Asia High Mountains Project Goals and Objectives

AHM Project Goals:

The overall goals of the Asia High Mountains (AHM) Project are to galvanize greater understanding and action at local, national and regional levels across the snow leopard range states to conserve this iconic and endangered species, and to connect snow leopard conservation to a broader set of environmental, economic, and social issues with consequences for Asia's future sustainability, namely local livelihoods, water and food security, and climate change adaptation.

Notably, the goals will contribute to the water security and sustainable development of the snow leopard range nations by demonstrating methods for maintaining healthy headwater ecosystems and by working with mountain communities to implement sound natural resource management and climate adaptation strategies benefitting both livelihoods and ecosystems.

AHM Project Objectives:

AHM Objective 1:

Promote climate-smart management of snow leopard habitat for sustainable development in Asia's high mountain landscapes and communities

Sub-objective 1.1:

Strengthen local natural resource institution's governance and capacity.

Sub-objective 1.2:

Increase community resiliency to climate change impacts.

Sub-objective 1.3:

Enhance community engagement in conservation.

Sub-objective 1.4:

Conserve the snow leopard and its habitat in priority sites.

AHM Objective 2:

Improve transnational collaboration on climate-smart snow leopard conservation in Asia's high mountain landscapes and communities

Sub-objective 2.1:

Building cooperation through the Climate Summit for a Living Himalayas and its regional "Framework of Cooperation" for protection of Asia's high mountain landscapes and snow

leopard conservation. (Note: The Climate Summit for a Living Himalayas terminated its activities in AHM Project Year 1 and is no longer a functioning initiative.)

Sub-objective 2.2:

Facilitate discussions on climate change and snow leopard conservation among the range countries.

Sub-objective 2.3:

Update range-wide information on snow leopard trafficking and provide trafficking information to enforcement efforts at the national and regional network levels.

Sub-objective 2.4:

Building momentum through a range-wide network for snow leopard conservation.

Sub-objective 2.5:

Support implementation of the Global Snow Leopard and Ecosystem Protection Program (GSLEP).

AHM Programmatic Approach

The Asia High Mountains (AHM) Project uses conservation of the snow leopard and its habitat to promote dialogue between the nations of high Asia on the need to mitigate climate change impacts on their shared, transboundary glacial watersheds, which are of critical importance to the wellbeing of densely populated downstream regions of Asia. The project's goals seek to galvanize greater understanding and action at local, national and regional levels across the snow leopard range states to conserve this iconic species and its alpine habitat by connecting snow leopard conservation to a broader set of environmental, economic, and social issues with consequences for Asia's future sustainability, namely local livelihoods, water security, and climate change.

The AHM Project is working directly with six range countries, namely Bhutan, India, the Kyrgyz Republic, Mongolia, Nepal, and Pakistan, and will focus year five on consolidating activities at ten demonstration sites in these project countries (Table 1, Annex 1). These demonstration sites will serve as smaller-scale models of an integrated, climate-smart approach to snow leopard habitat conservation and snow leopard landscape management. WWF will build on the knowledge gained through activities conducted in the first four years of the AHM Project at these sites to address a range of issues affecting both snow leopards and local residents. To qualify as a demonstration site, we have stipulated that each site must have a minimum of five integrated conservation activities that address land, water, and other natural resource management issues; climate change impacts; sustainable livelihood diversification; and community participation in mitigating conservation and environment issues. WWF will consolidate these activities with the aim of integrating conservation, development and climate adaptation for maximum effectiveness of all three at each demonstration site. These demonstration sites all lie in Global Snow Leopard and Ecosystem Protection Program (GSLEP) Priority Landscapes, and will also be used to inform the development of large-scale snow leopard landscape management plans for these priority landscapes under the 12-nation GSLEP Program.

The GSLEP Program was unanimously adopted by all 12 snow leopard range states at the Global Snow Leopard Conservation Forum held in Bishkek in October 2013. In AHM Project Year 5 WWF will continue to directly support the GSLEP Program, the overarching goal of which is to secure 20 snow leopard landscapes by 2020. This will include providing support for GSLEP Secretariat meetings and events, including a planned GSLEP Summit in mid-2017, as well as providing extensive technical support to GSLEP partners for the development of climate-smart snow leopard landscape management plans.

These landscape management plans will form the centerpiece of GSLEP implementation in GSLEP priority landscapes across the snow leopard's range. Notably, WWF will work with government partners to lead the development of one model climate-smart landscape management plan for the Eastern Nepal GSLEP Priority Landscape. This plan will be completed in February 2017, in time for presentation at the March 2017 GSLEP Technical meeting and June 2017 GSLEP Steering Committee Meeting and Summit (see Regional Activities section, below). This Eastern Nepal model snow leopard landscape management plan will take an integrated climate-smart approach to high altitude conservation that addresses issues affecting snow leopards and

their prey as well as local residents, including pasture management, livestock management, management of relevant wood and forest resources, water resource management, protected area management, and improved infrastructure planning, all while taking into account climate change impacts observed and predicted for this region. WWF will also help guide the development of landscape management plans in the other snow leopard range nations, particularly in the Kyrgyz Republic, which hosts the GSLEP Secretariat. Through these efforts, the AHM Project will improve knowledge and foster cooperation among agencies responsible for conserving snow leopards and their habitat by increasing the availability of data, sharing lessons learned, and developing the capacity needed to ensure implementation of climate-smart snow leopard conservation throughout the snow leopard's range.

Taken together, AHM demonstration site activities and support for the 12-nation GSLEP Process have greatly raised awareness about the need to conserve snow leopards and their fragile headwaters habitat throughout this endangered species range. AHM support has also contributed to raising the profile of snow leopard conservation efforts to the international stage. Importantly, the AHM Project is the first initiative to take a comprehensive approach to snow leopard and high altitude conservation that not only addresses direct threats to snow leopards and their prey, but also climate change impacts on Asia's high mountain ecosystems and their human inhabitants. Through these efforts, snow leopards and other wildlife are being provided with an opportunity to thrive while remote mountain communities long bypassed by development initiatives are being provided with opportunities to improve both management of their local natural resource base and their household incomes. At the same time these mountain communities have also found a source of pride in protecting their wildlife. And through climate-smart adaptation efforts to improve management of mountain pastures, forests, and farmlands, the AHM project is serving as a model for high mountain conservation and watershed management throughout the snow leopard's range.

Table 1. List of AHM Project Demonstration Sites

Site No.	Country	Demonstration Site
1.	Bhutan	Western WCNP (Sephu Geog)
2.	Bhutan	Central WCNP (Chokhor Geog)
3.	Bhutan	Eastern WCNP (Gangzur and Kurtoe Geogs)
4.	India	Lachen Village, North Sikkim and adjacent snow leopard range areas
5.	Kyrgyz Republic	Sarychat-Ertash State Reserve
6.	Kyrgyz Republic	Chon Kyzyl Suu River Basin
7.	Mongolia	Central Altai Range
8.	Nepal	Kangchenjunga Conservation Area
9.	Pakistan	Hoper Valley, Gilgit-Baltistan
10.	Pakistan	Laspur Valley, Chitral District, Khyber-Pakhtunkha

AHM Project Management

Work in AHM Project Year 4 directly addressed recommendations of the mid-term project evaluation and established a renewed focus for this project. The project management has been strengthened, including deeper engagement across the project leadership and with project field teams. The transfer of funds to the field has been streamlined through preparation of comprehensive annual funding agreements for AHM recipients in advance of USAID's work plan approval. This minimizes the waiting time between work plan approval and transfer of funds. WWF leadership has been and will continue to meet with USAID missions in AHM countries and relevant USAID regional offices during field visits.

With respect to programmatic implementation, the AHM Project is now focusing on consolidating demonstration sites in project countries and advancing the GSLEP climate-smart snow leopard landscape management planning process in GSLEP Priority Landscapes. A core team of WWF staff in Nepal has been formed to work closely with the government and partners on the development of a model landscape management plan for Nepal's Eastern GSLEP Priority Landscape. WWF has also launched a project working group that is focusing on analysis of topographical, climate, and habitat data and mapping to inform the Eastern Nepal GSLEP landscape management plan as well as planning for other GSLEP Priority Landscapes elsewhere in the snow leopard's range. Furthermore, a working group comprising WWF, Snow Leopard Trust (SLT), and the GSLEP Secretariat, is leading the regional coordination of range-wide landscape management plan development under the GSLEP Program.

AHM Project Communications

The AHM Project is pursuing communications in line with the project communications plan that includes plans for further developing both the AHM and Third Pole GeoLab websites as the main portals for AHM communications (see Annex 6). In Year 5, we will restructure the Third Pole GeoLab website to better showcase a variety of content from across AHM project sites, including conservation and adaptation stories, photos, infographics and videos. The restructured website will also include a blog section to highlight AHM expertise and learning. There will be a steady stream of stories on the AHM Initiative page on worldwildlife.org, one per month, with content featuring innovative work such as Bhutan's climate-smart village, knowledge exchange between Nepal and Bhutan on Snow Leopard Conservation Committee (SLCCs), ecotourism and community stewardship in India, and other stories identified during field visits. Project pages for each of the six project countries will be created on worldwildlife.org to provide highlights of AHM's work by country. A Nepal-based communications expert was hired in AHM Project Year 4 and is working with the AHM grantees and partners to collect and publicize stories of AHM successes from the field, produce a quarterly newsletter, and document lessons learned. The AHM communicator will also support country office staff in promoting AHM efforts within their home countries by working together on press releases, stories, brochures, and other communications materials. There will also be a project closeout report and final summary event in 2017.

AHM Year 5 Activities

AHM Year 5 Activities are presented below by demonstration site. As designed, each demonstration site serves as a small-scale model of an integrated, climate-smart approach to landscape-level snow leopard conservation. All AHM demonstration sites fall within a GSLEP Priority Landscape and each is suitable for replication at a large scale within its respective priority landscape. To qualify as a demonstration site we have stipulated that each site must have a minimum of five integrated conservation activities that address climate change adaptation, water resource management, natural resource management, rural livelihoods, and snow leopard conservation.

AHM Activities that fall outside demonstration sites in a given GSLEP Priority Landscape, involve multiple demonstrations sites, or are being conducted at a national or regional level are listed separately.

As this is the final year of the project, the descriptions of each Year 5 Activity below begins with an overview of all related actions and outcomes to date in order to show how the addition of the proposed Year 5 activities will result in specific Life of Project outcomes.

Bhutan

In Bhutan there are three AHM Project demonstration sites; the Western, Central, and Eastern Park Ranges of Wangchuck Centennial National Park (WCNP) and its buffer zone. These demonstration sites primarily fall in Sephu Geog (county), Chokhor Geog, and Gangzur and Kurtoe Geogs, respectively. Primary activity implementing partners are WCNP, the Watershed Management Division (WMD) and the Ugyen Wangchuck Institute for Conservation and the Environment (UWICE).

Bhutan AHM Demonstration Site 1: Western WCNP (Sephu Geog)

In the western WCNP AHM demonstration site during Project Years 1-4, implementing partners made excellent progress in carrying out a comprehensive set of integrated climate adaptation and conservation activities. In terms of climate change adaptation and water resource management, WCNP demonstrated improved springshed protection and water delivery methods and supported creation of a water user's association for the long term management of these activities. At the same time, the WMD conducted a rapid watershed assessment and held watershed management stakeholder consultation meetings as part of the integrated watershed management planning process for the Nikka Chu River. In terms of climate change adaptation and natural resource management and rural livelihoods, WCNP undertook two activities. The first was an effort to get residents of Sephu to plant patches of a local species of bamboo that is in decline around their homes, both to preserve the species and to reinvigorate the local bamboo crafts industry that has declined with overharvesting and overgrazing of this species. The second activity was erection of an electric fence to prevent crop loss to wildlife in neighboring Nubi Geog, given that agricultural harvests are already believed to be declining due to various climate change impacts. In terms of snow leopard conservation, the AHM Project conducted a comprehensive snow leopard camera trap survey of the western park region in AHM Year 1, and also supported the

establishment of a local snow leopard conservation committee that is actively helping park staff with wildlife monitoring and anti-poaching activities.

In AHM Project Year 5, will continue work at this site. Climate change adaptation and water resource management work will include a comprehensive set of WMD-led demonstration activities to contribute further to the integrated watershed management plan being developed by WMD for the Nikka Chu River basin, including reforestation of degraded lands, farm road drainage improvements, an improved water filtration system for a local village, movement of pit toilets away from streams, further water source protection work, and a village recycling program and education campaign to reduce dumping of household refuse into streams. Climate change adaptation actions for natural resources and watershed management will include fodder crop planting on degraded land to reduce grazing pressure on local pastures and a sustainable caterpillar fungus harvesting campaign for the western range to help prevent decline of this valuable resource. Adaptation activities for both livelihoods and improved watershed management will include activities such as greenhouse vegetable gardening and instruction on the making and use of bio-fertilizers and pesticides to reduce use and overuse of agricultural chemicals. With respect to snow leopard conservation, support for SLCC activities will be continued. Taken together, these activities form a comprehensive, climate smart suite of conservation, water and natural resource management, and rural livelihood activities that will support implementation of the climate Snow leopard Landscape Management Plan that is currently being developed for the Bhutan’s Himalaya GLSEP Priority Landscape.

Table 2. AHM Year 5 Activities in Bhutan’s Western WCNP AHM Demonstration Site.

Bhutan	Demonstration Site 1: Western WCNP (Sephu Geog)
Activity Number	Activity Description
B.S1.1 WCNP	Sub-objective Number: 1.1, 1.3 Indicator Number: 3, 4 WCNP will work to educate local residents about trash disposal issues, especially the problem of dumping trash into streams. In conjunction with awareness raising, recycling of trash in Sephu Geog will be promoted by erecting storage facilities for recyclable materials and working with local communities and recyclers to ensure that trash collected is recycled in a timely manner. Composting of biodegradable waste will also be demonstrated and management of materials that can’t be reused or recycled will be addressed.
B.S1.2 WMD	Sub-objective Number: 1.1, 1.3 Indicator Number: 3, 4 One notable water sanitation issue in Sephu Geog is the placement of pit toilets along local stream banks. WMD will work with local leaders to move pit toilets to more appropriate locations and teach local residents about toilet sanitation issues and methods for improving the sanitation of their toilets, such as construction of simple septic tanks.
B.S1.3 UWICE	Sub-objective Number: 1.2, 1.3 Indicator Number: 1, 3, 4 UWICE will work with WCNP to conduct a second sustainable caterpillar fungus harvesting campaign, this time targeting western WCNP. This campaign will focus on educating collectors about the life cycle of caterpillar fungus, optimal collection period, and methods for ensuring the sustainable harvest of this

	<p>economically important resource. Topics of discussion will also include threats to alpine ecosystems in collection areas caused by fuel wood harvesting, pack animals, poor camp sanitation practices, indiscriminate dumping of camp trash, and recognition and treatment of altitude sickness. This campaign will be conducted in three parts: 1) meetings with villager collectors prior to the harvest, 2) working with caterpillar fungus collection permit offices to distribute informational brochures on sustainable collection with each permit issued, 3) field visits to the eastern collection areas to educate collectors and document the environment impact of this activity.</p>
B.S1.4	<p>Sub-objective Number: 1.2 Indicator Number: 10</p> <p>WMD In Sephu Geog, a shortage of clean drinking water in Busa and Menchhugang Villages will be addressed by improving the villages' water filtration tank system and educating locals about the need to better maintain their water delivery system and better protect the water source area above these villages, which is currently degraded due to unmanaged wood cutting and grazing in the source catchment area.</p>
B.S1.5	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2</p> <p>WMD As one adaptation action to improve watershed management in the face of a changing climate, support will be provided to reforest 5 ha of State Reserve Forest land in Lubzur Village that has been degraded by a combination of timber cutting, fuel wood gathering, and winter grazing of yaks and cattle. These lands are located just above the main channel of the Nikka Chu River and will serve as a highly visible demonstration site on improved watershed and State Reserve Forest land management.</p>
B.S1.6	<p>Sub-objective Number: 1.2 Indicator Number: 1</p> <p>WMD In Sephu Geog, farm road drainage systems along the Busa Chiwog (village cluster) and Wangdi Gonpa farm roads will be improved on a demonstration basis to reduce sedimentation of the Nikka Chu River since farm roads at this site and throughout the WCNP project area are a leading cause of sediment loading in streams as well as landslides. This work will include building road drains at key sites combined with drain check dams, drain sediment traps, retaining walls, and bioengineering works like planting hedgerows, grass, trees, and other vegetation to reduce erosion and sediment loading in runoff. In addition, a farm road users' group will be formed to oversee long term maintenance of farm road improvements.</p>
B.S1.7	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 1, 2, 3, 4, 5, 6</p> <p>WMD In Sephu Geog, support will be provided to reduce grazing pressure on pastures and in forests by planting both perennial and seasonal fodder crops on a demonstration basis on 20 ha of degraded land. Planting of fodder crops will be accompanied by lessons on stall feeding of livestock with these crops. Through this adaptation effort, dairy production is expected to increase while land cover and watershed conditions in the demonstration area are expected to improve.</p>
B.S1.8	<p>Sub-objective Number: 1.2 Indicator Number: 5, 6</p> <p>WMD In conjunction with the fodder crop planting activity, above, fodder crops harvested will be used in a silage making and storage demonstration with the goal of providing cattle with adequate winter fodder that minimizes the need for free grazing on natural mountain pastures. This demonstration will include both pit and bag methods of producing silage from fodder crops.</p>
B.S1.9	<p>Sub-objective Number: 1.2 Indicator Number: 5, 6</p>

WMD	As one climate adaptation and watershed management strategy to increase agricultural yields without clearing additional forests in the Nikka Chu River catchment, five interested farmers in Sephu Geog will be selected for a greenhouse vegetable farming demonstration using water efficient irrigation systems. In terms of livelihood security, at present one viable option for sale of any excess vegetables from these greenhouses is by selling this produce at the nearby Nikka Chu Hydropower Plant construction site.
B.S1.10	Sub-objective Number: 1.2 Indicator Number: 5, 6
WMD	In Sephu Geog, farmers in Busa Chiwog, will be trained on how to make and use bio-fertilizers and pesticides from manure, chili peppers, and other locally available ingredients to reduce Busa's dependence on chemical fertilizers and pesticides which can potentially contaminate local springs and streams.
B.S1.11	Sub-objective Number: 1.2 Indicator Number: 5, 6
WMD	In partnership with WCNP and as a complement to their bamboo planting and protection activity that will have benefits for the Nikka Chu watershed, WMD will work with the local bamboo craft artisans in Sephu Geog to promote production and marketing of traditional bamboo crafts as one adaptation strategy for improving livelihood security in Sephu. This will include promoting of sales of various bamboo baskets and mats on commission in shops on the nearby national highway, looking for partner businesses in Thimphu and elsewhere, and setting up a local artisan's collective to carry on this work.
B.S1.12	Sub-objective Number: 1.2 Indicator Number: 5, 6
WMD	As one step in promoting improved livelihood security in Sephu Geog, at the request of local stakeholders, WMD will provide support for an evaluation to examine the feasibility and long term prospects of restarting and maintaining the local Busa Chiwog milk processing unit that has fallen into disuse.

Bhutan AHM Demonstration Site 2: Central WCNP (Chokhor Geog)

In the central WCNP AHM demonstration site during Project Years 1-4, implementing partners continued to make excellent progress on carrying out a comprehensive set of integrated climate adaptation and conservation activities. In terms of climate adaptation and water resource management, WCNP conducted a springshed protection and improved water delivery system activity. In addition, three village water users associations were established to help communities better protect, manage, and allocate their local water resources. In terms of climate adaptation and natural resource management, WCNP conducted a successful fodder crop planting campaign to reduce grazing pressure on natural pastures and improve watershed management. UWICE conducted a sustainable caterpillar fungus collection field campaign in the alpine meadows of the park's central region in spring 2015. In terms of adaptation and rural live livelihoods, WCNP and UWICE conducted two climate adaptation trainings for farmers to increase their awareness of climate impacts on their livelihoods and also sponsored a study tour to Sikkim for local homestay owners to learn from successful ecotourism programs there. With respect to snow leopard and wildlife conservation, WCNP followed up on the earlier snow leopard camera trap survey of the Central Park Range by establishing a local snow leopard conservation committee,

conducting a human-wildlife conflict survey and trial black bear camera trapping survey, and construction of bear-proof food storage facilities for nomadic herders who form the core of the central park region’s SLCC members. WCNP also began training local Buddhist monks to teach conservation awareness and participate in anti-poaching activities.

