Project Update: July 2023

Summary
The illegal wildlife trade is one of the key threats to species survival and its regulation and monitoring are dependent on accurate species identification. Plants are particularly difficult to identify which is aggravated when trade parts like stems, roots, etc., are dried and processed. Considering this, this project aimed to understand the extent of species identification among key trade stakeholders. In this respect, we wanted to assess the species identification capacity, train, and reassess to understand the effectiveness of the training. In doing so, we chose two districts as key project sites and from here, we chose one harvest community and one group of enforcement officials (note: we are keeping the names of places anonymous for public reports). We are in the early stage of this project implementation phase but by the end, we hope to identify areas that are crucial to design future interventions in terms of species identification.

In these first 4 months of project implementation, we have made the following progress.

Research permits obtained
We received research permits from the Department of Forest and Soil Conservation, and the Social Welfare Council, as well as approval from the Executive Committee of the project host, Greenhood Nepal. After receiving these permits, we communicated with local management.

Project scoping
Identification of respondents: As outlined in the proposal, during project scoping, and formally communicated with both Division Forest Offices to discuss the project activities. We also discussed this will field offices of forest offices to identify communities for intervention. The forest officials are very positive towards the project activities and willing to participate in the assessments, especially the training. We identified 20 enforcement officials from forest offices and 20 local community members (harvesters, intermediaries).

Literature review: We compiled relevant literature, published manuscripts, reports, and ID guides that are available online and unpublished materials via in-person office visits. We used these resources to: a) design our survey tools, b) identify plant species to focus on during assessment/training, and c) prepare capacity-building training materials.

Identification of target species: We first did a market survey to observe what kind of plant species are being traded for medical usage (see photos below). From the market survey and literature review, we had a list of over 50 plant species. After a series of communications with our project advisor, plant experts, traders, as well as enforcement officials, we identified 14 plant species (including both protected and unprotected) to focus on throughout this work. This includes plants whose trade parts are either roots, rhizomes, seeds, tubers, or bulbs - *Nardostachys grandiflora, Valeriana jatamansi, Dactylorhiza hatagirea, Paris polyphylla, Picrorhiza Kurroa, Coptis teeta, Fritilaria cirrhosa, Satyrium nepalense, Brachycorythis obcordata, Pleione praecox, Nephrolepis cordifolia, Delphinium denudatum, Roscoea purpurea,* and *Allum wallichii*. We

excluded plants whose leaves, flowers, and fruits are traded purposively because mixing tubers with leaves would not be logical in terms of identification.

The assessment activity involves the identification of images during psychological image-matching experiment methods adopted from prior studies (e.g., Kemp et al., 1997; White et al., 2014). Also, our prior work on species identification of plants using the same method (Bashyal et al., 2023) showed that species misidentification was least in the image combination of roots vs leaves while it was highest for other parts such as roots vs rhizomes, roots vs tubers, etc.

The survey tools and capacity-building training materials were further refined after the species were identified.

Field assessment and training dates: We plan to undertake a questionnaire survey to assess the identification capacity and do the training in August [for one district - dates and venue are already finalised].

Project progress vs plan

Activity no.	Year 1 (2023)			Year 1 (2024)	
	Apr-June	July-Sept	Oct-Dec	Jan-Mar	Apr
1	Project scoping				
2		Training			
3		Questionnaire surveys and interviews			
4			Data compilation, entry, and analysis		
5			Results dissemination		

Note: The colors show progress. Green = activity completed, Orange = activity ongoing, Gray = activity not yet started

Photos of different plant parts

Photo 1: Plant parts packed in plastic as displayed in herbal shop.

Photo 2: Plant part in trade.

Photo 3: Plant leaves (dried, crushed, and powdered) sold as incense in religious areas.

Photo 4: Nardostachys grandiflora (spikenard) as observed in market for sale.