

TRAINING ON

Human–wildlife conflict hotspot mapping

Capacity building for forestry field officials in Bhutan

16–18 March 2021 | Microsoft Teams



PHOTO: CAMERA TRAP IMAGE/NCD BHUTAN

Background

Human–wildlife conflict (HWC) transcends geographic boundaries and is widespread among the three countries in the Kangchenjunga Landscape: Bhutan, India, and Nepal. Wildlife habitats and corridors in these countries are under pressure from encroachment, infrastructure development and resource extraction, forcing wild animals to intrude into human use areas. In Bhutan, many communities depend on forests and practise subsistence farming and livestock rearing. These communities are particularly vulnerable to HWC, which affects their socioeconomic and psychological wellbeing and food security.

Crop raiding and livestock depredation are the most common forms of HWC in Bhutan, especially affecting the rural poor. Carnivores like tiger, snow leopard, common leopard, black bear, wild dog, and smaller cats depredate various types of domestic livestock and poultry, whereas ungulates like wild boar, sambar, and barking deer raid crop fields and orchards.

Given the severe impacts of HWC on local livelihoods and its conservation implications, there is a need to develop a better understanding of the patterns, seasonality, extent,

and intensity of conflict. Bhutan's Nature Conservation Division (NCD) and Department of Forest and Park Services (DoFPS) have prioritized mapping of HWC hotspots at the national level. The aim is to identify areas under high risk of HWC, understand the interactions, analyse possible drivers, and prioritize conservation efforts. For this, frontline workers must possess adequate skills to map and understand HWC dynamics and prioritize mitigation measures.

About the training

Against this backdrop, ICIMOD through its Kangchenjunga Landscape Conservation and Development Initiative (KLCIDI) is organizing an online training for Bhutan's forestry field staff. The training is expected to enhance understanding of the variability of HWC across space using spatial modelling. The three-day training will explore the use of geospatial technology to identify areas with a high probability of HWC and to delineate hotspots of conflict. Participants will use geo-statistical techniques to explore the possible drivers of HWC in the region. The training is expected to build the capacity of frontline staff and relevant partners to develop maps and analyse HWC using these spatial tools.



PHOTO: CAMERA TRAP IMAGE/NCD BHUTAN

Objectives

The objective of the training is to share findings and methodological details from HWC mapping in the Kangchenjunga Landscape and apply similar methods to Bhutan. HWC hotspot maps will be developed using available geospatial data in combination with expert knowledge from the participants.

The specific objectives of the training include the following:

- Sharing knowledge on methodological tools in the mapping of HWC
- Hands-on stepwise exercises on the use of mapping tools and geospatial data
- Discussion on potential drivers of HWC
- Building capacity of the participants

Expected participants

Around 25–30 HWC focal officials from the Department of Forest and Park Services, research institutions, universities, protected areas, and forest divisions across Bhutan will participate.

Expected outcomes

Participants will be trained in GIS data preparation, analysis, and interpretation of HWC hotspot maps. Upon completion of the training, participants will have acquired the technical competency to prepare HWC hotspot maps at the national and sub-regional level.

Post-training engagements

A template for follow-up action and progress review will be developed jointly by NCD and ICIMOD.

20–30 March 2021

Participants prepare HWC maps of their region

1 April 2021

First review of the training's impact

15 April 2021

Second review of the training's impact, based on the first review

30 April 2021

Final review of the training's impact

Agenda

All timings are in Nepal Standard Time (UTC+05:45).