In AHM Project Year 5, WCNP will continue with springshed protection work, fodder crop planting, and sustainable caterpillar fungus activities as well as continuing to work with SLCCs and Buddhist monks on anti-poaching activities in the central park region. At the same time, UWICE will undertake long term hydro-meteorological monitoring of temperature, precipitation, stream flow, and other parameters in both the upper Chamkar Chu River basin and the 1000 ha UWICE research preserve near Jakar, findings of which will be used for developing future climate scenarios and refining current adaptation strategies. Taken in aggregate, these activities will help guide development and implementation of the climate smart snow leopard landscape management plan for Bhutan’s Himalaya GSLEP Priority Landscape.

Table 3. AHM Year 5 Activities in Bhutan’s Central WCNP AHM Demonstration Site.

Bhutan	Demonstration Site 2: Central WCNP (Chokhor Geog)
Activity Number	Activity Description
B.S2.1 WCNP	Sub-objective Number: 1.1, 1.3, 1.4 Indicator Number: 3, 4, 8 Due to the great influence the Buddhist monks residing in the WCNP region have in teaching communities about the importance of wildlife protection, WCNP will partner with a Chokortoe Monastery on variety of activities. These will include incorporating wildlife protection themes into teachings at religious celebrations, anti-poaching activities such as snare removal patrols, and wildlife monitoring.
B.S2.2 WCNP	Sub-objective Number: 1.2 Indicator Number: 5, 6 Following earlier successes, WCNP will supply seed to local residents to plant fodder crops on 150 ha of land as one adaptation strategy to improve watershed management by reducing grazing pressure on upland pastures. This action will also improve livelihood security by increasing production of dairy products, particularly in winter. This activity will also be accompanied by sustainability training for participants on harvest and storage of their own fodder crop seed for future planting efforts.
B.S2.3 WCNP	Sub-objective Number: 1.2 Indicator Number: 1, 2, 6 WCNP will conduct a springshed protection and improvement activity for Thangbi Village that will include planting the 3-acre spring catchment area for this village with native tree species, digging a few strategically placed groundwater recharge trenches, fencing off the springshed to keep out free roaming livestock, and digging a small pond well below the spring for watering livestock.
B.S2.4 WCNP	Sub-objective Number: 1.2 Indicator Number: 1, 2, 6, 10 WCNP will conduct a springshed protection and improvement activity for Gorche Village that will include planting 2 acres of degraded land in the springshed above the village water intake pipe with native species, fencing off of the springshed, and construction of a simple passive filtration tank to remove sediment from the village water supply.

B.S2.5	Sub-objective Number: 1.4 Indicator Number: 1
WCNP	WCNP will construct a small ranger’s cabin strategically placed at the Nyepa Zampa bridge, the gateway to the Gomthang alpine meadow caterpillar fungus collection area in central WCNP. This cabin will function as a permanent check point for checking permits of caterpillar fungus collectors and trekkers entering the area and also as a base camp for conducting anti-poaching patrols. Timber for the cabin will be harvested locally and construction labor will be provided by WCNP staff.
B.S2.6	Sub-objective Number: 1.2 Indicator Number: 1, 6
WCNP UWICE	In Bumthang Dzongkhag (province), UWICE will establish a long-term hydrological, meteorological, and watershed monitoring system on its recently established 1000 ha research preserve. This preserve is located behind the UWICE campus near Jakar and spans an elevation range of 2900 to 4100 m. Notably, this watershed is a primary water source for 250 households in Jakar, the Bumthang provincial capital. Planned monitoring will include daily temperature, precipitation, humidity, stream discharge, and stream turbidity measurements. This work will provide an excellent complement to already ongoing work in the research preserve that includes wildlife, tree growth, and biomass productivity monitoring. The long term record produced by this effort will prove invaluable for future climate adaptation and water resource management planning work.
B.S2.7	Sub-objective Number: 1.2 Indicator Number: 6
WCNP UWICE	In Bumthang, UWICE will continue its ongoing hydro-meteorological study along the Chamkar Chu Watershed in central Wangchuck Centennial National Park. This involves using multiple portable HOBO weather stations to measure temperature, precipitation, and wind speed on an altitudinal gradient along the axis of the upper watershed. Data collected through this study will prove invaluable for future climate adaptation and water resource management planning work.

Bhutan AHM Demonstration Site 3: Eastern WCNP (Gangzur and Kurtoe Geogs)

In the eastern WCNP AHM demonstration site during Project Years 1-4, implementing partners worked with farming communities on carrying out a comprehensive set of integrated climate adaptation and conservation activities. In terms of climate adaptation and water resource management WCNP led a springshed protection and improved water delivery system activity in one village, while UWICE has conducted similar work at a second village it has selected for its “climate-smart village” demonstration. At the same time WMD has conducted watershed management stakeholder consultations in preparation of a climate-smart integrated watershed management plan for several farming villages around Lhuentse Town, the provincial capital. In terms of adaptation and natural resource management, WCNP developed a local forest management plan for one community forest in the region while UWICE conducted a tree planting activity as part of its climate-smart village watershed protection work. With respect to climate adaptation and livelihoods, UWICE provided support for villagers at its climate-smart village site to erect 3 greenhouses for producing off season vegetables and erected an electric fence to prevent crop loss to wildlife at a site where crop production is already believed to be in decline due to various climate change impacts. In terms of snow leopard conservation, WWF led a snow leopard survey of this park region in AHM Project Year 2.

In AHM Project Year 5, WMD will conduct a number of demonstration activities in support of its watershed management plan implementation, including various springshed protection activities such as tree planting in degraded water source areas and fencing off of water source areas to keep out livestock, improving farm road drainage systems, planting hedge rows along agricultural terraces to reduce topsoil erosion, improving irrigation canal efficiency, demonstrating river bank erosion control methods, fodder crop planting to reduce hillslope grazing pressure, and demonstrating improved village water system filtration methods and maintenance. UWICE will continue its demonstration climate smart village activity by working to construct a water storage tank for irrigation and drinking water as insurance against drought, introducing biogas technology to reduce local dependence on firewood, and planting of fodder crops to reduce grazing pressure on pastures and forests and to also increase dairy productivity. With respect to wildlife conservation WCNP will setup and train a wildlife protection committee in this park region to conduct anti-poaching activities and will reinforce this effort by conducting wildlife protection campaign at several schools in the eastern WCNP region as well as conducting a regional wildlife trade training for Bhutanese law enforcement officials. In total, these activities will form a comprehensive adaptation package for improving water, natural resource, and livelihood security as well as benefitting mountain ecosystems and wildlife. In addition, this suite of activities will support implementation of Bhutan’s national GSLEP climate smart snow leopard landscape management plan and will be suitable for replication in other mountain farming communities in Bhutan.

Table 4. AHM Year 5 Activities in Bhutan’s Eastern WCNP AHM Demonstration Site.

Bhutan	Demonstration Site 3: Eastern WCNP (Gangzur and Kurtoe Geogs)
Activity Number	Activity Description
B.S3.1 WCNP	Sub-objective Number: 1.3 Indicator Number: 5 WCNP will work with UWICE to set up several demonstration biogas digesters in Ney Village as an adaptation action to teach villagers about one method to reduce woodcutting, produce fertilizer, improve village sanitation, and promote renewable energy.
B.S3.2 WCNP	Sub-objective Number: 1.1, 1.3 Indicator Number: 1, 3, 4, 8 WCNP will set up a village conservation committee in Ney Village to promote wildlife protection and conduct anti-poaching work in this part of WCNP. Committee members will be trained about local wildlife poaching issues, conducting snare removal patrols, and reporting poachers and their movements to park staff.
B.S3.3 WCNP	Sub-objective Number: 1.1, 1.3 Indicator Number: 3, 4 In Kurtoe and Gangzur Geogs, WCNP will conduct a school education campaign at several schools to educate children about wildlife protection activities in WCNP. This will include teaching students and teachers about park conservation activities, park rules, and poaching issues in the park. Messages presented will be reinforced through distribution of park posters and brochures and a children’s drawing and essay competition.

B.S3.4	Sub-objective Number: 1.2 Indicator Number: 1, 2, 5, 6
WCNP	As one adaptation action to reduce grazing pressure on mountain pastures, WCNP will conduct a fodder crop planting demonstration at selected sites in the Eastern WCNP region. This will include provision of seed and fencing. Through this effort, one method for reducing degradation of natural pastures, improving watershed management, and increasing dairy production and livelihood security will be demonstrated.
B.S3.5	Sub-objective Number: 1.2 Indicator Number: 1, 2, 5, 6, 10
UWICE	UWICE will continue its climate-smart village demonstration activity at Shawa Village for a second year. Adaptation activities to be conducted will include construction of a water storage tank above the main village for irrigation and household use, particularly during spring drought; trial cultivation of cardamom as a cash crop to diversify livelihoods; a biogas digester demonstration to reduce dependence on firewood and imported cooking gas; and planting of fodder crops to reduce grazing pressure on local pastures and increase dairy productivity. Finally, UWICE will set up a portable weather station in Shawa to monitor long term climate patterns in this remote community and will also continue with long term monitoring of socio-economic conditions in the village.
B.S3.6	Sub-objective Number: 1.2 Indicator Number: 1, 2
WMD	In Gangzur Geog, 5 ha of land in the upper Gangzur Chu River catchment and 4 ha of land in the Lekpagang Chu River that have been degraded by woodcutting will be reforested with native species to improve runoff infiltration and seasonal availability of drinking and irrigation water in Ngar, Gangzur, and Jang Villages during dry season. In addition, reforestation efforts are expected to also improve water quality, reduce soil erosion, and help stabilize local hillslopes.
B.S3.7	Sub-objective Number: 1.2 Indicator Number: 1, 2
WMD	In Gangzur Geog, protection of the drinking water source for Ngar, Gangzur, and Jang Villages will be improved by erecting a sturdy barbed wire fence around the pipe intake points and the hillsides above. This will improve water quality, particularly during monsoon season, by preventing damage to vegetation at these water sources and contamination of water by free-roaming livestock that currently graze and drink at these community water sources. This action will also keep woodcutters away from this water source.
B.S3.8	Sub-objective Number: 1.2 Indicator Number: 1
WMD	In Gangzur Geog, farm road drainage systems will be improved on a demonstration basis in both the Gangzur Chu and Lekpagang Chu River catchments since farm roads at these sites, and throughout the WCNP project area, are a leading cause of sediment loading in streams as well as landslides. This work will include building road drains at key sites combined with drain check dams, drain sediment traps, and bioengineering works like planting hedgerows, grass, and other vegetation to reduce erosion and sediment loading in runoff.
B.S3.9	Sub-objective Number: 1.2 Indicator Number: 1, 2
WMD	In Gangzur Geog, support will be provided to the Ganzur-Denkaling Reneysa Community Forest to reforest 2.5 ha in the Gangzur Chu River catchment and to the Marculing Community Forest to reforest

	<p>3 ha in the Lekpagang Chu River catchment with native species. These lands have been degraded by a combination woodcutting and free grazing of livestock. This activity will improve the health of the local watershed by reducing erosion and sedimentation of runoff as well increasing the productivity of this community forest.</p>
<p>B.S3.10 WMD</p>	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2</p> <p>In Gangzur Geog, work will be conducted at selected farming sites in both the Gangzur Chu and Lekpagang Chu catchments to demonstrate methods for reducing soil erosion from agricultural terraces on steep hillsides as one way to improve surface water quality, agricultural productivity, and watershed management in general. Activities that will be undertaken include planting of hedge rows between terraces, reinforcing terraces by building stone walls to support them, and planting of trees, shrubs and other vegetation around the outer edges of terrace cultivation plots.</p>
<p>B.S3.11 WMD</p>	<p>Sub-objective Number: 1.1, 1.2 Indicator Number: 5, 6, 7, 8</p> <p>In Gangzur Geog, as a complement to reforestation activities for Ngar and Gangzur Villages, water security with respect to irrigation water will be improved by repair of the main irrigation canal for these two villages as well as establishment of an irrigation water users association. This effort will focus on addressing loss of irrigation water at high leakage and seepage points and reducing sediment load in water. This action will also ensure that irrigation water is allocated equitably amongst all user households, since at present there is no formal allocation system.</p>
<p>B.S3.12 WMD</p>	<p>Sub-objective Number: 1.2 Indicator Number: 1</p> <p>In Gangzur Geog, a demonstration river bank erosion control project will be conducted in Gangzur Village to protect valuable rice paddy terrace plots and reduce sediment loading in the Gangzur Chu River near its junction with the Kuri Chu River. This effort will include both use of stone protective works as well as bio-engineering works such as planting of native shrub and trees species along the river bank and establishment of buffer zone between agricultural fields and the river.</p>
<p>B.S3.13 WMD</p>	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2, 5, 6</p> <p>In Gangzur Geog, free-grazing of cattle has been identified as a large source of water contamination and watershed degradation. To reduce the impact of grazing on the local Gangzur Chu and Lekpagang Chu watersheds, support will be provided for planting of fodder crops on fallow agricultural terraces as well as fodder tree species on steep degraded slopes unsuitable for agriculture and along field borders. Fodder crops and leaves harvested will be used in a stall feeding demonstration that will reduce grazing impacts on the watershed and establish a central collection point for cattle waste that can be used as fertilizer.</p>
<p>B.S3.14 WMD</p>	<p>Sub-objective Number: 1.2 Indicator Number: 10</p> <p>Lhuentse Town, the capital of Lhuentse Dzongkhag (province), suffers from tap water with heavy sediment loading due to present municipal water intake points being located directly below the farming village of Jang in the Lekpagang Chu River catchment. In order address this situation, support will be provided to shift the municipal water intake points for this important administrative town of 72 households to a location 2 km uphill from agricultural fields in Jang. Discussions will also be held with the town government to inform them about methods for improving the effectiveness of their water treatment and storage systems.</p>
	<p>Sub-objective Number: 1.1</p>

B.S3.15 WMD	Indicator Number: 3, 4 In Gangzur Geog, residents of Jang and Ngar Villages will be trained on threats to water quality from poor rubbish disposal practices and excessive use of fertilizers and pesticides near waterways. To this end Jang and Ngar Villages will be used as pilot sites to demonstrate proper solid waste management and organic vegetable production for improving watershed management as well as reducing local health threats from excessive use of agricultural chemicals and improper disposal of associated agricultural and household waste.
B.S3.16 WMD	Sub-objective Number: 1.1 Indicator Number: 3, 4 In Gangzur Geog, residents of the Gangzur Chu River and Lekpagang Chu River catchments will be trained on compliance with the national Forest and Nature Conservation Act (FNCA) and its rules, in particular about the prohibition on exploitation of forest resources such as the harvesting of timber, firewood, and fodder tree leaves within 30 m of streams. Emphasis will also be placed on how these forest activities have a deleterious effect on the local watershed and water quality. Methods for improving monitoring of wood harvesting activities on local state reserve forests (SRF) in the catchment will also be discussed.
B.S3.17 UWICE	Sub-objective Number: 1.2 Indicator Number: 1, 2, 5, 6, 10 Following the success of the initial climate smart village activity in Shawa Village, Lhuentse Dzongkhag, UWICE will establish a second climate smart village in the WCNP region to showcase climate adaptation actions that can benefit rural farming communities in WCNP and elsewhere in northern Bhutan. At the selected village, UWICE will demonstrate climate-smart agricultural technologies and practices, such as improved water source protection and management, rain water and waste water harvesting, cultivation of drought resistant crop varieties, mulching of crops to inhibit weed growth and maintain topsoil moisture, composting of waste material and manure for enhancing fertility of fields, introduction of pesticide-free pest management strategies and human-wildlife conflict reduction strategies, and in general increasing the adaptive capacity of the selected village with respect to climate change impacts on their livelihoods.

Bhutan AHM Cross-cutting Activities

In addition to the above three demonstration sites, the AHM Project will also be supporting a number of cross-cutting WCNP park-wide and national level AHM activities as detailed below.

Table 5. AHM Year 5 Cross-cutting Activities in Bhutan

Bhutan	Cross-cutting Activities
Activity Number	Activity Description
B.CC.1 WCNP	Sub-objective Number: 1.3 Indicator Number: 3, 4 In October 2016, WCNP will host an International Snow Leopard Day celebration for school children residing in Wangchuck Centennial Park. This celebration will feature educational activities such as snow leopard themed quiz, speech, and drawing contests as well as an exhibition on WCNP wildlife and conservation activities.

B.CC.2	<p>Sub-objective Number: 1.2 Indicator Number: 3, 4</p>
WCNP	<p>WCNP and UWICE will organize a second climate adaptation training for an additional 30 forest, agriculture, livestock, and health extension workers; local geog leaders; WCNP and UWICE staff, and school principals. This activity will address climate impact-related issues on the above sectors with the goal developing adaptation strategies to address these issues that examine future climate scenarios as well as institutional, policy, and training needs to implement these strategies.</p>
B.CC.3	<p>Sub-objective Number: 1.4 Indicator Number: 3, 4</p>
WCNP	<p>Due to continuing wildlife crime occurring in Bhutan, in particular the use of Bhutan for transit of wildlife parts to China, WCNP and Bhutan’s Forest Protection and Enforcement Division (FPED) will conduct a second wildlife trade training for additional Royal Bhutan Police officers, Royal Bhutan Army border patrol members, Royal Court of Justice officials, Revenue and Customs officials, and Forestry Department and WCNP checkpoint staff. This training will focus teaching participants about trafficking routes and methods and identification of wildlife and parts that are commonly trafficked between India and China as well as on the need for inter-agency cooperation on wildlife trade.</p>
B.CC.4	<p>Sub-objective Number: 1.4 Indicator Number: 1, 3, 4</p>
WCNP	<p>A training on SMART (Spatial Monitoring And Reporting Tools) patrolling will be given for all 33 WCNP staff to introduce this system to the park. This system seeks to standardize both data collection during protected area patrolling operations and reporting and analysis of this data so that it can be used most effectively for improving conservation efforts. In conjunction with this effort, WWF will donate necessary patrolling and monitoring equipment to WCNP such as GPS units and cameras.</p>
B.CC.5	<p>Sub-objective Number: 1.3 Indicator Number: 1, 3, 4</p>
WCNP	<p>WCNP will work with UWICE to implement and enforce a Garbage In Garbage Out (GIGO) system for managing trash brought into highland areas of WCNP by caterpillar fungus collectors each spring. This will include educating the 1500 permitted caterpillar fungus collectors about this issue, drafting park regulations and penalties mandating the declaration of trash at check points upon entering and exiting the park, setting up a trash collection system at park exit points, and introducing a system for cleaning up remaining trash in the park at the end of each caterpillar fungus season.</p>
B.CC.6	<p>Sub-objective Number: 1.2 Indicator Number: 1, 3, 4</p>
WCNP	<p>WCNP will partner with the Institute of Traditional Medicine Services (ITMS) in Thimphu to improve the sustainability of medicinal plant collection in WCNP. This effort will involve the mapping of medicinal plant distribution and collection patterns in the park for high value medicinal plants threatened by overharvesting as well as educating collectors about threats to these plant resources and ways to minimize these threats. As one climate adaptation strategy for park ecosystems and livelihoods, trials will be conducted on raising certain high value species in household plots to reduce collection of wild growing plants.</p>
B.CC.7	<p>Sub-objective Number: 1.2 Indicator Number: 3, 4, 6</p>
UWICE	<p>In Bhutan, UWICE will organize the second Bhutan National Water Seminar in Bumthang. This event will bring together water resource specialists from government, NGOs, and universities to discuss current research on water resources in Bhutan and approaches for addressing current and future threats to</p>

	Bhutan’s water security, including the threat of climate change. The seminar will last 3 days and will emphasize management of mountain watersheds. Findings of the seminar will help direct new water resource research and policy, including policy for hydropower development in Bhutan. The seminar will also be used as a forum for generating cooperation and synergies amongst various organizations working to improve water security in Bhutan.
B.CC.8 UWICE	Sub-objective Number: 1.4 Indicator Number: 3, 4 Following the success of the NOLS Wilderness Medicine Training that trained 33 park rangers on wilderness first aid, UWICE will host a follow up Advanced Wilderness Medicine Training. At this time, lessons learned from the first training will be reinforced while participants will learn new first aid and rescue skills.
B.CC.9 WCNP UWICE WMD	Sub-objective Number: 1.4, 2.5 Indicator Number: 1, 7, 12 WCNP, UWICE, and WMD will present the findings and successes of their AHM activities to Bhutan’s national GSLEP committee to inform development of the climate-smart snow leopard landscape management plan for Bhutan’s Himalaya GSLEP Priority Landscape.

