



Darwin Initiative: Final 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/>).

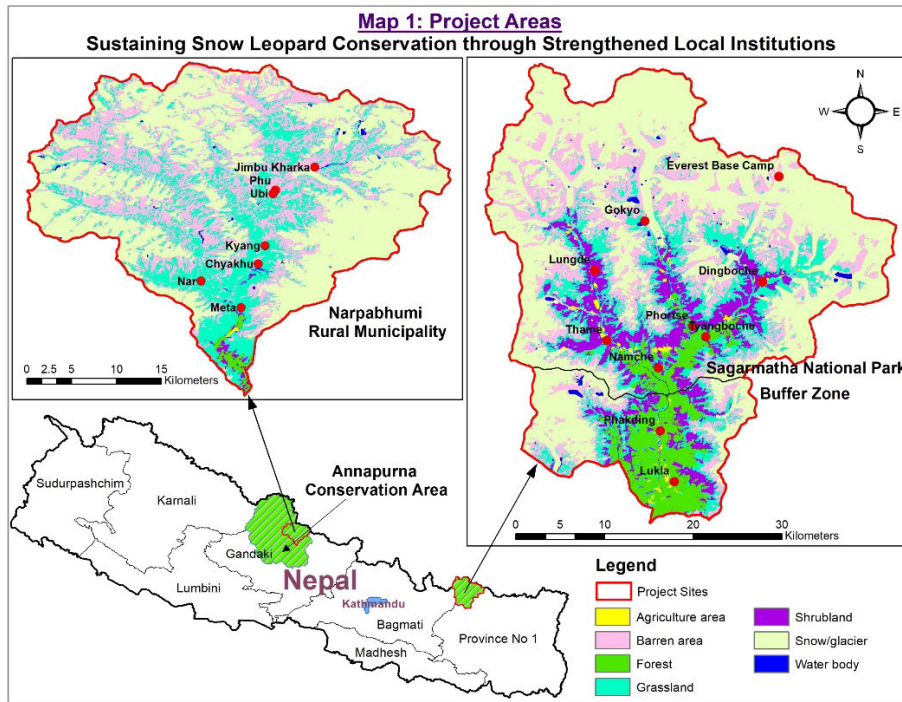
It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Darwin Project Information

Project reference	#25-027
Project title	Sustaining snow leopards through strengthened local institutions and enterprises
Country(ies)	Nepal
Lead organisation	Snow Leopard Conservancy
Partner institution(s)	Mountain Spirit, The Mountain Institute (TMI)*, Ennovent GmbH, Global Primate Network (GPN) Nepal * *NOTE: These two organizations (TMI and GPN) were legally dissolved during the project period + no longer exist
Darwin grant value	GBP 311,807
Start/end dates of project	Original date = 1 July 2018 - March 31, 2021*, end date extended to March 31, 2022 due to Covid-19
Project leader’s name	Brian Peniston
Project website/blog/social media	www.snowleopardconservancy.org
Report author(s) and date	Brian Peniston, Shailendra Thakali, PhD and Dr Rodney Jackson; April 2022

1 Project Summary

The project took place in two separate valley systems on Nepal; in the Nar + Phu valleys of central Nepal within the Annapurna Conservation Area (ACA) and in the Thamo and Nangpa valleys of East Nepal.



The project was designed to address three interlocked challenges and issues; lack of accurate knowledge of snow leopard populations and their prey species in project areas, reducing the risks of depredation by snow leopards on domestic livestock (with subsequent risk of retaliatory killing of a Red-listed species), and mobilizing sustainable sources of funding and incentives for conservation initiatives from a combination of public sector (e.g. Government) and private sector (tourism and alternative livelihoods) sources.

The biodiversity challenges addressed include limited knowledge of snow leopard and prey species populations, changing habitat conditions, human-wildlife conflict, insufficient community incentives and funding for encouraging impactful community-driven conservation actions.

The poverty challenge focused on enhancing livelihoods and income opportunities of remote mountain communities sharing montane habitats with snow leopards, while helping diversify community incomes from agro-pastoralism, replacing household income lost from livestock depredation, enhancing and diversifying sustainable tourism and locally appropriate alternative income sources.

These challenges are especially relevant for local community members who share snow leopard habitat, for regional tourism and enterprise entrepreneurs depending on both local tourism and agro-pastoral products, for provincial government authorities receiving revenues from these sources, and for national government authorities with international treaty and convention obligations for conserving biodiversity, particularly snow leopard national/international conservation action plans like the Global Snow Leopard Ecosystem Project (GSLEP; <https://globalsnowleopard.org/>). This globally supported initiative helps protect globally important biodiversity and tourism sites including Nepal's Mount Everest and Annapurna regions, home to iconic mountains and significant snow leopard populations. Problems were identified and confirmed through participatory meetings in Kathmandu and in the field with all partners, funded under a Darwin Initiative planning grant in 2017.

2 Project Partnerships

The project was designed as a 5-way collaboration with 4 partners in Nepal and involving target communities living in montane valleys of high biological value. The lead partner was Snow Leopard Conservancy, with 4 Nepal based partners: Mountain Spirit MS), The Mountain Institute (TMI), Ennovent GmbH, and Global Primate Network (GPN) Nepal. During the 3-year 9-month program two partner organizations (TMI and GPN) were formally and legally dissolved and thus

are no longer functioning. The program was originally designed for Mountain Spirit and The Mountain Institute to lead on in-country administration, with community liaison (Mountain Spirit) and alternative income development (TMI). By the end of Year 2, Mountain Spirit assumed all responsibilities after TMI was closed by its US parent governing body. GPN had responsibility for biodiversity monitoring and citizen science in Central Nepal, but was also closed by its leadership after failing to provide technical and financial reports of sufficient quality to the project. Subsequently, Mountain Spirit personnel, local consultants and the NTNC/ACAP conservation area authority (<https://ntnc.org.np/>) then assumed all GPN duties. (Note that both GPN and TMI were dissolved prior to onset of the COVID 19 pandemic, and thus not a consequence of the pandemic). Furthermore, the project secured approval from the Social Welfare Council which is mandatory for all I/NGOs to operate in Nepal. It signed Memorandum of Understandings with the Pasang Lhamu Rural Municipality and Narpabhumi Rural Municipality to implement project activities as planned.

Ennovent wrote report sections dealing with the *Snow Leopard Trail Initiative*. Progress on this partnership was disrupted by COVID 19 but remains strong, and future collaboration is expected as nature and adventure tourism are re-established post COVID with possible replication of successful innovations to other snow leopard sites in Nepal. The first two Trail Angels (Snow Leopard Trail) groups of 9 members visited Nepal in early 2022 and one group had a successful snow leopard sighting. Their local partner also received two additional groups in 2022 winter for snow leopard-based nature tourism. Trail Angels participants contributed Euro 750 to Manang communities, Euro 1,000 to Khumbu communities and an additional Euro 1,000 for communities engaged in lowland conservation activities (near tiger habitat). Snow Leopard Conservancy will continue partnering with Trail Angels' Nepal based partners and Mountain Spirit after the end of the Darwin project, particularly targeting community-based conservation/conflict issues and liaising with local government authorities and community members for implementing co-financed, incentivised conservation initiatives.

