Darwin Initiative Main Annual Report

To be completed with reference to the "Writing a Darwin/IWT Report" Information Note:
(https://www.darwininitiative.org.uk/resources-for-projects/reporting-forms-change-request-forms-and-terms-and-conditions/).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

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Darwin Project Information

Project reference	#25-027
Project title	Sustaining snow leopard conservation through strengthened local institutions and enterprises
Country/ies	Nepal
Lead organisation	Snow Leopard Conservancy
Partner institution(s)	Mountain Spirit, Nepal Trust for Nature Conservation,
Darwin grant value	GBP 311,807
Start/end dates of project	March 2019 – December 31, 2021 * ** (Change Request submitted and approved April 6, 2021)
Reporting period (e.g. Apr 2020 – Mar 2021) and number (e.g. Annual Report 1, 2, 3)	April 1, 2020 through March 31, 2021
Project Leader name	Brian Peniston
Project website/blog/social media	www.snowleopardconservancy.org
Report author(s) and date	Brian Peniston, Shailendra Thakali + Rodney Jackson; May 2021

1.   Project summary

The project is focused on improving the security and resilience of the snow leopard population, its primary prey base and other biodiversity in the Thamo, Thame and Thameteng valleys in Sagarmatha National Park and Buffer Zone in Eastern Nepal and the Nar and Phu valleys located within the Annapurna Conservation Area Project in Central Nepal. It aims to achieve this by 1) improving herder grazing and guarding practices while reducing human wildlife conflicts; 2) piloting snow leopard linked enterprises; and 3) enabling local institutions and stakeholders to compete for conservation investments and influence evolving local government policies under Nepal's new Constitution. Evidence in year 2 suggested that wolf predation may now be the greatest threat in the Sagarmatha National Park sites. Snow leopards, however, remain the main predator in the Nar and Phu valleys. A snow leopard prey base and human interaction study in year 2 found that the average annual household livestock loss to snow leopards at 2.5 and 3.5 in Nar and Phu respectively. Snow leopard population surveys, using camera traps and possibly also fecal DNA analysis, were planned for year 2 in Nar and Phu valleys, and analysis of completed camera-trap surveys completed in year 3 is on-going. This

activity was delayed by heavy snowfall (Winter 2019) and Nepal's country-wide coronavirus lockdown (Spring 2020- Feb 2021). A first change request extended the project timeline for six months until September 2021, but an additional change request was submitted in April 2021, due to continued disruptions caused by rising COVID-19 case numbers in India and the expected revised lockdown of domestic and international travel to Nepal. The second change request was also approved and extends the close of project date from September 30, 2021 until December 31, 2021.

2.   Project partnerships

Originally designed as a partnership between three organizations, the project has evolved and two partners remain operational — Mountain Spirit and Ennovent. Mountain Spirit (MS) is responsible for the overall project coordination and community mobilisation. Original partners The Mountain Institute (TMI) and Global Primate Network (GPN) both dissolved and closed their operations by early 2020. Mountain Spirit assumed additional implementation responsibilities from early 2020. Reasons for the dissolution of The Mountain Institute and Global Primate Network were described in Annual Report Number 2. With one primary partner, coordination duties were simplified and the Nepal based manager (Dr. Thakali) has spent several days per week working with Mountain Spirit, when not in the field or quarantined under national lockdowns. The national lockdown in Nepal and quarantine directives for much of 2020 has meant that coordination and adaptive management of targets and program approaches were instead supported, to the extent possible, through regular email and weekly virtual WhatsApp and Zoom communications and meetings.

The Department of National Parks and Wildlife Conservation (DNPWC) and Sagarmatha National Park (SNP) are also key project partners. DNPWC and SNP remain important partners with contacts regularly conducted through face-to-face meetings, telephone and WhatsApp conversations. Access to Sagarmatha National Park was restricted due to the national lockdown, which was only been lifted in early winter 2020, although air access to the nearby airport (Lukla) remained reduced to notably fewer flights. (Pre pandemic daily flights totaled 60-100 during the tourist season and are now at only 4-5 daily maximum).

National Trust for Nature Conservation (NTNC) and their local managerial body, the Annapurna Conservation Area Project (ACAP) also remain key partners. Coordination is through regular telephone and face-to-face meetings. Approval to conduct biological sampling by NTNC was received mid-year in 2020, but then delayed due to early snowfall and then by outbreak of COVID-19. NTNC completed the snow leopard population survey in Year 3 quarter 4 and data analysis is currently underway. The survey permission process in both SNP and in Nar & Phu valleys were considerably slower than estimated during the project design, despite regular contacts and follow-up requests.

The Pasang Lhamu and Narpa Bhumi Rural Municipalities are two other key partners. Despite the complications of national lockdown and restrictive domestic travel, both municipalities have been strong partners and we were able to organize several additional training sessions this year in Kathmandu, Pokhara and in-situ at the villages. Coordination with the Rural Municipality leaders has been a bit complicated as they move between Pokhara (the nearest regional center) and their home villages irregularly, based on the constantly changing lifting and reimposing of travel restrictions. A major breakthrough occurred this reporting period, when the Narpa Bhumi Rural Municipality committed to co-funding the initiation of a conservation enterprise, (cultivation of jimbu (*Allium hystersom sp*), among the project's overarching goals.

3.   Project progress

Overall Summary: This report covers the 12-month period, April 1, 2020 until March 31, 2021, including summarizing information presented in the Half Yearly Report (HYR2) and updates on achievements made over the last 6 months. This year was a period of intense disruption due to the COVID-19 pandemic and the continuing Constitutional crisis in Nepal resulting when the

Prime Minister prorogued the Parliament in July 2020, sending the country into several months of uncertainty. Opposition Parties responded by calling for a No-Confidence vote in December 2020. The Prime Minister responded by unilaterally appointing loyalists as heads of all Constitutional Bodies in February 2021 and dissolving Parliament in April 2021. The Supreme Court has recently declared the Prime Ministers actions illegal and restored Parliament's powers and there may or may not be an election called in the coming months. All of these events stymied local decision-making and development/conservation planning/actions.

Nepal's National lockdown from March 31, 2020 resulted in the cancellation of all domestic and international flights for some 6 months. Travel within the country was also restricted until late fall 2020, hence, delaying implementation of planned Year 3 programs and activities.

The evolution from a centrally managed government structure to a new government structure with two new power-layers (Provincial and Rural Municipality), as mandated by Nepal's New Constitution, continued to progress forward slowly with many disagreements about jurisdictional authority and power sharing. While some delays were predictable, the process of devolution of power has proven far more slowly than anticipated when this project was in its design phase.

Despite these challenges, the project has been able to make important progress against each of the three major project-related objectives, described in Sections 3.2 to 3.5 below.

In addition, and given unanticipated or emerging opportunities, several unplanned activities were completed or initiated. The pandemic and National lockdown affected face-to-face communications with the Rural Municipality officials, so the project depended more on internet-based tools (Zoom, Skype, etc) as well as telephone contact. One unplanned activity this year responded to the request by the Narpa Bhumi Rural Municipality: the project provided emergency food aid to 100 low-income households of Nar & Phu villages, using a combination of Darwin and SLC matching funds. The food aid included rich, flour, lentils, oil, shops, tea, sugar, beaten rich, instant noodle, etc. Personal protection equipment such as sanitizer, gloves, masks, etc., were also provided as requested by the local community. (Reported in Half Year Yearly report, namely HYR Yr 3). In addition, project partner Mountain Spirit conducted several non-Darwin funded training sessions for their members on how to make reusable cloth masks and homemade hand sanitizer.

Due to COVID-19 disruptions, the first change request to extend the project timeline for six months was approved and the log-frame modified accordingly. However, with continued pandemic-related disruption over the last 3 months, project management made a second change request to extend through December 31, 2021, which was also approved.

**Note: For this report, the listed activities used is from the timeline document, which has a more extensive listing of planned actions than the listed indicators in the logframe. (All logframe indicators are listed in the Milestones timeline as well).

3.1   Progress in carrying out project Activities

Output 1: Local Governance Strengthening

Activities 1.1 to 1.3: Most activities planned under this objective were completed in Years 1 and 2. Year Three has been mostly to revise and/or streamline the products produced in earlier years. In the first half of Year 3, the Conservation Governance and Environmental Safeguard training manuals were revised based on further feedback from participants. New legislative and regulatory changes were incorporated into these training manuals. (Available in Nepali Language, to be summarized in English). No further changes were made during the second half of Year 3. Several photos of trainings and manuals covers were provided as part of the Half Yearly report.

Activities 1.4 to 1.7: These monitoring tasks will be completed in Year 4, as they represent end-of-project indicators. The project requested and was approved change requests extending the project through December 31, 2021. Note: Activity 1.5 is being deleted as the local Government

Bodies do not conduct 5-year plans as noted in HYR Year 3. When the original proposal was written, Nepal's new Constitution was in the process of being enacted and the project designers mistakenly assumed that 5-year planning would continue at local levels as well. However, Local Government Officials opted for short term rather than long term planning mechanisms.

Activities 1.8 – 1.10: While the project maintained regular contact and informal training with herders, the formal human wildlife training sessions planned for Year 3 were postponed until Year 4 due to pandemic-related factors. With SLC's matching funds, a team of US veterinary doctors were scheduled to visit Nepal and conduct the training, combining with training of Rural Municipality staff, but this activity remains on hold. Training materials are under development and training is now planned for Fall 2021, conditions permitting. In addition to reducing livestock diseases and their prevalence, it is expected that risks related to zoonotic disease transmission may also be addressed and reduced. SLC will evaluate the effectiveness of the training and related materials post Darwin project, using matching SLC funding. As mentioned earlier, on-going face-to-face contacts, in-person mentoring and follow up training have been significantly disrupted by the continuing pandemic and its associated travel restrictions.

Output 2: Local communities protect, stabilize or improve snow leopard & prey numbers and habitats.

Activity 2.1: The snow leopard population survey for Manang district, with focus on Nar and Phu villages, was conducted in Year 3 by our partner organization Nepal Trust for Nature Conservation (NTNC). Data analysis is currently on-going, with the results expected by mid-2021.

Contracts to conduct the snow leopard survey in Sagarmatha National Park are being finalized and survey field work is planned to commence in May 2021 (this is likely to be delayed). Kamal Thapa, the researcher who conducted the Nar-Phu blue sheep (prey species) survey, will oversee this study and train local park personnel in optimized settings of camera traps and standardized survey methodologies.