In summary, AHM Activities in Bhutan are resulting in:

- Improved knowledge of snow leopard populations in Central Bhutan
- Improved conservation of snow leopards, their prey, and habitat in WCNP
- Improved watershed management and water security in participating communities in WCNP
- Improved natural resource management with respect to water sources, caterpillar fungus, pastures, forests, and farm land in WCNP
- Improved livelihood security for participating farmers and herders
- Improved ability of WCNP residents to adapt to climate change impacts
- Improved participation of WCNP residents in conservation activities
- Improved information for and ability of government departments to design and implement effective, climate-smart, landscape level snow leopard conservation measures

India

In India there is one AHM Project demonstration site, Lachen Village, North Sikkim and adjacent snow leopard range areas of North Sikkim District.

India AHM Demonstration Site: Lachen Village, North Sikkim

In India, the AHM demonstration site is in Lachen Village and adjacent snow leopard range areas of North Sikkim District. During Project Years 1-4, WWF worked with the Lachen Dzumsa (village council) and community members in carrying out a wide array of climate adaptation and conservation activities. In terms of climate adaptation and natural resource management, WWF conducted a sustainable caterpillar fungus harvesting campaign to ensure the continued viability of the village's single most economically important natural resource. WWF also educated both teachers and students about various environmental threats in North Sikkim, including threats to the local natural resource base. In terms of climate adaptation and rural livelihoods, WWF has placed a particular emphasis on ecotourism as an alternative livelihood to farming and livestock raising in North Sikkim given the large and growing number of domestic tourists that visit Lachen each summer. This has included a trash cleanup campaign for Lachen village and neighboring tourist destinations, establishment of a recycling center in Lachen to better manage trash, and development of a sustainability plan for the Green Lake Trek that addresses firewood collection, medicinal plant collection, trash disposal, and poaching issues. In terms of snow leopard conservation, WWF conducted the first snow leopard camera trap survey of North Sikkim, various snow leopard sign and prey species surveys, and trained a number of citizen scientists to assist with these surveys. WWF also conducted a human-wildlife conflict survey in North Sikkim. In addition, WWF trained and led members of the Himal Rakshaks (mountain guardian) group and the Forest, Environment and Wildlife Management Department (FEWMD) on how to conduct general wildlife monitoring and anti-poaching patrols.

In AHM Project Year 5, with respect to climate adaptation and water security, WWF will work with the Lachen Dzumsa to conduct an inventory of all springs and other water sources used by village residents. Once complete, WWF will develop and implement a strategy for improving protection of these water sources to insure their long term viability. With respect to climate adaptation and natural resource management, WWF will advise the state Forest Department, which has now assumed responsibility for the sustainable caterpillar fungus harvesting campaign started by WWF in North Sikkim. With respect to climate adaptation and rural livelihoods in Lachen Village, WWF and partners will work to promote climate-smart farming practices such as improved crop rotation, composting, and the production and use of bio-pesticides and fertilizers. WWF will also provide training for ecotourism workers and develop additional ecotourism products for Lachen to improve livelihood security in this sector. In terms of snow leopard conservation, WWF will continue to support wildlife monitoring and anti-poaching patrols by the Himal Rakshaks group in North Sikkim and will conduct a camera trap survey in West Sikkim. Successes of all WWF activities in North Sikkim will be used to inform development of the climate-smart snow leopard landscape management plan for India's Eastern Himalaya GSLEP priority site.

Table 6. AHM Year 5 Activities in India’s Lachen Village, North Sikkim AHM Demonstration Site.

India	Demonstration Site: Lachen Village
Activity Number	Activity Description
I.S1.1	<p>Sub-objective Number: 1.2 Indicator Number: 3, 4, 6</p> <p>In Lachen Village, WWF and partners will work to promote climate-smart agricultural practices in the village, including developing a crop rotation system designed to enhance soil fertility; implementing a village composting program to increase soil fertility and minimize the use of chemical fertilizers; and developing a system of integrated pest management at Lachen to minimize the use of chemical pesticides which will include training on the production and use of bio-pesticides.</p>
I.S1.2	<p>Sub-objective Number: 1.2 Indicator Number: 1</p> <p>In Lachen Village, WWF and the state Rural Management and Development Department will work with the village Dzumsa to develop a community water resource management plan for the village. As a first step in this effort, a consultation will be held with community residents to identify all springs and other water sources used in the village. Once identified, these community water sources will be mapped in a GIS system together with the watershed recharge zone of each. Next disturbed and degraded areas in these recharge zones will be identified and appropriate actions taken to improve the most severely degraded areas with respect to water resource provision.</p>
I.S1.3	<p>Sub-objective Number: 1.2 Indicator Number: 1</p> <p>Recently, the state Forest Department assumed the lead on the sustainable caterpillar fungus collection campaign for North Sikkim that was started by WWF in AHM Project Year 4. However, WWF will continue to advise this department on issues related to sustainable fungus collection as questions arise.</p>
I.S1.4	<p>Sub-objective Number: 1.3 Indicator Number: 3, 4, 6</p> <p>In Lachen, as one adaptation action to diversify livelihoods, WWF and partners will organize an eco-tourism service providers training. This will include eco-themed training for hotel and guest house owners, cooks, nature guides, and drivers that emphasizes local conservation and sustainability issues as well as promoting responsible tourism in Lachen. Development of additional tourism activities will also be discussed with the goal of increasing the length of tourist stays in Lachen.</p>
I.S1.5	<p>Sub-objective Number: 1.3 Indicator Number: 3, 4, 6</p> <p>WWF and partners will conduct a training on production and marketing of local Lachen handicrafts to tourists and others as one adaptation strategy to diversify livelihoods.</p>
I.S1.6	<p>Sub-objective Number: 1.3 Indicator Number: 1, 3, 4</p> <p>WWF will work with the state Forest Department to continue supporting high altitude biodiversity monitoring and anti-poaching patrols conducted by the Himal Rakshaks in North Sikkim, in particular by providing training and necessary equipment.</p>

India AHM Cross-cutting Activities

In addition to the Lachen Village AHM demonstration site, the AHM Project will also be conducting a number of cross-cutting state level AHM activities in Sikkim as well as activities at subsidiary AHM Project sites as detailed below.

Table 7. AHM Year 5 Cross-cutting Activities in Sikkim

India	Cross Cutting Activities
Activity Number	Activity Description
I.CC.1	<p>Sub-objective Number: 1.2 Indicator Number: 3, 4, 6</p> <p>In Lachung Village, North Sikkim, WWF and partners will work to promote climate-smart agricultural practices in the village, including developing a crop rotation system designed to enhance soil fertility; implementing a village composting program to increase soil fertility and minimize the use of chemical fertilizers; and developing a system of integrated pest management at Lachung to minimize the use of chemical pesticides which will include training on the production and use of bio-pesticides.</p>
I.CC.2	<p>Sub-objective Number: 1.3 Indicator Number: 1, 3, 4</p> <p>WWF will work with the state Forest Department to continue supporting high altitude biodiversity monitoring and anti-poaching patrols conducted by the Himal Rakshaks in West Sikkim, in particular by providing training and necessary equipment.</p>
I.CC.3	<p>Sub-objective Number: 1.4 Indicator Number: 3, 4, 8</p> <p>WWF will train and work with local citizen scientists to conduct snow leopard camera trap, sign, and prey species surveys of potential snow leopard habitat in the Khangchendzonga National Park and Biosphere Reserve in West Sikkim. Predator scat collected will be sent to the Center for Cellular and Molecular Biology in Bangalore for genetic population analysis as a secondary method for estimating snow leopard populations. WWF will compile the findings of its snow leopard survey work in Sikkim in a snow leopard distribution map for the state.</p>
I.CC.4	<p>Sub-objective Number: 1.4, 2.5 Indicator Number: 1, 7, 12</p> <p>WWF will share findings and successes of AHM snow leopard research work and conservation and adaptation activities with India's national GSLEP committee to inform writing of the climate smart snow leopard landscape management plan for India's Eastern Himalaya GSLEP Priority Landscape.</p>

In summary, AHM Activities in India are resulting in:

- Improved knowledge of snow leopard populations in Sikkim
- Improved conservation of snow leopards, their prey, and habitat in Sikkim
- Improved watershed management and water security in Lachen

- Improved natural resource management with respect to water sources and caterpillar fungus in Lachen
- Improved ecotourism practices and livelihood security in Lachen
- Improved ability of Lachen residents to adapt to climate change impacts
- Improved participation of Lachen residents in conservation activities
- Improved information for and ability of government departments to design and implement effective, climate-smart, landscape level snow leopard conservation measures

Kyrgyz Republic

In the Kyrgyz Republic there are two AHM Project demonstration sites, the Sarychat-Ertash State Reserve and its buffer zone and the Chon Kyzyl Suu River basin.

Kyrgyz Republic AHM Demonstration Site 1: Sarychat-Ertash State Reserve

At the Sarychat-Ertash State Reserve demonstration site in the eastern Kyrgyz Republic during AHM Project Years 1-4, WWF worked with local partners to conduct a comprehensive series of integrated climate adaptation and conservation activities. In terms of climate adaptation and water and natural resource management, WWF participated in the successful campaign to expand the Sarychat-Ertash State Reserve, effectively closing about 150 km² of this alpine region to human activities and creating an opportunity to build the resilience of this fragile ecosystem to climate change impacts. Closure of these lands to future mining and grazing activities will also have benefits for the local watershed which forms the headwaters of the Syr Darya, such as by reducing erosion and increasing runoff infiltration in this area as vegetation recovers. WWF is also continuing to develop an improved pasture management system for the buffer zone of the Sarychat-Ertash Reserve that focuses on increased rates of pasture rotation, with benefits for both watershed management and pastureland productivity. In terms of climate adaptation and rural livelihoods, WWF is demonstrating yak herding as a climate smart alternative to keeping sheep and goats, which are more prone to die off during severe snow storms and are preyed upon at a higher rate by local wolves and snow leopards than are yaks. WWF has also successfully promoted production and marketing of various local handicrafts and supported local processing of wool. With respect to snow leopard conservation, WWF has supported a variety of activities at the Sarychat-Ertash Reserve, including snow leopard camera trap, sign, and prey species surveys; DNA analysis of scat samples collected in the reserve to better understand local snow leopard population dynamics; anti-poaching patrols; provision of training and equipment for reserve rangers; and holding of various snow-leopard themed conservation awareness raising events.

In AHM Project Year 5, WWF will continue with the above activities as well as promoting ecotourism and homestay operations at the reserve. Notably, WWF will also work closely with the GSLEP Secretariat, SLT, and government partners to complete writing of climate-smart snow leopard landscape management plan for the Kyrgyz Republic's Central Tian Shan. Taken together, these activities form a comprehensive, climate-smart, package for the conservation of snow leopards and ecosystems in this remote reserve that will serve as a model for replication by other GSLEP range states in the Central Asia Region.

Table 8. AHM Year 5 Activities in the Kyrgyz Republic's Sarychat-Ertash State Reserve AHM Demonstration Site.

Kyrgyz Republic	Demonstration Site 1: Sarychat-Ertash State Reserve (Ak Shyrak, Engilchek, and Karakolka Villages)
Activity Number	Activity Description
K.S1.1	Sub-objective Number: 1.1, 1.3 Indicator Number: 8

	<p>An annual International Snow Leopard Day celebration will be held in Karakolka Village in October 2016. This event will be attended by all three villages in the demonstration site and feature environmental-themed drama, song, essay, speech, and art competitions between village teams.</p>
K.S1.2	<p>Sub-objective Number: 1.1, 1.3 Indicator Number: 8</p> <p>Land of the Snow Leopard Festivals will be held in all three demonstration site villages in May 2017. These village festivals will boost local conservation awareness and help village teams prepare for the annual inter-village International Snow Leopard Day competition.</p>
K.S1.3	<p>Sub-objective Number: 1.2 Indicator Number: 1, 3, 4, 5, 6</p> <p>WWF will continue to support keeping of a demonstration yak herd in Ak Shyrak Village to illustrate one method of climate-smart herding and pasture management suitable for replication elsewhere in the Tian Shan. In Year 5, five poor families will care for 5 female yaks and each receive a yak calf in payment in the spring of 2017. It also planned to sell a small number of excess male yaks, with the proceeds being used for ranger training and equipment.</p>
K.S1.4	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 5, 6</p> <p>As a companion activity to activity K.S1.3, above, another adaptation action to diversify rural livelihoods will be to conduct a training for all three demonstration site villages on processing and use of yak wool as well as on production of yak milk products. Currently yak wool and milk are not harvested in the Kyrgyz Republic, and this is one simple way to diversify incomes.</p>
K.S1.5	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 3, 4, 5, 6, 8</p> <p>As another adaptation action, WWF will seek to increase livelihood security in the three demonstration villages by supporting women’s groups to establish homestay operations. This will include training on the basics of homestay management and ecotourism. In addition, WWF will work with ecotourism companies based in Bishkek to promote ecotourism and homestays in the Sarychat-Ertash reserve project villages.</p>
K.S1.6	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 5, 6, 8</p> <p>As another adaptation action to diversify rural livelihoods, WWF will continue to support training on both felt making and handicraft production as well as support for marketing of crafts produced, such as at the annual summer crafts fair at Lake Issyk Kul.</p>
K.S1.7	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 3, 4</p> <p>In the winter and spring of 2016-2017, WWF will continue to train rangers and local herders on how to conduct snow leopard sign surveys and use camera traps for snow leopard monitoring in the Sarychat-Ertash Reserve and the new nearby Khan Tengri Nature Park. In addition WWF and partners will analyze the results of these surveys and produce a report on survey findings.</p>
K.S1.8	<p>Sub-objective Number: 1.3, 1.4, 2.3 Indicator Number: 1, 3, 4, 7, 8</p>

	<p>WWF will continue to support anti-poaching trainings and patrols for rangers and community members in the Sarychat-Ertash Reserve as well as the new Khan Tengri Nature Park. This will include continued cooperation with the Kyrgyz State Agency of Environment Protection and Forestry (SAEPF) and the Issyk Kul Biosphere Reserve mobile anti-poaching group on conducting these patrols. Support for Sarychat-Ertash State Reserve staff anti-poaching team will include jeep fuel, spare parts, uniforms, and field equipment.</p>
<p>K.S1.9</p>	<p>Sub-objective Number: 1.3 Indicator Number: 1, 3, 4, 8</p> <p>WWF will provide training to communities in the buffer zone of the Sarychat-Ertash State and Khan Tengri Nature Park reserves on a variety of species conservation topics, including snow leopard ecology, human-wildlife conflict prevention for herding families, snare removal and other anti-poaching methods.</p>

Kyrgyz Republic AHM Demonstration Site 2: Chon Kyzyl Suu River Basin

The second AHM demonstration site in the Kyrgyz Republic is the Chon Kyzyl Suu River Basin, which stretches from the northern boundary of the Sarychat-Ertash State Reserve to the shore of Lake Issyk Kul. During AHM Project Years 3-4 at this site, WWF performed extensive preparatory work on developing and implementing an integrated watershed management plan for this site that addresses management of pastures, forests, and agricultural lands. WWF also began work on a biodiversity assessment for this basin as part of an effort to have this remarkable valley declared a protected area.

In AHM Year 5, WWF will conduct a series of watershed demonstration activities in support of watershed management plan implementation. In terms of climate adaptation and water and natural resource management, WWF will conduct a small-scale drip irrigation demonstration to demonstrate a simple way to improve water use efficiency on local farms. As at Sarychat Ertash, WWF will also demonstrate an improved pasture management system in the valley that emphasizes increased rates of pasture rotation that will have benefits for both pasture productivity and watershed management, particularly through renewed use of currently disused highland pastures. WWF will also work with local villages to better regulate woodcutting and forest use practices in the valley with benefits for both forests and watershed management. In terms of climate adaptation and rural livelihoods, WWF will work with local partners to demonstrate and market products of a variety of climate-smart alternative livelihood activities, including ecotourism in the Chon Kyzyl Suu Valley, off-season greenhouse vegetable gardening, beekeeping, and sustainable harvest of wild mushrooms and medicinal herbs. WWF will also strive to improve marketing of local dairy products. With respect to snow leopard conservation, WWF will conduct community awareness raising events about the plight of snow leopards and other wildlife in the valley. WWF will train local citizen scientists on how to conduct snow leopard camera trap, sign, and prey species surveys and lead these type of field surveys in the upper Chon Kyzyl Suu basin. In conjunction with citizen scientist trainings, WWF will also provide anti-poaching training to interested local residents and form an anti-poaching team to periodically conduct patrols in the valley. Finally, WWF will work with government partners to develop a proposal for granting the upper Chon Kyzyl Suu River basin protected status, which will serve as an excellent adaptation strategy for improving management of the basin and

increasing the resilience of the basin’s montane ecosystems to climate change impacts. As with the Sarychat-Ertash AHM demonstration site, activities ongoing in the Chon Kyzyl Suu basin will inform development of the climate smart snow leopard landscape management plan for the Krygyz Republic’s Central Tian Shan GSLEP priority landscape and will serve as a model for replication for the other Central Asia GSLEP member states.

Table 9. AHM Year 5 Activities in the Kyrgyz Republic’s Chon Kyzyl Suu River Basin AHM Demonstration Site.