Mountain Spirit staff were involved in preparation of all 6-month and annual reports as well as the final report. The project was designed to build and strengthen skills of TMI and Mountain Spirit staff in community-based conservation and sound natural resource governance at the local level. In the absence of TMI, Mountain Spirit assumed additional duties and responsibilities that are incorporated into this final report. The program was also designed to strengthen the biodiversity monitoring skills of partner GPN, which has been subsequently replaced by a new organization (Third Pole Conservancy) essentially operating as an umbrella for individual researchers and conservationists. Mountain Spirit staff and select consultants filled this and their volunteer staff were trained in biodiversity monitoring skills. The project's operational tasks were complemented by experts, notably MA and PhD level students -- who conducted studies on community attitudes towards snow leopards, blue sheep population counts, an investigation of predators and prey in Sagarmatha National Park, thar population counts and prey species behaviours in the presence of multiple predators, a descriptive study on depredation compensation mechanisms and procedures, and a study exploring factors predisposing household to livestock depredation plus a study on the effectiveness of Foxlights as a predator deterrence, impacts of COVID 19 on tourism and conservation programs in Sagarmatha National Park and feasibility study of Jimbu cultivation in Phu valley. (See Annex 5 listing all studies and publications/reports generated).

Although not formally listed as partners, the project was dependent on active engagement and participation from the local communities and local level (Gaun Palika) Rural Municipality officials, particularly in Nar and Phu villages. Although difficult to verify, their estimated pro bono contribution of time and efforts is estimated at +/- 40 days (total effort) on consultation, meetings, drafting agreements, purchasing materials, handing over to the committee, etc for the Jimbu (Himalayan Chives, *Allium species*) cultivation project in year 4 alone. Gaun Palika Officials (mayor, vice-mayor, executive officer, ward chair, and committee chair and members) spent approximately 50 days for meetings, community mobilization, committee formation, travel,

procuring materials, and other project matters. The Rural Municipalities also contributed 45% in cash to pilot the Himalayan chives (“jimbu”) cultivation project.

Another indicator for commitment by Rural Municipality authorities is the redesigned official logo for their Government Offices, which includes an image of a snow leopard, a blue sheep, a nature tourist and yarsagumbu (a caterpillar/fungus popular in Tibetan medical systems). [REDACTED]. Estimation of the community contributions is more difficult to quantify but they contributed their time for participating in multiple meetings and training, providing facilitation support and recruiting trainees for Kathmandu based trainings (due to COVID), supporting field training logistics and providing lodging and food for trainers and project monitors. These contributions were acknowledged in appreciation letters provided by Rural Municipality representatives from both project sites to Snow Leopard Conservancy and Mountain Spirit.

Collaboration with Nepal Trust for Nature Conservation (NTNC) and Department of National Parks and Wildlife Conservation (DNPWC) was informal and proceeded well. The project maintained coordination and communications with staff from both institutions supporting specific program activities. NTNC took the lead for conducting the camera trap survey in Manang district of Annapurna Conservation Area (ACA). Sagarmatha National Park (DNPWC) showed interest in conducting a camera trap survey in 2020 and 2021 but this was postponed due to the pandemic and changing national priorities. It was later dropped due to changes in National regulations on camera trapping in national parks. Currently, DNPWC is planning to conduct a national survey to estimate the country-wide snow leopard population in 2023. Both NTNC and DNPWC were more severely affected and disrupted by the pandemic than anticipated, with loss of tourism revenues restricting their income stream for supporting field activities. The combination of the pandemic, resulting international and domestic travel restrictions, Nepal’s strict lockdowns and enforcement during the early stages of the pandemic, and notably Nepal’s mid-project Political Crisis resulted in the regular reprogramming or scheduling of key monitoring activities. There were also personnel changes within partner organizations and adjustments in institutional priorities, resulting in further delays of administrative and approval decision-making.

Such factors delayed and then eventually postponed Nepal’s planned national snow leopard population survey. This survey was first delayed by the pandemic and later replaced by the previously delayed national rhinoceros and tiger surveys which the Nepal Government prioritized. (Rhino and tiger-based tourism brings in significant national tourism revenues, hence they receive greater national priority). Camera trap surveys were further delayed by unexpectedly heavy snows in Years 2 and 3 and by severe flooding and trail damage that occurred in late Year 3 and early Year 4 of the project. While anticipating such potential natural calamities, their severity was underestimated when designing the project. The project also underestimated the complexity and time required to obtain permissions to conduct camera trap surveys and faecal scat surveys, as regulations underwent several revisions and subsequent delays in ratification.

With matching SLC funding (non-Darwin fund support), specialized training in faecal analysis techniques was planned, to be led by a Globally recognized DNA analysis expert. However, this offer was not taken up. The Government of Nepal is reluctant to approve sending any DNA samples outside the country for validation or sanction use of an alternative in-country private laboratory with the necessary DNA PCR analysis capacities.

3 Project Achievements

3.1 Outputs

3.1 Final report Project Activity Progress

Output 1: Local Governance Strengthening

In 2015, under Nepal's New Constitution, Local Government authorities are afforded exclusive and concurrent powers to work on environmental and biodiversity issues. This includes the power to protect local wetlands, biodiversity, flora and fauna and related conservation and natural resource management duties. The full extent of the devolution powers and authority obligations remain under discussion, clarification and further negotiation at the local federal governmental levels. Fuller exercise of these powers during our project period was constrained by numerous conflicting national laws, the Federal Governmental authorities' reluctance to devolve prior powers it had exclusively held and current lack of technical skills and knowledge by local governments and their responsible officials.

Three different training needs were identified by local Rural Municipality authorities: (1) training to enhance capacity of local officials to conduct asset-based participatory planning. The project addressed this component through training in environmental safeguards and conservation governance, as requested by these authorities. Two sets of manuals were developed, field-tested and 10 trainings were conducted for 245 participants in these two separate though linked topics. 27% of participants were women and included 23 participants who received a Training of Trainers (ToT) course. Based on participant feedback, these two conservation-related topics were consolidated into a single integrated manual for future use, with 200 copies (in Nepali language) being produced and distributed for use. [REDACTED]

One visible indicator for change is the design of Nar & Phu Rural Municipality official logo, which includes images of snow leopards and blue sheep, thus symbolically representing local commitment to conservation and integrating conservation into future development plans. The Narpa Municipality also produced a short documentary film featuring snow leopard and blue sheep as prominent major tourist attractions. ()

Another significant change involved the Rural Municipality Officials of Nar and Phu taking responsibility for coordinating with ACA for prompt payment of compensation to herders losing livestock to snow leopards. In 2021, the Rural Municipality authorities played key roles in expediting the compensation process for two herders, a first for these remote settlements. They also provided affected families an emergency fund targeting herders, another notable indicative outcome.