Discussion: The surveys were originally scheduled for Year One, then delayed due to bureaucratic and jurisdictional constraints encountered early in Year 2. Once these constraints had been resolved, deployment of the field survey teams was delayed, first by heavy snowstorms and then by COVID-19 and resultant lockdown and travel restrictions which persisted though much of Year 3. In retrospect, the project design team proved overly optimistic about the difficulty of resolving survey permit procedures and responsibility around jurisdictional claims between the Government of Nepal and NTNC, an NGO. Permission to conduct DNA scat (faecal) sampling has not yet been granted, and the project may thus have rely upon camera-trap surveys only since this technique is viewed differently by various decision-makers.

The Darwin Initiative snow leopard population work was originally conceived as an integrated component of the Nepal Government's National Snow Leopard Survey (also to be coordinated with the 12-nation Global Snow Leopard Protection Plan and PAWS initiative; https://globalsnowleopard.org/gslep-projects/paws/). Despite our promises of significant support to the Government of Nepal and their envisaged provision of matching funds, no multilateral funds were raised after all and the National survey has yet to be conducted. The Darwin supported snow leopard survey work will thus be the first foundational standardized survey undertaken at the national level within the last five years or so. Discussions are on-going with government authorities to help them use Darwin-funded survey outputs to leverage additional multilateral funds for enabling completion of the country-wide survey, to include all mountain national parks and areas deemed critical to the long-term welfare of Nepal's snow leopard population.

Activity 2.2: The blue sheep survey for Nar and Phu valleys was conducted and completed in early Year 2, using the Double Prey Count methodology, a first time application in Nepal, and only the 3rd time range-wide (see Year 2 Annual Report). Researcher Kamal Thapa revised the paper detailing results and has submitted it for peer review and publication after senior project

staff made significant contributions to strengthen this technical paper. The first journal rejected the manuscript on the basis the topic was too specialized. No prey surveys were planned for Sagarmatha National Park in the original project design, as sufficient data on the Himalayan thar population existed at the time.

Activity 2.3: Training of the Sagarmatha National Park rangers in optimal use of camera traps for conducting large mammal surveys is scheduled for May - June 2021, once survey permits have been obtained. The field survey is scheduled to take place in Year 4 quarters 1 and 2. Researcher Kamal Thapa trained NTNC staff in camera trap usage and optimal placement for the Annapurna region in Year 3 Quarter 1, an activity covered in the HYR Year 3. Results of that study are currently under processing and data analysis.

Activity 2.4: Additional trainings of herders in improved corral design, maintenance and livestock guarding techniques are planned for Summer - Fall 2021. These were delayed in spring of 2020 by COVID-19. Informal training on different topics takes place during each field visit when project staff interact with herders and community members. Herders were interviewed during several of the 36 episodes of special radio programs on snow leopard conservation where experience and advice on ways of improving corral design is shared, for example. (All broadcasts are in Nepali language only and distributed through a network of mountain radio stations in Nepal. A sample Facebook post promoting the broadcasts is in the Annexes).

Two depredation events occurred this fiscal year in the Nar and Phu valleys, resulting in the loss of 4 and 7 livestock respectively. While drafting this report (late April), a major depredation event occurred in the Phu valley, where a snow leopard gained access into a corral and killed +/- 50 goats. Once travel restrictions are lifted project personnel will go rapidly to Phu to assess the situation. It is not known if the herder was using project supplied Foxlight deterrents. Outside the project area, in March – April 2021, a common leopard attacked and killed 27-30 livestock in a well-built corral in Marpha village after the herder had improperly secured the corral's door. Another mass killing event occurred in Dolpo, also outside the project working area. Here snow leopards entered poorly constructed corrals resulting in the death of about 40 sheep in March 2021. SLC and Mountain Spirit quickly mobilized their resources and interviewed the Assistant Warden of Shey-Phoksundo National Park and local herders to open communication channels with local livestock owners, along with airing a special broadcast radio episode – an example of leveraging the Darwin funded radio broadcasts to spread lessons on improved corral design, explaining the process for applying and accessing Government compensation, while also interviewing affected herders for their perspective of co-existing with predators like snow leopard. A separate radio episode was then broadcast describing the snow leopard's typical predatory behaviour, helping herders understand why these mass-killing events occur and how they can minimize or entirely mitigate events in the future.

Activity 2.5: The effectiveness of such herder training will be evaluated after all training has been completed, now scheduled for Fall 2021 with a planned visit of US veterinarians. SLC determined that linking livestock depredation training with herder training on identifying and treating common livestock diseases would increase both immediate and long-term training impacts. Such veterinary training is expected to help improve livestock productivity while also reducing losses from common diseases. The training may also help reduce the risk from zoonotic disease transmissions. Manuals and communication materials for improved pasture and grassland management are also under development. While comprehensive, they need to be simplified to be more accessible to herders given their limited educational background. These materials will be field tested in Nar and Phu, including for scaling up later. Veterinary training targeting Nar and Phu herders has been postponed twice over the past year and is now rescheduled for fall 2021. Baseline questions for the visit have been prepared and an interviewer trained but is yet to be deployed. This familiarization should reduce the time required for the US based vets to spend gathering baseline information and thus allow them to dive more deeply into specific issues related to livestock and disease in the targeted communities. (NOTE: The herder training is a Darwin funded activity, travel and expert costs for the US veterinarians are SLC matching activities and not funded by Darwin Initiative).   The US veterinary team has made contact with various Nepal based academic institutions in Animal

and Veterinary Sciences to explore possible collaboration with student groups for different veterinary and animal welfare technical training in support of the project's objectives.

Other components of herder training like the use of deterrence mechanisms (e.g., Foxlights, scarecrows, noisemakers) are under evaluation. In December 2020, 24 Foxlights were distributed to herders in Nar and Phu valleys (20 men and 4 women) along with an additional 20 Foxlights to herders in Thamo and Thame valleys of the Khumbu region (17 men and 4 women). In Year 3, researcher Kamal Thapa conducted an initial efficacy assessment of the Foxlights distributed prior to the Darwin project. An important key finding was that, while Foxlights appeared especially effective during the first 4-6 months of placement, they appeared to lose effectiveness as more time passes. Thapa determined that these herders had not moved the Foxlights as originally recommended, thus apparently allowing snow leopards to become habituated to presence of the LED lights. As a result, all Foxlight training materials have been updated to emphasise the need for regular rotation and changing of their deployed locations. This preliminary effectiveness survey is attached in the annexes. Thirty more Foxlights were delivered to Nepal since the HYR Yr 3 report and will be deployed as conditions permit.

The SLC partnership with RESOLVE to adapt AI technologies for improving predator deterrence mechanisms is on-going and the first on-board snow leopard and wolf detection model passed key proof-of-concept pilot tests in March 2021. In HYR Yr 3, we added images of brown bear and domesticated dogs into the program's algorithm, aimed at differentiating between natural predators and herder's guard dogs (Tibetan mastiffs). Several other issues with the initial prototype deterrence devices and cameras have been addressed and this device is nearly ready for deployment and practical testing in Nepal, again awaiting lifting of airline restrictions so SLC staff can travel to Nepal.

Activity 2.6: At the request of reviewer in annual report 2, training of snow leopard citizen scientists was moved to Output 3 where it fits more logically into the Snow Leopard Trail enterprise activity.

Activity 2.7: During Year 3, an attitude survey of local residents on snow leopards, environmental threats (including climate change) was conducted with the results currently under analysis. This survey was conducted both in Sagarmatha National Park and Nar and Phu valleys. Two Mountain Spirit staff members were trained in social science research and served as enumerators, conducting the field surveys. The results will be prepared for potential journal publication and will include preliminary questions related to climate change. A preliminary write up is attached in the Annexes. The detailed paper is expected to be ready for pre-publication peer review by the end of July 2021.

Output 3: *Activities 3.1 to 3.4* (1) stakeholder training, 2) Snow Leopard Trail identified, 3) service design and 4) implementation strategy) were completed in the Year 2. (See Annual Report). These activities prepared the groundwork for the first paying visitors for the Snow Leopard Trail. SLC Partner Ennovent's background reports were included with Annual Report Year 2. However, the field components of Snow Leopard Trail activities have also been delayed as the first paying batch of tourists have not been able to visit project sites due to the pandemic. These visits were postponed twice in 2020; if COVID-19 conditions, the first group of paying visitors are expected to visit the project area in fall, 2021. Ennovent has developed basic training modules and materials, and also trained local guide staff and support staff, who are considered "citizen scientists," as described in the original project proposal (Reported in Annual Report Year 2). The main guides continue to produce and disseminate promotional materials for highlighting the Snow Leopard Trails Project on Instagram, Facebook and other socials media, especially material submitted by Tashi Ghale and Rinzin Phunjok Lama. Rinzin/s contributions to snow leopard conservation were recognized with WWF's Young Conservation Awardee for 2020 to him in March 2021.

Activity 3.5 will be assessed after the first paying visitor group have completed the tour. A benefit sharing agreement has been developed for Ennovent for implementation after this, now

expected in fall 2021 at the earliest. A copy of this agreement is available in the Annex, but Darwin is requested not to share this document widely as it contains proprietary information.

Activity 3.6: The pandemic has completely disrupted tourism revenues across Nepal since March 2020. For this, and other reasons, the project made concerted efforts to identify and promote alternative and especially more diversified, robust livelihoods starting this year. Ennovent conducted a series of 3 Business Planning workshops for Mountain Spirit staff and some 13 members in October 2020. Topics covered included three sessions: 1) Theoretical Foundation (30 Sep) - Introduction, Business Ventures, Business Modelling; 2) Practical Applications (1 Oct) - Business Model Patterns, Process, Startup Tools and 3) Group Exercise (7 Oct) - Group Presentations, Feedback where participants developed a sample model business plan using the model business canvas methodology. A powerpoint presentation with the workshop framework is attached in Annex 3. The pilot conservation enterprise project to cultivate jimbu (*Allium hystersom sp.*) builds upon this initial training and associated asset identification training (APPA) undertaken in Year 2.

Also building upon the APPA (asset-based planning) and business planning training completed in Year 2, Mountain Spirit staff have identified and overseen several alternative livelihoods trainings during Year 3, including two bakery and cooking skills trainings. The first 7-day training, held in February this year centred on bakery and cookery skills training for 30 participants, 25 from the Thamo and Thame villages and 5 from the Nar and Phu valleys. In March 2021, a second 7-day bakery and cooking skills training was conducted in Kathmandu for 32 participants from the Khumbu region. (Combined total trained = 43 men and 39 women) Khumbu participants had requested such training as an alternative or supplementary income opportunity to tourism, but it had to be postponed due to COVID-19 and was finally completed on April 7, 2021. Such culinary products are designed to be marketed to both local people and tourists, thus reducing total dependency on the foreign tourist sector. While the connection to snow leopard conservation is relatively indirect, improved local skills helps create greater village self-reliance and independence. Photos of the training are attached as Annexes and have been posted on Mountain Spirit's Facebook page and their website, crediting Darwin Initiative funding.