Kyrgyz Republic	Demonstration Site 2: Chon Kyzyl Suu River basin
Activity Number	Activity Description
K.S2.1	<p>Sub-objective Number: 1.1, 1.3 Indicator Number: 8</p> <p>In the Chon Kyzyl Suu Valley, WWF will provide support for holding a local biodiversity awareness festival to increase community awareness of local biodiversity and promote AHM conservation activities in the valley.</p>
K.S2.2	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 2, 4, 5, 6</p> <p>As climate adaptation actions to diversify rural livelihoods, WWF will demonstrate beekeeping and start up of small-scale greenhouse agriculture for vegetable cultivation at selected sites in the Chon Kyzyl Suu Valley.</p>
K.S2.3	<p>Sub-objective Number: 1.2 Indicator Number: 1, 6, 8</p> <p>As an adaptation action to improve resiliency of pasture ecosystems in the Chon Kyzyl Suu Valley, WWF will work with pasture experts to develop sustainable pasture management plans for four villages in the valley using UNDP’s “Electronic Pasture Management” software. WWF will also help village pasture committees in the Chon Kyzyl Suu Valley to improve their livestock migration patterns by promoting use of remote disused summer pastures in the highland areas of the Central Tian Shan range.</p>
K.S2.4	<p>Sub-objective Number: 1.3 Indicator Number: 3, 4, 5, 6, 8</p> <p>As one adaptation action to increase livelihood security by diversifying household incomes in the Chon Kyzyl Suu Valley, WWF will work with the Kyrgyz Community Based Tourism Association to develop homestay and ecotourism activities in the valley and train local residents.</p>
K.S2.5	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 3, 4, 5, 6, 8</p> <p>As another set of adaptation actions to increase livelihood security by diversifying household incomes in the Chon Kyzyl Suu Valley, WWF will work with local residents and retailers in Bishkek and Karakol to process and market local dairy products and sustainably-harvested wild mushroom and wild medicinal herb products. As with activity K.S2.4, above, these livelihood activities will be tied to a commitment from participants to work in preventing poaching of snow leopards and their prey species and to support other AHM Project conservation activities in the valley.</p>
	<p>Sub-objective Number: 1.3, 1.4</p>

K.S2.6	<p>Indicator Number: 1, 3, 4</p> <p>WWF and partners will train herders and other interested groups residing in the Chon Kyzyl Suu Valley on how to conduct snow leopard sign and prey species surveys and on how to use camera traps for monitoring snow leopards in appropriate locations.</p>
K.S2.7	<p>Sub-objective Number: 1.3 Indicator Number: 1, 3, 4, 8</p> <p>WWF will provide training to communities in the Chon Kyzyl Suu Valley on a variety of species conservation topics, including snow leopard ecology, human-wildlife conflict prevention for herding families, snare removal and other anti-poaching work as well as wildlife prevention.</p>
K.S2.8	<p>Sub-objective Number: 1.4 Indicator Number: 7</p> <p>WWF will continue to work to pursue expansion of the national protected area system to improve protection of snow leopards. This will include conducting a biodiversity assessment of the Chon Kyzyl Suu River basin as a first step in securing national level protected status for this ecologically important valley.</p>

Kyrgyz Republic AHM Cross-cutting Activities

In addition to the above two demonstration sites, the AHM Project will also be supporting several of cross-cutting AHM activities at both the local and national levels in the Kyrgyz Republic as detailed below.

Table 10. AHM Year 5 Cross-cutting Activities in the Kyrgyz Republic

Kyrgyz Republic	Cross-Cutting Activities
Activity Number	Activity Description
K.CC.1	<p>Sub-objective Number: 1.3 Indicator Number: 3, 4</p> <p>In the summer of 2017, WWF and partners will sponsor a summer eco-camp on the shore of Lake Issyk Kul for 20 school children from the four main AHM project sites: Ak Shyrak, Karakolka, and Engilchek Villages and the Chon Kyzyl Suu Valley. This camp will feature lessons on snow leopard range ecology, eco-themed art and essay contests, and local nature field trips.</p>
K.CC.2	<p>Sub-objective Number: 1.3 Indicator Number: 3, 8</p> <p>WWF will collect local eco-themed legends and stories about wildlife and important sacred sites as well as traditional knowledge regarding the environment. These stories will be published as a booklet and posted online and distributed to schools and other interested parties to educate young people about the Kyrgyz people’s long tradition of nature protection and spiritual connection to the land.</p>
K.CC.3	<p>Sub-objective Number: 1.4, 2.5 Indicator Number: 1, 7, 12</p>

	WWF AHM Project staff in the Kyrgyz Republic are currently members of the Kyrgyz Republic's drafting committee for developing a climate-smart snow leopard landscape management plan for the nation's Central Tian Shan GSLEP Priority Landscape. As such the findings and successes of their AHM activities will inform development of this snow leopard landscape management plan which will serve as a model for replication by the other GSLEP Central Asian nations.
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In summary, AHM Activities in the Kyrgyz Republic are resulting in:

- Improved knowledge of snow leopard populations in the eastern Kyrgyz Republic
- Improved conservation of snow leopards, their prey, and habitat in the eastern Kyrgyz Republic
- Improved watershed management, particularly in the Chon Kyzyl Suu Basin
- Improved natural resource management with respect to pastures and forests in the eastern Kyrgyz Republic
- Improved livelihood security in participating communities
- Improved ability of participating communities to adapt to climate change impacts
- Improved participation of demonstration site residents in conservation activities
- Improved information for and ability of government departments to design and implement effective, climate-smart, landscape level snow leopard conservation measures

Mongolia

In Mongolia, there is one AHM demonstration site in the Altai Mountains that stretches from Sair Mountain, Bayan Olgii Aimag (province) in the north to Khazhgiin Mountain, Khovd Aimag in the south, which hereafter will be referred to as the AHM Central Altai Range Demonstration Site.

Mongolia AHM Demonstration Site: AHM Central Altai Range

In Mongolia's Central Altai Range AHM demonstration site, activities during AHM Project Years 1-4 focused on this site's grassland ecosystems. With respect to climate adaptation and water resource management, at the request of the provincial government, WWF prepared an integrated water resource management plan for the closed Khuisiin Gobi-Tsetseg River basin and restored one important spring site that had gone dry in Tsetseg Soum. In terms of climate adaptation and natural resource management, WWF oversaw the compiling of pasture databases for five soums (county) in key snow leopard range areas and is currently working with herders and local soum governments to institute group herding regimes that increase rates of pasture rotation to reduce overgrazing pressure on privately held pasture allotments. In terms of climate adaptation and rural livelihoods, WWF has supported ecotourism training focussing on setup and running of mobile yurt camps for seasonal use, sale of handicrafts to visiting tourists and in local market towns, and improved marketing of livestock produce. In terms of snow leopard conservation, WWF has helped establish two local protected areas; trained local citizen scientists to conduct snow leopard camera trap, sign, and prey species surveys and led these surveys throughout the Central Altai; used survey findings to update the snow leopard distribution map for western Mongolia; erected a demonstration steel fence corral to show one method for reducing human-snow leopard conflict; and worked with school eco-clubs to conduct an innovative trap exchange campaign to reduce the number of jaw traps on Jargalant Khaikhan Mountain.

In AHM Project Year 5, WWF will continue with the above activities placing a particular emphasis on improving pasture management practices. Notably, WWF will repair and improve protection of three disused wells in the Khuisiin Gobi-Tsetseg River Basin. This action will improve the water security of local herders and also increase their rates of pasture rotation and mitigate current overgrazing issues at currently functioning wells. WWF will also work with government partners to develop climate-smart snow leopard landscape management plans for Mongolia's North Altai and Altai GSLEP Priority Landscapes. Thus in total, these activities will make a leading contribution to informing landscape management plan development for both Mongolia's North and South Altai GLSEP Priority Landscapes.

Table 11. AHM Year 5 Activities in Mongolia's Central Altai Range AHM Demonstration Site.

Mongolia	Demonstration Site: Central Altai Range
Activity Number	Activity Description
M.S1.1	Sub-objective Number: 1.2 Indicator Number: 5, 6, 11

	<p>As one recommendation resulting from the Integrated Water Resource Management (IWRM) planning process that WWF conducted for the Khuisiin Gobi-Tsetseg River Basin in southern Khovd Aimag, WWF is planning to rehabilitate 3 broken or damaged wells used by herders in this basin. This effort will get these wells working again, improve their water delivery efficiency, and better protect these water sources from contamination by livestock and sediment. Work at these sites will include installing hand pumps and fencing off well sites to keep livestock out. Water from these wells will be used for both household use and watering livestock and will also increase rates of pasture rotation and reduce overgrazing and severe trampling of pastures around currently working well sites where livestock now gather in large numbers.</p>
M.S1.2	<p>Sub-objective Number: 1.2 Indicator Number: 1, 3, 4, 5, 6, 7, 8</p> <p>As one climate adaptation strategy to increase the resilience of grassland ecosystems, an improved rotational grazing system will be established for pastures in Darvi Soum, Khovd Aimag. This system will be developed by a local pasture management specialist with the goal of reducing grazing pressure on the trial site by 30 percent. The system developed will be put before the local soum government for approval and will be accompanied by development of grazing regulations for the site as well as training on rotational grazing systems for local herders.</p>
M.S1.3	<p>Sub-objective Number: 1.2 Indicator Number: 1, 3, 4, 5, 6, 7, 8</p> <p>WWF will organize a seminar for soum (county) level officials and other community leaders from the Altai-Sayan project region to share best practices and lessons learned from the successful WWF-supported community-based pasture management systems implemented at the Sair Mountain and Chandmani Soum AHM Project sites. The seminar will be co-organized with a local pasture management specialist and will emphasize the ecological and economic benefits and feasibility of highly rotational group herding practices, as opposed to current single family plot grazing systems.</p>
M.S1.4	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 3, 4</p> <p>WWF will continue to support volunteer rangers at priority sites in the AHM Project region of western Mongolia to conduct monitoring of snow leopards using camera trap, sign, and prey species surveys. Data collected by these citizen scientist will be compiled in a data base and will be used for updating the snow leopard distribution map of western Mongolia and for improving design of snow leopard conservation efforts in western Mongolia, including for Mongolia's GSLEP snow leopard landscape management plan.</p>
M.S1.5	<p>Sub-objective Number: 1.4, 2.5 Indicator Number: 1, 7, 12</p> <p>WWF AHM Project staff in Mongolia will work closely with Mongolia's national GSLEP focal point to develop climate-smart snow leopard landscape management plans for the nation's North and South Altai GSLEP Priority Landscapes. As such the findings and successes of WWF's AHM activities in Mongolia will inform development of this snow leopard landscape management plan for this vast and important snow leopard region.</p>

In summary, AHM Activities in Mongolia are resulting in:

- Improved knowledge of snow leopard populations in the western Mongolia
- Improved conservation of snow leopards, their prey, and habitat in western Mongolia
- Improved watershed management, particularly with respect to pasture management
- Improved natural resource management with respect to pastures and water sources in western Mongolia
- Improved livelihood security in participating communities
- Improved ability of participating communities to adapt to climate change impacts
- Improved participation of demonstration site residents in conservation activities
- Improved information for and ability of government departments to design and implement effective, climate-smart, landscape level snow leopard conservation measures

Nepal

In Nepal, there is one AHM demonstration site, the Kangchenjunga Conservation Area in the northeast corner of Nepal, an important snow leopard landscape centered on the world's third highest mountain.

Nepal AHM Demonstration Site: Kangchenjunga Conservation Area

During AHM Project Years 1-4, a comprehensive set of integrated climate adaptation and conservation activities was carried out in the KCA that covered the 5 core AHM Project themes. In terms of climate adaptation and water resource management, WWF and CARE introduced sprinkler irrigation systems and improved irrigation canals for maximizing water use efficiency. WWF is also currently developing a climate-smart watershed management plan for the KCA to improve land management with respect to water provision. In terms of climate adaptation and natural resource management in the KCA, a particular emphasis has been placed on increasing rates of pasture rotation in highland areas by improving bridge and trail access to and water supply at disused pastures. WWF also guided development of sustainable management plans for harvest of NTFP species. In terms of climate adaptation and rural livelihoods, WWF has sought to diversify agricultural livelihoods by introducing and improving a variety of sustainable alternative livelihoods to traditional grain farming, potato farming, and livestock rearing in the KCA. These alternative livelihoods include cardamom farming (a valuable cash crop); two profitable essential oil plants; greenhouse vegetable farming; and eco-tourism improvements such as trekking trail repairs and proper trash disposal. In terms of snow leopard conservation, WWF has conducted a predator-proof corral demonstration, trained and mobilized 8 anti-poaching teams for annual patrols, and trained local citizen scientists to monitor snow leopards and their prey using camera traps and other techniques. Notably, WWF has conducted an innovative program working in cooperation with local citizen scientists to GPS collar three snow leopards in the KCA. Successes of all of the above activities are currently informing development of a model climate-smart snow leopard landscape management plan for Nepal's eastern GSLEP Priority Landscape that is currently being prepared by WWF and the Government of Nepal.

In AHM Project Year 5, WWF will continue implementing similar conservation awareness, training, and research activities in the KCA as well as climate adaptation activities for water, natural resources, and rural livelihoods in support of the GSLEP process. Notably, in AHM Year 5, WWF will complete and begin implementation in the KCA of the Eastern Nepal GSLEP Landscape Management Plan, including its watershed management subcomponent. In doing so, the Eastern Nepal GSLEP landscape management planning process will serve as a model for other GSLEP member states to replicate with respect to snow leopard conservation, climate adaptation, sustainable management of high mountain ecosystems, water and natural resource management, and development of alternative livelihoods for mountain communities.

Table 12. AHM Year 5 Activities in Nepal's Kangchenjunga Conservation Area AHM Demonstration Site.

Nepal	Demonstration Site: Kangchenjunga Conservation Area (KCA), Nepal
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Activity Number	Activity Description
N.S1.1	<p>Sub-objective Number: 1.1, 1.3 Indicator Number: 3, 4, 8</p> <p>WWF will provide support to local communities in the KCA for organizing four public awareness raising events:</p> <ol style="list-style-type: none"> 1. International Snow Leopard Day (Oct. 23rd) 2. Wildlife Week (mid-April). 3. World Environment Day (June 5th) 4. National Conservation Day (Sept. 23rd) <p>These events will be organized in cooperation with the KCA management council (KCAMC), local communities, AHM partner organizations, and other stakeholders, and will raise the awareness of KCA residents on local conservation, environment, natural resource, and climate change issues in the KCA as well as on AHM Project activities to address these issues.</p>
N.S1.2	<p>Sub-objective Number: 1.1, 1.2 Indicator Number: 3, 4, 6, 8</p> <p>WWF will provide support for local leaders in the KCA to participate in 2 exposure visits to enhance their knowledge and capacity with respect to climate change adaptation. The first exposure visits will look at successes of AHM climate adaptation activities in the KCA itself. The second exposure visit will look at WWF-sponsored climate adaptation activities in the neighboring Terai Arc Landscape of Nepal.</p>
N.S1.3	<p>Sub-objective Number: 1.2 Indicator Number: 3, 4, 5, 6, 8, 10</p> <p>WWF will continue to support local institutions and communities in the KCA to implement four local climate adaptation plans developed earlier in the project. Although specific climate adaptation actions will vary from site to site, they will include introduction of greenhouse cash crop farming, small scale irrigation for cardamom and other important crops, protection of critical water sources, promotion of alternative livelihood activities to farming and livestock herding, and cultivation of local non-timber forest products, such as <i>Swertia chirata</i>, an important medicinal plant found in the KCA. Collectively, these actions will improve livelihood, food, and water security in the KCA in the face of a changing climate.</p>
N.S1.4	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 1, 3, 4, 6, 8</p> <p>WWF will continue to work with the local herders in the KCA to promote climate-smart pasture management practices to increase the resiliency of high altitude pastures to climate change impacts and improve herder livelihood security. Activities will include improving protection of water sources in pasture areas, piping water to pasture areas that have fallen into dis-use due to a lack of water, improving access to dis-used pastures by repairing trails, and removal of unpalatable invasive species that have colonized former pastures that have fallen into dis-use. These pasture management efforts will also benefit wild ungulates such as blue sheep, the primary wild prey of local snow leopards.</p>
N.S1.5	<p>Sub-objective Number: 1.3 Indicator Number: 1, 8</p> <p>WWF will support the KCAMC and local communities to conduct community-based anti-poaching operations (CBAPO) in the KCA. These operations will include anti-poaching patrols, snare removal, and monitoring of wildlife crime. All 8 existing CBAPO teams in the KCA will conduct at least one patrol in their areas of about one week in duration.</p>

N.S1.6	<p>Sub-objective Number: 1.3 Indicator Number: 1, 5, 8</p> <p>WWF will provide support to KCA communities along the trekking routes to both Kangchenjunga’s north and south base camps to improve community-based tourism facilities along these routes. This will include improving camp sites, community waste disposal practices, trails, trail signs, and protection of cultural and sacred sites in the KCA. WWF will also promote creation of a trekking lodge owners association in the KCA and gateway communities to share experiences and promote ecotourism to the Kangchenjunga region.</p>
N.S1.7	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 3, 4, 8</p> <p>WWF will continue monitoring of a snow leopard collared in the KCA in April 2016, and will attempt to collar a fourth snow leopard in AHM Year 5. Through this process, WWF is gathering detailed information on snow leopard home range size, habitat preferences, and behavior in the KCA. Findings of this activity will be shared with neighboring countries for the purpose of improving transboundary snow leopard conservation efforts in the Kangchenjunga landscape.</p>
N.S1.8	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 1, 3, 4, 8</p> <p>WWF will provide further training and mobilize members of the four snow leopard conservation committees (SLCC) in the KCA to monitor snow leopards and their prey species. This will include conducting snow leopard camera trap and sign surveys and conducting counts of snow leopard prey species in the KCA, such as counts of blue sheep.</p>
N.S1.9	<p>Sub-objective Number: 1.1, 1.3 Indicator Number: 1, 8</p> <p>WWF will provide support to the KCAMC and Department of National Parks and Wildlife Conservation (DNPWC) for institutional strengthening, such as by improving AHM Project activity coordination with local stakeholders through a series stakeholder feedback meetings to be held at AHM project field sites in the KCA. WWF will also support these two organizations to conduct monitoring and evaluation of AHM Project activities in the KCA.</p>

Nepal AHM Cross-cutting Activities

In addition to KCA site activities, WWF will also support the DNPWC in development of a climate-smart snow leopard landscape management plan for Nepal’s Eastern GSLEP Priority Landscape.

Table 13. AHM Year 5 Cross-cutting Activities in Nepal

Nepal	Cross Cutting Activities
Activity Number	Activity Description
N.CC.1	<p>Sub-objective Number: 1.4, 2.5 Indicator Number: 1, 7, 12</p> <p>WWF will partner with the Department of National Parks and Wildlife Conservation and other stakeholders to prepare a model climate-smart snow leopard landscape management plan for Nepal’s</p>

	<p>eastern GSLEP Priority Site, which includes the Kangchenjunga Conservation Area. This landscape plan will be developed by a joint WWF-Government of Nepal team and will follow the GSLEP landscape management planning guidelines adopted by the 12-nation GSLEP steering committee. The Eastern Nepal GSLEP landscape management plan will be particularly comprehensive and the planning process utilized will be held up as a model for other GSLEP member nations to replicate in developing landscape management plans for their respective GSLEP Priority Landscapes.</p>
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In summary, AHM Activities in Nepal are resulting in:

- Improved knowledge of snow leopard populations and their movement patterns in eastern Nepal
- Improved conservation of snow leopards, their prey, and habitat in eastern Nepal
- Improved watershed management in the Tamor River basin, particularly with respect to pastures and forests
- Improved natural resource management with respect to pastures, forests, water sources, and NTFPs in eastern Nepal
- Improved livelihood security in participating communities
- Improved ability of participating communities to adapt to climate change impacts
- Improved participation of demonstration site residents in conservation activities
- Improved information for and ability of government departments to design and implement effective, climate-smart, landscape level snow leopard conservation measures. Notably the landscape management plan being developed for the Eastern Nepal GSLEP Priority site will be continue to be presented as a test case and model for replication by other GSLEP member states at upcoming GSLEP technical meetings (see Regional Activities section, below).

Pakistan

In Pakistan, there are two AHM demonstration sites. The first is Hoper Valley in Gilgit-Baltistan (GB) while the second is Laspur Valley in Chitral District, Khyber-Pakhtunkhwa (KP).

Pakistan AHM Demonstration Site 1: Hoper Valley, Gilgit-Baltistan

At the Hoper Valley demonstration site in Gilgit-Baltistan during AHM Project Years 1-4, a set of integrated climate adaptation and conservation activities was carried out covering the 5 core AHM Project themes. In terms of climate adaptation and water resource management a demonstration clean water delivery and improved water storage system was built while an irrigation pipe was buried to demonstrate one effective method for improving water security by reducing damage to irrigation systems from avalanches and rock falls. WWF also built a flood protection wall to demonstrate one method for reducing loss of agricultural lands and homes to increasingly frequent flood disasters. With respect to climate adaptation and natural resource management, WWF conducted fodder crop planting and planting of native multi-purpose tree species on degraded land to reducing grazing and woodcutting pressure on natural pastures and forests. At the same time, these activities will also provide benefits for watershed management and increase the resilience of natural pastures and forests to climate change impacts. With respect to climate adaptation and rural livelihoods in Hoper, WWF established a vocational training center for local women that is teaching them how to sew clothing and make and market local wool handicrafts in an effort to diversify household incomes that are largely reliant on grain farming and livestock raising. WWF also conducted a livestock vaccination campaign to reduce loss of livestock to preventable disease and increase livelihood security. In terms of snow leopard conservation, WWF conducted an extensive series of well-attended conservation awareness raising events in the valley; provided support for hiring and training two village wildlife guards to report poaching, illegal woodcutting, and illegal grazing activities to authorities; erected a demonstration predator-proof corral to show residents one effective method for reducing the loss of livestock to snow leopards; trained citizen scientists to conduct snow leopard sign and prey species surveys; and conducted these snow leopard surveys on an annual basis in the valley.