Perhaps the most long-lasting change involves project-trained Rural Municipality officials in Nar and Phu, committing central government channelled funds for co-funding ongoing cultivation of Himalayan jimbu (local chives, *Allium species*). They have contributed approximately 45% of total project costs, voluntary labour and subsidized transportation of materials to the project sites This enterprise supports snow leopard conservation by reducing collection of wild jimbu, and in turn disturbance of at least 7.5 hectares of important snow leopard habitat. Officials have also made a long-term multi-year commitment to continue supporting this initiative.

Narpabhumī Municipality officials are organizing local herders into a herder cooperative aimed at providing multiple benefits like access to livestock insurance and government subsidies for improving livestock production, delivery of veterinary medicine and "corral" or shed improvement. This would also assist herders to both consolidate and market livestock-based products along with increasing market access, thus fostering cooperation in place of competition among herders.

Activities 1.4 to 1.7: The project requested and was approved three separate COVID 19 change requests extending the project through March 31, 2022. While extending the project timeframe, there were only limited project output changes to the original logframe. Additional budget was not requested. (Extending the project timeline by 1 year resulted in increased staff costs, largely funded by SLC co-financing).

Activities 1.8 – 1.10: Due to repeated disruptions from COVID 19 pandemic and related travel restrictions, formal human wildlife training sessions reprogrammed for Year 4 were then postponed until April 2022 (after the close of the project). With SLC's matching funds, a team of US veterinary professionals visited Nepal from April 15-30, 2022 and conducted a training workshop, combining

training of Rural Municipality staff, herd owners, villagers, shepherds and designated ACA Snow Leopard Conservation Committee members. Approximately 45 persons participated with 40% being women. Training materials were developed in advance and pre-training herder surveys undertaken in early April 2022 helped focus the training content. In addition to reducing livestock diseases and their prevalence, potential risks related to zoonotic disease transmission were also addressed and hopefully reduced. This program meshes closely with international veterinary training programs under the SLC's One Health initiative, offering post Darwin opportunities for building sustainability.

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

Activity 2.1: 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 and Ecosystem Protection Plan (GSLEP) following its PAWS protocols; <https://globalsnowleopard.org/gslep-projects/paws/>). These surveys were designed to follow the internationally accepted PAWS protocols, so no additional training manuals were needed for training survey personnel. Unfortunately, due to COVID pandemic restrictions and changing GON priorities, the national snow leopard census was repeatedly delayed in 2020, 2021 and further pushed back in 2022. It is now planned for 2023 (i.e. post Darwin Project time-frame).

Complementing this, and with Darwin project funding, a snow leopard census for Manang district was conducted by project partner the Nepal Trust for Nature Conservation (NTNC) [REDACTED]. However, the NTNC survey team did not fully understand nor strictly follow recommended PAWS methodologies. Specifically, they did not synchronize the initiation of all camera trap timing, thus violating a key mark-recapture methodology assumption, required for all camera trap stations to be afforded equal probability for capturing snow leopard visitations / image as some stations were operating longer than others. One possible consequence would be an overestimation of snow leopard numbers. Also, the investigators have not clearly indicated the criteria used for identifying individual animals. We have recommended several revisions for strengthening their report, which is ongoing. The report noted a total of 24 snow leopards in Nar and Phu valleys. Further analysis is required to validate this conclusion, with the need to again review more than 3,000 images. This highlights the difficulties and potential limitation of using only camera trap data for identifying individual animals and for accurately enumerating an elusive predator species like snow leopard. Additionally, the NTNC team was only able to collect 26 faecal samples (8 fresh and 18 old samples). More scat samples will be needed to provide a more robust assessment. The NTNC final report also did not refer to previous snow leopard census surveys conducted here or elsewhere in Nepal, representing a missed opportunity for comparing study findings under varying conditions.

Despite nearly two years of discussion with Sagarmatha National Park (SNP) and the Department of National Parks and Wildlife Conservation (DNPWC) managers, a proposed snow leopard survey could not be conducted. SNP had included the snow leopard survey in their annual park and buffer zone plan for 2021 but this was not ultimately approved due to COVID-19 pandemic (which resulted in the loss of park revenues along with cutting its buffer zone budget). Also, DNPWC has insisted that all snow leopard surveys be fully integrated into the National Snow Leopard Census efforts. As noted above, Government priorities shifted several times resulting in the national survey being repeatedly postponed. One lesson learned is that Government permission to conduct camera or faecal surveys, which contribute significantly to national level conservation databases require intensive (many years) negotiation and preparation, as GON priorities can shift with little advance notice. GON has afforded higher priority to national charismatic mammal surveys targeting tigers, rhinos and elephants over snow leopard, but these were also hampered over 18-20 months by the COVID pandemic, travel restrictions and lockdowns. As noted, the combined tourism revenue from tiger and rhino tourism greatly exceeds the average number of tourists hoping to see a snow leopard, partially explaining such shifting priorities.

Another important lesson learned is that conducting national level surveys which conform to GSLEP standards requires an enormous level of national commitment and large-scale external resources, given the many logistical limits to working in mountainous terrain. This action alone would have consumed more than the entire 4-year Darwin budget, but outcomes no more than a greater 15-20% probability of accurately predicting actual snow leopard numbers. We suggest it is better to invest scarce resources in changing local people's attitudes and perceptions toward predators through supporting the community's aspirations along with strengthening co-existence between humans and snow leopards than focusing on establishing statistically robust snow leopard population numbers which inherently have limited accuracy.

Activity 2.2: We conducted prey species surveys at both project sites, both of which demonstrated little evidence of poaching. Blue sheep and snow leopard signs are regularly seen in Nar and Phu valleys and they are regularly sighted in the Mt Everest region. Another indicator is that Tashi Ghale, a local "citizen scientist" and Snow Leopard Trails entrepreneur made 27 live sightings of snow leopards during the past 15 years when he started photographing them (with most in the last 2-5 years). This suggests a healthy snow leopard population with at least some snow leopards becoming "comfortable" with nearby human presence. Mr. Ghale's photos and videos also confirm the regular occurrence of females with young cubs.

A blue sheep survey in Nar and Phu valleys was completed in year 2, using the accepted Double Prey Count Observer Methodology -- a first-time application in Nepal, and only its 3rd use range-wide (see Year 2 Annual Report for details). Researcher Kamal Thapa submitted his survey to a peer-reviewed journal, now published in the prestigious journal *Wildlife Biology*. Another independent study also confirmed a stable blue sheep population for Manang District (Filia et al, 2020, *Ecology and Evolution*).

Mr. Thapa conducted a brief survey of Himalayan thar populations in Sagarmatha National Park and determined this species population remains stable within this important protected area. The study assessed behaviour of prey species in the presence of predators, particularly considering a growing wolf population. Preliminary analysis suggests thars are more fearful of wolves than other predators, as indicated by their close proximity (average 29m) to cliffs giving them better protection from wolves (but not necessarily from snow leopards). [REDACTED] Finally, he trained 10 local people including members of the Snow Leopard Conservation Committee (SLCC) of Nar and Phu communities and 4 Game Scouts from Sagarmatha National Park. 4 SLCC members and 4 Game Scouts who accompanied him as resource persons during his work in Nar-Phu and Sagarmatha National Park.