Local people identified and requested other alternative livelihood trainings for implementation the period 2020-21. Two weeks of basic plumbing and practical skills in water system maintenance training was completed in Kathmandu involving 20 participants (all men) from the Khumbu region in late Year 3. These communities have become increasingly dependent on tourism revenues, so with training in basic vocational skills means that they can install and repair basic plumbing for lodges, tea houses and restaurants themselves rather than being forced to hire more expensive contractors from downstream. They also mastered basic pipe welding and joining skills so that they can conduct basis repairs to community drinking water and irrigation pipelines. During this half year, we also planned to conduct similar plumbing training for the people of Nar & Phu; however, no participants from these settlements elected to participate in such training. Comments from trained participants are included in the Annex.

The most exciting enterprise opportunity is the decision to develop the enterprise asset identified during the March 2020 community-focussed Appreciative Planning and Participatory Action (APPA) training. Nar and Phu residents decided to initiate pilot cultivation of jimbu (*Allium hystersom sp.*), a highly valued species of the onion family that is endemic to these valleys and produces a highly fragrant bulb when dried and used as a food and spice supplement. Jimbu from Nar and Phu is highly valued and in high demand in local markets. Cultivation trials are scheduled to begin in summer 2021. The trial project will be co-funded by the Rural Municipality (Gaun Palika) from local government funds. If successful, jimbu cultivation could offer multiple conservation benefits including: 1) reduced harvesting time spent by community members in high pastures and rocky habitat favoured by snow leopards (by approximately 1 month per year); 2) reduced disturbance of the native alpine vegetation and also snow leopards and their prey; 2) impactful local income generation while helping to diversify household revenue from high tourism dependence and finally, 3) become the first co-funded conservation enterprise partnership with local government officials, one of the project's overarching long-term and scaling-up goals.

Activity 3.7: The Snow Leopard Trail benefit sharing model will be implemented by Ennovent/Trail Angels, also in partnership with the local Rural Municipality (Gaun Palika) Government Officials. Local community members will have representation on the Committee that determines which locally identified projects are to be funded from the proceeds. Initial funding levels are expected to be low, perhaps only US$500 per year, depending on the volume of tourists willing to pay wildlife premiums. As noted, the first paying visitors are delayed yet again and now will occur in fall 2021 at the earliest. The proposed benefit sharing mechanism contract is described under Activity 3.5.

Output 4: <u>Project Management, Evaluation & Reporting</u>. This was removed at the suggestion of the reviewer of Annual report Year 1.

Due to the COVID-19 pandemic, the project sought, and was approved, two change requests: extending the end of project date: first to September 30, 2021 (first change request) and then later until the end of December 31, 2021 (second change request being approved in April 2021, again due to the continuing effect of this pandemic. No budget changes occurred although permission was granted to spend the remaining funds in total by the end of December 2021. A new logframe incorporating very minor changes was generated and approved.

Other Non-Darwin funded but related activities in Fiscal year 2020-2021:

In January, Nepal based project manager Dr Shailendra Thakali authored an article for a Nepali Newspaper on "What can conservation planners and practitioners can learn from the COVID-19 pandemic?" His published news story highlighted the need for adaptive management and flexibility in coping with COVID-19. SLC also published the most recent version of the Snow Leopard Magazine. As part of the radio episodes described earlier, SLC initiated an Essay Competition on snow leopard conservation for radio listeners, and the 3 winners will be receiving awards. SLC partners and collaborators Sonam Choeki and Tshiring Lhamu made a short documentary film titled "Snow Leopard Calling", about community conservation efforts in areas adjacent to the Darwin project area. This film won the best short documentary category at the Kathmandu International Mountain Film Festival in December 2020. An experienced film maker is trying to raise funds to convert it into a full-length feature documentary film. SLC celebrated International Snow Leopard Day in October 2020 with a special radio program and print publications. SLC Associate Jonny Hanson made a short video attached as an annex.

3.2   Progress towards project Outputs

Our project focuses on improving the security and resilience of snow leopard populations, their primary prey base and other biodiversity in the Thamo, Thame and Thame Teng valleys (Sagarmatha National Park and Buffer Zone) of Eastern Nepal and the Nar and Phu valleys of the Annapurna Conservation Area Project in Central Nepal. The project aims to achieve its goals by 1) improving herder grazing and guarding practices while reducing levels of human wildlife conflict; 2) piloting snow leopard linked enterprises; and 3) enabling local institutions and stakeholders to compete for conservation investments and influence evolving local government policies under Nepal's new Constitution. When designed, snow leopard predation was believed to be the biggest threat to livestock. However, Year 2 survey evidence suggested wolf predation may now be the greatest threat in the Sagarmatha National Park. Snow leopards, however, remain the main livestock depredator in Nar and Phu valleys.

We had to drop faecal scat sampling as a means for monitoring snow leopard populations, in large part because the government and line-agency decision makers have yet to endorse this non-invasive genetic survey option (which allows for monitoring both population size and diet at both individual and population level). The NTNC declined to accept pro bono technical training in genetic analysis offered by SLC (as part of Darwin matching funds). There are two laboratories in Nepal capable of analyzing snow leopard scats, but due to institutional jealousies and other reasons, the Government run lab declined to accept additional training aimed at obtaining maximum information from each sample set, a disappointing outcome. We

now perceive we were over-optimistic in highlighting state-of-the-art genetic technology, with the Nepal government and NTNC more focused on camera-trapping, a methodology that is also not without its challenges.

New Co-financed Activity: In 2019, Snow Leopard Conservancy started collaborating with RESOLVE to develop, adapt and test motion sensitive surveillance (trail) cameras linked with Artificial Intelligence (AI) enabling on-board, real-time field identification of potential predator species like snow leopard, wolf, brown bear and feral dogs. The next action will involve link each camera with effective noise-making and light devices aimed at deterring predators from closely approaching livestock pens. While SLC collected some 6,500 images of domesticated dogs for input into the AI discrimination software, RESOLVE found another partner, the company Civedia Inc., who have pioneered a less time-consuming and distinctly more reliable AI-driven identification based on a 3-D generated algorithm which is agnostic to the cameras' background (that of course varies greatly from one site to another, complicating separation of subject from its background environment). This algorithm also helps to differentiate between predators and domestic dogs that are proving increasingly important depredators of wildlife in India as well as elsewhere in the Himalaya. While work has been slowed by COVID-19 travel restrictions, AI prototypes being currently field tested in Africa and with several modifications of the camera and batteries, we now have proof of concept. (for details, see https://www.resolve.ngo/trailguard.htm).

SLC's plan is to deploy the first prototypes in Nar-Phu and Dolpo District, hopefully before the end of 2021. When fully implemented, this should lead to far more harmonious and "predator-friendly" livestock husbandry practices with minimal negative economic consequences (Activity 2.7).

The project is positioned to deploy 40 additional Foxlights to herders in Nar and Phu in Year 3, along with continuing to monitor their effectiveness under improved protocols. (Activity 2.5)

Progress in Sagarmatha National Park communities proceeded slowly but with the change of Assistant Warden at the Park, activities in partnership with the park staff have been initiated in late Year 3. Officials from Nar and Phu valleys completed environmental safeguards and governance training and training in asset based participatory planning in Year 2, (Activity 2.8). This training provided the foundation for future discussions and Government staff have now committed to co-funding cultivation of jimbu (*Allium hystersom sp.)* as a pilot conservation enterprise.

As per the recommendation of the Reviewer in Annual report 1, Activity 2.7 was moved to Output 3 and accordingly eliminated from Output 2.

Output 3 focuses on various snow leopard linked enterprise activities, starting with piloting the Snow Leopard Trails, a partnership with the internationally recognized Trail Angels organization and local partner Ennovent (see Year 2 report for details). As noted above the pandemic has delayed field implementation of this enterprise with the first paying guest expected late 2021. The project has adapted by working with Ennovent to complete several business planning workshops in collaboration with Mountain Spirit staff using the model business canvas methodology (see annex and earlier descriptions in section 3).

In addition, various vocational trainings were conducted in Year 3, as described in Section 3.1. We are currently exploring conducting a training in "net weaving", training for turning raw rolls of wire into gabion "nets" for erosion control and for predator-proofing livestock corrals. Community members have also requested trainings in improved weaving of livestock products, which would require innovation in designs of traditional materials and products. In this regard, we are discussing co-financing with local Rural Municipality officials. We note that several training requests are less directly connected with conservation outcomes and would not have been conducted except for the pandemic significantly disrupting tourism and the local income streams. The initial project design was only to support training with closer conservation connections.

This year the Rural Municipality officials approved a pilot training in *Jimbu* cultivation, (*Allium hystersom sp.,* a native onion with high demand and commanding a high local price). Scheduling the training is being determined in consultation with the local officials. Rural Municipality Officials have committed to co-funding this training, one of the project goals. The conservation benefits of jimbu cultivation were described in Section 3.1.

3.3   Progress towards the project Outcome

Progress toward project outcomes are addressed, directly or indirectly in preceding report sections. On a positive note, and despite the catastrophic COVID-19 pandemic with its travel restrictions and near total disruption of Nepal's tourism sector, along with unforeseen bureaucratic delays, we feel the project has made encouraging and important progress towards achieving the intended outcome(s). These include 4 interconnected components, namely a) strengthened local organizations, b) more diversified enterprises, c) mitigated livestock loss and human-wildlife conflict, and d) more informed, better adapted communities which better appreciate the complex linkages between climate change, pasture management and snow leopard populations. The combined long-term impact of these four action areas aims at stable snow leopard and prey populations in the two project work sites. The progress made to date activity by activity is summarized in Section 3.2.

Current data indicates that overall snow leopard and prey populations are remaining stable three years into the project. Precise results from the recently completed Nar and Phu population survey work will be available this summer after all survey results have been tabulated. The camera-trap survey of the small Khumbu snow leopard population (estimated at 3-5 individuals) remains under discussion with the National Park department staff for final approval and implementation. In 2020, local community informants from Khumbu report regularly seeing 3-4 snow leopards, although wolves have repopulated the study area and are expected to become the dominant apex predator (reported in Annual Report Year 2). Some have hypothesized that the intensified competition between these two species could possibly lead to reduction in snow leopard numbers; a more likely outcome is expected to be increased depredation of yaks, especially during daytime (when Foxlights are ineffective as a deterrent).