In AHM Year 5, WWF will expand successful climate adaptation and watershed management activities from Years 1-4 to new sites in the Hoper Valley, as detailed below. WWF will also continue snow leopard research and community conservation activities. Notably WWF will present findings of all activities to Pakistan's Pamir GSLEP Priority Landscape conservation management plan drafting committee and participate in the writing of this plan. Taken together, AHM activities in the Hoper region of Gilgit-Baltistan are demonstrating effective methods for mitigating the impact of climate change on local livelihoods and ecosystems and will inform development of a climate-smart snow leopard landscape management plan for Pakistan's Pamir GSLEP Priority Landscape.

Table 14. AHM Year 5 Activities in Pakistan's Hoper Valley, Gilgit-Baltistan AHM Demonstration Site.

Pakistan	Demonstration Site 1: Hoper Valley, Gilgit-Baltistan (GB)
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Activity Number	Activity Description
P.S1.1	<p>Sub-objective: 1.1 Indicator: 3, 4</p> <p>WWF will conduct 3 education and awareness programs for students, teachers, and other community members highlighting the importance of climate adaptation, water resource management, natural resource management, rural livelihoods and snow leopard conservation. These events will mark:</p> <ol style="list-style-type: none"> 1. International Snow Leopard Day – October 23rd 2. International Mountain Day – December 11th 3. International Day for Biological Diversity – May 22nd
P.S1.2	<p>Sub-objective Number: 1.1 Indicator Number: 1, 2, 8</p> <p>WWF will work with teachers and school nature clubs in the Hoper Valley to conduct one village tree planting and rubbish cleanup day to mark the spring planting seasons in the valley. These activities will be accompanied by field walks led by an ecologist who will increase students’ awareness of their natural surroundings and local environmental issues.</p>
P.S1.3	<p>Sub-objective Number: 1.1 Indicator Number: 3, 4, 8</p> <p>WWF and the Hoper Conservation and Development Organization (HCDO) will organize a capacity building workshop on conservation proposal writing and NGO record keeping for 50 NGO leaders from the Hoper Valley.</p>
P.S1.4	<p>Sub-objective Number: 1.1, 1.3 Indicator Number: 7, 8</p> <p>WWF will facilitate periodic meetings between village conservation committees in the Hoper Valley and representatives of the Gilgit-Baltistan District Conservation Committee to discuss local environmental issues, and in particular climate change adaptation and snow leopard conservation needs.</p>
P.S1.5	<p>Sub-objective Number: 1.1, 1.2 Indicator Number: 3, 4, 6, 8</p> <p>WWF will organize a Gilgit-Baltistan District level seminar on climate change impacts and adaptation strategies for community leaders in the Hoper Valley and elsewhere in GB to educate them about the principals of climate adaptation and how to apply these principles to their home communities.</p>
P.S1.6	<p>Sub-objective Number: 1.2 Indicator Number: 6, 7, 8</p> <p>WWF will work with both local communities and the GB district government to improve and formally adopt a climate adaptation strategy for the Hoper Valley, a draft of which was developed as part of WWF’s climate vulnerability assessment for northern Pakistan. This strategy will address water and natural resource management, rural livelihoods, and local conservation issues as well as mitigation and response to climate-related hazards such as flooding and GLOFs. A particular emphasis of this strategy will be implementing watershed management plan activities developed earlier for the Supultar and Daranchi Nullah watersheds in Hoper. This local adaptation strategy will also serve as a model for addressing climate change impacts under the climate-smart snow leopard landscape management plan being developed for Pakistan’s Pamir GSLEP Priority Landscape.</p>

P.S1.7	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2, 6</p> <p>WWF will continue to promote planting of native species of fast growing multi-purpose timber and fodder trees, such as poplar and willows in the Hoper Valley as one adaptation strategy to reduce cutting of local forests and improve degraded land and local watershed management, including through bioengineering works such as planting willows to reduce rates of stream bank erosion.</p>
P.S1.8	<p>Sub-objective Number: 1.2 Indicator Number: 5, 6</p> <p>As one adaptation strategy to reduce grazing pressure on mountain pastures, improve degraded lands and watershed management near settled areas, and improve livelihood security, WWF will promote planting of fodder crops and winter stall feeding of livestock in Hoper.</p>
P.S1.9	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2, 6</p> <p>WWF will promote planting of fruit trees for home orchards in Hoper as one adaptation strategy to improve local food and livelihood security as well as watershed management in settled areas. Local cherry and apricot varieties will be planted since both fruits have a good potential to be sold locally as cash crops.</p>
P.S1.10	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 3, 4, 6</p> <p>At Hoper, the climate vulnerability assessment revealed that local farmers plant local crop and fruit tree varieties and at the same time do not use chemical fertilizers and pesticides. In spite of increasing temperatures and rainfall intensities, these local varieties have proven resilient to these climate impacts and continue to be harvested in similar amounts as prior to the onset of climate change impacts. Therefore, as one adaptation strategy to improve the livelihood security of these farmers, WWF will work to obtain organic certification for these farmers' produce and will also help them develop an improved marketing strategy for their farm produce. WWF will also work with agricultural specialist on methods to improve productivity of these farms, such as by introducing organic composting practices to Hoper.</p>
P.S111	<p>Sub-objective Number: 1.2 Indicator Number: 5, 6</p> <p>Following the success of this activity in the Rumboor Valley, Chitral District in AHM Year 1, WWF will provide support for a home poultry rearing training for women in Hoper as one adaptation strategy to improve both their livelihood and food security, reducing their direct dependence on local grassland and forest resources.</p>
P.S1.12	<p>Sub-objective Number: 1.2, 1.3, 1.4 Indicator Number: 3, 4, 5, 6, 9</p> <p>As one adaptation strategy to reduce loss of livestock to disease, discourage herders from retaliatory killing of snow leopards, and reduce the rate of disease transmission between domestic livestock and snow leopard prey species, WWF will conduct a second livestock vaccination campaign at Hoper to vaccinate an additional 5000 goats and sheep. At the same time, local herders will be trained on how to identify local livestock diseases and their prevention as well as on how to conduct livestock vaccination campaigns.</p>
P.S1.13	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 1, 3, 4,</p>

	WWF will continue support the two village wildlife guards in the Hoper Valley to conduct anti-poaching patrols and prevent other illegal activities such as illegal woodcutting and free grazing of livestock. Guards will also help build support for conservation activities amongst local residents. Support provided will include training, field equipment, and small monthly honorariums.
P.S1.14	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 1, 3, 4</p> <p>WWF will work with local citizen scientists to continue monitoring snow leopard and prey species populations in the Hoper Valley region by conducting winter and spring snow leopard camera trap, sign, and prey species surveys, with predator scat collected being sent for genetic analysis as another method of gauging snow leopard population size and dynamics. Findings of the survey and lab analysis will be used for improving snow leopard distribution maps and conservation initiatives in northern Pakistan, in particular for developing the GSLEP Landscape Management Plan for Pakistan’s Pamir GSLEP Priority Landscape.</p>

Pakistan AHM Demonstration Site 2: Laspur Valley, Chitral District, KP

In WWF Pakistan’s Laspur Valley Demonstration Site during AHM Project Years 1-4, WWF conducted an integrated suite of activities covering all AHM field core areas. With respect to climate adaptation and water resource management, WWF developed an integrated watershed management plan for the Phargram River Watershed in Laspur; with respect to climate adaptation and natural resource management, WWF planted fodder crops and native multi-purpose tree species on degraded land to reducing grazing and woodcutting pressure on natural pastures and forests which will provide benefits with respect to watershed management. WWF also established a small grazing set aside that will allow this alpine pasture to recover from overgrazing by livestock while reduced human presence at the site will permit its reoccupation by local wild ungulates, primarily ibex. With respect to climate adaptation and rural livelihoods WWF conducted a variety of activities to diversify incomes, including home fruit tree orchard, home vegetable gardening, and livestock vaccination activities. WWF also supported opening of a vocational training center to teach local women sewing and production of handmade wool handicrafts as well as local marketing of their products. In terms of snow leopard conservation in Laspur, WWF provided support for two village wildlife guards to conduct anti-poaching patrols, trained citizen scientists to conduct snow leopard sign and prey species surveys, conducted these monitoring surveys with the assistance of citizen scientists on an annual basis, and also conducted a human-wildlife conflict survey in the valley.

In AHM Year 5 at Laspur, WWF will continue conservation awareness programs in Laspur and will implement climate adaptation strategies for water and natural resource management as well as livelihoods as detailed below. These activities will include implementation of integrated climate-smart watershed management demonstration activities for the Phargram River watershed.

In addition, WWF will also conduct a snow leopard camera trap survey in the valley. Taken together, this activities form a comprehensive plan for improving climate adaptation, water and natural resource management, livelihood security, and wildlife conservation in Laspur that will

inform development and implementation of the climate-smart snow leopard landscape management plan for Pakistan’s Hindu Kush GSLEP Priority Landscape.

Table 15. AHM Year 5 Activities in Pakistan’s Laspur Valley, Chitral District, KP AHM Demonstration Site.

Pakistan	Demonstration Site 2: Laspur Valley, Chitral District, Khyber-Pakhtunkhwa (KP)
Activity Number	Activity Description
P.S2.1	<p>Sub-objective: 1.2, 1.3 Indicator: 1, 2, 8</p> <p>WWF will work with teachers and school nature clubs in Phargram and Balim Villages in the Laspur Valley to conduct village tree planting and rubbish cleanup days to mark the spring planting season in the valley. These activities will be accompanied by field walks led by an ecologist who will increase students’ awareness of their natural surroundings and local environmental issues.</p>
P.S2.2	<p>Sub-objective Number: 1.1, 1.3 Indicator Number: 7, 8</p> <p>WWF will facilitate periodic meetings between village conservation committees in the Laspur Valley and representatives of the Chitral District Conservation Committee to discuss local environmental issues, and in particular climate change adaptation and snow leopard conservation needs.</p>
P.S2.3	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 1, 3, 4, 6</p> <p>One result of earlier WWF vulnerability assessment and watershed management planning work was the identification of the need to improve management of forests and pastures as one adaptation strategy to mitigate flash flood hazards. To this end, WWF will work with the KP Forestry Department in the Laspur Valley to delineate key birch, willow, and juniper forests degraded by woodcutting and livestock grazing so that the Forestry Department can erect enclosure fences around these sites to promote natural regeneration. WWF will also train community watchers to monitor enclosure sites.</p>
P.S2.4	<p>Sub-objective Number: 1.2 Indicator Number: 6, 7</p> <p>As part of WWF’s climate adaptation work in Laspur, an integrated watershed management planning process was conducted for the small Phargram River basin in Laspur Valley. One climate related hazard identified at this time was the presence of three glacial lakes in this basin that pose a GLOF risk to downstream villages. WWF will conduct a study of these lakes to assess the potential GLOF hazards and will recommend necessary disaster risk reduction and mitigation measures to relevant government agencies and affected local communities.</p>
P.S2.5	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 1, 3, 4, 6</p> <p>In Laspur Valley’s Phargram River watershed, overgrazing of pastures caused by the 800 sheep and goats and 200 cattle free grazing in the drainage was identified as one of the leading causes of watershed degradation and flooding in the area. As one adaption strategy to improve pasture ecosystem resilience and management at this site, WWF will work with local herders and community leaders to determine the carrying capacity of three pasture sites in the basin and will develop a sustainable grazing system for these pastures. WWF will also train herders in Laspur on the use of this improved grazing management system.</p>

P.S2.6	<p>Sub-objective Number: 1.2 Indicator Number: 5, 6</p> <p>In Laspur Valley’s Phargram River watershed, as one adaptation strategy for reducing overgrazing pressure, improving watershed management, and improving livelihood security, WWF will promote planting of fodder crops on degraded land and will also promote winter stall feeding of livestock with fodder crops harvested. In addition, WWF will also promote planting of multi-purpose fodder trees along irrigation channels near Phargram Village.</p>
P.S2.7	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2, 3, 4, 6</p> <p>In Laspur Valley’s Phargram River watershed, WWF will design a program for planting multi-purpose native tree species to maximize benefits for watershed management which will then be implemented by the KP Forest Department. This effort will focus on reducing soil erosion of both degraded lands and stream banks as well as reducing flood hazards, and will include planting of local species of poplar, birch, willow, and sea buckthorn. WWF will also provide necessary training to KP Forest Department staff and community members for carrying out this activity.</p>
P.S2.8	<p>Sub-objective Number: 1.3 Indicator Number: 1, 3, 4, 5, 6,</p> <p>In Laspur Valley’s Phargram River watershed, WWF will work to improve the sustainability of the valuable wild black cumin harvest. Anecdotaly, increases in temperature and rainfall have increased productivity of wild black cumin at Phargram. However, this resource is now threatened by both overharvesting and overgrazing by livestock. Therefore, as one adaptation strategy to sustain this alternative income generating activity, WWF will develop and demonstrate a sustainability plan for the wild black cumin harvest that will include temporary exclosure fences to promote natural regeneration in degraded areas and harvesting guidelines to preserve this resource. WWF will also provide training on the packaging and local marketing of wild black cumin.</p>
P.S2.9	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 3, 4, 6</p> <p>In the Laspur Valley, the WWF climate vulnerability assessment revealed that local farmers plant local crop and fruit tree varieties and at the same time do not use chemical fertilizers and pesticides. In spite of increasing temperatures and rainfall intensities, these local varieties have proven resilient to these impacts and continued to be harvested in similar amounts as prior to the onset of climate change impacts. Therefore as one adaptation strategy to improve the livelihood security of these farmers, WWF will work to obtain organic certification for these farmers’ produce and will also help them develop an improved marketing strategy for their farm produce. WWF will also work with agricultural specialist on methods to improve productivity of these farms, such as by introducing organic composting practices to Laspur.</p>
P.S2.10	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2, 6</p> <p>WWF will promote planting of fruit trees for home orchards in the Laspur Valley as one adaptation strategy to improve local food and livelihood security as well as watershed management in settled areas. Local cherry and apricot varieties will be planted since both have a good potential to be sold locally as cash crops.</p>
P.S2.11	<p>Sub-objective Number: 1.2, 1.3, 1.4 Indicator Number: 3, 4, 5, 6, 9</p> <p>As one adaptation strategy to reduce loss of livestock to disease, discourage herders from retaliatory killing</p>

	of snow leopards, and reduce the rate of disease transmission between domestic livestock and snow leopard prey species, WWF will conduct a livestock vaccination campaign in the Laspur Valley to vaccinate 3000 goats and sheep. At the same time, local herders will be trained on how to identify local livestock diseases and their prevention as well as how to conduct livestock vaccination campaigns.
P.S2.12	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 1, 3, 4</p> <p>WWF will work with local citizen scientists to continue monitoring snow leopard and prey species populations in the Laspur Valley region by conducting winter and spring snow leopard camera trap, sign, and prey species surveys, with predator scat collected being sent for genetic analysis as another method of gauging snow leopard population size and dynamics. Findings of the survey and lab analysis will be used for improving snow leopard distribution maps and conservation initiatives in northern Pakistan, in particular for developing the GSLEP Landscape Management Plan for Pakistan’s Hindu Kush GSLEP Priority Landscape.</p>
P.S2.13	<p>Sub-objective Number: 1.4 Indicator Number: 1, 9</p> <p>During the course of field work in the Laspur Valley, it came to light that there is a growing problem of feral dogs killing livestock. These same dogs may also threaten wildlife in the Laspur region, including snow leopards and their prey species. Therefore WWF will conduct a feral dog survey at Laspur and propose proper management practices to mitigate this potential threat to herding livelihoods and wildlife.</p>

Pakistan AHM Cross-cutting Activities

In addition to the activities being conducted at the Hoper and Laspur Valley AHM Project demonstration sites, in Year 5 WWF will also conduct a limited number of awareness raising, natural resource management, livelihood, and snow leopard conservation activities in the subsidiary Rumboor Valley, Chitral AHM Project Site, which is also an important snow leopard range area. Year 5 activities at Rumboor will build upon successful climate adaptation work conducted there in AHM Project Years 1-4. These earlier activities included set up of village conservation committees, sustainable pasture management, planting of fodder crops and fruit trees, livestock vaccination, poultry raising as an alternative livelihood, and snow leopard and prey species monitoring. In addition, at the national level, WWF will cooperate with the Snow Leopard Foundation (SLF), the GB and KP Wildlife Departments, and the Federal Ministry of Climate Change to develop a climate-smart snow leopard landscape management plan for Pakistan’s Pamir and Hindu Kush GLSLEP Priority Landscapes.

Table 16. AHM Year 5 Cross-cutting Activities in Pakistan

Pakistan	Cross-cutting Activities
Activity Number	Activity Description
P.CC.1	<p>Sub-objective: 1.2, 1.3 Indicator: 1, 2, 8</p> <p>WWF will work with teachers and school nature clubs in Shekhanadeh Village in the Rumboor Valley to conduct village tree planting and rubbish cleanup days to mark the spring planting season in the valley.</p>

	These activities will be accompanied by field walks led by an ecologist who will increase students' awareness of their natural surroundings and local environmental issues.
P.CC.2	<p>Sub-objective Number: 1.1, 1.3 Indicator Number: 7, 8</p> <p>WWF will facilitate periodic meetings between village conservation committees in the Rumboor Valley and representatives of the Chitral District Conservation Committee to discuss local environmental issues, and in particular climate change adaptation and snow leopard conservation needs.</p>
P.CC.3	<p>Sub-objective Number: 1.2, 1.3 Indicator Number: 1, 3, 4, 6</p> <p>One result of earlier WWF vulnerability assessment and watershed management planning work was the identification of the need to improve management of forests and pastures as one adaptation strategy to mitigate flash flood hazards. To this end, WWF will work with the KP Forestry Department in the Rumboor Valley to delineate key birch, willow, and juniper forests degraded by woodcutting and livestock grazing so that the Forestry Department can erect enclosure fences around these sites to promote natural regeneration. WWF will also train community watchers to monitor enclosure sites.</p>
P.CC.4	<p>Sub-objective Number: 1.2 Indicator Number: 1, 2, 6</p> <p>WWF will promote planting of fruit trees for home orchards in the Laspur Valley as one adaptation strategy to improve local food and livelihood security as well as watershed management in settled areas. Local cherry and apricot varieties will be planted since both have a good potential to be sold locally as cash crops.</p>
P.CC.5	<p>Sub-objective Number: 1.3, 1.4 Indicator Number: 1, 3, 4</p> <p>WWF will work with local citizen scientists to continue monitoring snow leopard and prey species populations in the Rumboor Valley region by conducting winter and spring snow leopard camera trap, sign, and prey species surveys, with predator scat collected being sent for genetic analysis as another method of gauging snow leopard population size and dynamics. Findings of the survey and lab analysis will be used for improving snow leopard distribution maps and conservation initiatives in northern Pakistan, in particular for developing the GSLEP Landscape Management Plan for Pakistan's Hindu Kush GSLEP Priority Landscape.</p>
P.CC.6	<p>Sub-objective Number: 1.4, 2.5 Indicator Number: 1, 3, 4</p> <p>WWF will cooperate with the Snow Leopard Foundation (SLF), the GB and KP Wildlife Departments, and the Federal Ministry of Climate Change to develop a climate-smart snow leopard landscape management plan for Pakistan's Pamir and Hindu Kush GSLEP Priority Landscapes. This will include providing information on results of snow leopard surveys, revised snow leopard distribution maps, and successes of community conservation activities in the Hoper, Laspur, and Rumboor Valley regions to inform development of this plan.</p>

In summary, AHM Activities in Pakistan are resulting in:

- Improved knowledge of snow leopard populations in northern Pakistan
- Improved conservation of snow leopards, their prey, and habitat in northern Pakistan
- Improved watershed management in two small river basins in northern Pakistan
- Improved natural resource management with respect to pastures, forests, water sources, and agricultural lands in northern Pakistan
- Improved livelihood security in participating communities
- Improved ability of participating communities to adapt to climate change impacts
- Improved participation of demonstration site residents in conservation activities
- Improved information for and ability of government departments to design and implement effective, climate-smart, landscape level snow leopard conservation measures

Regional Activities

During AHM Project Years 1-4, WWF support for the GSLEP Process included support for preparations and holding of the Global Snow Leopard Conservation Forum, including support for drafting the GSLEP program documents. WWF also provided support for holding of post-forum GSLEP trainings and meetings at Lake Issyk Kul and Bishkek in the Kyrgyz Republic, on the sidelines of UNFCCC CoP 16 in Paris, and in Kathmandu, Nepal.