Activity 2.4: Additional trainings for herders focused on improved corral design, maintenance and livestock guarding techniques planned for the Summer - Fall 2021 were unfortunately postponed due to the Omicron wave of COVID infections in Nepal. However, the training with the Veterinary team took place in April 2022 and confirmed the need for further investments in improved predator-proof corral design and proper maintenance, while affirming that predation of livestock on open pastures remains a low risk. The project distributed 24 Foxlights in Nar and Phu, and 43 Foxlights in Sagarmatha National Park. Many of the herders interviewed considered Foxlights to represent an effective deterrent mechanism. They also noted that snow leopards may eventually become habituated to its presence with the effectiveness being reduced over time. Some herders have started using Foxlights only when they see signs of snow leopards in order to minimize the likelihood of becoming habituated. The work with RESOLVE, Inc to incorporate human voice deterrents and AI recognition into Foxlight-type devices has proceeded more slowly than expected (given RESOLVE's prioritizing African predator species like lions, the primary interests of their donors).

Three significant livestock depredation events occurred during the project, including a major depredation incident in Phu in April 2021 after a snow leopard gained access into a corral and killed +/- 50 goats. It highlights the continued risk for retaliatory killing of snow leopards due to severe economic loss from such mass killing and the need for predator-proofed corrals.

Unfortunately, the livestock owner died, presumably in part from depression and alcoholism. As noted **above** Rural Municipality officials in Nar and Phu then mobilized support for herders and their families by encouraging expedited compensation procedures from the Annapurna Conservation Area authorities.

Activity 2.5: As described above (Activities 1.8 – 1.10), the Veterinary and herder training had to be postponed until after the project ended. (Travel and expert costs for US veterinary professionals were covered by SLC's matching grant and not the Darwin Initiative). SLC has determined that linking livestock depredation training with herder training for identifying and treating common livestock diseases would generate immediate and long-term livestock management training outcomes. Such training can be expected to improve livestock productivity while reducing losses from common diseases, and probably also reduce risks from zoonotic disease transmission. Manuals and communication materials for improved pasture and grassland management were developed in draft but will need simplification to be accessible to herders given their limited educational background. These materials were field tested during the veterinary training session. The US veterinary team contacted several Nepal based academic institutions in Animal and Veterinary Sciences and commitments for further collaboration were obtained.

Herder training emphasized the use of deterrence mechanisms like Foxlights, bells, scarecrows, fire, flashlight, or noisemakers and in total 67 Foxlights were distributed during the project. An assessment of Foxlight efficacy was conducted by Thapa who also noted that they may become lose effectiveness over time. One concern is that herders do not rotate placement of Foxlights as recommended, creating conditions for snow leopards to more rapidly habituate to LED light presences. This underlines the need for ongoing monitoring and continuous follow up guidance to herders. As a result, all Foxlight training materials have been updated to emphasise the need for regular rotation and changing of their deployed locations.

The SLC co-financed partnership with RESOLVE to adapt AI technologies for improving predator deterrence mechanisms continues although progressing slower than anticipated as noted. Images of brown bear, snow leopard, wolf and domesticated dogs were added into the program's algorithm, aimed at differentiating between different predators and herder's guard dogs. The system was capable for make these distinctions. RESOLVE donors have emphasized their priority for African predators, but we hope to achieve more progress in the third quarter of 2023. Toward this goal, Mountain Spirit recorded local villagers shouting at a snow leopard in their local language for incorporation into the final deterrent.

Activity 2.6: After annual report Year 2, training of snow leopard citizen scientists was moved to Output 3 where it fitted more logically with the Snow Leopard Trail enterprise activity. Project partner ENNOVENT has trained several well motivated citizen scientists who also serve as Snow Leopard Trails entrepreneurs. Citizen scientist and entrepreneur Mr. Tashi Ghale has become very skilled at spotting wild snow leopards and has now recorded 27 live sightings. His observation suggests a healthy snow leopard population of which some at least are becoming more habituated to human presence. Tashi Ghale and partner Rinzin Phunjok Lama have interacted with 2 groups to date, one of which observed a free-roaming snow leopard. See Output 3 for their 2022 monetary contributions for conservation activities.

Activity 2.7: The project completed an attitude survey of local residents for snow leopards, wolves and environmental threats (including climate change) in 2021, which confirmed that community attitudes toward snow leopards are much more favourable than their feelings concerning wolves. Surveys were conducted in Sagarmatha National Park and Nar and Phu valleys, and two Mountain Spirit staff members were trained while serving as enumerators during the field surveys. Study results were prepared for journal publication in 2022 and include preliminary questions related to climate change. [REDACTED]

Output 3: *Activities 3.1 to 3.4, namely stakeholder training, Snow Leopard Trail identification, service design and implementation strategy were completed in Year 2. However, due to COVID*

19, the first paying visitors Snow Leopard Trail initiative visitors did not arrive until early 2022. Ennovent has developed basic training modules and trained local guides and support staff. The main guides (aka “citizen scientists”) have produced and disseminated promotional materials for highlighting the Snow Leopard Trails Project on Instagram, Facebook and other social media. The main contributors are Tashi Ghale and Rinzin Phunjok Lama (who was recognized with WWF’s Young Conservation Awardee for 2020 and the prestigious Rolex Award for Enterprise in 2021).

Activity 3.5 The first two paying visitor groups visited project sites in early 2022 and one group saw a live snow leopard. Euros 750 and Euros 1,000 were shared with the community as part of the agreed-to benefit sharing agreements.

Activity 3.6: The pandemic completely disrupted tourism visitations and revenue generation all across Nepal from March 2020. In response, the project identified and promoted several alternative, more diversified and robust livelihoods starting in 2021. Ennovent conducted 3 Business Planning workshops for Mountain Spirit members in October 2020. Topics covered included three sessions: 1) Theoretical Foundation - Introduction, Business Ventures, Business Modelling; 2) Practical Applications - Business Model Patterns, Process, Start-up Tools and 3) Group Exercise - Group Presentations and Feedback. Participants developed a sample model business plan using the model business canvas methodology. The pilot conservation enterprise project to cultivate jimbu (*Allium hystersom sp.*) builds upon such training and was implemented in early 2022. Rural Municipality authorities contributed 45% of the project costs and community members contributed land and voluntary contributions. As cultivation will take several months for maturation, it is too early to evaluate program effectiveness, but SLC and the Rural Municipality have committed resources over the next few years to continue to monitor, evaluate and strengthen this activity if justified.

Building upon project-related Appreciative Planning and Participatory Action (APPA) asset-based planning) and business planning training completed in Year 2, Mountain Spirit identified and conducted several alternative livelihoods trainings during Year 3, including three bakery and cooking skills trainings. There were 84 participants, and 94% of them were women. These training were held by Nepal Academy of Tourism and Hotel Management, Nepal’s first and leading institute for tourism and hospitality management. Bakery products are designed to be marketed to both local people and tourists and offer most potential for communities in the Everest region. While connections to snow leopard conservation are indirect, improved local skills fosters greater village self-reliance and independence. Training topics were designed based on community priority setting input.