The skillsets of the Rural Municipalities of Nar and Phu have been strengthened through asset-based training (APPA), and environmental safeguards and governance trainings are underway (see Year 2 Annual report for details). In Year 3, the project provided PPE, emergency food and hand-gloves which improved trust, reenforcing local views of the project being responsive to locally identified needs, including during this major crisis. During regular contacts with project staff, local officials have demonstrated greater awareness of the connections between development planning and nature (biodiversity) conservation. (pers. communication, Dr Shailendra Thakali). This is demonstrated by their recent commitment to co-finance training for jimbu cultivation, which has several well-defined conservation benefits (see Section 3.1). No special training of Rural Municipalities of the Khumbu region has been planned for now. as these administrative centres are far from the locations where snow leopards are prevalent. However, the project has targeted strengthening the capacities of local organizations like the herder groups, entrepreneurial groups and local businessmen and women's associations.

Thanks to our partner Ennovent, 10 Mountain Spirit staff are now trained in use of a basic business planning tools (5 men and 5 women, See Annex, this report). The Snow Leopard Trail project will be field launched as soon as the pandemic permits. Other changes to the women owned and operated drinking water project in Khumbu were addressed in Annual Report Year 1).

We have also made progress to addressing and reducing livestock depredation losses, but this remains a key priority area for continued refinement. While no major mass killing events of livestock have occurred in either of the Darwin project areas during this reporting period, such events are common in adjacent areas. Since such events are somewhat randomly driven and based on specific carnivore behaviours, their absence does not necessarily prove our interventions to have been successful. In retrospect, we probably should have chosen as an indicator, the number of corrals improved rather than simply a change in depredation rates. Over the last three years, SLC and its partners distributed some 70 Foxlights and other deterrence devices. Ongoing evaluation has led to revision and improvement in training materials aimed are minimizing predator habituation to these bright lights. NOTE: While writing

this report a mass killing event occurred in late April in Phu valley. As soon as travel restrictions are lifted project staff will visit the settlement to explore what mitigation efforts are most appropriate.

Although not articulated in the original project proposal and design, SLC''s growing partnership with RESOLVE for using AI trail camera to increase the variety and effectiveness of deterrence devices is showing promising results (see section 3.2 above). This initiative is supported with matching SLC funds and is not dependent on Darwin resources. We are working to design herder training materials and depredation handbooks and creating materials like posters for much more wide application than the immediate project area (all currently in draft form). We explored the idea of painting "eyes" on the rumps of livestock as a deterrence, a practice which has proven successful in Africa. This idea was abandoned given the coarse hair of yaks, sheep and goats that would serve to quickly "hide" the eye pattern. This approach works best on animals with smooth hides like the African cattle or water buffalo.

A precautionary note: while solid foundations have been established for progressing on each of the above interconnected targets, we must emphasize that they represent long term aspirational targets unlikely to be sufficiently achieved during the short 3.5 year term of the Darwin project. Thus, this augurs for robust ongoing sharing of ideas and integration of these aspirations into SLC's and partner Strategic Conservation and Livelihood plans going forward.

3.4   Monitoring of assumptions

Several assumptions made at the design of the project proved incorrect or inaccurate.
1. Permission to conduct scat sampling has proven much more complicated than expected. Despite the clear advantages (cost, quality of detailed analysis possible and reliability), the Government of Nepal (GON) prefers to grant permission to conduct camera surveys rather than DNA analysis of faecal samples. Even then, GON approval for camera trap surveys has been far slower than we had anticipated.
2. Recruiting local Citizen Scientists has also proven more challenging than anticipated. This may turn out to be a multi decade long process. For example, SLC trained Junior Ranger Ms. Tshering Lhamu Lama (Citizen Scientist batch of 2006) is finally turning into an international recognized and emerging snow leopard conservationist, but this process has obviously taken many years. Hopefully, several of the younger staff that have been working on the Darwin project will follow the same path. Our success at recruiting locally based youths to work as coordinators on project activities has been disappointing. One driver appears to rest with youth's high salary aspiration, a main factor behind them migrating to Kathmandu and entering more lucrative professions.
3. While we identified the possibility of pandemics and potential impacts, we completely underestimated the global and national scale of these impacts and the length of time that such disruptions would continue. COVID-19 essentially eliminated tourism income for more than a year, while preventing technical team members, both national and international, from visiting the two field sites.
4. Wolves are apparently displacing snow leopards as the main predators in the Khumbu region, as reported by frequency of depredation events based on associated sign. There is evidence wolves are on the increase in Manang District as well. This may impact the Nar-Phu snow leopard population along with elevating levels of human wildlife conflict due to anticipated increases in livestock depredation.
5. As stated in assumption #1, the difficulty of getting governmental permission for scat collection and laboratory analysis was underestimated.
6. All the Snow Leopard Trails activities have been negatively impacted by the pandemic and global travel disruptions, and on hold until conditions for foreign visitations improve.
7. Tourism did not expand according to projections; rather this sector and its diverse benefits essentially disappeared due to the pandemic.
8. Identification of Alternative Income opportunities proceeded slower than expected, but progress is being made (as described above).
9. The Government of Nepal's transition from Centrally directed governance to a Government operating at three separate levels and with greater decentralized authority as mandated under the country's New Constitution has proceeded far more slowly than anticipated. Our projections for this transition and imbedded mutually approved protocols taking hold were overly optimistic.

3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation

As the preceding sections indicate, we have had more important and greater positive impacts on biodiversity conservation than on poverty alleviation. Changing the poverty status in small, remote Himalayan mountain communities represents a huge challenge that is going to take years, if not decades of learning and refined effort to overcome. In addition, the poverty alleviation objectives were profoundly negatively affected by COVID-19, given emphasis of primary and short-term activities on tourism, Nepal's vital sector devastated by pandemic-related travel restrictions.

Helping Nepal establish reliable snow leopard and prey species population data moves the understanding of these critical apex-level species forward. The Darwin supported surveys and training assist the Government of Nepal to report back the 12-nation GSLEP body on the estimated population size of cats in the country.

Following on a recent spike in livestock mass killing events by snow leopard (although outside our working area), we are in the process of developing educational and motivational tools and messages for herders which can be applied beyond the project area. These materials will be tested in the project sites and if proven effective as communication tools, expanded for use into other snow leopard habitat in Nepal. One untested hypothesis is that the incidence of livestock mass killing has increased this year as mountain communities and residents spend less time in high mountain pastures due to national lockdown and related pandemic restrictions.

The Snow Leopard Trail initiative holds promise for expansion across Nepal's snow leopard habitat if proven successful here. However, proof of concept has been limited by the pandemic, and in the future may become a victim of reduced monetary benefits from Nepal's highly competitive tourism environment, with competitive pricing reductions and undercompensated salaries prevalent to tourism sector businesses and their employees. This model is likely to fare better under an economic system that prices such services higher, such the case of Bhutan. By contrast, Nepal attracts more budget minded travellers who leave less behind in terms of donations or only infrequently hire guides.

The Nar-Phu Rural Municipality (Gaun Palika) support for using Government of Nepal funds to co-finance the upcoming *jimbu* cultivation project has major replication potential if proven successful and actively promoted. Implementation details are currently being worked out this quarter and will be shared in coming reports.

4. Contribution to the Global Goals for Sustainable Development (SDGs)

These are long term aspirational goals. Project activities are consistent with these goals of SDG goals, as described in previous HYR and Annual Reports (Year's 1 and 2). Little has changed as these are longer term aspirational goals. We will update lessons learned in the final project report.

5. Project support to the Conventions, Treaties or Agreements

The project's main leverage for meeting international commitments rests with the Government of Nepal's Department of National Parks and Wildlife Conservation (DNPWC) and its officials acting at Central Government and Rural Municipality levels. The project has helped support biodiversity targets and goals for high altitude species, habitats and select conservation issues. Due to the pandemic, conferences and in person activities related to the various conventions have been greatly curtailed or limited to internet-based virtual interactions. The project's main contribution relates to Nepal's participation in the Global Snow Leopard Environment Protection Plan (GSLEP), which falls under several international conventions. As the first field-based project to contribute to the National snow leopard and prey survey and protocols, we have helped establish critical baseline data and field demonstration of key methodological innovations like the Double Count ungulate prey species methodology (which the Government of Nepal (GON) and national NGOs are expected to adopt).

The project continues to contribute, in various ways, to Nepal's achievement of multiple Aichi Targets especially targets Number's 1: (snow leopard conservation), 3: ecological and snow

leopard friendly economic activities (such as Snow Leopard Trail, *jimbu* cultivation trials), 7: improved alpine management (*jimbu* trials), 11: protected area management contributing to improved conservation landscapes; 12: improved snow leopard populations (efforts to reduce retaliatory killing, deterrence of domestic livestock depredation), 14: safeguarding and restoring alpine ecosystems (training for Government officials in environmental safeguards and governance, *jimbu* cultivation trials); 16; compliance with Nagoya Protocols (safeguards and governance   training), 18: respect for traditional knowledge, innovations and practices (asset based enterprise identification and APPA training, model business planning that incorporates environmental and social goals).

Jimbu cultivation training will emphasize environmental management and sustainable harvesting of any materials that are brought to market and follow key harvesting, marketing and sales permitting processes required within the Annapurna Conservation Area and cleared by National Trust for Nature Conservation (NTNC). NTNC also partnered in conducting the snow leopard population survey for Nar and Phu valleys, ensuring compliance with NTNC and the Department of National Parks and Wildlife Conservation (DNPWC) internal regulations and related requirements. For the snow leopard survey in the Khumbu region, implementation will be done by trained DNPWC staff, again ensuring compliance with all regulations.

6.   Project support to poverty alleviation

This issue is partially addressed above (section 3.5), and as noted, planned poverty alleviation target actions have been immensely and adversely affected by the global pandemic, national lockdown restrictions and restrictions in international and national travel. The projects' major poverty alleviation actions are related to tourism impacts and especially the Snow Leopard Trail initiative. Since March 2020, almost all mountain tourism in Nepal has been decimated due to the COVID-19 pandemic. Progress that was made in Years 1 and 2 were intended to be tested with paying clients in late Year 2 and Year 3: but few tourists have arrived in our working areas since March 2020 and none arrived under the wildlife premium Snow Leopard Trail program. However, we believe the Snow Leopard Trail work accomplished will be relatively resilient and should bounce back once the pandemic is over, although limited to paying clients now not expected much before end of the project in December 2021.

The project also targeted developing additional conservation based micro enterprises. Our partner Ennovent completed valuable business planning training using the model business canvas approach in Year 3. This training was designed to be followed up quickly with some face-to-face asset identification workshops in each project site, but so far all follow up has been placed on hold by the pandemic. The limited follow up completed centred on activities undertaken off site and/or using internet technologies (not available to local villagers, however). One promising outcome involved identification of jimbu (*Allium hypersum* sp.) for cultivation and the Narpa Bhumi Rural Municipality has committed to co-funding this potential conservation enterprise. Cultivation trials are planned in Year 4 Quarters 1 and 2, and bulb nurseries will be established for planting by the end of the project. The first commercial sales are not expected until after the end of the project.

