Program Schedule for Field Trip

(7th - 11th November, 2014 - Pu'er City)

07 Nov. 2014

07:00 - 07:45	Breakfast at Golden Spring Hotel
07:50 - 08:00	Boarding Bus
08:00 - 12:00	Drive from Kunming to Mojiang Country
12:00 - 13:00	Lunch in Mojiang Coutry .
13:00 - 16:00	Drive to Pu'er City and Check-in at Hotel
18:00 - 19:00	Dinner (Hosted by Local Government and City
	Forestry Bureau)

08 Nov. 2014

08:00 - 08:30	Breakfast at Hotel
08:30 - 09:30	Introduction to Forestry Development in Pu'er City
09:30 - 11:30	Visit Pu'er Fine Variety Ecological Tea Garden
12:00 - 13:00	Lunch
13:00-17:30	Visit the Demonstration Site of Logging Ban Programs
	of Protection Forests for Ecological Function in
	Wanzhangshan Forest Farm
18:00 - 19:00	Dinner

09 Nov. 2014 08:00 - 08:30 Breakfast at Hotel 08:30 - 11:30Visit Demonstration Site of Upland Agroforestry Practice in Villages and Caiyanghe Nature Reserves 12:00 - 13:00 Lunch 13:00 - 15:00 Cultivation Base for Rare and High Value Medicinal Herbs under Natural Forests 15:00 – 17:00 Visit Tissue Cultivation at Private Enterprise (Dendronbum. Spp.) 18:00 – 19:00 Dinner 10 Nov. 2014 08:30 - 11:30Visit Forestry Industry Enterprises (Rosin/Colophony) 12:00 – 13:00 Lunch 13:00 -15:00 Visit the Traditional Model of Arbor Tea Plantation in **Natural Forests** 15:00 - 18:00Free (City Sightseeing) 18:00 – 19:00 Dinner 11 Nov. 2014 08:00 - 08:45 Breakfast at Hotel 08:45 - 09:00 Check-out 09:00 - 11:30 Drive from Pu'er City back to Kunming, 11:30 – 12:30 Lunch in Mojiang Country

Mojiang Country to Kunming City

Dinner

Arrive in Kunming and check in Golden Spring Hotel

12:30 – 16:30

16:30 – 17:00

18:30 – 17:30

A Brief Introduction to the Field Sites

Pu'er City

Pu'er City is situated in the Southwest region of Yunnan Province and administers one district and nine counties over a jurisdiction area of 45,385 km². It is the largest prefecture in Yunnan in terms of area. Pu'er City is 470 km south of Kunming. Pu'er Prefecture borders the Laos and

Vietnam in the Southeast and adjoins Myanmar in the Southwest, sharing an international border of km with countries. The Lancang (Mekong) River, Red River and Nankang River flow to the neighboring countries. A significant segment



of the famous Southern Silk Road traverses Pu'er City. The total population of Pu'er Municipality is 2.37 million, of which 1.44 million are ethnic minorities, accounting for 61% of the total. There are 36 ethnic minorities in the prefecture and 14 of whom are indigenous inhabitants, which mainly include the Hani, Yi, Dai, Lahu, Wa, Bulang and Yao peoples. It is an important production area of the renowned Pu'er Tea and one of the largest tea production areas in China.

Distributed within the territory of Pu'er Municipality are vast undulating mountains that occupy 98.3% of its landscape. Due to its proximity to the Tropics of Cancer and an integrative impact of the physiognomy and varying elevation gradient from 376 to 3,306 meters, distinctive vertical climate zones are widespread in the region. Being located at the same latitude with that of Cuba in Central America and Taiwan Province of China and as a result of its location on the transient area between the

northern and southern bio-geographic regions, its landscape has long been reputed as "a magic natural museum" that composed of rich species diversity, lush primary forest vegetation, rare animals and plants, and a diverse and uplifted landscape.

To protect natural forest resources in the region, the Natural Forest Resources Protection Programme is implemented in year 2000 to conserve and manage a total forest area of 8500 km², including 288 km² of reforestation. The project has successfully increased forest volume by 26 million cubic meters in a period of 10 years.

Since year 2002, Pu'er City has reforested a total area of 1155 km², including the conversion of 279 km² of agricultural land and afforestation of 720 km² of bare land. More than 78,000 households have participated in the programme. As a result of this programme, the region has increased forest cover by 2%, and has reduced soil erosion and improved ecological conditions significantly.

Field Visit Sites

1. Fine Variety Ecological Tea Garden



The Fine Variety Ecological Garden is run by Tea Yunnan Pu'er Tea Research Institute, the only tea research institute established within the academic system of Yunnan. The institute has implemented more than 20

research projects funded by the provincial government, the provincial departments of sciences and technology, agriculture and education. Some

outstanding achievements have been made in the germplasm of tea trees in Yunnan, the intrinsic relationship between Pu'er tea processing techniques and its quality, the functional elements in Pu'er Tea, and processing of large-leaf high quality tea varieties in Yunnan as well as the integrative utilization of tea products. The areas of research include the genetic diversity of Pu'er tea germplasm; the key techniques for managing ecological Pu'er tea plantations, key techniques for post fermentation of Pu'er tea, fine processing and integrative use of Pu'er tea, improving the quality of Pu'er tea by using beneficial microorganisms; appreciation of Pu'er tea quality; safety assessment and evaluation of the quality of Pu'er tea; and the sustainable development of the Pu'er tea culture. All these efforts have contributed enormously to the development of tea industry in Yunnan Province.