Local people identified and requested an additional alternative livelihood training in 2020-21. Two weeks of basic plumbing and practical skills in plumbing and water system maintenance were completed in Kathmandu and involving participants from the Khumbu region in late 2021. There were 20 participants, and they were all males. Training in basic vocational skills creates local self-reliance in installation and basic repair skills for plumbing applications associated with lodges, tea houses and restaurants. Use of such training skills has not yet been monitored. Trainees also mastered basic pipe welding and joining skills enabling them to undertake basic repairs to community drinking water and irrigation pipelines.

The most promising conservation-linked enterprise emerged out of community-Rural Municipality discussions held in the March 2020 facilitated APPA training workshop. Nar and Phu residents decided to initiate a pilot cultivation of jimbu (*Allium hystersom sp.*), a highly valued species of the onion family endemic to these valleys and which produces a notably fragrant bulb dried for use as a special food and spice supplement. Jimbu from Nar and Phu is in high demand in local markets and as far as Kathmandu. Cultivation trials were scheduled to begin in summer 2021 but were then delayed by Covid 19 until summer 2022. The trial project is being co-funded by the Rural Municipality (Gaun Palika) using local government funds with matching funds from SLC. If successful, jimbu cultivation could offer multiple conservation benefits including: 1) reduced harvesting time spent by community members in high pastures (especially the rocky habitat

favoured by snow leopards and blue sheep (by approximately 1 month per year); 2) reduction in annual disturbance of the native alpine vegetation to benefit of snow leopard prey; 3) impactful income generation along with helping to diversify household revenue sources from their currently high dependence on tourism and finally; 4) establishes protocols for the first co-funded conservation enterprise partnership between the local community and government officials, one of this project's overarching long-term and scaling-up goals. (This initiative is generating lessons that could be readily shared with other municipalities in the Himalaya through study tours, presentations, TV/radio and other means).

3.2 Outcome

This project planned diverse time-bound logframe-defined outcomes associated with multiple components being accomplished to varying degrees. The logframe table (See Annex 3) provides a qualitative assessment of where each major objective and associated set of objectives stands as of this writing.

In summary, we have begun the process of strengthening Local institutions to better integrate development, environmental and conservation activities into their overall annual planning and funding cycles. The new logo the Nar and Phu Rural Municipality adopted stands as symbolic acceptance of these themes and their commitment to follow-up. The training in conservation governance and safeguards and the request of Rural Municipalities to combine these two skills into one more comprehensive integrated manual is also an indicator of changing attitudes.

While the Darwin project has strengthened livelihood capacities, not all are generating sufficient benefits presently and will need more support and stewardship from SLC and its in-country partners. Mountain Spirit is at a crossroad and needs to move from a primarily volunteer community mobilizer to a fledged NGO with a more robust, staff-driven organization for continued partnership and implementational capacity. Alternatively, SLC has to find another organization with needed skills to provide the required level of professional and technical advice for building and delivering desired levels of self-sustaining governance and implementational skills by collaborating local communities and Rural Municipalities. At an institutional level, the initiative of the jimbu cultivation project (Himalayan chives) is firm evidence of progress with the Rural Municipality committing 45% of project costs from their own funds. Local skills were bolstered in such areas as bakery, cooking and plumbing aimed at increasing local incomes, in house (or within settlement) skills and technical capacities. These trainings were offered in response to local requests, and presumed priorities.

In Sagarmatha National Park the project encouraged and provided initial support for a women owned local water bottling snow leopard savings group. Although it initially produced some income for group members, it had to be dropped when the National Park enacted strict regulations banning all use of plastic (including re-use of plastic containers). Likewise, women participants of several small savings and credit groups initially requested support for a postcard producing and marketing project, but this was rejected after determining that there is little or no market demand for postcards. SLC and its partners will continue to explore prospective income-generating opportunities that also incentivise short and long-term conservation outcomes.

The Snow Leopard Trail was designed, marketed and after 2 years of COVID delays, the first 9 paying guests arrived and contributed to support snow leopard conservation related activities in early 2022. Conservation benefits were shared (Euro 750 – Manang; Euro 1000 - Khumbu) for snow leopard conservation and Euro 500 for Chitwan communities to support conservation activities targeting rhinos and tigers in the lowlands, an unanticipated outcome. Field assessment of local skills and likely enterprises identified the potential for improved livestock based weaving products and sustainable harvesting of an endemic red root (marangi, in local language) that produces red dye valued and used by monasteries for religious items and local use for natural dyes in weavings. Although the trainer arrived at the site, the weaving trainings did not occur as she got sick and had to be emergency evacuated by helicopter. This training has been postponed twice due to COVID travel restrictions.

3.3 Monitoring of assumptions

Project assumptions were described in the initial and revised log frames and monitoring summarized in written half-year (6-monthly) and annual technical reports. We assumed several assumptions, mostly regarding availability and timeliness of obtaining governmental permissions, the responsiveness of local communities and availability of citizen volunteers along with more general assumptions concerning random events like natural disasters, and stochastic events (e.g., pandemics, global economic disruptions and climate change). Several of these assumptions were partially or fully incorrect. However, we failed to predict the global pandemic, and its impact on public health, international or domestic travel, the health and illness rates of project staff or contractors and the number of months these unpredicted events would end up impacting the project and the world, directly or indirectly. We reported in real-time on these disruptions via email and in regular technical report submissions. We also failed to predict that 2 of the original project partners would be formally and legally dissolved in the project period. Although we predicted that some natural disasters like landslides could occur, we clearly underestimated how much disruption would occur or last. We did not predict that fibre optic cables could be washed out at one site, blocking communications, market access and road access for several months. We predicted the possibility of some disruption to global tourism, but obviously underestimated the resulting time and scope of disruptions. These also influenced other factors, notably the availability and willingness of local people to volunteer and work as citizen scientists and local project adjuncts or mobilizers.

Project staff was also overly optimistic about the timing and rate of government approvals for conducting and implementing various scientific surveys, notably the Government of Nepal's timeline for fulfilling its commitments under the GSLEP. In turn, these were delayed by COVID and Government lockdowns starting March 2020 and continuing through January 2022. Further delays accrued due to reallocation of intended snow leopard survey funds, replaced by the GON's national rhino survey and later its national tiger survey. In fact, all GON biodiversity surveys were disrupted and repeatedly delayed throughout the pandemic, with the rhino and tiger surveys receiving highest priority once restrictions were lifted, presumably because these species live in lowlands and more accessible habitats so their protected areas generate more income than snow leopards associated with mountain parks.

We tried to address all challenges through constant reassessment, reprogramming and adaptive management as evidenced by three separate change requests submitted and approved over the project's life.