Adaptive planning enabled the project to support a series of 3 different vocational trainings and training 82 (43 men/ 39 women) people from project sites in the skills of bakery, "culinary cooking" and basic plumbing and water system maintenance. The first two vocational trainings taught participants to produce baked goods for local demand and consumption as well as products for the tourism sector when tourists return. The plumbing and water systems maintenance training will help local households become more self-reliant and reduce their dependence on high-cost downstream contractors, thereby retaining more income within the household and village. While the conservation linkage with these skillsets is not nearly as strong as desired or intended for, supporting such trainings demonstrated the project's responsiveness to community identified needs, and built trust between the project and intended beneficiaries during a very challenging time. The plumbing skills also will enable trained participants to conduct basic repairs on community drinking water and irrigation facilities, and thus represent valuable self-reliance skills.

We investigated options for assisting the villages of Nar and Phu to obtain internet connectivity by upgrading the relay towers for cell phone from the nearest facility. Currently coverage is

severely limited by geography as well as weather conditions. After researching the options, we determined that Nepal telecom and other telephone service providers already have plans in place for improving coverage to both settlements, so project assistance may not be necessary. The intention was that improved cell phone coverage would improve market linkages, provide better access to human and veterinary health services and improve educational opportunities for these remote communities. In prior SLC and partner projects, those communities with better communications capacities were also able to market and sell local products for higher rates by timing delivery to better coincide with price spikes and downstream demands.

7.   Consideration of gender equality issues

The project has consistently tried to address issues of gender equity through each set of relevant activities. Both project working areas represent traditional mountain communities of Nepal, where typically women have more authority and decision-making roles as many men are either involved in mountain climbing or other seasonal work, resulting in them being gone for often many months at a time. This de facto empowering of village women has been disrupted by the pandemic, for much seasonal migration work stopped or was significantly restricted. We have no evidence but suspect that men have assumed greater responsibility for household level decisions during the past year. In Year 3, women were the dominant participants in the bakery and cookery trainings, but only 2-3 women participated in the plumbing training despite recruitment efforts to better balance gender representation. The attitudes survey conducted in Year 3 will analyse and disaggregate data by gender to see if there are any notable differences. Preliminary data indicates that women's attitudes towards wolves may be slightly more negative, although sample sizes are small. There were two enumerators trained for that survey, one man and one woman. Women were also well represented in the Environmental Governance and Safeguards trainings that took place in Years 1 and 2. Many of the Mountain Spirit staff collaborating with the project are women (especially from mountain regions of Nepal), including the NGO's finance person, and two project assistants.

8.   Monitoring and evaluation

Here we also address project outcomes aimed at objectives of strengthened local organizations; diversified livelihoods; reduced livestock losses and villager or household roles in development /conservation. The combination of these interlocking components is intended to contribute and support the maintenance of stable snow leopard and prey populations and improved biodiversity at project sites.

Project activities and outputs contribute directly to components a) through c) with fairly direct connections and impacts. Trained local government officials contribute to improved biodiversity through Best Practices for environmental governance and safeguards training and follow-up managerial skills (including community-level advocacy). The most direct evidence thus far for this the local government's commitment to co-finance the first proposed conservation enterprise that has relatively clear conservation benefits as noted above. Trained researchers and research assistants have improved their prey counting and camera trapping skills through on-job training and implementation of skills learned. Entrepreneurs and especially tourism operator skills in hotel management, guide services and provision of tourism support activities stand poised to demonstrate their competency in snow leopard tracking and identification once tourists return. One challenge will be convincing tourists to pay equitably for such services. The guides particularly have demonstrated their competency by posting regular updates of camera trapped snow leopard images and other biodiversity on websites promoting the Snow Leopard Trail and other entities. One Citizen Scientists photos are included in the SLC sponsored a coffee-table book of snow leopard images taken by the photographer rather than coming from a trail camera. Community members are demonstrating improved understanding of snow leopard behaviour and ecology through their mastery of survey skills, especially following the Year 3 attitude survey.

Yearly depredation reports have indicated no major livestock mass-killing events in the last three years and apparently suggest snow leopards have less to fear from local people than from competitors like the wolf. However, the lack of depredation events does not necessarily demonstrate that project interventions have been successful to date as noted above. We acknowledge that additional attention to improving herder practices and strengthening corral

design remain urgent tasks, as shown by events involving mass killing of livestock by snow leopards that have occurred in villages outside the project areas. We documented that herders provided with Foxlights did not regularly relocate their placement, and that some snow leopards have apparently became accustomed to the lights and thus the device's deterrence effectiveness is being undermined. In any case, more vigilant guarding by herders is required. NOTE: A livestock mass killing event occurred in Phu valley in late April while writing this report. Project staff will travel to Phu to investigate and try to determine mitigation measures as soon as COVID-19 travel restrictions are lifted.

Achievement of the indicator for Component 4 is obviously difficult to accurately assess or demonstrate as it essentially targets long term behavioural responses by human and animal communities. Specifically, it looks at changes in community understanding of complex linkages between climate change, pasture management and stable snow leopard populations. Basic post training assessments on safeguards and environmental governance indicated participants understood the materials presented while increasing their level of understanding on this topic. Other training materials linked alternative livelihoods to snow leopard conservation and sound environmental practices (especially pasture and livestock management). Radio messages and various episodes reenforced such positive messaging. Whether changes in knowledge translate into better long-term conservation behaviour and action remains to be seen. Regular face-to-face interactions and the opportunity to regularly reenforce positive messages and behaviours in informal settings would have provided anecdotal evidence but such opportunities were disrupted by the pandemic. While no significant snow leopard retaliatory killing or poaching events occurred over the last year, it is difficult to completely attribute this to improved education, awareness and better guarding of livestock at this stage.

9.   Lessons learnt

The project has been well served by staff and community members who faced and then did their best to adapt to unexpected outcomes related to the catastrophic pandemic (which resulted in near total disruption of Nepal's tourism industry that employs an estimated 12-15% of the population). We learned how to conduct program activities (especially training) remotely, either using the internet or conducting socially distanced training workshops in Kathmandu and Pokhara (before community members were able to return home after lifting of 2020 travel restrictions). Fortunately, many members were in the urban areas getting supplies for spring planting and trekking season when COVID-19 hit.

We learned how to conduct trainings using Zoom, Skype or other internet services, becoming more proficient and effective toward engaging participants with time. We also learned how to conduct in-person trainings while adhering to social distance principles and related public health directives or guidance. We learned more about "remote active listening", by interpreting participant actions and understanding on a computer screen instead of reading subtle face-to-face clues. We learned how to anticipate changes in the National Government's COVID-19 policies so that we could rapidly deploy field teams during the brief openings when field travel was permitted. We learned how to rapidly assess urgent community needs so that we could respond rapidly with emergency food relief and PPE distribution programs. We also changed our strategy from meetings and events to using radio programs covering snow leopard conservation and recruiting local expert speakers to explain issues and solutions in simple local language, thereby reaching many more mountain communities than originally planned. The major learning is that we can conduct some programs remotely without undue loss of quality or contextual content and conclude that mass media like radio represent an effective and reasonably priced alternative approach for communicating with remote and isolated settlements. That said, mass media communication efforts are better reenforced with follow-up face-to-face meetings.

10.   Actions taken in response to previous reviews (if applicable)

All issues raised by prior reviews and comments were addressed in Year 2 annual report and this Year 3 half yearly report.

11.   Other comments on progress not covered elsewhere

In previous sections we have detailed progress made to date and lessons learned. One major risk is that any mass killing of livestock by snow leopards could derail the currently fragile public trust and thus progress resulting from ongoing failure of the basic flawed government managed compensation system. This re-enforces the need to give careful attention on ways of improving herder education, knowledge and their drive to make corral improvements, which are among the focus of the coming 6 months of project activities. Finding and piloting ways to cost-effectively strengthen corral design using local materials and local labour while communicating this knowledge and incentive-driven process within and outside of the Darwin project is of critical importance – i.e., both in our project areas as well as the Himalaya at large. Thus, we will spend the next 6 months focused on consolidating gains and continuing to build local capacity for adapting to change, including cementing progress within local governmental institutions through positive messaging, conservation-conscious behaviour and constantly improving (adaptive learning) enterprise initiatives.

NOTE: A livestock mass killing event occurred in Phu valley in late April while writing this report. Project staff will travel to Phu to investigate and try to determine rapid mitigation measures as soon as COVID-19 travel restrictions are lifted.

12.   Sustainability and legacy

Darwin supported activities represent important contributions to snow leopard conservation in Nepal, including vital surveys undertaken Nar and Phu valleys (2nd or 3rd best sites in country, with the planned population survey for Khumbu, and providing much-needed foundational baseline data for Nepal. The Darwin supported work is the first Nepal-based initiative in support of the Global Snow Leopard Environment Protection Plan's effort to protect 20 Snow Leopard landscapes by the year 2020. Other in-country agencies have not yet mobilized sufficient funds to conduct planned national surveys of the three listed landscapes under GSLEP. The blue sheep Double Count survey completed in Nar-Phu represents another significant update for prey species in Nepal's mountain protected areas. It proved utility of a new methodology for counting large, mobile and often shy ungulates like blue sheep, leading to more accurate ecological baseline data and associated knowledge. The Nar and Phu Rural Municipality commitment to funding Jimbu (*Allium hystersum sp*) cultivation trials is an initial indicator of local governmental commitment to supporting community-based conservation liked enterprises. Their support for the Snow Leopard Trail is another indicator that such activities have private sector sustainability potential. Other sustainability indicators were described in Sections 3.1 - 3.5.

13.   Darwin identity

Darwin's identity and contributions have been acknowledged and highlighted in all print and radio communications, as well as every Facebook and Instagram posts on project activities by Snow Leopard Conservancy and Mountain Spirt social media posts. Print media have used the logo and expressed gratitude in abstracts, acknowledgements and throughout associated reporting outputs. The Darwin funded project is recognized within Nepal as a snow leopard conservation project fitting within and measurably augmenting Nepal's national snow leopard conservation effort. It has reached and involved Nepal Government authorities at national, provincial and local levels as well as Nepal's international and national NGO communities and snow leopard professional circles. The Darwin supported activities featured prominently on Mountain Spirit and SLC websites, and special mention has been made on each of the 35 + radio episodes which reach a large proportion of Nepal's mountain communities.

