

Conservation through insurance?

A concept paper on the development of a community-owned saving, credit and insurance scheme

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Abstract

The Snow Leopard, one of the world's rarest cats inhabits the Northern regions of Nepal. Within Nepal the Annapurna Conservation Area (ACA) has one of the highest population densities of Snow Leopards. Through its policies of grassroots management and community participation, the Conservation project has been successful in conserving wildlife and its habitat whilst promoting human development and managing tourism.

However the Snow Leopard population is under constant threat from livestock owners who view the animal as a threat to their stock and persecute it in retribution for livestock losses. Livestock rearing in the region is a vital activity for the community's sustenance in the extreme conditions that they live. In consultations with community groups, it has been established that if existing rules and regulations are to be observed a system of loss compensation needs to be developed. Similar schemes have been tried worldwide, but have often failed due to excessive claims, or a lack of long-term sustainability once funding ends. We propose a community owned insurance scheme stemmed from a community based Saving and Credit Group, with funds from this group going directly to livestock insurance scheme. The introduction of Saving and Credit schemes will facilitate the establishment of a community owned and managed financial delivery mechanism for the benefit of the locals in the region, while the introduction of a locally managed insurance scheme should take the risk away from livestock depredation and avoid many of the problems larger schemes have faced, such as fraudulent claims. Initially this may be a pilot project in the Nyeshang Valley of Manang; however if successful the scheme may be replicated across other areas of the ACA and outside it, affected by livestock-wildlife conflict of similar nature.

Geographical Overview

Manang

The Manang district in central-north of Nepal lies in the Trans-Himalayan region in the rain shadow area of the Annapurna and Lamjung mountains. Manang lies in the Annapurna Conservation Area (ACA) (refer to Annex 1 to see the location of Manang). Geographically, Manang can be divided into three valleys with settlements: Nyeshang, Gyasumdo and Nar valleys. The majority of the people rely on subsistence agriculture, animal husbandry and trade (KMTNC, 1997).

Snow Leopard territory

The Snow Leopard territory found in Nepal lies in the Himalayan range that bordering the Tibetan plateau. Particularly, their territory includes mountain ridges with sparse vegetation in the alpine and sub-alpine zones. Their natural prey species is the Blue Sheep, but often the livestock outnumber natural prey and are also preferred by the Snow Leopard for their less wary characteristics (WWF, 2001).

Snow Leopard population

Uncia Uncia or the Snow Leopard is one of the world's most endangered mammals; within Nepal various Acts and Regulations have been formulated for the protection of the species (National Parks & Wild Life Conservation Act 1973). Inhabiting regions in central Asia between 3-5000 metres, it is regarded as an important indicator species for the health of the mountain ecosystem.

Exact populations worldwide are as of yet unknown, estimates place the total at 4500-7500 (Fox, 1994). However the species is under increasing threat from habitat and prey loss, as well as hunting (Ale, 1997).

In terms of the ratio of the potential Snow Leopard territory to the total land area of the country, Nepal with 20.41% ranks after Kyrgyz Republic and Tajikistan based on Annex 2. Similarly, in the density of Snow Leopards, Nepal ranks 5th with 0.50 per 100 sq. km while Bhutan ranks the highest with 1. However, the density in the ACA area ranges from 4.8 to 6.7 per 100 sq. km (WWF, 2001) giving it one of the most concentrated populations.

Livestock in Manang rangelands

Rangelands of Manang lying in the rain shadow regions have played an important role in livestock rearing for the communities dependent on the agro-pastoral production systems. Range lands are a unique resource rich in biodiversity and a source of energy for livestock enterprise albeit, unsuitable for agriculture production. Thus rangelands often considered marginal land, do not compete with agricultural land. Rangelands support the natural prey species of the Snow Leopard and also livestock; livestock rearing forms an integral part of the sustenance of communities.

Livestock as a coping strategy

Ever since civilization was established in the region, livestock enterprises of Manang based on free range grazing system have been the backbone of their existence and shaped their livelihood and traditional cultures. Livestock enterprise species in the region include native yak and hybrid yak (*dzopa*), cattle/lulu, sheep, goat, horse, mule and donkey. For the communities living in high altitude with extreme harsh conditions which are unfavourable for agriculture due to low and erratic rainfall, cold temperatures, rough topography and poor soil structure, livestock enterprise has provided them with a coping strategy for sustenance (Karky, 2001).