In AHM Project Year 5, WWF will continue to support the 12-nation Global Snow Leopard and Ecosystem Protection Program (GSLEP). WWF is currently supporting development of model climate-smart snow leopard landscape management plans for GSLEP Priority Landscapes in Nepal and the Kyrgyz Republic towards achieving the overarching GSLEP goal of securing 20 snow leopard landscapes by 2020. This has included the hiring of two staff members to lead writing of these two plans and extensive support on mapping and climate-smarting these plans. Notably, all AHM field activities in the 6 AHM Project countries are being conducted in GSLEP Priority Landscapes. Consequently, the results of these field activities with respect to climate adaptation, water resource management, natural resource management, rural livelihoods, and snow leopard research and conservation will inform the GSLEP landscape management plans in each of these countries and in turn contribute to a broader international dialogue on snow leopard conservation and protection of Asia's high mountain landscapes, the source regions of Asia's most economically and culturally important rivers.

Table 17. AHM Year 5 Regional Activities in Support of the GSLEP Landscape Management Planning Process.

Regional Activities: WWF and SLT Support for GSLEP	
Activity Number	Activity Description
R.1 SLT/ WWF	<p>Sub-objective Number: 2.5 Indicator Number: 1, 3, 4, 7, 8, 12</p> <p>In October 2016, SLT, WWF, and the GSLEP Secretariat will organize a 4-day joint technical progress review meeting and GSLEP Steering Committee meeting in Almaty, Kazakhstan. This meeting will review progress on the landscape management planning process since the April 2016 Kathmandu GSLEP landscape management planning training and will also serve as a forum for planning the June 2017 GSLEP presidential summit.</p>
R.2 SLT/ WWF	<p>Sub-objective Number: 2.5 Indicator Number: 1, 3, 4, 7, 8, 12</p> <p>In March 2017, SLT, WWF, and the GSLEP Secretariat will organize a 4-day technical meeting to review progress on development of climate-smart snow leopard landscape management plans for GSLEP Priority Landscapes. Participants of this meeting will include GSLEP national focal points and landscape management planning team members, other range country government representatives, and climate change adaptation experts who will assist in reviewing the plans for climate smartness. Planning guidelines and further development of plans will be discussed as will timetables for completion and launch of landscape management plans.</p>

R.3	<p>Sub-objective Number: 2.5 Indicator Number: 1, 3, 4, 7, 8, 12</p> <p>SLT/ WWF</p> <p>In March 2017, SLT, WWF, and the GSLEP Secretariat will organize a one-week study tour to visit project sites in WWF's Terai Arc Landscape (TAL) that are being successfully managed at the landscape level for tiger conservation. The process of designing and implementing community-supported tiger landscape management plans in this landscape began in 2001, and its successes will help inform the GSLEP landscape planning process, particularly with respect to sustainable infrastructure development, community participation, and climate adaptation. In addition to a site visit, a series of meetings for participants will also be held in Kathmandu with organizations such as WWF, the National Trust for Nature Conservation (NTNC), ICIMOD, and others to discuss landscape level conservation efforts in Nepal. Participants will include landscape coordinators and national focal points from selected GSLEP range states.</p>
R.4	<p>Sub-objective Number: 2.5 Indicator Number: 1, 3, 4, 7, 8, 12</p> <p>SLT/ WWF</p> <p>In June 2017, SLT, WWF, and the GSLEP Secretariat will organize a 4-day GSLEP Steering Committee meeting in Bishkek. Participants of this meeting will be relevant ministers from snow leopard range countries or their designated GSLEP national focal points as well as steering committee advisory board members, donors, and other interested participants involved in snow leopard conservation work. At this meeting, governance and oversight of the GSLEP process will be reviewed as will progress on development of climate-smart snow leopard landscape management plans for the GSLEP Priority Landscapes. This meeting will also feature a one-day science symposium to highlight the latest scientific achievements with respect to conservation of snow leopards and their habitat in the 12 GSLEP member states, including the scientific achievements of researchers receiving support under the AHM Project.</p>
R.5	<p>Sub-objective Number: 2.5 Indicator Number: 1, 3, 4, 7, 8, 12</p> <p>SLT/ WWF</p> <p>In June 2017, SLT, WWF, and the GSLEP Secretariat will organize a 1-day presidential snow leopard summit in Bishkek in conjunction with the 2017 GSLEP Steering Committee meeting. This meeting will highlight the accomplishments of the GSLEP process to date and review what will be needed to achieve the program goal of safeguarding 20 snow leopard landscapes by 2020. In addition to renewing high level support for GSLEP and providing an opportunity for meetings with current and potential GSLEP donor organizations, the summit will also provide an excellent media opportunity to raise the profile of snow leopard conservation efforts worldwide. This meeting will be held at the same location and consecutively with the June 2017 steering committee, described above.</p>
R.6	<p>Sub-objective Number: 2.2, 2.5 Indicator Number: 1</p> <p>WWF</p> <p>WWF US will prepare a second water provision, climate change, and snow leopard habitat map book. This new volume will feature detailed mapping of selected earlier GSLEP Priority Landscape mapping performed by WWF US GIS and hydrological modeling consultants on behalf of the GSLEP process in AHM Project Year 4. This map book will be distributed online as a PDF file and its contents will also be incorporated into the mapping tool on WWF's Third Pole Geolab website.</p>
R.7	<p>Sub-objective Number: 1.2, 1.4, 2.5 Indicator Number: N/A</p> <p>WWF</p> <p>In December 2016, WWF will hold a 3-day AHM learning and sharing meeting for about 15-20 key AHM Project staff in Bangkok. At this meeting progress in achieving AHM goals with respect to water security, climate adaptation, and snow leopard conservation will be discussed, as will progress towards achieving progress on GSLEP goals in each AHM Project country. Project wrap-up and reporting</p>

	requirements will also be discussed at this time as will ways forward on work started under the AHM Project. The meeting will also feature several selected guest presentations on climate adaptation, fund raising, and communications.
R.8 WWF	Sub-objective Number: 2.4, 2.5 Indicator Number: N/A In Winter 2017, WWF will work with the Wilson Center to hold a high-level speaker panel event to highlight threats to snow leopards and their high mountain range, including the impacts of climate change on the headwaters regions of Asia’s most important rivers. This event will highlight achievements of both the AHM Project and the GSLEP Process in addressing these threats, and will lay out a path forward for the sustainable development of Asia’s high mountain regions.
R.9 WWF	Sub-objective Number: 1.2, 1.4, 2.5 Indicator Number: N/A WWF will produce a short video focused on capturing key ideas related to conservation at the nexus of climate change and snow leopard survival that will address such topics as climate adaptation, water resource management, rural livelihoods, human-wildlife conflict, etc. The video will include onsite video in each of the 6 AHM Project countries and highlight how the USAID-funded AHM grant is enabling each of these snow leopard range states to address these issues in a strategic, upbeat way. We will frame these ideas through positive short stories from each of the 6 landscapes. Because the Kyrgyz Republic is host to the GSLEP Secretariat and the upcoming GSLEP presidential summit, we will focus a significant part of the film on work there.

In summary, AHM Regional Activities are resulting in:

- Increased range state participation in snow leopard conservation activities under the GSLEP Program
- Increased international profile of snow leopard conservation work
- Development of two model climate-smart snow leopard landscape management plans for GSLEP Priority landscapes in Nepal and Kyrgyzstan that will serve as models for replication by other GSLEP countries in achieving the GSLEP goal of securing 20 snow leopard landscapes by 2020
- Compilation of improved data on climate change impacts and water resources in GSLEP Priority Landscapes that will inform GSLEP landscape management planning efforts
- Increased knowledge of and action to mitigate climate change impacts on headwater regions of Asia’s great rivers.
- Increased international cooperation on between GSLEP member states on addressing high altitude conservation and water resource issues.

Monitoring and Evaluation

Monitoring and Evaluation (M&E) for the Asia High Mountains Project consists of the following major components:

- Implementation of a Monitoring and Evaluation Plan for the entire project period (that was prepared as a separate stand-alone document) which closely adheres to WWF's Standards for Conservation Project Management;
- Designation of at least one WWF staff member in each participating project office who is responsible for conducting internal project M&E;
- Creation of a centralized database for project monitoring data, reports, and other output;
- Submission of semi-annual project progress reports to the project donor;
- Submission of an annual report with Performance Management Plan (PMP) to the project donor;
- Periodic site visits to project offices by WWF US staff members to check individual project achievements against project objectives and perform financial auditing;
- Periodic collection and sharing of lessons learned and best practices with all project offices and partners;
- Implementation of adaptive management as needed to achieve project goals, objectives, and targets.

The structure of project M&E activities is multi-level. At the ground level, monitoring of results in each project country will be conducted by on-site field staff and will include interviewing project participants about both project benefits and shortcomings as well as quantifying results in terms of pre-selected project indicators – both those specified by the donor and custom indicators developed by WWF (Annex 4). The intermediate level of oversight will be conducted by the central project management staff, who will compile monitoring data and lessons learned from all project countries, prepare semi-annual and annual reports based on these findings, manage the project database, and conduct periodic site visits to all project countries to verify project achievements. The third and highest level of project monitoring will be conducted by WWF-US staff external to the project, who will conduct intermittent project progress and budget checks. Based on findings of project monitoring, project activities will be adapted as necessary to insure successful achievement of the projects goals and objectives.

Sustainability

The Asia High Mountains Project is adopting a long-term, transboundary, landscape approach to protecting the snow leopard throughout its known range, not only through direct protection of the snow leopard, but also by protecting its habitat and improving human land-use practices in its snow leopard range areas. This work has included developing a program of climate adaptation for the snow leopard's range, diversifying the livelihoods of poor high mountain communities in snow leopard range areas, and striving to sustainably achieve food and water security for residents of the project region. Thus, all of these features of the project have been designed to maximize the sustainability of the project. Individual project activities also highlight sustainability on a smaller scale, such as activities aimed specifically at promoting sustainable harvest of NTFPs and education programs accompanying livestock insurance schemes to teach herders methods for avoiding loss of livestock to wild predators. Importantly, WWF makes great efforts to ensure that local communities are trained to participate in and eventually take ownership of all site-based activities – from anti-poaching operations to snow leopard monitoring – so that there is local capacity to continue implementing these and other activities in the future. Notably, the snow leopard is a high profile flagship species in each of the six AHM Project countries. Therefore future WWF initiatives in each of these countries will continue to build upon lessons learned under the AHM Project.

Travel

Travel support is provided to enable program staff and partners of WWF US to travel, primarily for the purposes of attending meetings, attending trainings, making project site visits, and learning and sharing about project achievements and shortcomings, such as at scientific conferences and other project gatherings. Under the AHM Project, travel support is also being provided to a number of government delegations and partners to participate in the 12-nation GSLEP Program, particularly for attending GSLEP trainings, technical meetings, steering committee meetings and other GSLEP events. The requested trips are all included in the budget and will not exceed the approved amount of funding. See Table 18 for a summary of AHM Project Year 5 international project travel.

Table 18. International project travel planned for AHM Project Year 5.

FROM	TO	WHO	PURPOSE	# TRIPS
USA	Bhutan	WWF Program Management and Administration	Cross-cutting/support and oversight of AHM Program office management, compliance and administration.	6
USA	Nepal	WWF Program Management and Administration	Support and oversight of AHM Program office management, compliance and administration.	4
USA	Mongolia	WWF Program Management and Administration	Support and oversight of WWF Mongolia partner office compliance and administration.	4
USA	Kyrgyz Republic	WWF Program Management and Administration	Support and oversight of AHM Program office management, compliance and administration and GSLEP administration.	4
USA	India	WWF Program Management and Administration	Support and oversight of WWF Mongolia partner office management, compliance and administration.	2
Canada	Nepal	WWF Snow Leopard Biologist	Meetings/Field Work	3
Canada	Kyrgyz Republic	WWF Snow Leopard Biologist	Meetings	2
Bhutan	Project Region M&E Travel	WWF Program Officer	Monitoring and Evaluation, Meetings	3
Bhutan	USA	AHM Program Manager	Annual Home Leave, Meetings,	3
Bhutan	Regional Travel to AHM Project and GSLEP Countries and other destinations in Asia/Europe	AHM Program Manager	Site Visits, WWF Meetings, Trainings, Monitoring, GSLEP Meetings	8
Bhutan	Kyrgyz Republic	AHM Program Manager	AHM Project Site Visit, Meetings, follow-up meeting with the Global Snow Leopard Forum Secretariat	3
Bhutan	Mongolia	AHM Program Manager	AHM Project Site Visit, Meetings	2
India	Kyrgyz Republic	AHM Regional Landscape Coordinator/SLT	GSLEP Meetings/Activities	6
India	Regional Travel to AHM Countries/ GSLEP Events	AHM Regional Landscape Coordinator/SLT	GSLEP Meetings/Activities	6
Kyrgyz Republic	Regional Travel to AHM Countries/ GSLEP Events	AHM Regional Landscape Coordinator/SLT	GSLEP Meetings/Activities	6
Nepal	Regional Travel to AHM Countries/ GSLEP Events	AHM Communicator AHM Social Scientist		16
GSLEP Meeting 10/16				
Afghanistan	Kazakhstan	Government Officials/Partners	GSLEP Meeting	3
Bhutan	Kazakhstan	Government/ Partners/ WWF Staff	GSLEP Meeting	5
Canada	Kazakhstan	WWF Staff	GSLEP Meeting	1
India	Kazakhstan	Government/ Partners/ WWF Staff	GSLEP Meeting	7
Kyrgyz Republic	Kazakhstan	Government/ Partners/ WWF Staff	GSLEP Meeting	6
Mongolia	Kazakhstan	Government/ Partners/ WWF Staff	GSLEP Meeting	4
Nepal	Kazakhstan	Government/ Partners/ WWF Staff	GSLEP Meeting	6
Pakistan	Kazakhstan	Government/ Partners/ WWF Staff	GSLEP Meeting	5

Tajikistan	Kazakhstan	Government Officials/Partners	GSLEP Meeting	3
Uzbekistan	Kazakhstan	Government Officials/Partners	GSLEP Meeting	3
USA	Kazakhstan	WWF Staff/Partners/Consultants	GSLEP Meeting	9
Southeast Asia	Kazakhstan	TRAFFIC/Partners/Consultants	GSLEP Meeting	3
AHM Meeting 12/16				
Bhutan	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	3
Canada	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	1
India	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	3
Kyrgyz Republic	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	3
Mongolia	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	2
Nepal	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	3
Pakistan	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	2
USA	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	2
Southeast Asia	Thailand	WWF Staff/Partners	AHM Learning and Sharing Meeting	2
GSLEP Meeting 3/17				
Afghanistan	India	Government/ Partners	GSLEP Meeting	4
Bhutan	India	Government/ Partners/ WWF Staff	GSLEP Meeting	4
Canada	India	WWF Staff	GSLEP Meeting	1
Kazakhstan	India	Government/ Partners/	GSLEP Meeting	4
Kyrgyz Republic	India	Government/ Partners/ WWF Staff	GSLEP Meeting	6
Mongolia	India	Government/ Partners/ WWF Staff	GSLEP Meeting	4
Nepal	India	Government/ Partners/ WWF Staff	GSLEP Meeting	6
Pakistan	India	Government/ Partners/ WWF Staff	GSLEP Meeting	5
Tajikistan	India	Government/ Partners	GSLEP Meeting	4
Uzbekistan	India	Government/ Partners	GSLEP Meeting	3
USA	India	WWF Staff/ Partners	GSLEP Meeting	8
Southeast Asia	India	Partners/Consultants	GSLEP Meeting	2
GSLEP TAL Study Tour 3/17				
India	Nepal	GSLEP Government Delegates	Terai Arc Landscape Planning Study Tour	10
India	Nepal	GSLEP Secretariat Delegates	Terai Arc Landscape Planning Study Tour	2
India	Nepal	SLT Delegates	Terai Arc Landscape Planning Study Tour	2
GSLEP Meeting 6/17				
Afghanistan	Kyrgyz Republic	Government/ Partners/	GSLEP Meeting	5
Bhutan	Kyrgyz Republic	Government/ Partners/ WWF Staff	GSLEP Meeting	6
Canada	Kyrgyz Republic	WWF Staff	GSLEP Meeting	1
India	Kyrgyz Republic	Government/ Partners/ WWF Staff	GSLEP Meeting	7
Kazakhstan	Kyrgyz Republic	Government/ Partners/	GSLEP Meeting	5
Mongolia	Kyrgyz Republic	Government/ Partners/ WWF Staff	GSLEP Meeting	5
Nepal	Kyrgyz Republic	Government/ Partners/ WWF Staff	GSLEP Meeting	7
Pakistan	Kyrgyz Republic	Government/ Partners/ WWF Staff	GSLEP Meeting	5
Tajikistan	Kyrgyz Republic	Government/ Partners/	GSLEP Meeting	5
Uzbekistan	Kyrgyz Republic	Government/ Partners/	GSLEP Meeting	4
USA	Kyrgyz Republic	WWF Staff/ Partners	GSLEP Meeting	9
Southeast Asia	Kyrgyz Republic	Partners/Consultants	GSLEP Meeting	3

Annex 1: Location Maps of AHM Demonstration Sites

Bhutan

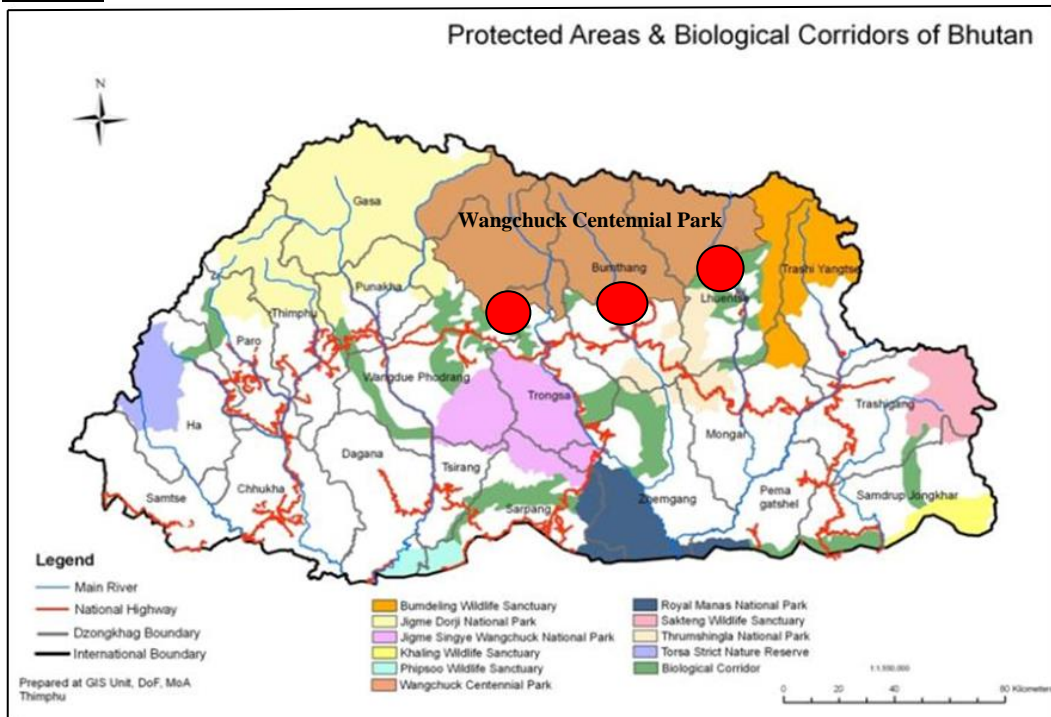


Figure A1.1. Map of protected areas in Bhutan with locations of the Eastern, Central, and Western Wangchuck Centennial National Park AHM demonstration sites shown with red circles.