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

While the project cannot validate achieving all desired impacts for sustaining snow leopard populations, establishing institutional conservation finance mechanisms and imbedding community stewardship, significant progress was made in each major goal. The results of the preliminary snow leopard population survey in Manang district indicated a healthy population of some 24 individuals, with limited poaching at most. While some elements of the survey methodology could be challenged, this snow leopard appears to be reasonably robust with higher densities than many other globally important sites. Qualitatively, this is validated by regular sightings and photo-documentation of 27 live snow leopards by the "citizen scientist" and entrepreneur Tashi Ghale over the last 15 years. Likewise, the Himalayan thar survey in Sagarmatha National Park shows some historical increase in the population over time, with the species representing an important wild prey species for the Park. Similarly, the blue sheep survey showed healthy blue sheep populations in Nar and Phu valleys, also sustaining increases over time. While none of these findings offer conclusive evidence of a balanced predator - prey population within each project area or period, they demonstrate positive population trends when compared with historical data.

The commitment of the Nar and Phu Rural Municipalities to co-finance the jimbu (Himalayan chives) cultivation project shows a similar commitment for sustainable institutional conservation

finance from the Government of Nepal. The municipality has already provided Nepali Rupees 4 lakh in cash (+/- US \$ 3,335 in 2021-22) to support the project and has committed to continue its support for 2 more years. The local community members also contributed voluntary time and labour valued at approximately the same dollar figures. The active engagement of the Nar and Phu Rural Municipality Officials to lobby and advocate The Annapurna Conservation Area Authority for expedited compensation for loss of livestock by snow leopards is another positive sign and the first occurrence of this type of advocacy in support of those herders facing losses in Nar and Phu valleys. Although one herder unfortunately died, the funds provided will help compensate the remaining family members to better cope for their significant loss of livestock and major source of livelihood income. They were also provided with some pasta making machines for income generation following a April 2022 visit (after Darwin project was completed).

From the private sector, the sharing of Euros 750 and Euros 1,000 from the first 2 Ennovent supported Snow Leopard Trails nature tourism groups hopefully launches a positive long-term trend towards benefit sharing. While total amounts are limited, with only 9 paying visitors (limited by pandemic factors), such contribution is deemed valuable and relatively significant and is expected to increase as the tourism recovers.

It is too early to assess impact from the other livelihoods trainings (bakery, plumbing etc), as well as their indirect effect on conservation.

While difficult to quantify and demonstrate conclusively, results of the attitude survey and finance commitments from local government authorities indicate an increase in awareness and commitment for conservation stewardship by both local officials and community members.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

The snow leopard conservation elements mostly support Sustainable Development Goal (SDG) target 15.4, aimed at conservation of mountain ecosystems and their biodiversity while ensure their capacity to provide benefits essential for sustainable development. This project contributed by helping ensure snow leopards, their prey and the habitats that sustain biodiversity are protected, and that the populations of these charismatic species and their prey remain healthy and robust. During the project period, no evidence of poaching of snow leopards or their primary prey species of blue sheep and Himalayan thar was noted.

The on-going jimbu (Himalayan chives) cultivation project in Nar and Phu valleys will restore 7.5 hectares of degraded and abandoned pasture and cultivated land for sustainable cultivation of chives, while reducing pressures on adjacent wildlands (including rocky snow leopard habitat where wild chive populations also predominate). Human mortality due to accidental falls will be avoided to the extent such lands are no longer being harvested. The Himalaya jimbu cultivation effort mobilizes local resources to support conservation, better integrating efforts into normal development planning processes.

The project improves income from less extractive resource intense alternative livelihoods including expanding revenue generating opportunities from nature tourism through training of citizen scientists and local nature guides. These alternatives include weaving training from livestock products, and less directly bakery, cookery and plumbing skill training for fostering greater local self-reliance.

4.2 Project support to the Conventions or Treaties (e.g. CBD, Nagoya Protocol, ITPGRFA, CITES, Ramsar, CMS, UNFCCC)

The project's main leverage for addressing international biodiversity commitments rests with the Government of Nepal's Department of National Parks and Wildlife Conservation (DNPWC) and officials working at both Central Government and Rural Municipality levels. The project supports 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 were greatly curtailed and/or only limited to internet-based virtual interactions. The project's main contribution includes underpinning Nepal's participation in the Global Snow Leopard Environment Protection Plan (GSLEP), which falls under several SDG's. As the first field-based project to contribute to the National Snow Leopard and Prey Survey and protocols, we enabled establishment of critical baseline data and field demonstration of key methodological innovations like the Double Count ungulate prey species methodology (which both GON and national NGOs are expected to adopt).

The project contributes, in various ways, to Nepal's achievement of multiple Aichi Targets namely targets # 1: (snow leopard conservation), #3: ecological and snow leopard friendly economic activities (such as Snow Leopard Trail, *jimbu* cultivation trials), #7: improved alpine habitat management (*jimbu* trials), #11: protected area management contributing to improved conservation landscapes; #12: improved snow leopard populations (by reducing retaliatory killing, deterring domestic livestock depredation), #14: safeguarding and restoring alpine ecosystems through training of Government officials and enhancing local governance,); #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).

The Jimbu cultivation training emphasizes environmental management and sustainable harvesting of wildland materials brought to market including adopting appropriate harvesting, marketing and sales permitting protocols mandated within the Annapurna Conservation Area and cleared by the National Trust for Nature Conservation (NTNC). The project partnered with NTNC to conduct the snow leopard population survey for Nar and Phu valleys, ensuring compliance with DNPWC regulations and related requirements.

4.3 Project support to poverty alleviation

The project contributes directly to poverty alleviation through several interconnected activities. The most direct contributions are through the Snow Leopard Trail enterprise and the on-going Nar-Phu *jimbu* cultivation initiative. While the total amount of the benefits shared by the Snow Leopard Trail initiative are quite small, it represents a start. The *jimbu* cultivation project has a much larger scale of community participation and the potential to contribute to poverty alleviation for many families in Nar and Phu villages (+/- 90% of the households). The project is also in its early stage and the first harvest of cultivated *jimbu* products is not expected until Fall 2022. However, initial results from cultivation trials are promising. [REDACTED]

The Khumbu Region is well known for its entrepreneurialism among Sherpas, and generally favourable household income and well-being status, especially compared to all other rural mountain regions of Nepal. That said, project-related poverty alleviation activities in the Khumbu region were not impactful, as the bottled drinking water and postcard projects were cancelled due to changing National Park regulations banning use of plastics. The market study showed little or no consumer demand for postcards. Khumbu residents participated in and benefited from new skills training in bakery, cookery and plumbing training. These trainings have not yet demonstrated additional income, but the self-reliance skills gained will contribute to community well-being and increased independence from downstream (outside) technical contractors. In summary we conclude that project-related differences at both sites remain difficult to quantify, and further exploration in this sector is desirable, especially for Nar-Phu.

4.4 Gender equality

The project consistently targeted issues of gender equity through each set of relevant activities. Both project working areas represent traditional mountain communities of Nepal, where women often have more equitable authority and decision-making roles as men (who are more involved in mountain climbing or other seasonal work and resulting in them being out-of-village, often many months). However, such de facto empowerment of village women was disrupted by the pandemic, which stopped or severely restricted seasonal migration work. 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 no women participated in the plumbing training despite recruitment efforts for more equitable gender representation. Preliminary data indicates that women's attitudes towards wolves may be slightly more negative, although sample sizes are small. Two enumerators were trained during the survey, one male and one female. Women were also well represented (27%) in the Environmental Governance and Safeguards trainings held in Years 1 and 2. Many of the Mountain Spirit staff collaborating with the project are women (especially from mountain regions of Nepal), including their former finance staff, and two project assistants.