Livestock provides:

- Dairy products for daily needs,
- A source of nutrients such as protein and fats,
- Supplement for the food deficit months during the lean winter months,
- Fulfills fibre and leather requirements for household purposes,
- Cash income,
- Reserve capital for risk aversion strategy especially since the limited agriculture season dependent on the vagaries of nature is a risk prone production system,
- Dung supplement for fuel needs and in the case for nomads, it forms the main source of energy,
- Dung is also the main source of fertilizer,
- Transportation medium for goods, people and supports the growing tourism industry in the rough terrain,
- Draught power for tilling land and
- Efficient use of resources from marginal lands which otherwise may not be well utilized.

Due to the significant uses of livestock critical for human sustenance, rearing livestock is a necessity as much as a tradition. Livestock population demonstrates a sheer show of wealth and status in the community just like in other communities of the world living in harsh conditions such as the Masai tribe in the African continent.

Institutional Background

Annapurna Conservation Area Project

The ACA of central-north Nepal, famous for its rich biological, cultural, ecological, and physiographical diversity, is the largest protected area in Nepal. Through a government mandate, the King Mahendra Trust for Nature Conservation (KMTNC) founded the Annapurna Conservation Area Project (ACAP) in 1986 to manage the Annapurna Area and protect the natural and cultural riches it contains. The ultimate goal of ACAP is to fully hand over the management of the ACA to local communities.

ACAP's objectives are as follows:

1. To conserve the natural resources of the ACA for the benefit of the present and future generations;
2. To bring sustainable social, institutional and economic development to the local people;
3. To develop tourism in such a way that it will have a minimum environmental impact.

These objectives are executed through a grass-root level approach, for which ACAP is renowned. ACAP's philosophy of "Conservation for Sustainable Development" can be described through the following principles:

1. *People's participation*: Grass-root level institutions are formed for local people to plan, implement and manage conservation projects on their own.
2. *Catalyst or matchmaker*: ACAP brings together domestic and international donors, researchers, technicians and local communities to work on conservation projects.
3. *Sustainability*: Economic, environmental and social sustainability of ACAP's projects are the long-term goals when handing over project management to the local people.

At the Village Development Committee (VDC) level, ACAP has initiated a network of local institutions, headed by Conservation Area Management Committees (CAMC), through which communities themselves undertake conservation and development programmes. Nine core programmes exist, with various subcommittees supporting these main programmes as necessary. One such sub-committee is the Snow Leopard Conservation Committee (SLCC), which was established to oversee issues related to Snow Leopard and to help ensure its conservation.

Wildlife conservation policies and complimentary activities

The project has made progress in protecting wildlife within the area, with surveys showing that the districts of Manang and Mustang in the ACA possess some of the highest population densities of Snow Leopards in Nepal, with 4.8-6.7 per 100 sq. km compared to a national average of 0.1-0.5 per 100 sq. km (WWF, 2001). This is largely due to conservation measures that have been introduced at both national and local levels. At the national level, the government declared it illegal to hunt or trade Snow Leopard through the National Parks & Wild Life Conservation Act 2029 (1973 AD), and at local levels, ACAP has taken the following measures to support the national policy:

- A ban on hunting of Blue Sheep (the primary prey species of the Snow Leopard)
- The Formation of a 12 member Snow Leopard Conservation Committee in the Nyeshang valley
- Felicitation of individuals contributing significantly to Snow Leopard conservation

- Conservation Education / Awareness Program
- The establishment of complementary development schemes to villagers. (Taken from Ale, 1997).

However, killing of Snow Leopards have not ceased as such national policies does not take into consideration the stake holder's perspectives and interests. The residents of Manang feel that they have been paying the price for conservation of Snow Leopard population through the losses of their livestock. Similarly, the complementary activities are financially non-sustainable and will eventually cease when funding ends. The conservation results so far demonstrated in the ACA though positive, is not guaranteed. In the long run with the handover of the project to the locals, local interests could prevail over the state's policies.

