Project Update: November 2016

Location Details

The expedition was aimed to assess the population, threats and distribution ecology of the *Paphiopedilum fairrieanum* and people's perception as well in the project area. The study area was conducted in Naglaa, Zhemgang Dzongkhag (district) in southern Bhutan. The project sites specifically located at 26°56'18.2'' N and 90°59'47.9'' E, elevation ranges from 600 to 1238 m asl, vegetation type of warm broadleaved forest.

Method and Methodology

A total of 10 sampling plots were established at different elevations keeping an interval of approximately 100 m between plots. The sample plot sizes of (10 x 10m) were used at different elevations for vegetation description with the objective to include at least 0.01 % of the total area. While one sub-plots of sample sizes of 2 x 2 m in centre were adopted carefully within for seedling/sapling and ground layer in order to study the associated species of *Paphiopedilum fairrieanum*. I visited local communities and carried out the interviews to see how many people are aware of the species.

Soil samples were collected from each plots randomly to know the environmental attributes and few seed pods of the *Paphiopedilum fairrieanum* were also collected to examine micro propagation trial at the Royal Botanical Garden. The entire parameters for habitat ecology of the species were collecting and analysis is under way.

Data Analysis

Analysis of data was processed using pivot table of the Microsoft Excel 2013, data was further processed for the species composition. PC-ORD version 5.1 will be using for the cluster analysis and SPSS Version 20 for correlation and regression analysis between various variables.

Finding/Result

Interestingly, in one plot both *Paphiopedilum fairrieanum* and *Paphiopedilum venustum* were recorded growing together which signified the most favourable habitat in this elevation, strongly indicating the most favourable environmental condition for the both species. Those two species are critically endangered and *Paphiopedilum venustum* is a new record for Bhutan; so far it is recorded only from Darjeeling and Sikkim area in India (The Orchid of Bhutan, Pearce N.R and Cribb P.J., 2002), which needs further studies on both the species for the conservation strategy.

In the next phase, I will be searching more localities of *Paphiopedilum fairrieanum* in the project site and nearby places of limestone areas, conducting awareness programmes, interviews and vegetation surveys will also be carried out. Few plants which were already damaged along the footpath/walking trail were rescued from the project sites and grown in the orchidarium at Royal Botanical Garden under National Biodiversity Centre.

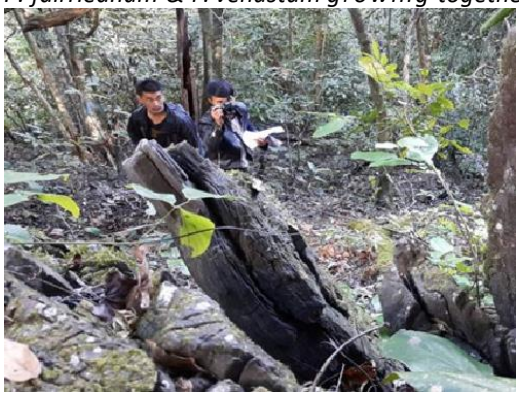
Appendices I

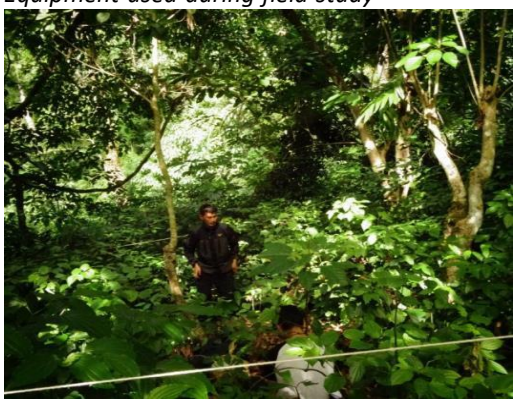
Paphiopedilum fairrieanum growing alone the footpath

Paphiopedilum fairrieanum in full bloom

P. fairrieanum & P. venustum growing together

Equipment used during field study





Field work in project site

Interviewing with Local people

Appendices II: Data sheets

Data sheet (Tree Vegetation >1.3m)

Location :
Date :
Altitude :
Inclination :
Plot No. :
Aspect :
Plot Size :
Recorder :

Ht: Height, HB: Lowest living branch, HL: Lowest leaf

Sp. No.	Species name	DBH	Ht.	HL	HB	Status	Stem type

Data sheet for Sapling (1.3-0.5m) and seedling <0.5m							
	Location :				Plot No. :		
	Date :				Aspect :		
	Altitude :				Plot Size:		
	Inclination :				Recorder:		
Sp. No.	**Species name (Seedling)**	**Ht.**	**Age**	**Sp. No.**	**Species name (Seedling)**	**Ht.**	**Age**

Ground vegetation survey (Data form)				
	Location :		Plot No.	:
	Date :		Aspect	:
	Altitude :		Plot Size	:
	Inclination :		Recorder	:
Sl/No.	**Species**	**Ht. (cm)**	**C (%)**	**Remarks**