2. Wanzhangshan Forest Farm

Wanzhangshan Forest Farm

is a new type of state-owned forest farm that was created through reforming previous forest logging enterprise. The forest farm covers 88 km², of which 42.7 km² is commercial forest and km^2 45.3 is



amenity/ecological forests that are distributed in the first level tributary of the Lancang (Mekong) River. Currently, the forest farm has 60 permanent staffs. In the past decade, the forest farm has implemented the Low-yield Forest Improvement Programme and afforestation on barren land. In total, about 40 km² of plantation forest has been established and eight million

trees have been planted. The indigenous species, *Pinus kesiya* (Simao pine), is the main tree species used in the afforestation project.



The survival rate has maintained at above 96% in the planting year and above 86% in following years. Through years of efforts, the forest stands in Wanzhangshan Forest Farm has been greatly improved. Sustained forest

resources were enhanced significantly and net growth of forest resources is also increasing steadily. The establishment of effective management models for state-owned forest farms has contributed substantially to the management goals of "seeing green mountains and steady stock growth", and to the erosion control and ecological protection in the watersheds of the Mekong River.

3. Upland Agroforestry Practice (Coffee and Tea Agroforestry Demonstration Site)

The mixed planting of coffee under the economic forest was a dominated upland agroforestry model in Dakaihe Village, which was invented from traditional shifting cultivation, such as slash and burn or swidden. The total area is around 3.1



km², producing a net income of 3,580 yuan per person annually for the

village.

4. Caiyanghe Provincial Nature Reserve

Caiyanghe Provincial Nature Reserve is located in the southeastern part of Simao District in Pu'er Municipality. The nature reserve is located in the low latitude zone in Southern Yunnan and is covered by typical subtropical forest ecosystems of Southern China. The nature reserve was established in 1981, it has a total area of 149 km2, with the core zone of 45.3% and an experimental zone of 54.7%. In 2009, the nature reserve became a part of Pu're National Park (216.23 km2) to strengthen forest management and the development of eco-tourism.

Wild animals: There are 415 wild animal species listed for national and provincial protection in the nature reserve, including 71 species of national protection and 344 species of provincial-level protection. These include 102 mammal, 222 bird and 91 reptile species. The species listed



for key monitoring include: Indian buffalo (Bubalus bubalis). sambar deer (Hydropotes inermis), Indian muntjac (Muntiacus muntjak), red jungle fowl (Gallus gallus), silver pheasant (Lophura nycthemera),

great white egret (*Oriolus traillii Vigors*), giant water monitor (*Varanus salvator*), python (*Python molurus bivittatus*) and latera-stripe salient tree frog (*Chirixalus vittatus*).

Vegetation and plants: 2,104 higher plant species have been recorded in the nature reserve belonging to 883 genera in 209 families. There are 892 species of medicinal plants in the reserve belonging to 530 genera in 163 families. In total, 36 species are listed for protection, including one species for National Class I Protection, 15 species for National Class II Protection, and 20 species for provincial protection in Yunnan. Fifty species are endemic to Yunnan.

5. Cultivation Base for Rare and High Value Medicinal Herbs under Natural Forests

Jinling Plant Pharmaceuticals
Company is the largest of its
kind in using the medicinal
herbs Dendrobium species
in China. Currently, the
company has three
subsidiary companies, two
of which are in China and
one in Oudomxai Province



of the Laos PDR. All of these subsidiary companies are specialized in growing rare and high value medicinal herbs, such as Dendrobium species, and they are the leading enterprises in Pu'er City. For a decade since the founding of the company, it has become the earliest Dendrobium growing enterprise, and the largest of its kind in the region. The company has adopted the management model of "Company + Plantation Bases + Farmer Households". It has promoted the development of more than 30 plantation bases and 3,000 farmer households specialized in growing Dendrobium medicinal herbs which have contributed substantially to poverty alleviation amongst the rural farmers in the mountainous areas. These efforts further contributed significantly to the sustainable extraction and the use of Dendrobium resources, and to promote the modernization, internationalization and industrialization of traditional Chinese herbal medicines.

6. Forestry industry enterprises (Rosin/Colophony)

Pu'er City in Yunnan is province an important forest industry production base. the initial of formation the forestry board, forest, forest paper industrial system, the forest industry in the city's



economy proportion nearly 30%. The total output value of forestry from RMB 4.4billion yuan in 2008 to RMB12.3 billion yuan in 2012, in which, income from rosin is more than 1billon yuan. The forest industry has maintained rapid and healthy development momentum. The city's major forest products such as plywood, rosin, pulp yield increase by more than 15% compared to the same period, and the economic efficiency of enterprises improved significantly, cash income of the farmers in the drought conditions are still grew by more than 10%, the "hope in the mountains, rich by forest" of majority of farmer's aspirations put into reality.

7. Traditional Model of Arbor Tea Plantation in Natural Forests

The traditional system of upland arbor tea plantation in natural forests in Yunnan Province is mainly located in resident areas of native ethnic groups who still practicing the traditional agricultural system of upland arbor tea plantation in natural forests, it has the history for tea plantation in natural forests more than 1200 years and the diverse types of adoration to tea accentors—and tea culture as well as the agricultural culture system for harmonious development of ecology environment formed by the



traditional tea cultivation and management. The arbor tea plantation in natural forest as undergrowth always mixed and intercropped with hundreds of species and plants and various birds, insects within the

original forests, such as sweet-scented Osmanthus, Camphor, Crataegus, Alder, Banyan tree, Pear trees, which has established a better food chain system for biological control of insect pests; meanwhile, the leaves from many trees formed over as good organic fertilizer for tea growing, as a result, the arbor tea has the characteristics of organic foods with higher value of both for market environment protection no chemical fertilizers and pesticides.

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