A brief history of Snow Leopards in the ACA

Past conservation efforts

The high density of the Snow Leopard in the region has in many ways been due to the conservation projects of ACAP, which have reduced hunting of both leopards and their prey. However not all view this as a success; the residents of the Manang valley and surrounding areas are coming increasingly to view the Snow Leopard as a pest, stealing livestock from pastures and pens, often resulting in losses of up to 25% of a family's annual income (Groves, 1998). In this sense the animal represents a major pest for the inhabitants of the area.

Previous work and research has often focused purely on conservation of the Snow Leopard and failed to address the needs of local inhabitants (Jackson and Ahamad, 1997). Ahmed and others highlight the importance of taking into account the needs of the residents in order for wildlife conservation projects to be successful. Past projects in both the ACA and other areas have often failed to take this into account (Ale, 1997). Successful wildlife management projects need to recognise and resolve human-wildlife conflicts if they are to be successful (Jackson and Ahamad, 1997). Various Protected Areas have achieved this in various ways; some such as the Korup National park in Cameroon, and more locally Chitwan have achieved this through the removal of the human population from the area creating a core zone. However this cannot be done in the ACA as its status as a conservation area and the holistic approach taken in area management do not permit this. Rather than exclusion, the project will need to rely on inclusion for it to be a success.

The problem in context

The Nyeshang Valley runs in an East-West direction across the district of Manang. It is home to some 5000 residents who traditionally engaged in livestock herding and subsistence agriculture. The Manangis have traditionally

been traders, trading at first with Tibet, and more recently importing goods to Nepal from overseas (Arrington, 1991). Over the past two decades the valley has experienced increasing numbers of visitors walking the Annapurna circuit as nearly 40,000 tourists visit annually. This has led to a growth in service industries aimed at these visitors, and many people have invested the tourism sector, moving away from traditional sources of income.

Productive land in the valley consists principally of scrubland, and at elevations over 4000m alpine grasslands (Ale, 2000). Blue Sheep, the natural basis of the Snow Leopard's diet, have traditionally grazed these areas. However these areas are also the principal grazing pastures for local resident's livestock, often leading to conflict. In many cases the biomass of livestock outnumbers that of blue sheep by 3:1 indicating overgrazing by livestock (Ale, 2000). Groves (1998) notes that livestock herd sizes in the valley have increased in past years, whilst the number of Gothalos (Shepherds) has remained the same, or decreased leaving herds open to attack (Groves 1998).

Snow Leopards are blamed for up to 63% of livestock losses in relevant areas (Jackson 1999), although some of the losses attributed to Snow Leopards may be due to other causes, such as disease, or jackals. Jackson (1999) notes that a lot of these losses could be prevented through better guarding, or construction of better corrals. It is suggested that Snow Leopards are blamed for many of the attacks in the hope of receiving compensation, or to justify the extermination of leopards.

However, conflict will occur as long as Snow Leopard habitats are used for grazing area (Dhungel 1994). Groves (1998) shows that removal of one of the conflict drivers (either the Snow Leopard or livestock) will solve the problem. In the past residents have attempted to do this by removing the Snow Leopard, thus leaving their livestock free from predators.

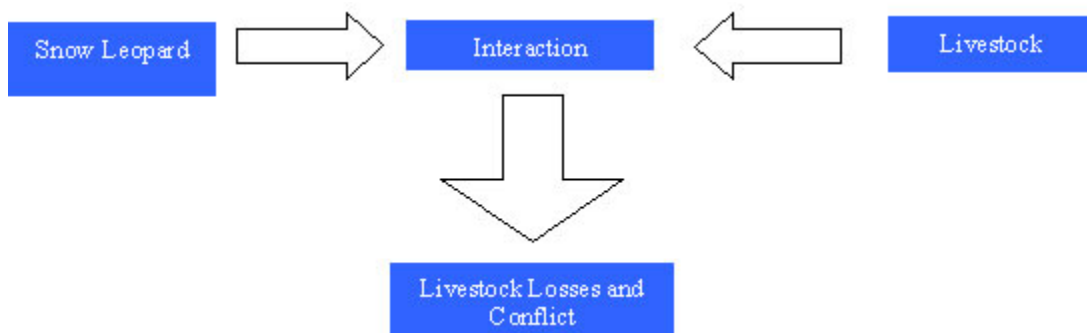


Figure 1. Snow Leopard and Livestock conflict model, taken from Groves (1998).