India

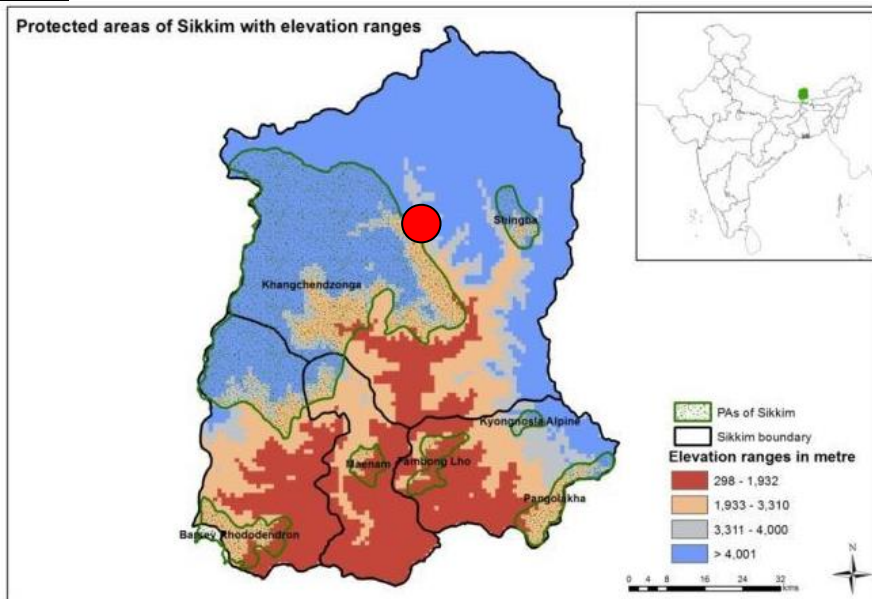


Figure A1.2. Map of protected areas in Sikkim with locations of the Lachen Village AHM demonstration site shown with a red circle.

Kyrgyz Republic



Figure A3. Map of the Kyrgyz Republic with locations of the Chon Kyzyl Suu River Basin (above) and Sarychat-Ertash State Reserve (below) AHM demonstration site shown with red circles.

Mongolia



Figure A4. Map of Mongolia with location of the Central Altai Range AHM demonstration site shown in red.

Nepal

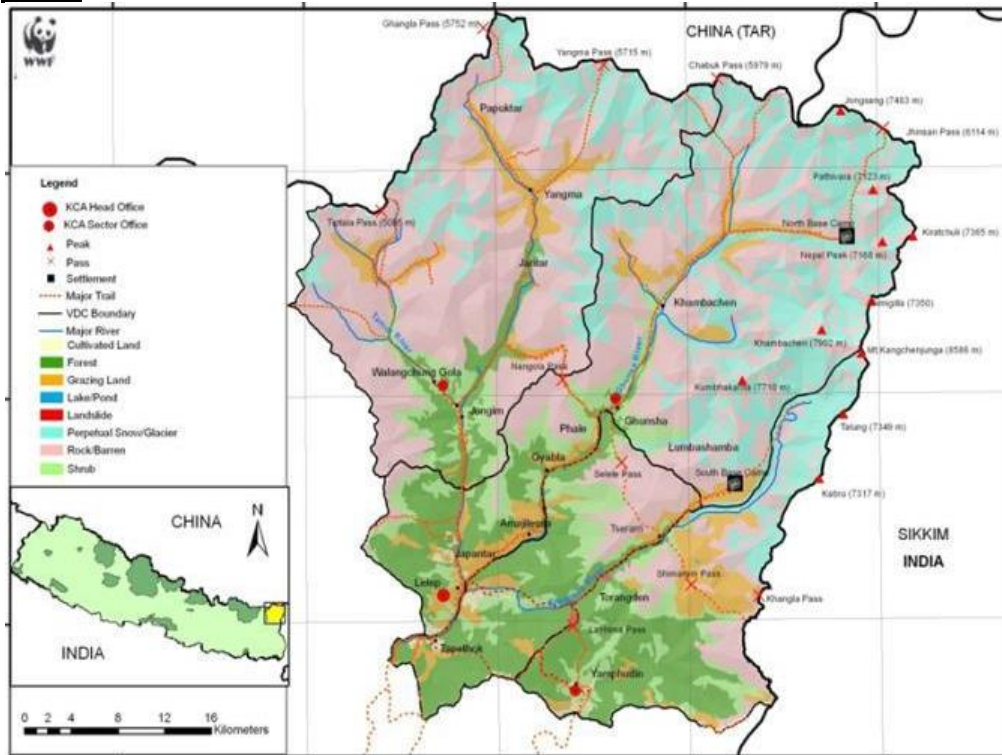


Figure A5. Map of the Kangchenjunga Conservation Area AHM demonstration site, Nepal.

Pakistan 1.

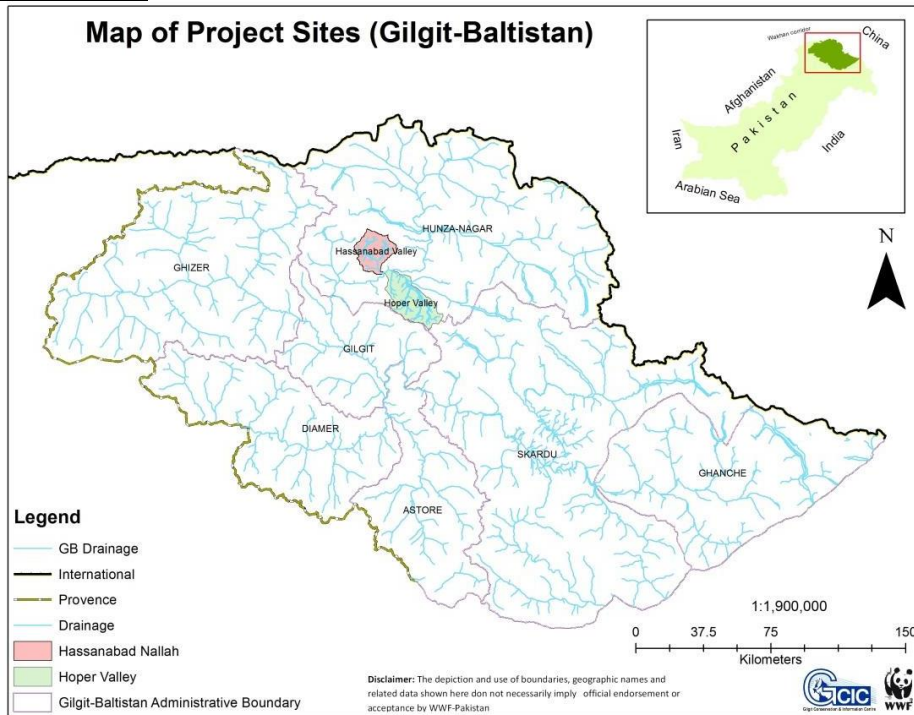


Figure A6. Map of the Hoper Valley, GB AHM demonstration site, Pakistan.
Pakistan 2.

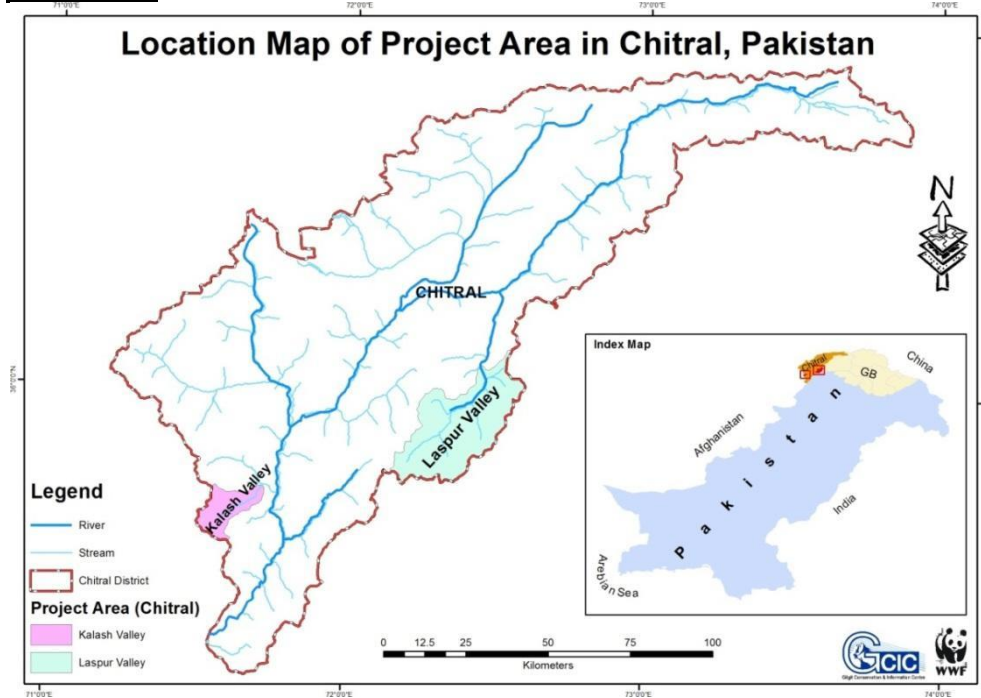


Figure A6. Map of the Laspur Valley, Chitral, KP AHM demonstration site, Pakistan.

Annex 2: AHM Project Threat Rankings and Conceptual Model

Table A2.1. Asia High Mountains Project threat rankings as generated by a Miradi analysis.

THREAT	TARGET							
	Glaciers and Glacial Lake Processes	Alpine Meadows and Shrubs (including permafrost)	High Altitude Wetlands	Conifer Forests	Broadleaf Forests	Snow Leopards	Spring Sources	Summary Threat Rankings
Drought		High	High	Low	High		High	High
Killing (retaliatory, etc.)						Very High		High
Prey Base Decline (ungulates)		High				Very High		High
Unregulated Hunting (poaching)						High		Medium
Unsustainable Extraction of NTFPs/MAPs		Medium		Low	Medium			Medium
Extractive Industries (Mining)		High	Medium			Low	Medium	Medium
Pasture Degradation (from overgrazing and invasive species)		High	Medium				Medium	Medium
Glacial Retreat and GLOFs	Medium							Low
Unsustainable Water Use (degradation of water resources, inefficiency, etc.)							Medium	Low
Forest Fire (natural and anthropogenic)				Low	Low			Low
Poorly Planned Infrastructure (village roads, large scale hydropower)				Low	Low			Low
Deforestation and Forest Degradation				Low	Medium		Low	Low
High-intensity Precipitation Events (snow, rainfall)		Medium	Low	Low	Low	Low	Low	Low
Wildlife Disease						Medium		Low
Summary Target Ratings	Low	High	Medium	Low	Medium	Very High	Medium	High

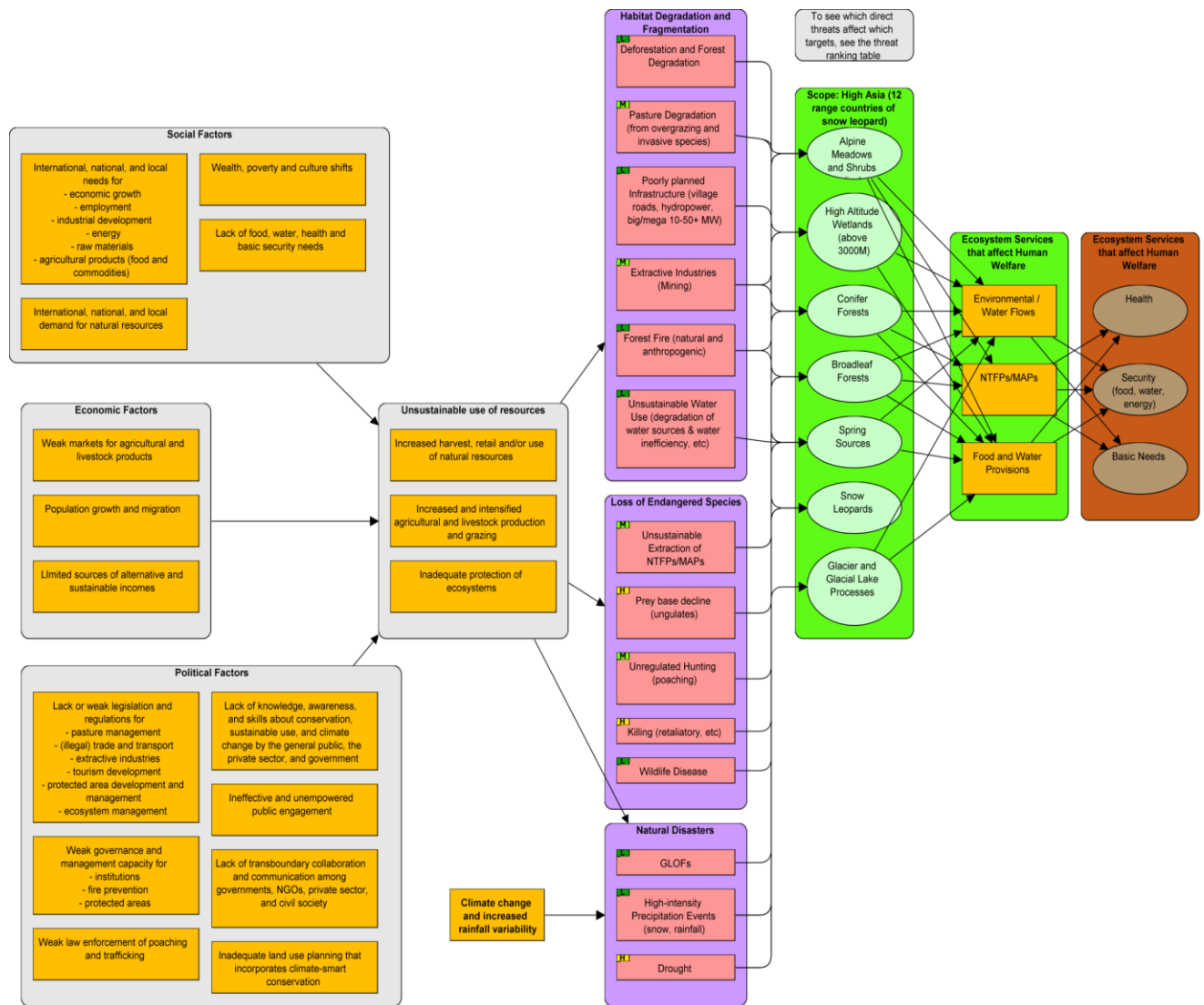


Figure A2.1: Conceptual Model for the Asia High Mountains Project

Annex 3: AHM Project Results Chain

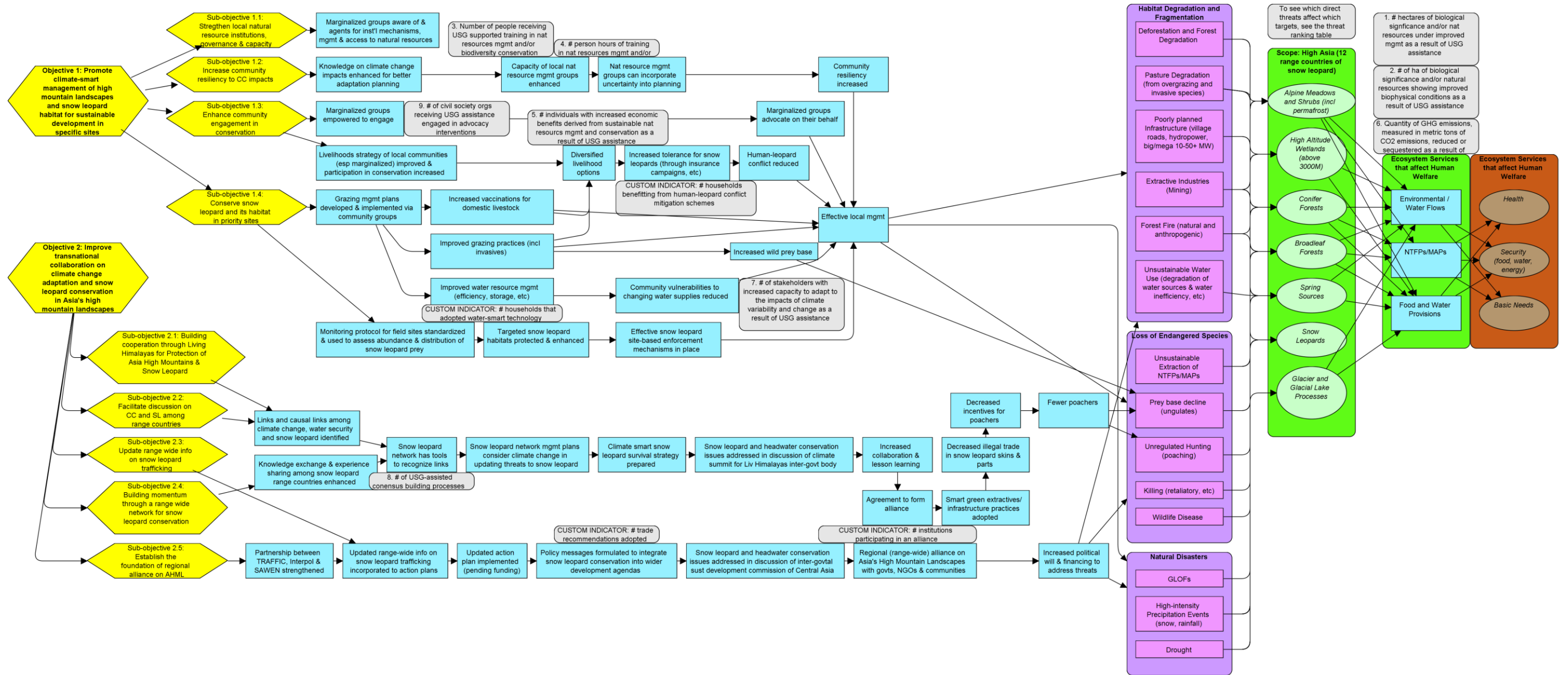


Figure A3.1. Results Chains for AHM Project Objectives 1 and 2 (Note: This figure is formatted for printing on 11"x17" paper)

Annex 4: AHM Project Indicators

Table A4.1. Summary of WWF Asia High Mountains Project Indicators.