DAY 1 – TUESDAY, 16 MARCH 2021

Basic GIS exercise using ArcGIS tools for HWC density and hotspot mapping

Moderator: **Tandin**, Kangchenjunga Landscape Bhutan Focal, NCD, DoFPS, Bhutan

Co-facilitator: **Tashi Dorji**, Programme coordinator, KLCDI, ICIMOD

| Time | Programme | Responsible |
|-------------|---|---|
| 09:45–10:00 | Check-in on MS Teams | ICIMOD IT team |
| 10:00–10:10 | Opening Introduction of the training and its objectives | Sonam Wangdi , Chief, NCD, DoFPS, Bhutan |
| 10:10–10:25 | Opening remarks | Dasho Lobzang Dorji , Director, DoFPS, Bhutan |
| 10:25–10:40 | Opening remarks | Basanta Shrestha Director of Strategic Cooperation, ICIMOD |
| 10:40–10:50 | Vote of thanks | Namgay Wangchuk , HWC Focal, NCD, DoFPS |
| 11:00–11:15 | Technical session Pre-training session assessment of participants' knowledge, understanding of HWC mapping, and expectations from the training | Participants and ICIMOD IT team |
| 11:15–11:30 | Overview of HWC in Bhutan | Namgay Wangchuk and Letro Sr Forestry Officer, NCD, DoFPS |
| 11:30–12:30 | Presentation on use of geospatial data in mapping of HWC Demonstration (occurrence data from NCD, DoFPS) Density mapping in ArcGIS | Prashanti Sharma GIS and Remote Sensing Associate, ICIMOD |
| 12:30–13:30 | Lunch | |
| 13:30–14:30 | Demonstration (occurrence data from NCD, DoFPS) Hotspot mapping in ArcGIS | Demonstration and group exercise facilitated by Namgay Wangchuk , Letro , and Prashanti Sharma |
| 14:30–15:30 | Group exercise Density and hotspot mapping (data set from NCD) | |

DAY 2 – WEDNESDAY, 17 MARCH 2021

Advanced GIS modelling exercise for prediction of HWC hotspots in data-deficit regions

Moderator: **Tandin**, Kangchenjunga Landscape Bhutan Focal, NCD, DoFPS

Co-facilitator: **Kesang Wangchuk**, Biodiversity Specialist, ICIMOD

| Time | Programme | Responsible |
|-------------|--|--|
| 09:45–10:00 | Reflections from Day 1 | Participants |
| 10:00–10:30 | Presentation on a case study of HWC from the Kangchenjunga landscape | Prashanti Sharma , GIS and Remote Sensing Associate, ICIMOD |
| 10:30–12:30 | Demonstration Preparation of raster data – ArcGIS Inputs for geospatial modelling – MaxENT | Facilitators: Namgay Wangchuk , Letro , and Prashanti Sharma |
| 12:30–13:30 | Break | |
| 13:30–15:30 | Demonstration Modelling and analysis - MaxENT Interpretation – ArcGIS | |

DAY 3 – THURSDAY, 18 MARCH 2021

Hands-on exercises by participants

Moderator: **Tandin**, NCD, DoFPS

Co-facilitator: **Kesang Wangchuk**, Biodiversity Specialist, ICIMOD

| Time | Programme | Responsible |
|-------------|---|--|
| 09:45–10:00 | Reflections from Day 2 | Participants |
| 10:00–12:30 | Group exercise Geospatial modelling for hotspot mapping using HWC Bhutan data | Facilitators: Namgay Wangchuk, Letro, and Prashanti Sharma |
| 12:30–13:30 | Break | |
| | Closing session Moderator: Sonam Wangdi , Chief, NCD, DoFPS Co-facilitator: Kesang Wangchuk , Biodiversity Specialist, ICIMOD | |
| 13:30–14:00 | Post-training assessment | Participants and ICIMOD |
| 14:00–14:20 | Roadmap for HWC spatial mapping in Bhutan at national level | Namgay Wangchuk and Letro , NCD, DoFPS |
| 14:20–14:35 | Closing remarks | Nakul Chettri , Regional Programme Manager, Transboundary Landscapes, ICIMOD |
| 14:35–14:50 | Closing address | Dasho Lobzang Dorji , Director, DoFPS |
| 14:50–15:00 | Vote of thanks | Tandin , NCD, DoFPS |

Organized by

Nature Conservation Division (NCD); Department of Forest and Park Services (DoFPS), Ministry of Agriculture and Forest (MoAF), Bhutan; and Kangchenjunga Landscape Conservation and Development Initiative (KLCDI), International Centre for Integrated Mountain Development (ICIMOD)

For further information

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