Challenges for the conservation project

The challenge lies in finding a method of protecting both livestock and Snow Leopards thereby removing the conflict drivers. This method must be sustainable even after the ACAP conservation project is handed over to the local communities. This paper proposes to achieve this through two methods: direct and indirect.

Direct method:

- Through the creation of an insurance scheme which compensates against livestock loss.

Indirect method:

- Improvements in corralling and herd protection measures.
- Development of wildlife based tourism scheme designed to get visitors to stay longer in the region.
- Further extension of the already successful ACAP conservation education programme.

This paper proposes the establishment of the insurance package tied with financial delivery mechanism as a direct intervention for the conservation of Snow Leopard population. To complement the direct intervention, various indirect methods are proposed. Improvements in corralling and introducing improved herd practices will reduce livestock Snow Leopard conflict. Increasing tourist revenues by developing wildlife based tourism aimed at getting the tourists to stay longer will also help in putting an economic value on Snow Leopard rather than viewing it as a liability. The extension of ACAP conservation education programme can be intensified and expanded to highlight the importance of wildlife conservation. Such a combination of activities will indirectly assist in the wider goal of the conservation project.

Establishing a livestock insurance scheme

Rationale for proposing insurance scheme

It has been established that the major anthropogenic threat to the Snow Leopard population in the Nyeshang Valley is due to retaliatory killings for livestock losses. In discussions with community groups, it was revealed that the main demand for conflict mitigation would be through the provision of an appropriate compensation mechanism that will minimize financial losses.

Implementing an effective compensation measure is itself an issue. In most cases globally, externally administered insurance schemes have not been cost effective in identifying claims and have not been sustainable after project funding phases out (Jacobsohn et. al, date unknown).

Community based schemes have been proposed, and one example can be cited from Pakistan's insurance scheme which has been operating (Hussain, 2000). Hussain's model of the insurance scheme is linked with the tourism sector based on the Full Moonnight's Trekking Snow Leopard Conservation Project. The community based insurance scheme proposed by this paper is different from Hussain's model. Although both are based on livestock insurance, they differ in their approaches. Hussain's insurance scheme is based on revenue generated from tourism. The insurance scheme proposed in this paper stems from Saving and Credit Groups that are 100% community owned and managed and do not require external fundings once established, as the Saving and Credit Groups themselves generate funds and in the long run, the insurance scheme may do the same.

In this manner by establishing an insurance scheme based on Saving and Credit Group in the Nyeshang Valley, we hope problems of cost effectiveness and fraudulent claims can be overcome, through creating a scheme that is economically and financially sustainable and which is of benefit to the whole community.

By building on existing grassroots organisations the scheme can be established faster, and will require fewer overheads. Both the Snow Leopard Conservation Committees (SLCC) and the Conservation Area Project are established within the valley so the process of institution building will not need to be so lengthy and the trust relationships that are needed for this sort of undertaking have already been established.

The workings of the Saving, Credit and Insurance scheme

Saving and Credit Groups

The uniqueness of the proposed project lies in the establishment of the insurance scheme on the back of community Saving and Credit Groups. The Snow Leopard Conservation Committee (SLCC), elected by the village, will manage the Saving, Credit and Insurance scheme. In the past, ACAP has initiated numerous Saving and Credit Groups both in the Trans-Himalayan region and in the mid hill regions. Experiences show that these groups have enormous capacity in generating funds for the group, generating income at household levels, and building capacity at grass roots level for managing financial delivery mechanism as depicted in Figure 2.