Indicator Number	Indicator Description	Unit of Measure
Standard Indicator 1	Number of hectares of biological significance under improved management as a result of US government (USG) assistance.	Hectares
Standard Indicator 2	Number of hectares of biological significance and/or natural resources showing improved biophysical conditions as a result of USG assistance.	Hectares
Standard Indicator 3	Number of people receiving USG supported training in natural resources management and/or biodiversity conservation.	Number of people
Standard Indicator 4	Number of person hours of training in natural resources management and/or biodiversity conservation supported by USG assistance.	Number of person hours.
Standard Indicator 5	Number of people with increased economic benefits derived from sustainable natural resource management and conservation as a result of USG assistance.	Number of people.
Standard Indicator 6	Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change as a result of USG assistance.	Number of people.
Standard Indicator 7	Number of USG-assisted consensus-building processes resulting in an agreement.	Number of processes resulting in an agreement.
Standard Indicator 8	Number of Civil Society Organizations (CSOs) receiving USG assistance engaged in advocacy interventions.	Number of CSOs
Custom Indicator 9	Number of households benefiting from human-wildlife conflict mitigation schemes.	Number of Households
Custom Indicator 10	Number of households that adopt water-smart technology.	Number of Households
Custom Indicator 11	Number of wildlife trade recommendations adopted.	Number of recommendations adopted
Custom Indicator 12	Number of institutions participating in a transnational Alliance.	Number of Institutions

Annex 5: AHM Project Year 5 Calendar

Table A5.1. AHM Project Year 5 Calendar

Activity	Oct. 2016	Nov. 2016	Dec. 2016	Jan. 2017	Feb. 2017	Mar. 2017	Apr. 2017	May 2017	June 2017	July 2017	Aug. 2017	Sep. 2017
Bhutan Field Activities	X	X	X	X	X	X	X	X	X	X		
India Field Activities	X	X	X	X	X	X	X	X	X			
Kyrgyz Republic Field Activities	X	X			X	X	X	X	X	X		
Mongolia Field Activities	X	X				X	X	X	X	X		
Nepal Field Activities	X	X	X			X	X	X	X			
Pakistan Field Activities	X	X	X	X	X	X	X	X	X	X		
GSLEP Meetings	X					X			X			
GSLEP Model Landscape Planning (Nepal and Kyrgyz Republic)	X	X	X	X	X							
AHM Project Wrap Up and Reporting											X	X

Annex 6: AHM Project Communications Plan

Asia High Mountains Project 2015-2017 Communications Plan



WWF-US Communications Lead: Catherine Blancard

Program Lead: Kate Newman

Last Edited: 30 October 2015

INTRODUCTION

Asia's high mountains form the headwaters of river systems that provide fresh water for millions of people. The mountains are also rich with biodiversity, and are the primary habitat for the endangered snow leopard. However, as the climate changes, unpredictable rainfall and shifting temperatures are changing the landscapes, threatening traditional livelihoods, water security for local and downstream communities and endemic species like the snow leopard. Additional threats further exacerbate pressure on these high mountain ecosystems and all that depend on them.

In October 2012, WWF launched the USAID-funded Conservation and Adaptation in Asia's High Mountain Landscapes and Communities project (hereafter referred to as the AHM project). The project is centered on four core approaches: promote water security; conserve snow leopards as the region's flagship species; help communities address vulnerabilities and prepare for climate change; and advance sustainable development at local, national, and regional levels. Our tactics include conducting field activities in and improving collaboration among six of the snow leopard's 12 range countries: Bhutan, India, Nepal, Mongolia, Kyrgyz Republic, and Pakistan. These nations suffer from ecological threats such as climate change impacts, declining availability of water resources, overgrazing of alpine meadows, poaching and retaliatory killing of wildlife, deforestation, unsustainable harvesting of non-timber forest products, forest fires, and poorly planned infrastructure, as well as other more localized issues.

Through this integrated strategy, WWF will deliver greater benefits for wildlife, ecosystems, and people than by focusing on any one of the four core approaches alone.

PROGRAM VISION

By conserving high-altitude ecosystems and improving the livelihoods of communities on the edge of the snow leopard range, we can better protect biodiversity and the natural resources that sustain millions of people in Asia, even in the face of a changing climate. By focusing on the iconic, endangered snow leopard in six of the twelve range countries, we can foster stronger transnational cooperation to protect and increase the resiliency of Asia's high mountain landscapes.

Specifically, we are developing models of climate-smart conservation activities in the communities that serve as gateways to snow leopard habitat. These integrated demonstration sites can help pave the way for climate-smart landscape management plans for GSLEP priority landscapes.

PROGRAM GOALS

- Support ten integrated demonstration sites in five snow leopard range countries.
- Support development of one model climate-smart landscape plan for a GSLEP priority landscape.

COMMUNICATIONS GOALS

- All target audiences will understand that climate adaptation and sustainable practices in high altitude communities of Asia will help safeguard livelihoods throughout the region, and reduce impacts on snow leopard habitat and prey.
- The snow leopard research and conservation community, land-use decision makers and the general public will access and use AHM’s science-based snow leopard data, including GPS mapping from satellite collars and camera trap imagery, as well as the Third Pole GeoLab and other project tools and publications.
- Policymakers in the project region will recognize the need for transnational cooperation on snow leopard conservation and climate resiliency.
- Policymakers, the snow leopard research and conservation community, and the general public will see USAID as a champion of integrated, climate smart conservation and development in Asia’s high mountain regions.
- The work and objectives of partners, in particular GSLEP and in-country grantees, will be highlighted and made known to decisions makers and the public.
- WWF supporters will further embrace the snow leopard as an ambassador for climate change adaptation, landscape-scale conservation and high mountain livelihoods.
- USAID Missions and WWF offices in the region will be avid advocates for AHM and integrated, climate-smart, community-based snow leopard conservation.

SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Extensive WWF expertise, including John Farrington (snow leopards, climate, high mountain ecosystems), Shaun Martin & Ryan Bartlett (climate adaptation), field staff, partners • Growing base of research (e.g. Climate Vulnerability In Asia's High Mountains: How Climate Change Affects Communities and Ecosystems in Asia's Water Towers; Guardians of the Headwaters: Snow Leopards, Water Provision, and Climate Vulnerability; Snow Leopard: WWF Wildlife and Climate Change Series; Columbia University’s data and projections) • WWF Snow Leopard Species Action Plan • Compelling, optimistic stories with strong characters and creative solutions 	<ul style="list-style-type: none"> • Seven countries (including US office) across which project leaders must coordinate • WWF US, country offices, and field project team communications are virtual • Perceived competing agendas (e.g. snow leopard research and conservation vs. freshwater or climate; means to fully embrace adaptation or protect traditional livelihoods) • Project sites have lack of understanding of climate adaptation as integrated with ecosystem management and snow leopard conservation, a core part of the work plan
Opportunities	Threats
<ul style="list-style-type: none"> • Charismatic species associated with climate 	<ul style="list-style-type: none"> • Still seeking sustainable funding after project

<p>and water, two issues that are complicated and often without an iconic species</p> <ul style="list-style-type: none"> • Working collaboratively with the Snow Leopard Network and its members • Deepening support for GSLEP/NSLEP Action Plan • Increasing interest in the “Third Pole” • Potential to pioneer adaptation strategies in region broadly • USAID support • GEF and potential GCF alignment • Paris COP raising global dialogue on climate • Global Tiger Initiative high level meetings, IUCN World Conservation Congress, Convention on Biological Diversity Conference of the Parties • WWF’s APGS fundraising campaign • “Ghost of the Mountains” documentary 	<p>closeout</p> <ul style="list-style-type: none"> • Communicating the project in the context of the greater holistic landscape ecosystem management context and needs. • Dependence on pace/strength of external institutions (i.e. GLSEP) • Can’t travel to Pakistan for security reasons • May not be able to work visibly in the Kyrgyz Republic because of current challenges in USAID-Kyrgyz Republic relationship
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TARGET AUDIENCES

Audience	Readiness	Values	Barriers
Policymakers and governments in Bhutan, India, Kyrgyz Republic, Mongolia, Nepal, Pakistan and all other range countries	Varies – some countries/offices are more ready to collaborate than others, and some elements of the project are politically easier to discuss than others	<ul style="list-style-type: none"> • Long-term wellness of citizens • Economic security • Protection from/resiliency to extreme events • Global perceptions and political positioning 	<ul style="list-style-type: none"> • Biodiversity relatively low priority • Lack of commitment • Historic conflicts
The public in project countries	Low-medium – largely concerned with economic well-being. Conservation secondary. Don’t often understand climate change.	<ul style="list-style-type: none"> • Social and Economic security and well-being • Patrimony of the nation • Iconic species from their countries • Future of their children 	<ul style="list-style-type: none"> • Poor access to internet • Difficult to reach in target areas • May not care about activities in other countries.
Partners, practitioners and conservation managers	High – largely because they know and trust WWF	<ul style="list-style-type: none"> • Biodiversity conservation, community-based adaptation and/or water security • Learning and sharing, particularly best practices and data 	<ul style="list-style-type: none"> • Varied priorities (species experts vs. climate specialists) • Proprietary information/legal barriers to sharing • Inter-NGO competition

Audience	Readiness	Values	Barriers
USAID Missions and DC HQ	Medium	<ul style="list-style-type: none"> • Visibility of USAID in countries • Visibility of USAID results to senior management and Congress • Development • Climate change • Biodiversity conservation 	<ul style="list-style-type: none"> • Stringent guidelines on branding difficult for offices • WWF offices want to brand WWF • Like to see frequent success stories and sophisticated marketing of the project
Other public sector organizations	Medium – USAID has already offered credibility; transboundary nature of the work is also appealing	<ul style="list-style-type: none"> • Biodiversity • Climate resiliency for communities and landscapes • Conservation = Development • Transboundary collaboration • Sustainable financing/lasting benefits 	<ul style="list-style-type: none"> • Bureaucratic processes • Competition for funds and attention
WWF members and supporters	High – snow leopards and local communities are well-received by our audiences	<ul style="list-style-type: none"> • Species and people • Efficient and innovative work 	<ul style="list-style-type: none"> • Complexity of water and climate issues

MESSENGRERS

WWF

- AHM US-based project staff including Kate Newman, Jon Miceler, John Farrington and Barney Long
- Rishi Sharma, WWF SAP Lead
- WWF country/field office representatives
- WWF-US Freshwater and Climate team members, including Karin Krchnak, Shaun Martin and Ryan Bartlett
- WWF-US development staff

USAID

- Mary Melnyk
- Laura Cornwell

Snow Leopard, Climate Adaptation and Development community

- Snow Leopard Trust (SLT) – Brad Rutherford
- GSLEP – Koustubh Sharma

MESSAGES TO USE WITH OUR TARGET AUDIENCES

- **Asia’s high mountains are crucial for people and nature.** The mountains that surround the Tibetan plateau, an area also known as the “Third Pole,” form the headwaters of river systems that provide freshwater for nearly one-third of the world’s population. The mountains are rich in culture and biodiversity, and are the primary habitat for the endangered snow leopard.
- **These high mountain landscapes—and the ecosystem services they provide—are at risk.** Climate change is melting glaciers, causing perennial snow cover and permafrost to disappear, and increasing the variability of weather patterns. These shifts put local and downstream communities and biodiversity at risk. Poor management and degradation of natural resources further exacerbate the climate pressures on these high mountain ecosystems.
- **Snow leopards are Asia’s climate ambassadors.** In a politically charged region, saving such an iconic species is a mission all countries can commit to. Saving the snow leopard also saves people; conservation efforts are simultaneously improving local livelihoods, increasing water and food security, and building climate change resiliency. Snow leopard conservation and habitat protection provides a variety of environmental, economic, and social benefits.
- **WWF, USAID and our key partners are committed to the region’s future.** By both working in Asia’s high mountain communities, where many impacts are already being felt, and influencing policy, which governs natural resource management across the snow leopard range, we are contributing to a future where both people and biodiversity can thrive, even in the face of climate change.
- **We are developing models of climate-smart conservation activities** that benefit both people and nature in “gateway communities” nestled on the edge of the snow leopard range. These demonstration sites will help pave the way for integrated, climate-smart landscape plans for GSLEP priority landscapes.
- Through GSLEP, governments across the snow leopard range have boldly committed to empowering their most remote—and often most vulnerable—communities to build the resiliency of high mountain landscapes.
- We must act quickly to build the resiliency of Asia’s high mountain landscapes and communities.
 - Snow leopard range nations are amongst the first to feel the impacts of a changing climate, and communities and governments are pioneering community-based adaptation approaches. Communities, governments, and multi-sectoral stakeholders must continue to work to safeguard the rich heritage of these high mountain communities and the iconic snow leopard.
 - Climate and snow leopard experts currently operate in silos, yet the future of the region depends on their collaboration. **ThirdPoleGeoLab.org provides a common platform for sharing knowledge about Asia’s high mountains across expertise.**
 - Informed in part by USAID-funded research, WWF has developed the first-ever species action plan (SAP) for snow leopards, which will guide efforts to save this iconic species and its habitat. However, a significant funding gap challenges the success of this plan.

APPROACH/TACTICS

- **Engage existing and potential partners by populating and promoting the Third Pole GeoLab**
 - Promote the Third Pole GeoLab in climate, snow leopard, development and conservation networks (i.e. newsletters, digital libraries, etc.)
 - Discuss the resource at conferences and speaking events
 - Share and promote with AHM sites and partners, and encourage/empower them to share beyond the project (through personal emails, webinars and targeted newsletters) and share data (including their research findings, data, camera trap footage, collaging info, etc.)
 - Develop “Snowy’s Stories” with more content from across the region
 - Capture and share stories about community-based climate adaptation throughout the region

- **Raise awareness of public sector organizations and the general public through targeted outreach and collateral development**
 - Develop a compelling, comprehensive story package as well as materials specific to each site
 - Secure coverage in WWF-US communications outlets (i.e. *Worldwildlife Magazine*, WWF annual report, social media)
 - Organize 2-3 US-based events raising awareness of the project, including as an example of an existing public initiative aligned with new mandates on climate adaptation, natural capital and ecosystem services
 - Secure 2-3 feature stories in third-party media outlets
 - Increase social media coverage of AHM activities

- **Leverage high-level events to elevate the AHM project amongst climate, water and snow leopard conservation experts and practitioners**
 - Society for Conservation Biology in Marseille
 - World Water Week in Stockholm
 - Climate COP in Paris
 - IUCN World Conservation Congress
 - Convention on Biological Diversity Conference of the Parties in Mexico
 - Others

- **Raise awareness amongst WWF and USAID audiences by building the AHM brand throughout our materials**
 - Establish the our **web page** (Worldwildlife.org/AHM) as the hub for project communications
 - Develop [project pages](#) for each of the AHM sites
 - Keep the [story](#) and [publication](#) sections up-to-date
 - Establish AHM page on each WWF Office website in the project countries
 - Co-host events with the USAID mission in each project country

 - Ensure a steady **drumbeat of stories** to support activities and ensure AHM messages reach USAID and members and supporters, and can be used as assets for other key audiences
 - Outlets
 - *Worldwildlife Magazine*
 - USAID article(s)

- Stories published on Worldwildlife.org, ThirdPoleGeoLab.org and field offices' websites
- Social media support when applicable from WWF-US and field offices

Hooks

- Oct. 23 – Snow Leopard Day
 - Dec. 2015 – UNFCCC climate COP
 - GSLEP meetings
 - Publication of any reports or findings as a result of AHM or other snow leopard/high mountain landscape conservation work
 - New camera trap footage
 - Produce a quarterly **newsletter** for distribution by project sites, USAID missions and partners
- **Raise awareness in project countries through media outreach, social activation and other tactics**
 - **Engage regional policymakers**
 - **Mark end of USAID grant by celebrating successes, sharing lessons learned and articulating transitional plans**

EXISTING ASSETS

Digital

- [Worldwildlife.org Initiative page](#)
 - Linked to from the [freshwater](#), [climate](#) and [wildlife conservation](#) pages
 - Exploring options to shift this to a [place-page](#)
 - Seeking to expand the [affiliated projects](#) to represent main areas of work for each site
 - Continuously adding to stories as content comes in from the field
- [Third Pole GeoLab](#)
- [40+ hours of professional snow leopard tracking video and stills shot in KCA in Dec 2015.](#)

Publications

- [Climate Vulnerability In Asia's High Mountains: How Climate Change Affects Communities and Ecosystems in Asia's Water Towers](#)
- [Guardians of the Headwaters: Snow Leopards, Water Provision, and Climate Vulnerability](#)
- [Snow Leopard: WWF Wildlife and Climate Change Series](#)

Stories

- *Worldwildlife Magazine*
 - [Inquiry: Can saving snow leopards quench people's thirst? Winter 2013](#)
 - Feature story [TO COME NOVEMBER 2015]
- Worldwildlife.org web stories
 - [The Earth Has a Third Pole](#)
 - [Human-Wildlife Conflict Mitigation in Nepal](#)
 - [Promoting Sustainable Livelihoods in the Kyrgyz Republic](#)
 - [Citizen Scientists Saving Snow Leopards](#)
 - [Amazing Snow Leopard Images from Nepal](#)
 - [Building a Future for Snow Leopards](#)

DELIVERABLES

By 2017, we will...

- Finalize the Third Pole GeoLab and populate it with compelling project site content, stories, social tools and data; traffic and data contribution to the site will increase, particularly from within the region
- Develop 1 high-end, comprehensive story package (e.g. video, brochure/booklet)
- Develop at least 1 compelling story package (e.g. 500 word stories, photos, one-page overview) from each of the six project countries
- Publish and promote one feature package for *Worldwildlife Magazine*
- Secure 2-3 AHM feature placements in third-party outlets
- Ensure there are at least 12 AHM stories on Worldwildlife.org
- Ensure there are at least 4 stories per year promoted by the local WWF office to their media outlets in the six priority countries.
- Technical reports on snow leopards prepared in consultation with the GSLEP Secretariat.
- Produce up to 8 issues of a newsletter – with a flexible format that allows each country to customize the edition to feature their news prominently
- Meet with and present results, findings, success stories to USAID Missions and embassy staff
- Co-host events with USAID in at least two countries
- Develop a suite of close-out reporting materials, including a report, stories from the field, and issue papers highlighting specific big win areas of the project (e.g. climate-smart landscape management plans, demonstration site activities and how they are feeding into landscape scale work)

GLOSSARY

Target Audience: Who are the *main* people (internally and/or externally) and/ or what are the main entities we need to reach in order to achieve our communications goals? For each audience, we assess the following:

- *Readiness:* Is your audience ready for what you want to tell them? For example, do they know about and generally support what you are trying to do? Or are they skeptical about what you are trying to do? Neutral? Do they have a basic knowledge of – and a personal connection to – the issue? Are they willing/able to overcome their barriers?
- *Values:* What is most important to your audience when it comes to the goal you are pursuing (e.g., power, achievement, benevolence, tradition, security, conformity)?
- *Barriers:* What do they see as the risks associated with working with WWF to reach the goal?
- *Goal:* What behavior are you trying to change and/or action do you want your target audience(s) to take *this year* in order to help meet the vision? (Example: WWF members, donors and Americans with a conservation-affinity have a better understanding of how climate change and ocean acidification impact species, priority places and the solutions to combat them.)

Message: A simple yet compelling statement that addresses one the values of your target audience and/or helps them overcome one of their concerns/barriers. The message should inspire a change in behavior or an action. Emotional messages are better than rational messages. Hopeful messages (e.g., messages that inspire wonder, awe and joy) are more effective than doom and gloom messages, as the latter are likely to lead people to apathy.

Messenger: Which people/entities will be most effective at funneling our key messages to our target audiences? These are also referred to as “influentials” or “champions.” They are the people we will work

with on a regular basis to reach our target audiences. They must be credible people/entities who can influence your target audiences. In some instances, messengers and target audiences are one in the same.

Metrics: Quantifiable and anecdotal ways to measure success in reaching your goals. The measures can be a mixture of outputs (i.e., the things you are doing to move your strategy forward, such as news articles) and outcomes (i.e., the changes that occur because of the outputs, such as people who read the articles started sourcing more sustainable products).

SWOT: What circumstances are going to make it easier to reach our communications goal(s) and what circumstances are going to make it more challenging to do so? Consider internal and external circumstances, such as funding, staffing, reputation and the political environment.

- *Strengths* = Internal opportunities
- *Weaknesses* = Internal challenges
- *Opportunities* = External opportunities
- *Threats* = External challenges

Vision: What do you envision conditions will be like in three years if we achieve the communications goals set for this program? This should be a general one- to two-sentence statement. (*Example: Americans demand government action to combat climate change.*)