4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

Yes, local herders and other marginalized people were included in environmental governance and safeguards trainings, leveraging their representation and voices related to biodiversity management. This was especially true for the Nar and Phu communities where all but 13 of the 71 households are participating in the jimbu (Himalayan chives) cultivation project. (Most of the 13 households have moved to and now reside in Kathmandu).

- **Were any management plans for biodiversity developed and were these formally accepted?**

The major biodiversity management plan developed during the life of the project comprised the plan to restore the 7.5 hectares of degraded pasture lands in upper Nar and Phu valleys and to cultivate Himalayan chives (jimbu) as an alternative income stream.

- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures?**

All trainings conducted during the life of the project were participatory and primarily "asset based" trainings. Trainings started from the viewpoint of "what is working" and then proceeded to define areas to improve rather than the more typical "root problems" based training model. The participatory technique used is called Appreciative Planning and Participatory Action (APPA) and was applied throughout project implementation. Formal management structures are elected officials and unfortunately, all elected officials this cycle were males in Nar and Phu villages. Government officials in the Khumbu region were not actively engaged in the project activities.

- **How did the project positively influence household (HH) income and how many HHs saw an increase?**

While the project aimed to positively impact household incomes over the project period, the main existing income generating activities were tourism related. Tourism came to a virtual standstill from March 2020 through January 2022, resulting in no or minimal household income targets being met. The first 9 foreign visitors came in 2022 under the Snow Leopard Trail initiative and a total of Euro 1,750 was distributed, but only a few households were actively engaged in tourism and received any cash benefit. The project also designed several alternative income programs, most notably the

jimbu (Himalayan chives) cultivation project which has broad participation among the households of Nar and Phu. However, more time is needed for the initiative to generate harvestable chives products, so there will not be any change in incomes until products are brought to market, projected to be late 2022.

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Measurable positive changes in household income did not occur during the project period, due to high dependency on tourism. Households in both sites likely experienced net income losses rather than any gains, due to COVID-19 that (largely) terminated visitations to both sites.

4.6 Transfer of knowledge

The project trained 428 persons in different basic technical and knowledge skills ranging from use of predator deterrents (Foxlights), biodiversity monitoring, business planning, bakery and cookery skills, plumbing, environmental safeguards and transparent local governance. While technical skills and knowledge were advanced, none resulted in newly acquired formal qualifications. All trainees were Nepali citizens from local communities. Approximately 1/3 of the trainees were women who were more engaged in the bakery, cookery and weaving trainings. Women comprised a smaller percentage of the environmental safeguards and transparent governance training sessions (+/- 30% of all participants). One Health herder training took place in April 2022, immediately following the close of the project. This was originally planned within the project timeframe but was postponed several times due to the pandemic. 78 herders were trained, with 28 being women. (SLC used its own funding sources to support the training).

4.7 Capacity building

- [Did any staff from developing country partners see an increase in their status nationally, regionally or internationally? For example, have they been invited to participate in any national expert committees, expert panels, have they had a promotion at work?](#)
- [What gender were they?](#)

One male, Rinzin Phunjok Lama received National recognition from WWF for his snow leopard and mountain conservation work. He also received the prestigious Rolex Award for Enterprise in 2021. Another male, Mr Tashi Ghale burnished his reputation for snow leopard and biodiversity photography through a coffee-table photo book published by SLC, as well as regular Instagram, Facebook and other social media postings or presentations, leading to notable increases in his number of followers. He was recognized as one of nine important Nepalis by Travellers Magazine in 2021. He participated in several expert panels on Zoom hosted by Snow Leopard Conservancy.

Several of the persons trained during the project period left their respective organizations following training and joined international organizations including UNDP, UNICEF and international NGOs. Unfortunately, they left the biodiversity conservation field and pursued other avenues of international development. Two women and one male staff left Mountain Spirit during the project period for jobs in international development and project finance management, respectively.

5 Sustainability and Legacy

Several project achievements are expected to endure after formal ending of the project. The jimbu (Himalayan Chives) cultivation project which has committed resources from the Nar and Phu Rural

Municipality for an additional 2 years, and The Snow Leopard Trail Enterprise are likely to endure as keen private sector interest continues, especially after an early group had a live sighting of a snow leopard. Many of the persons trained in various technical skills are expected to continue using their skills, particularly those involved in direct economic benefits like bakery, cooking, weaving and plumbing skills. Persons trained in environmental safeguards and transparent local governance are likely to demand that local elected officials maintain these opportunities for the local population. The Snow Leopard Conservation Committee members (SLCC) and trained Games Scouts are expected to continue using their new skills to meet their professional responsibilities while also expanding their income generating capacity.

One area of disappointment is that our partners were unable to train many Government of Nepal (GON) or other NGO personnel in proper application of PAWS and related GSLEP survey techniques as we had desired. Despite significant effort on our part, the snow leopard surveys were not undertaken as mandated under PAWS. We were also unable to convince the GON of the wisdom of complementing camera trap surveys with large scale scat surveys and thus could not take advantage of opportunities for additional training in advanced DNA analysis techniques (despite having access to pro bono international technical expertise).

6 Lessons Learned

What did not Work Well:

- Citizen scientists and Community Mobilizers are hard to identify, recruit, motivate or retain. Most prospective candidates were seeking outside-of-area employment (especially in Kathmandu). However, the payoff is solid in the case of Rinzin Lama, Tashi Ghale, and Tshiring Lama working in the adjacent valleys of Dolpo region) but we note that it typically takes many years of mentoring, coaching and supporting, which almost always exceeds the typical 3-5 year project lifespan.

What was Unexpected:

- Wolves have now overtaken snow leopards as the primary livestock predators at both sites. Despite several mass livestock killing events, local residents show greater willingness to co-exist harmoniously with snow leopards. Most demand the ability to trap or eliminate wolves.
- Obtaining Government of Nepal permissions for snow leopard camera-trap surveys and collection of biological samples was considerably more time consuming, difficult and expensive than anticipated. Survey permissions were repeatedly delayed or remain unacted upon by the responsible decision-making authorities.
- Changing Government regulations and frequent personnel changes also slowed down project progress
- We completely underestimated the potential for a global pandemic sufficient to close down all normal business activities for an extended period of time.
- We also underestimated the severity of natural disasters in the project area, including landslides, erosion, road closures, snowstorms etc. More-over, climate change in the Himalaya is happening much faster and more severely than we thought possible 4 years ago.

Unrealistic Expectations for Bringing about social, environmental and economic change:

- For private benefit sharing mechanisms to positively affect conservation outcomes, they need to happen at a larger scale and with greater economic benefits than presently occurring in this project. Training and changing key aspects of human behavior while simultaneously expanding marketing opportunities is time-consuming, requiring building of trust across typically diverse stakeholders and thus needs sufficient time to generate

observable outcomes. It often requires mid-stream corrections to adjust for unanticipated reactions, evolving economic conditions, etc.