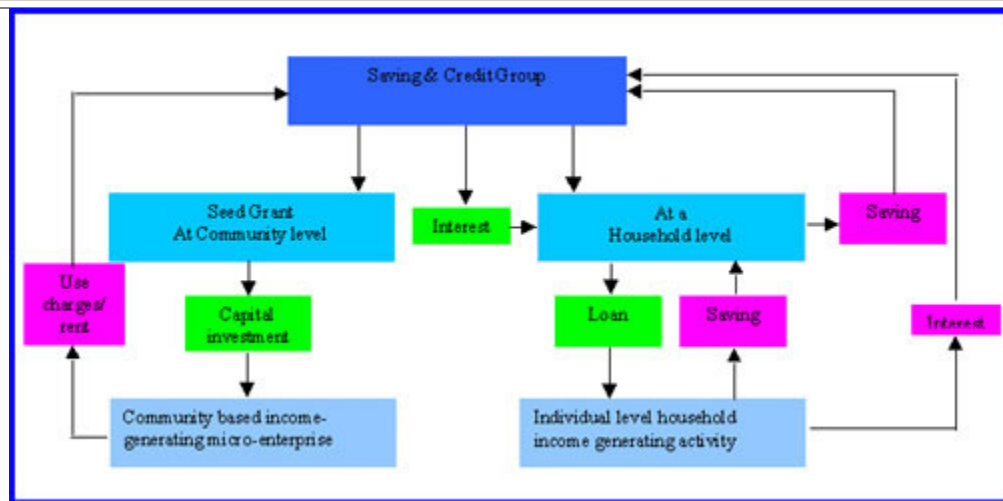
The Saving and Credit Groups are the cornerstone for:

- Reducing the dearth for rural financial demands;
- Mobilizing community savings into productive investment;
- Capacity building of the locals to manage and own finance delivery mechanism;

- Assist in delivering affordable and appropriate technology to the locals as per their requirements and as per market opportunities.

The objectives of the Saving and Credit Activities are to:

- Provide financial services integrated with technological backstopping and marketing development;
- Assist in raising the living standards of the local population;
- Mitigate the depletion of natural resource base in the long run by providing alternative income generating activities;
- Formalize the traditional/informal money lending system.



Outreach in Community: Traders, micro-entrepreneurs, tourism sector operators, farmers, livestock owners, etc.

Figure 2. Revolving fund and income generation at community and household levels.

Process of tying Saving, Credit and Insurance schemes

The process for the Saving, Credit and Insurance scheme involves the establishment of the Saving and Credit Groups first with a seed grant as depicted in Figure 2; with the insurance scheme developed at the end.

The Seed grant can be in the form of a micro-enterprise for the group as was done in Upper Mustang Biodiversity Conservation Project (ACAP, 2001). Community owned micro-enterprise diversifies the investment portfolio of the Saving and Credit Group, financially assists in the generation of group funds through rents/profits, investments are made locally and the scheme helps in retaining the migration of the population in their economic active age through employment opportunities created. This model also has a wide outreach in the

community; Upper Mustang has experienced a take up rate of nearly 100 percent.

After a year or so, when the group matures, and when they are capable of managing the saving and credit transactions independently and when they start generating group funds, the insurance scheme will be introduced as shown in below in Figure 3. The aim of the insurance scheme is to take the risk away (Sloman, 1999), and in this context the risk of livestock depredation from the predator, the Snow Leopard.

Interest rates and premiums

In the initial stage of the project, communities will decide upon the workings of the Saving and Credit scheme and the community micro-enterprise with technical support from ACAP. Different groups will fix their own interests for savings and credits depending upon the nature of their markets and the group's reserve funds. Similarly, upon the maturity of the Saving and Credit Groups, the insurance scheme will be integrated with the community themselves determining premium rates and claims. Throughout the project the emphasis is on community ownership and management, and after the completion of the project period, the community will be left to manage the scheme independently.

Outreach of the Saving and Credit scheme

The Saving and Credit scheme will be open to all with a wide community outreach, regardless of livestock ownership.

At the community level, the micro-enterprise in the form of seed grant will generate income for the group funds. Their use will be open to all with a small charge being made each time for usage, or a tithe of produce being collected from enterprise users. Or if desired, the micro-enterprise can be leased out to a member. The funds generated will go back into the community fund where a portion will be allocated for the insurance scheme. The group will decide this proportion and different groups can have different allocations.

At household levels, members will be able to save money from which they will receive a competitive rate of interest and take loans from the group for investment.

The central fund of the Saving and Credit Group will increase as loans and interests are paid back into the group fund. The availability of loans should allow people to diversify from traditional forms of income, creating opportunities that are economically more stable such as micro-enterprising related to catering to the growing tourism sector. Through diversification, the financial impact of livestock loss will also be reduced as assets diversify.

