

# Workshop on "Challenges for Biodiversity Conservation and Human-Wildlife Conflict - Identifying the Problems and Possible Solution"

## Concept Note

India is recognized as one of the 12 mega diversity centres of the world. Out of the 18 Biodiversity hot-spots in the world, India owns 2, namely the Western Ghats and the Eastern Himalayas. Sikkim covering just 0.2 % of the geographical area of the country has tremendous biodiversity and has been identified as one of the HOT-SPOT in the Eastern Himalayas. Sikkim falls under Himalayan (2) Bio-geographic zone & Central Himalaya (2c) biotic province----having about 9 types of forests types (Champion & Seth).

The state is bestowed with high biodiversity wealth harbouring around 40% of the biodiversity that occurs in the Indian subcontinent (Acharya and Sharma, 2013). Over 82% of the total geographical area of Sikkim is under the administrative control of the forest department.

The State is endowed with rich floral and faunal diversity. Species wise, the State harbors over 4500 flowering plants, 550 Orchids, 36 Rhododendrons, 16 Conifers, 28 Bamboos, 362 Ferns and its allies, 9 Tree Ferns, 30 Primulas, 11 Oaks, over 424 Medicinal plants, 144+ mammals, 550 Birds, 48 Fishes and over 600 Butterflies. While these figures are still not absolute, it may be kept in mind that this is only the mega-fauna and flora. The tremendous diversity of insects like beetles and moths as well as a host of other life forms is yet to be enumerated. Most of the high altitude medicinal plants are rare and endangered species. Sikkim also has 28 Mountains/Peaks, more than 80 Glaciers, 227 high altitude lakes/wetlands and over 104 rivers and streams.

But the recent biodiversity studies in Sikkim gradual loss in biodiversity, the major threats to biodiversity in Sikkim is mostly human induced activities like habitat destruction, habitat fragmentation, habitat degradation, overexploitation of species for commercial use and introduction of exotic species and Human Wildlife Conflicts. Typically, these threats develop so rapidly and on such a large scale that species are not able to adapt genetically to the changes or disperse to a more hospitable location (Primack,1998).

Human Wildlife conflict is on the rise in the state. Sikkim has a long standing problem of Man-Wildlife conflict which occur mostly on fringes when people venture in forest for collection of fuel and fodder and the other conflict that occurs near human habitation.

The reasons in the context of Sikkim, could be due to the increase in wildlife population and its increasing requirements of resources to sustain these population (Bhutia, K C 2017). This significant increase in wildlife population due to the establishment of protected areas and the resultant conflict, have altered the perception and tolerance of these communities towards wildlife and threaten to erode the local support for conservation by making them hostile towards wildlife, conservation initiatives and staff of protected areas.

Human–wildlife conflicts in Sikkim can be grouped into four categories: (1) attacks on humans, (2) livestock killing, (3) crop raiding and (4) wildlife straying in human dominated areas. It is mainly due to the overlap of resources amongst man and animal.

Also, with the rising human population and increasing settlements near the forest fringes, wild animals take their chances to feed on the livestock and crops resulting in conflicts with humans often with fatal casualties or injuries to the later. High altitudes have more incidences of yak/ cow kill by attack of wild dogs and Himalayan Black Bear. Personal communication with herders from high altitudes also suggests cattle lifting by snow leopards in some parts. The mid belts suffer from incidences of cattle kill and crop damage by Himalayan Black Bear, wild pigs and macaques. The lower belts of the state suffer from attacks by wild pigs and birds like peacock. The number of Himalayan Black Bear attack increases onset of winter and in spring when they search for food out to the agricultural fields before hibernation. Pure cardamom fields without tree cover adjoining to natural forests and High proportion of Protected Area possibly contributed for the cause.

The Forest Department is carrying out the first phase of population estimation to know the status of wildlife in the state. This will help us understand whether there has been an increase in the population of wildlife in recent past and has crossed its carrying capacity which has resulted in increasing conflict. There are a number of other initiatives undertaken by the Department. A number of site specific, practical field based solutions are being carried out like solar fencing in areas like Kitam to prevent wildlife from entering fields. The Department also organizes frequent trainings on tranquilizing animals in Himalayan Zoological Park. A community-based insurance system which has been practiced in other Himalayan states has to be initiated in the state.

In this context, It is proposed to conduct one day workshop on Biodiversity Conservation through addressing Man-animal conflicts issues in the State of Sikkim, the workshop is proposed to be conducted in the month of November,2019.

**Objectives:**

The main objective of the workshop is to come up with more practical, effective and long standing solutions, effective stakeholder's participation in conflict management so as to resolve the conflict amicably to an extent that is possible.

**Participants:**

The workshop expected to be attended by stakeholders including line departments in Sikkim, JICA India Office, New Delhi, State Forest Departments who are implementing JICA Project and Expert from the Subject Matter.

**Period of Workshop:**

The workshop is proposed to be held for 02 days(15.11.2019 & 16.11.2019), the first day starts with inaugural session and followed by 02 technical sessions on Man-animal conflict and Management issues, the second day is earmarked for field visits to have exposure of Sikkim forests and Wildlife in context to Man-wildlife conflict.

**Expected outcome:**

By the end of this workshop, sufficient information and understanding on Human Wildlife Conflicts, current management and effective solutions for the State to address Human-Wildlife conflict issue will be identified and come up with effective intervention packages.