14.   Impact of COVID-19 on project delivery

Impacts from COVID-19 are significant and are described in some detail throughout earlier sections of this report. The global pandemic has affected most aspects of the project as well as local community governance and into people's daily lives. This has been a year requiring much adaptation while intensifying those efforts to deliver effective programs. The project started with emergency assistance needs and then delivering these without delay

(e.g., PPE, food supplies to the Nar-Phu community; Khumbu region has better resources to act on their own). Training efforts were adjusted from in-person attended workshops to use of internet-based service training and information exchanges. In-person training was conducted in the larger facilities in central locations like Kathmandu and Pokhara which better permitted social distancing and enabled participants to practice hand hygiene and mask wearing. In place of public gatherings, radio broadcasts were used to share snow leopard conservation messaging and key issues to much broader and audiences of remote mountain communities. The result is that we reached many more listeners and remote settlements than originally anticipated. The proposed veterinary work with herders may help minimize risks of future zoonotic disease transmission within these mountain communities, while also increasing general awareness of zoonotic risks. The pandemic forced the project to place greater emphasis on livelihoods that diversify the current tourism limited base for income generation. We anticipated this evolution will continue, but perhaps not the dire urgency of the need or pace required to diversify. The pandemic has helped open doors for debating unanticipated change, especially from the more disadvantaged rural areas and their generally more conservative and less-well informed constituencies. Greater emphasis on alternative livelihoods that serve local and national markets will be placed as future projects are designed.

15. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred ☐
during this financial year.

If you have ticked the box, please ensure these are reported to
ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

While SLC and partner staff visits to project sites were severely curtailed by COVID-19, we are not aware of any safeguard, human rights violations or harassment events having occurred or reported to (or by) partners and/or project management over the past 12-15 months. SLC has shared its clear policies for safeguarding vulnerable people including sexual harassment, and which are incorporated into all contracts and sub-contracts under this initiative. SLC's new Vice President is conducting an institution wide review aimed at strengthening all of SLC personnel policies.

SLC core operations have been reviewed and strengthened where appropriate to conform with relevant US Federal and California State regulations relating to the COVID-19 pandemic, including implementing stringent measures aimed at avoiding viral infection among staff and associates.

16.   Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL				

Predicting expenditures this year was nearly impossible with the pandemic, the opening and closing of international and domestic travel restrictions on short notice, the Government of Nepal Constitutional Crisis and threatened dissolution of all Government bodies at all levels. This was followed by our partner senior staff in the Finance and Nepal based Project Manager both getting serious cases of COVID 19 and being incapacitated for between 3 -4 weeks. It meant rapidly changing course to take advantage of narrow work opportunities and programming funds with little advance notice during brief opening periods. We also did not expect a near collapse of tourism and remittance wages, which are key parts of Nepal's economy. Hopefully 2021-2022 will be more predictable and healthier for all.

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Impact Snow leopard populations are sustained and their prey and habitat protected through institutionalized conservation finance and stewardship at local levels and can be replicated to other sites.		Prey and Habitat surveys completed and demonstrate suitable prey and habitat conditions. See blue sheep report. Private sector operators pilot implementation delayed due to travel restrictions from Covid -19. Nar & Phu Local Government Officials state high interest to incorporate conservation into Annual Plans and Budgets	
Outcome: Strengthened local institutions & livelihoods, diversified enterprises, reduced livestock losses, and climate-smart villagers committed to sustaining stable snow leopard and prey populations and better overall biodiversity	0.1 Stable Snow Leopard Density of ±0.5- 1.0 /100 km^2 (Khumbu) & ≥1.0-2.0/ 100 km^2 (Manang) 0.2 > 9 local institutions (+/- 50 Officials) in 2 sites report 25% increase in enterprise & conservation supported activities targeting 750 households 0.3 Up to 750 households in 2 sites engaged in snow leopard & biodiversity protection activities 0.4 Depredation & human wildlife conflicts reduced by 30% over 3 years 0.5 Community understanding increased by 30% of important linkages between climate change, pasture management impacts & snow leopard populations, Baseline Year 1, Results Year	0.1 Prey and Habitat surveys completed and demonstrate suitable prey and habitat conditions. See blue sheep report. 0.2 Nar & Phu Local Government Officials committed to co-fund conservation enterprise in Year 4 budgets 0.3 Private sector operators pilot implementation delayed due to travel restrictions from Covid-19. 0.4 Low depredation rates reported in Khumbu. Depredation rates stable in Nar & Phu during Year 2. Foxlights reported to be successful deterrence, then decline as rotation not done by herders. NOTE: While writing this report, a significant	0.2 and 0.3: Reduced target numbers due to lower population in revised logframe Evaluation of effectiveness delayed due to pandemic and no Snow Leopard Trail tourists *Foxlight effectiveness survey conducted in Year 3, along with additional deployment. Trial AI based camera deterrent tested and ready to deploy in Year 4*

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
		depredation event occurred in Phu in late April 2021	
Output 1. 1. Training and Capacity building provided for local government and stakeholder institutions; (Savings & Credit Groups, Buffer Zone Sub Committees, Conservational Area Management Committees, Herder User Groups & local Rural municipality (*Gaun Palika*) governments);	1.1 20 officials from Two local government institutions trained (6 workshops x 3 days each) in: a) transparent governance; and b) finance management, funds, mobilization & mediation in 2 sites (Year 1: 3 trainings; Year 2: 1 Training; Year 3: 2 trainings) 1.2 Conservation Mainstreamed into annual plans agreements, measured against the baseline of zero (***NOTE:** These are new Government of Nepal Structures under the new Constitution): Assessed in Year 2 & Year 3 1.3 Conduct 4 training in 50 formal and informal leaders from 9 local stakeholder groups (5 communities in Manang and 4 in Khumbu, representing +/- 750 households) in Human Wildlife Conflict mediation & preventative measures; Years 2 & Year 3	*1.1 Eight Governance and Environmental Safeguards and APPA trainings completed in Year 2. 209 individuals trained.* *1.3 Trained Nar and Phu Officials committed to including increased conservation activities into annual plans but remain in Kathmandu due to internal travel restrictions. Five Year plans indicator dropped in Change request and approved by Darwin.* *1.3 Training to herders and local stakeholders delayed due to pandemic ed Nar and Phu. The AI based camera deterrence mechanisms partnership passed proof of concept but deployment delayed due to travel restrictions*	
Activity: 1.1 Two Training Manuals produced, a) transparent governance, and b) mediation/conflict/resource mobilization		2 Manuals produced in Year 1 and refined in Year 2 (in Nepali language).	Completed

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Activity 1.2: One Trainer of Trainers conducted (for TMI and MS staff)		ToT Training conducted, 23 persons trained in earlier years	Completed
Activity 1.3: Eight Governance trainings conducted in 2 sites over 3 years		8 Governance Training completed in Year 2.	Completed in Nar & Phu. In Year 2.
Activity 1.4: Before and After Training skill assessments x 8 trainings		Training effectiveness assessed and described in text.	Completed for Nar & Phu in Year 2
Activity 1.5: Number of conservation activities in One Year Rural Municipality Plans		National lockdown and travel restrictions delayed this activity.	In progress, once trainees reach villages. Needs be assessed in Year 4
Activity 1.6: Number of conservation Activities in 5 Year Rural Municipality		Eliminating in Change request in early year 3.	Eliminated indicator
Activity 1.7: Total amount of revenues raised from Gov't of Nepal sources for local conservation recorded		Nar and Phu officials committed to co-fund conservation enterprise activities in year 3.	Measure at end of project.
Activity 1.8: Four Herder and Human Wildlife Mediation and prevention trainings; 2 trainings x 2 sites; years 2 and 3		Trainings completed in Year 1. Herder training and veterinary training planned for 3/2020 postponed twice and uncertain given new COVID outbreak in spring 2021	Rescheduled twice and tentatively scheduled for or Oct-Nov 2021
Activity 1.9 Number of Trained Herders practice some form of preventative measures on their lands/herds		32 herders received and using Foxlights in Year 1. 20 additional Foxlights distributed in year 2. 40 additional Foxlights deployed in year 3. 40 additional Foxlights sent to Nepal and await deployment.	Foxlight effectiveness evaluation done in Year 3. Foxlights useful for 6 months but herders failed to rotate light sources, resulting in snow leopards becoming habituated. New training materials being designed
Output 2. Local Communities (750 households) protect & stabilize or improve snow leopard & prey	2.1 Annual rate of change assessed for snow leopard abundance in 1 site (Manang), through (a) DNA baseline survey (Year 1) & repeated in Year 3; and (b) annual	2.1 Measuring annual rates of change is not feasible as population changes are much more gradual except when there are extreme circumstances such as heavy poaching pressure. Small sample size & associated variability affect statistical power for detecting change. Permission to conduct survey in Nar and Phu was granted and survey	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
numbers, habitat conditions in Manang and Khumbu sites	camera trap surveys (Year 1-3 Manang, potential expansion to Khumbu Years 2&3) 2.2: Stable Prey and Habitat demonstrated by Year 3 in 2 sites 2.3: 5-15 local Protected Area rangers trained in camera trapping, prey & habitat surveys (Year 1 in Manang; Year 2 in Khumbu) 2.4: 30-50 herders trained on improved livestock guarding and husbandry techniques, documenting and monitoring annual livestock depredation losses at Manang and Khumbu (Year 1&2) 2.5: 50-75% of trained herders confirm value of improved livestock practices, including use of cost-effective, deterrents (e.g. Foxlights, guard dogs) and adopt climate-smart practices, including improved pasture management 2..6 20 "Citizen Scientists" (Snow Leopard Scouts) trained Manang in wildlife monitoring techniques and linked to development of *Snow Leopard Trails* 2.7 People's attitudes & understanding of clear linkages between increased revenues, climate smart agri-pastoralism &	completed, Analysis of results is on-going. Contract with National Parks in Khumbu drawn up and under negotiation. Delayed yet again due to new Covid-19 lockdown and restrictions. 2.2 Stable conditions demonstrated in Nar & Phu. Habitat of Khumbu briefly described in Wolf survey report submitted in year 2. 2.3: Protected Area rangers trained during wolf study in Sagarmatha National Park. (Actual number trained will be in the final report). 2.4 40 herders trained in corral improvements and use of Foxights in Year 1 and Year 2. Herder training planned for March 2020, Oct 2020 and March 22021 postponed, due to Covid-19. Tentatively rescheduled in Fall 2021. 2.5: Foxlight effectiveness evaluation conducted in Year 3. Effective for up to six months but herders failed to rotate the lights regularly, resulting in snow leopards becoming habituated to light and less effective. SLC and Partners are resigning training and communications materials on Foxlight use, corral design and pasture management in Year 4. 2.6 Two Mountain Spirit staff trained in social science research techniques. 2 Community mobilizers actively conducting programs in Year 3. Ennovent trained two snow leopard entrepreneurs who are monitoring and photographing snow leopards on a regular basis. No Snow Leopard Trails paying visitors due to pandemic. 2.7: GPN completed attitude and perception surveys in year 1. A revised and improved perception survey was redesigned in Year 3 and survey conducted. Data analysis is on-going with preliminary results attached as Annex.	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
	snow leopard conservation increased by 30% in Manang, Baseline Year 1; Results: Year 3		
Activity 2.1.: 2.11 Establish baseline snow leopard and/or prey/habitat 2.12 Conduct non-invasive faecal survey, (if permitted) 2.13 Develop manual and conduct camera trap survey 2.14 Develop manual and Conduct Prey and Habitat surveys		2.11: Habitat survey completed for Manang (as part of blue sheep survey) and attached. 2.12 and 2.13 Camera trap and faecal Survey permission granted, delayed due to snow and National Lockdown; Survey methodology included in Blue Sheep survey. 8 Snow Leopard Committee members trained and 3 have used techniques in Year 2	2.11-2.13: Conducted Nar and Phu surveys in Year 3. Results being analysed. Contract to conduct Khumbu survey under negotiation with National Parks. Delayed due to Spring 2021 Covid-19 lockdown
Activity 2.2: Conduct Herder/Livestock Owner Attitude Surveys		Herder attitude survey completed in year 1 but unsatisfactory. Survey redesigned, 2 enumerators were trained and survey conducted in year 3. Results under analysis.	Complete survey analysis and prepare results for possible publication
Activity 2.3: Develop Manual / Implement & Monitor Livestock Protection Measures for Herders		Need to redesign and improve Foxlight deployment manuals based on results of effectiveness survey; Deploy pilot RESOLVE AI deterrence systems as soon as travel restrictions are lifted.	Redesign Foxlight use manuals and communication materials to retrain herders in proper use; Pilot deterrence systems with RESOLVE
Activity 2.4: Establish & Monitor *Snow Leopard Trails*		Moved to Output 3 based on Year 1 reviewer comments.	Eliminated from logframe.
Activity 2.5: Preliminary Feasibility Assessment of Wildlife Damage Relief Fund		Existing compensation schemes described in radio broadcast episodes across Nepal. Some	Continued discussion with Government of Nepal to streamline systems