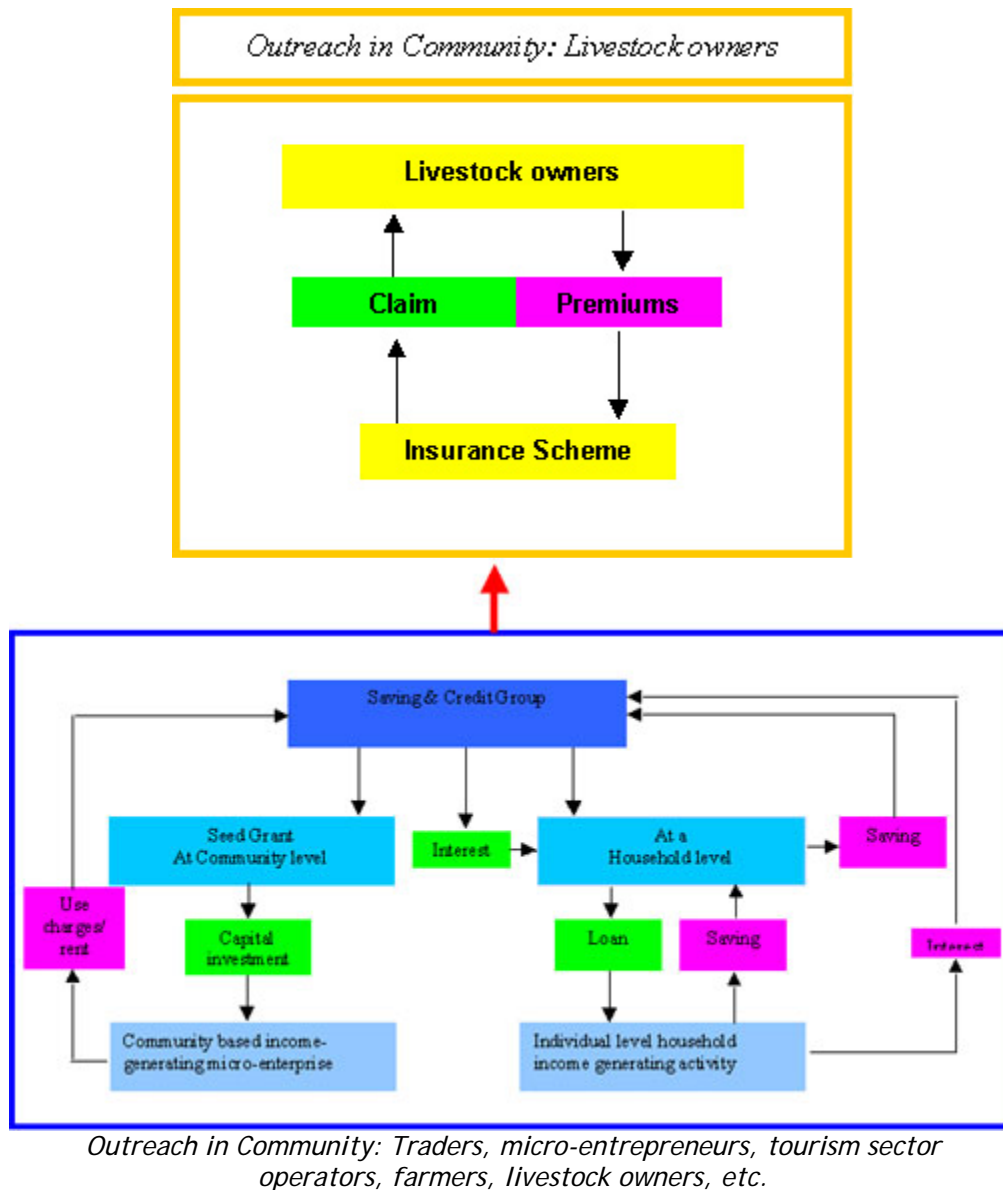


Figure 3. Saving, Credit and Insurance Scheme: a sustainable revolving fund mechanism.