- Thus, we need to establish more realistic timeframes for meeting many, if not most of what are classified as key or strategic “life-changing” objectives and goals.
- Staff come and go, and each project must establish management protocols for addressing such turn-over.
- Finding individuals with gifted skillsets and the commitment to take on uncertain and challenging tasks will remain a critical milestone for projects like this to overcome

6.1 Monitoring and evaluation

There were few changes to the original log frame over the project life, centered around 3 approved Change Requests; updated assumptions related to COVID and natural disasters that occurred during the project period; and some reductions in targets (or indicators) based on new information. For example, the indicator of 5-year local government plans was dropped after the Government of Nepal adopted a one-year planning cycle and eliminated longer planning and budget periods.

The M & E system as originally designed proved largely valid, but a number of timing targets changed as permissions for activities like the snow leopard survey were either postponed or cancelled. Follow up assessment of training effectiveness was curtailed because of COVID related travel restrictions. One element we would change in future project relates to baseline and repeat surveys, and a constrained project timeline too short to result in observable, measurable changes within a 3–4-year period. Local communities may rapidly tire of surveys that are not connected with or followed by direct action at generating articulated or perceived community benefits.

No external evaluation of the project took place, except for the required financial review/end of project audit. This is underway and will be submitted to Darwin upon completion.

6.2 Actions taken in response to annual report reviews

There are no remaining issues raised during annual report evaluations that have not already been addressed. Most were tackled during in the following report cycle.

7 Darwin identity

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The project acknowledged the Darwin Initiative and funding wherever possible. These included scientific studies, general reports, draft professional papers submitted for review like the published Double Count Observer Method report on blue sheep populations. The project was recognized in all Snow Leopard Conservancy newsletters, annual reports, YouTube videos, and presentations at the annual Wildlife Conservation Network Expo in San Francisco as well as other events. Most NGOs and Government authorities in Nepal are aware of the Darwin Initiative and value Darwin’s contributions to on-going conservation efforts. Citizen Scientists like Mr. Tashi Ghale regularly posted on social media.

8 Impact of COVID-19 on project delivery

The impacts from COVID 19 domestic and global travel restrictions are mentioned throughout this report. These disruptions severely affected project timelines, and our ability to conduct planned and complete activities in a timely manner. Despite this, we accomplished most planned activities, although not necessarily on their designated schedule. One senior Nepal based project staff contracted COVID and was seriously ill but fortunately he recovered in full.

Local communities imposed their own severe COVID travel restrictions and closed all entry to incoming visitors for about 10 months during the pandemic's height in 2020-21 when nearly all planned activities had to be postponed. During these times, adjustments were made to enable several trainings to take place remotely by Zoom or under strict anti-COVID precautions in Kathmandu, rather than in rural project sites as originally proposed. We found in-person trainings to be more effective than the Zoom meetings, given notable technology constraints like poor internet connection adversely curtailed participation options. In response to the pandemic, the project contracted local radio to conduct a series of 37 conservation related radio programs. As the programs were rebroadcast over a consortium of mountain radio stations, it has proved difficult to formally evaluate their effectiveness, although informal surveys indicated broad listenership.

9 Finance and administration

9.1 Project expenditure

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	██████████	██████████	165%	Project was 12 months longer than planned, + extended twice = Higher staff costs
Consultancy costs	██████████	██████████	-100%	Travel restrictions constrained consultants
Overhead Costs	██████████	██████████	87%	roughly as planned
Travel and subsistence	██████████	██████████	97%	Many monitoring trips conducted once travel restrictions lifted
Operating Costs	██████████	██████████	92%	Conducted all pending works after restrictions lifted
Capital items (see below)	██████████	██████████	101%	Printer for Nepal partner office
Others (see below)	██████████	██████████	+/- 7%	**Final financial review/audit fees in Nepal included in Operations
TOTAL	48,760	62,088.75	127.33%	Overspending due to increasing project life by 12 months

Staff employed (Name and position)	Cost (£)
Staff Nepal	██████████

Shailendra Thakali		
P Bhattarai		
B Peniston		
R Jackson		
US Accounting staff		
TOTAL		

Capital items – description	Capital items – cost (£)
Printers for partners	
TOTAL	

Other items – description	Other items – cost (£)
Bank Fees	
TOTAL	

9.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
2018, 2019, 2020 Islands Funds – Programs: Darwin, GPN, SL Mag	
2018, 2019 Shared Earth Funds – Programs: Darwin, GPN	
2018 Janin Funds – Program: GPN	
2017 Zoo Victoria Funds – Program: GPN, Mustang	
2021-WCN Funds & 2018-2022 SLC Co-financing – Mult. Prog	
TOTAL	

Source of funding for additional work after project lifetime	Total (£) 35,329
2022 -SLC Co-financing to completed Darwin reporting, Unrestricted funds (After April 2022)	
SLC Co-funding for follow on Alternative Income work, Unrestricted funds	

SLC Unrestricted funds, for Monitoring Herder awareness programs		████████
TOTAL		████████

9.3 Value for Money

All studies conducted during the project except for Hanson were led by Nepali professionals, contributing both to cost effectiveness and to capacity building. (Hanson’s study used SLC non-Darwin funds and he trained Nepali Nationals to conduct the field work). Due to COVID -19 travel restrictions, SLC also spent less than expected on international airfares. However, we also had fewer face to face meetings in project sites and training sessions than originally planned, which was less than optimal. Despite these challenges, we largely met or exceeded planned targets. (The exception was that we completed the planned snow leopard census survey in only one site). While adaptive management required more senior staff time and significant effort in response to rapidly changing field conditions, the end results were satisfactory and most planned activities were completed, although not always on schedule. Field work in remote mountain sites in snow leopard habitat often requires several days walk. Finally, using SLC co-financing funding, we were able to respond to challenging field conditions by extending the project period by 12 more months without additional budget from Darwin.

Snow Leopard Conservancy (SLC) has contributed GBP ████████ of its own funds to implement the planned project above and beyond the funding provided by Darwin Initiative during the project period. SLC also contributed GBP ████████ of its own funding to complete the Darwin Initiative final report, (reported as “Overspending” above). The GBP ████████ represents +/- ████████ co-funding of the total project costs. (This figure does not factor in pro -bono time that has been contributed by Dr Rodney Jackson, Team Leader Brian Peniston and by the SLC Accounting team to complete the project during the project lifetime).

SLC will continue supporting key elements of the project initiated during the Darwin funded period. These include promoting alternative incomes streams, increasing herder and pasture management awareness, continued testing of livestock depredation deterrence mechanisms and advocating for increased Rural Municipality (local government) funding for conservation programs. We estimate that we will conservatively contribute a minimum of GBP 22,000 for these programs in the remaining months of 2022.

10 OPTIONAL: Outstanding achievements of your project during the (300-400 words maximum). This section may be used for publicity purposes

I agree for the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)