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
		simplification done by Government of Nepal departments on local level	
Output 3. Snow leopard linked enterprises identified, piloted and offering conservation incentives	3.1 18 local stakeholder institutions (approximately 50-60 officials) trained in business planning, t2 trainings, (Manang and Khumbu) +/- 750 households, Year 1	3.1: 82 persons trained in 3 alterative livelihood skills including 39 Women and 23 men trained in Food Preparation and Bakery; and 20 men trained in basic plumbing and water systems maintenance.	Follow up mentoring and refresher training as needed
	3.2 One product based enterprise identified and feasibility assessed in Manang linking enterprise and snow leopard & biodiversity conservation; Year 2	3.2 Snow Leopard Trail enterprise designed but implementation delayed (see text for details).	Completed
	3.3 One service design completed for snow leopard trail at Manang site, with local stakeholders, serving 5-8 communities, +/- 50-80 HHs; Year 1	3.3 Service design completed in year 1 by Ennovent.	Delayed until Year 3 due to lockdown, scheduled for Fall 2021
	3.4 One implementation strategy developed and verified to pilot snow leopard trail in Manang; Years 2 and 3	3.4 Implementation strategy designed. 2 paying client trips postponed.	Benefit sharing agreement designed, awaits implementation after first paying visitors
	3.5 30+ Households receive cash incentives from Income generated through Snow Leopard Trail trekking in 4 communities in Manang; Year 3	3.5 Community benefits sharing mechanism not yet designed.	Awaiting implementation after lockdown lifted
	3.6 10+ Pilot snow leopard linked micro-enterprise projects serving 750 households identified and funded through small grants project in Manang and Khumbu, Years 2 & 3. (Done by TMI and MS)	3.6: See 3.1 above. Nar and Phu Rural Municipality Officials committed to co-finance Conservation Enterprise	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Activity 3.1: .1 Complete market study in Manang to identify at least one snow leopard-linked product, Year 1		Completed Year 1, report attached last report	Completed
3.2 Complete Service Design for pilot snow leopard trail in Manang, including route, platform, partners, and pricing, Year 1		Completed Year 1, report attached last report	Completed
3.3 Train local community members in developing and managing the Snow Leopard Trail, Year 1&2		Completed Year 1, training ongoing Year 2 -4	Follow up on the job training
3.4 Develop detailed Implementation Strategy to pilot the trail in Manang, Year 1		In progress, awaiting first paying visitors	In progress
3.5 Enlist the trained community members and Kathmandu travel agents as partners in piloting the trail, Year 2 and 3		Community member entrepreneurs identified and trained, 10 Mountain Sprit Trainers of Trainers (ToT) trained in basic nosiness planning skills	Follow up mentoring and refresher training as needed
3.6 Initiate the pilot of the snow leopard trail along the identified route and villages, in partnership with key local stakeholders, Year 2 and Year 3		Initiation delayed due to National Lockdown, 2 trips postponed	Planned in Year 4, fall 2021
3.7 Monitor the pilot and incorporate feedback to improve the service, Year 3		Pilot paying clients identified but trip cancelled due to Covid-19 pandemic; Delays likely in Year 4	Planned in Year 4

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project Monitoring and Evaluation

Measuring Impact

17.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: (Max 30 words) (27) Snow leopard populations are sustained and their prey and habitat protected through institutionalized conservation finance and stewardship at local levels and can be replicated to other sites.			
Outcome: (Max 30 words) Strengthened local institutions & livelihoods, diversified enterprises, reduced livestock losses, and climate-smart villagers committed to sustaining stable snow leopard and prey populations and better overall biodiversity	0.5 0.1Stable Snow Leopard Density of ±0.5- 1.0 /100 km^2 (Khumbu) & ≥1.0-2.0/ 100 km^2 (Manang) 0.6 > 9 local institutions (+/- 50 Officials) in 2 sites report 25% increase in enterprise & conservation supported activities targeting 750 households 0.7 Up to 750 households in 2 sites engaged in snow leopard & biodiversity protection activities 0.8 Depredation & human wildlife conflicts reduced by 30% over 3 years 0.5 Community understanding increased by 30% of important linkages between climate change, pasture management impacts &	0.1a) 2 snow leopard genetic surveys conducted using scat samples over 3 years 0.1b) Prey counts in each site, 2 times 0.2 Local institutional records, focus groups, local enterprises registered with local bodies 0.3 Project monitoring records 0.4 Local institution & Wildlife Dept /Conservation Area records / reports	Permission to collect scats will be provided by DNPWC Sufficient Citizen Science volunteers & University students participate in volunteer data collection & monitoring Depredation rates vary widely by site & are prone to exaggeration in local reports; Wolf predation increasing dramatically & project reduces wolf-related livestock loss rates to accepted levels based on changing attitudes Measures to reduce daytime wolf attacks implemented & accepted by herders

	snow leopard populations, Baseline Year 1, Results Year 3		
		0.5 Attitude & Perception surveys toward climate change impacts on pastures on prey & community attitudes towards depredation & predators	Wolves will not displace snow leopards from Khumbu or Manang
			No major natural disasters or pandemics during work period & political situation sufficiently stable or supportive
Outputs: **1**. **Outputs:** 1. Training and Capacity building provided for local government and stakeholder institutions; (Savings & Credit Groups, Buffer Zone Sub Committees, Conservational Area Management Committees, Herder User Groups & local Rural municipality (Gaun Palika) governments);	1.4 20 officials from Two local government institutions trained (6 workshops x 3 days each) in: a) transparent governance; and b) finance management, funds, mobilization & mediation in 2 sites (Year 1: 3 trainings; Year 2: 1 Training; Year 3: 2 trainings)	1.1 Training attendance records, Years 1-4 1.11: Before and after training surveys demonstrate increased capacity/skills Years 1 -4	Trained people & institutions use their skills to reduce livestock loss & promote snow leopard conservation; Gaun Palika (Rural Municipality) staff will meet with local people / organizations & fairly consider their requests for support;
	1.5 Conservation Mainstreamed into annual plans agreements, measured against the baseline of zero **(*NOTE:** These are new Government of Nepal Structures under the new Constitution): Assessed in Year 2 & Year 3 1.3 Conduct 4 training in 50 formal and informal leaders from 9 local stakeholder groups (5 communities in Manang and 4 in Khumbu, representing +/- 450 Households) in Human Wildlife Conflict mediation &	1.21 Local Government One Year Plans fund conservation activities; (Year 4 = 2 plans; Life of Project: 2 plans) 1.22 Amount of Conservation revenues generated from local government sources increased from zero in 2017. 1.3 1 Training attendance records	

		1.3.2 # herders and livestock owners implementing and monitoring preventative measures.	
preventative measures; Years 2 & Year 3			
2. Local Communities (350-400 households) protect & stabilize or improve snow leopard & prey numbers, habitat conditions in Manang and Khumbu sites	2.1 Snow leopard abundance in 1 site (Manang), through (a) DNA baseline survey (Year 4) ; and (b) annual camera trap surveys (Year 3-4 Manang, potential expansion to Khumbu Year 4)	2.1.1 200 Faecal (genetics) samples collected, analysed & entered into central / local database 2.1.2 Data base of individual snow leopards verified from photo records entered into database	Permission for biological (scats) sample collection approved by DNPWC and NTNC; samples not degraded
	2.2 Stable Prey and Habitat demonstrated by Year 4 in 2 sites	2.2 Baseline wild prey (blue sheep) abundance survey conducted in Manang (Year 2) based on transect double counts (including 20 habitat plots) 2.2.1 Training Attendance records; Prey numbers recorded from observed at fixed points along transects (including *Snow Leopard Trails by Year 4*); monitoring comparative photographs for change	Snow Leopard Trails project is started post pandemic and paying visitors record data
	2.3 5-15 local Protected Area rangers trained in camera trapping, prey & habitat surveys (Year 3 in Manang; Year 4 in Khumbu)	2.3. Training certificates issued after training workshop 2.3.2 Survey photographic data collected by rangers 2.3.3 Monitoring Manual developed & utilized by other park staff & local stakeholders/herders & Snow Leopard Scouts (Manang)	Camera trap permisions are granted by DNPWC and NTNC in imely manner