Livestock insurance against Snow Leopard

This insurance scheme is exclusive to livestock owners. The livestock insurance scheme will be run separately but by the Savings and Credit Group. A certain portion of the funds generated from the Savings and Credit Group will be transferred to the Insurance Scheme. In the long run, transfers can be made both ways, depending on the group's decisions and the availability of reserves.

Premiums received by the insurance scheme will be paid into the Insurance Scheme account of that Savings and Credit Group. In the long run, if excess funds are generated by the Insurance Schemes, funds can be transferred as

loans through the Savings and Credit Groups for investments or shared as no claim bonus, which will also be an incentive against fraudulent claims.

The amount taken out of the fund each year to cover insurance claims will obviously vary, however it is in the interest of the community to keep claims as low as possible, as money that is not used goes directly back to the community. Similarly premiums need to be at a rate that is appropriate, too low and insufficient revenue will be generated, too high and livestock owners will not insure their herds. The Snow Leopard Conservation Committee (SLCC), elected by the village, will set premium rates based on a criteria developed for livestock valuation as they will also be members of the Savings and Credit Group.

Since it is a locally managed scheme it should not be necessary to register individual animals, as local knowledge should prevent claims for non-existent animals or fraudulent deaths. By giving ownership of the scheme to the community, incentives for fraudulent claims should be eliminated. Claims from the fund 'cost' the Saving, Credit and Insurance Scheme, and will ultimately affect interest rates. This mechanism will also reduce transaction costs as it is community owned and managed.

Complimentary activities

Complimentary activities such as improved corralling and herd protection management, promoting wildlife tourism and expanding the ACAP extension programme are included so as to enhance

- A holistic approach to Snow Leopard conservation;
- Facilitate the development of Saving, Credit and Insurance scheme that is economically and financially viable;
- Raise awareness for the need to conserve wildlife.

The future of the scheme

This is a concept paper for proposing a pilot project, which if successful will be replicated across the ACA region, and if possible throughout areas in Nepal which suffer from livestock-wildlife conflict of similar nature.

Conclusion

Nepal's geographic physiology has endowed it with one of the most endangered mammals- the Snow Leopard, together with a whole array of biodiversity richness. Though a small nation, the proportion of Snow Leopard territory to the total area is one of the largest, while the population for Snow Leopard in the ACA is also one of the most concentrated. This clearly puts the country in an important position for the conservation of this mammal.

The Snow Leopard territories are adjacent rangelands, which support their natural prey, the Blue Sheep. Rangelands also support livestock, which outnumber their natural prey and are also preferred as a prey. Livestock rearing for the communities living in the Himalayas is a tradition and a lifestyle as much as a coping strategy against the harsh environment. Though the population of Snow Leopard in the ACA is still relatively concentrated compared to many countries, ultimately when the ACAP conservation project is handed over to the locals, Snow Leopard conservation might become a lesser priority as the locals feel that they have been paying the price for conservation of the animal through livestock losses.

It is against this background that the insurance scheme is proposed. This paper presents a novel concept in developing a livestock insurance policy against the threats of Snow Leopard based on Saving, Credit and Insurance mechanism that is community owned and managed. This is primarily designed to reduce livestock-wildlife conflict by developing an economically and financially sustainable insurance mechanism. This project may be implemented and if the outcomes show positive signs, it can be replicated in other areas with similar livestock-wildlife conflict.

Annex I Location of Manang district in Nepal



Annex 2 Snow Leopard territory and population in different countries

Country	Potential Snow Leopard Habitat (sq. km)	Potential Snow Leopard Habitat: Total Area (%)	Population Estimates	Population (per 100 sq.km.)
Afghanistan	80,000	unknown
Bhutan	10,000	100	1
China	400,000	4.17	2,000-2,500	0.56
India	95,000	2.89	500	0.53
Mongolia	130,000	8.30	1,000	0.77
Nepal	30,000	20.41	300-500	0.50
Pakistan	80,000	10.05	300	0.38
Russia	130,000	0.76	120	0.09
Kazakhstan	71,000	2.61	100-120	0.15
Kyrgyz Republic	126,000	63.32	650	0.52
Tajikistan	78,000	54.54	< 200-300	0.32
Uzbekistan	14,000	3.13	< 50	0.36

Source: International Snow Leopard Trust web page (www.snowleopard.org)

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Notes to readers

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