	2.4 30-50 herders trained on improved livestock guarding and husbandry techniques, documenting and monitoring annual livestock depredation losses at Manang and Khumbu (Years 1-4)	2.4 Training Attendance records; Number of depredation events per year per site/location	Livestock depredation measures will be kept effective & ahead of the ability of predators to learn & thus habituate to such deterrents
	2.5 50-75% of trained herders confirm value of improved livestock practices, including use of cost-effective, deterrents (e.g. Foxlights, guard dogs) and adopt climate-smart practices, including improved pasture management	2.5 Herder & community perception survey,	Snow Leopard Trials generates sufficient sustainable funding from tourism sources beyond life of project
	2..6 20 "Citizen Scientists" (Snow Leopard Scouts) trained Manang in wildlife monitoring techniques and linked to development of *Snow Leopard Trails*	2.6 Monitoring visit reports & camera-trap photographs; Incentives provided for Citizen Scientists (Snow Leopard Scouts, etc)	Monitoring information will help feed growth in tourism trekking / snow leopard trips

Growing, sustainable numbers of visitors (trekkers) |
| | 2.7 People's attitudes & understanding of clear linkages between increased revenues, climate smart agri-pastoralism & snow leopard conservation increased by 30% in Manang, Baseline Year 3; Results: Year 4 | 2.7 Perception and Attitude survey on linkages designed and conducted by partner organizations | No natural calamities, pandemics or political unrest

Veterinary teams and other experts can visit project sites post pandemic |

3. Snow leopard linked enterprise/s identified, piloted and provides conservation incentives	3.1 18 local stakeholder institutions (approximately 50-60 officials) trained in livelihoods planning, 2 trainings, (Manang and Khumbu) +/- 350-400 households, Year 4	3.1 Criteria developed to assess snow leopard and enterprise linkages, Training Attendance Records	Tourism in Nepal does not experience any natural disasters, pandemics (earthquakes etc) or external shocks (like kerosene shortages, airplane crashes, lengthy border closings that deter international or domestic tourists
	3.2 One product-based enterprise identified and feasibility assessed in Manang linking enterprise and snow leopard & biodiversity conservation; Year 4	3.2 Market study manual, Project report, Year 3	Institutions & households willing to adopt new, innovative business planning, fiscal management & implementation practices
	3.3 One service design completed for snow leopard trail at Manang site, with local stakeholders, serving 5-8 communities, +/- 20-50 HHs; Year 1	3.3 Service design document including process description for trail development	Additional funding for enterprise pilot successfully raised from donors
	3.4 One implementation strategy developed and verified to pilot snow leopard trail in Manang; Years 3 and 4	3.4 Implementation Strategy and progress report	Continued growth of trekking Tourism sector in absence of external shocks, political disturbances, pandemics, etc
	3.5 30+ Households receive cash incentives from Income generated through snow leopard trail in 4 communities in Manang; Year 4	3.5 Report of income generated and profits shared	Tourism sector is not disrupted by external shocks
	3.6 10+ Pilot snow leopard linked micro-enterprise projects serving		

	250 households identified and funded through small grants project in Manang and Khumbu, Year 3-4 (Done by MS)	3.6 Business plan template adapted for snow leopard conservation micro-enterprise, small grants programs initiated, Baseline Year 3, Result: Year 4	Scalable micro enterprise activities are identified, are attractive to local people and generate sufficient funds to serve as conservation incentives

Activities (each activity is numbered according to the Output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output **1**) **Governance**

1.1 Two Training Manuals produced, a) transparent governance, and b) mediation/conflict/resource mobilization
1.2 One Trainer of Trainers conducted (for TMI (years one and two only) and MS staff)
1.3 Eight Governance trainings conducted in 2 sites over 4 years
1.4 Before and After Training skill assessments x 8 trainings
1.5 Number of conservation activities in One-year Rural Municipality Plans
1.6 Total amount of revenues raised from Gov't of Nepal sources for local conservation recorded
1.7 Four Herder and Human Wildlife Mediation and prevention trainings; 2 trainings x 2 sites; years 3 + 4
1.8 Number of Trained Herders practice some form of preventative measures on their grazing lands/herds

2) Facilitate Biodiversity Stewardship by Local Institutions:
2.11 Establish baseline snow leopard and/or prey/habitat

2.12 Conduct non-invasive faecal survey
2.13 Develop manual and conduct camera trap survey
2.14 Develop manual and Conduct Prey and Habitat surveys
2.2 Conduct Herder/Livestock Owner Attitude Surveys
2.3 Develop Manual / Implement & Monitor Livestock Protection Measures for Herders
2.4 Establish & Monitor Pilot *Snow Leopard Trail*s
2.5 Preliminary Feasibility Assessment of Wildlife Damage Relief Fund

3 Private Sector Generating Incentives for Snow Leopard Conservation in one or more site
3.1 Complete market study in Manang to identify at least one snow leopard-linked tourism product, Year 1
3.2 Complete Service Design for pilot snow leopard trail in Manang, including route, platform, partners, and pricing, Year 1
3.3 Train local community members in developing and managing the trail, Year 2
3.4 Develop detailed Implementation Strategy to pilot the trail in Manang, Year 2

3.5 Enlist the trained community members as partners in piloting the trail, Year 3

3.6 Initiate the pilot of the snow leopard trail along the identified route and villages, in partnership with key local stakeholders, Year 3-4

3.7 Monitor the pilot and incorporate feedback to improve the service, Year 4

23. Provide a project implementation timetable that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project (starting from Q2 July 2018)

Please add/remove columns to reflect the length of your project. For each activity (add/remove rows as appropriate) indicate the number of months it will last, and shade only the quarters in which an activity will be carried out. The workplan can span multiple pages if necessary.

	Activity	No. of	Year 1			Year 2				Year 3				Year 4	
		month	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Output 1	**Local Governance Strengthening**														
1.1	Two Training Manuals produced, a) transparent governance, and b) mediation/conflict/resource mobilization			X											
1.2	One Trainer of Trainers conducted (for TMI and MS staff)			X											
1.3	Eight Governance trainings conducted in 2 sites over 3 years				X						X				
1.4	Before and After Training skill assessments x 8 trainings				X						X				
1.5	Number of conservation activities in One year Rural Municipality Plans								X				X		
1.6	Number of conservation Activities in 5 Year Rural Municipality (ELIMINATED IN CHANGE REQUEST)												X		
1.7	Total amount of revenues raised from Gov't of Nepal sources for local conservation recorded								X				X		
1.8	Four Herder and Human Wildlife Mediation and prevention trainings; 2 trainings x 2 sites; years 2-4						X					X			
1.9	Number of Trained Herders practice some form of preventative measures on their lands/herds							X					X		
1.10	In-service Training & Follow-up					X	X	X	X		X	X	X		
Output 2	**Facilitate Biodiversity Stewardship by Local Institutions**														

Code	Activity		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2.1	Establish Baseline Snow Leopard and/or Prey / Habitat		X	X	X	X										
2.1.1	Conduct Non-invasive Faecal Genetic Survey (UNLIKELY DUE TO GOVT OF NEPAL PERMISSIONS)			X	X	X								X	X	
2.1.2	Develop Manual & conduct camera trap surveys					X				X					X	X
2.1.3	Develop Manual & Conduct Prey & Habitat Surveys			X	X	X								X	X	
2.2	Conduct Herder / Livestock Owner Attitude Survey			X										**X**		
2.3	Develop Manual / Implement & Monitor Livestock Protection Measures for Herders					X	X					X	X			X
2.4	Establish & Monitor Pilot *Snow Leopard Trails*						X	X				X	X	X		
2.5	Pilot Feasibility Study for Wildlife Damage Relief Fund					X			X	X					X	
Output 3	**Private Sector Generating Incentives for Snow Leopard Conservation in one or more sites**															
3.1	Complete Market study in Manang to identify at least one snow leopard linked product		X	X	X	X							X			
3.2	Complete Service design for pilot snow leopard trail in Manang including route, platform, partners and pricing		X	X	X											
3.3	Train Local community members in developing and managing the trail		X	X	X											
3.4	Develop Detailed Implementation Strategy to Pilot the trail in Manang			X	X											
3.5	Enlist the trained community members as partners in piloting the trail					X	X	X	X							
3.6	Initiate the pilot of the snow leopard trail along the identified route and villages, in partnership with key local stakeholders					X	X	X	X		X	X	X	X		X
3.7	Monitor the pilot , incorporating feedback to improve services										X	X	X	X		X
3.8	Develop criteria to assess Snow Leopard linked Micro Enterprise Projects and initiate small grants 10+ projects (done by Mountain Institute and Mountain Spirit) [2]/				X					X				X	X	X
Output 4	**Project Management, Evaluation & Reporting (DROPPED BY REVIWER IN YEAR !)**															
4.1	Complete Annual Work-Plans ELIMINATED		X	X		X						X				

4.2	Monitor Key Indicators			X		X			X			X		X	
4.3	Progress / Final Reports & Disseminate Findings & Lessons Learned		X	X	X	X	X	X	X		X	X	X	X	

Foot Notes

1. Institutions affecting habitat, natural resources & alpine ecosystems (especially over-exploitation), and those involved in livestock husbandry, tourism, etc.

2. Using criteria linked with and/or supporting biodiversity conservation objectives (especially conservation of snow leopards, their prey & habitat)

Annex 3: Standard Measures

Table 1   **Project Standard Output Measures**

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
Established codes								
1A -5	Not applicable							
6A-B	Described in text by topic, gender and length							
7	Described in text, largely in Nepal language							
9-10	Not applicable							
11 B								

Table 2   **Publications**

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
11B Several publications in process but not accepted yet	In process, Submission expected in Year 4 Q2 and 3					
12 A -13B	Not applicable					

25-027: Year 3: Annex 4 Onwards – supplementary material

1) SLC Partner Mountain Spirit Program Summary with participants comments on Bakery and Cookery Skills Training and Plumbing + Water Systems Maintenance Training

2) Draft: K Thapa Blue Sheep study submitted for peer review and publication

3) Ennovent Benefit Sharing Agreement, (CONFIDENTIAL, For internal DI Use only)

4) Ennovent: Business Planning Module Powerpoint Presentation

5) Summary FM Radio episodes, originals in Nepali language only

6) Preliminary results of Snow Leopard Attitudes Survey, (final analysis and write up in progress) – primary author Jonny Hanson

7) Foxlight Effectiveness evaluation, primary author Kamal Thapa

8) Depredation Survey Results, primary author MaheshTiwari

9) [Video link](#) to Snow Leopard Associate Jonny Hanson presentation on International Snow Leopard Day, October 2020. (*Darwin Initiative acknowledgement at +/- minute 16)

End of annexes

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	