DỰ ÁN TĂNG CƯỜNG CÔNG TÁC QUẢN LÝ HỆ THỐNG KHU BẢO TỒN THIÊN NHIÊN TẠI VIỆT NAM
STRENGTHENING PROTECTED AREA MANAGEMENT IN VIET NAM-SPAM PROJECT

ASSESSMENT OF THE SPECIAL-USE FOREST SYSTEM AND ITS MANAGEMENT IN LAO CAI PROVINCE

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the Lao Cai Provincial Working Group

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ACRONYMS

Danida	Danish International Development Agency
DARD	Provincial Departmernt of Agriculture and Rural Development
DOSTE	Provincial Department of Science, Technology and Environment
FPD	Forest Protection Department
GDP	Gross Domestic Product
MARD	Ministry of Agriculture and Rural Development
MBs	Management Boards
MOSTE	Ministry of Science, Technology and Environment
NR	Nature Reserve
PAs	Protected Areas
PCs	People's Committees
PFPD	Provincial Forest Protection Department
PRA	Participatory Rural Assessment
PWG	Provincial Working Group
SPAM	Strengthening Protected Area Management
WWF	World Wide Fund for Nature
5MHRP	5 Million Hectares Reforestation Program (661 Program)

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Issues related to Hoang Lien Nature Reserve in Lao Cai Province have attracted great interest, not only from the local authority but as well the Government, for the sustainable development strategy formulation process. In an effort to review all the achieved results during 1994-2001, indicate opportunities and challenges confronted by Hoang Lien Nature Reserve and at the same time propose options for better management of this protected area in the coming time, we developed this report on "Assessment of the Special-use Forest System and its management in Lao Cai Province".

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INTRODUCTION

Located within the geographical area characterized by the tropical monsoon, Viet Nam is endowed with a very typical and rich ecological system of evergreen tropical, tropical humid deciduous and sub-merged forests. Our forest is very valuable in terms of biodiversity. According to the latest evaluation made by the World Conservation Monitoring Center, Viet Nam is ranked 16th in relation to the level of biodiversity (WCMC, 1992).

Realizing the important role of biodiversity, the State has set up more than 100 protected areas on mainland, wetland and coastal areas over the last several decades.

The establishment of a protected area system aims to preserve and maintain all typical and valuable ecological systems in terms of scientific and economic values and at the same time to preserve the valuable gene source of wild animals, protect culture-history-environment oriented landscapes so as to partly contribute to sustainable development for the interest of the community.

In spite of strong efforts made for biodiversity conservation, degradation is still taking place in our country (Forest Protection Department – FPD, 1999). At the present time, forest coverage is only 33,2% (MARD, 2000). Forest coverage proportion of high quality natural forest is only 10%, of which primary forest occupied 1% (Collins et al. 1991). The biological resource is degrading. As described in the two Red Books, 366 species of animals and 350 species of plants are now threatened.

In order to intensify efforts for the conservation of our typical biodiversity system, FPD has implemented a Danida funded project on strengthening protected area management (SPAM) under WWF's execution. The mail objective of this project is to formulate a strategy on protected areas management, which aims to encourage the establishment of close workflow/coordination among relevant stakeholders in order to jointly focus the available sources and efforts on biodiversity conservation oriented activities.

Representing different ecological zones of the country four provinces, Lao Cai, Thua Thien Hue, Gia Lai and Ba Ria-Vung Tau were selected as pilot areas to conduct in-depth study on the current status of protected areas, application of the inter-sectoral accessibility approach on the process of plan formulation, development and management of protected areas.

Hoang Lien Nature Reserve in Lao Cai Province is located on the interface of two geological and three biogeographical zones, where unique animals and plants in the world occur (Frontier - Viet Nam, 1999). Over recent years, the Forest Protection Sub-department in Lao Cai Province and the management board of Hoang Lien Nature Reserve have made untiring efforts to protect and manage a unique mountainous tropical ecological system on Hoang Lien mountain range. Unfortunately, the protected area is seriously threatened by forest fire, illegal forest products exploitation and animal hunting, added to by slash and burn agriculture and inappropriate livestock grazing. The underlying factor leading to this deforestation is miserable living conditions, backward cultivation and low educational levels

of ethnic people living inside and adjacent to the protected area. Insufficient planning for ecotourism development is a potential threat to the reserve.

In order to comprehensively assess activities related to organization and management of Hoang Lien NR, a cross-sectional Provincial Working Group (PWG) was set up constituted by representatives from relevant agencies in the province and local community.

To assess the economic, ecological and historical-landscapes system, the PWG applied appropriate study approaches such as information collation, PRA, consultation, data analysis, synthesis and processing to assess the following aspects:

1. Boundary, area, biodiversity of protected area and buffer zone.
2. Organizational system of the protected area.
3. Workflow/relation between the protected area and various agencies and sectors at district, commune and village community.
4. Forest law enforcement
5. Investment level and efficiency
6. Impacts of socio-economic activities on the protected area.
7. Impacts of ecotourism on the protected area
8. Local people's awareness improvement.

On the basis of synthesizing all previous study results in addition to that from this survey, the report on analysis of Hoang Lien Nature Reserve system indicated achievements, difficulties, challenges and opportunities on biodiversity conservation and protected areas management in Lao Cai Province providing the practical and theoretical basis for recommendations for formulating a protected area management strategy in Viet Nam.

Due to limited study duration and professional knowledge, oversights are unavoidable and we hope to receive constructive comments from managers, experts and colleagues.

CHAPTER I

OVERVIEW ON HOANG LIEN NATURE RESERVE AND RELEVANT ISSUES

1.1 General information on Lao Cai Province

As a mountainous province, Lao Cai covers a natural area of 8.057 $km^{2,}$next to China on the north and northwest, Ha Giang and Yen Bai Provinces on the east, Lai Chau and Son La Provinces on the West and the South. There are 27 ethnic groups in Lao Cai Province with a total population of 594,600 (1/4/1999).

In terms of administrative structure, Lao Cai consists of nine districts (Si Ma Cai, Bac Ha, Muong Khuong, Bao Thang, Van Ban, Than Uyen, Bat Xat and Sa Pa) and two towns (Lao Cai, Cam Duong) with 180 communes including 138 mountainous communes.

There are many high mountain ranges in Lao Cai, Hoang Lien Son mountain range runs in a Northwest-Southeast direction and is considered as a natural catchment of the Red and Da Rivers. From the Viet Nam-China border, the mountains range through May Pass, reaching the heights of Ngu Chi Son range at heights of 2500-3000 m, to the west of Ta Giang Phin and then slopes to the pass at Hoang Lien varying in height from 2200 - 2400 m and then sharply rises as high as Fansipan Mountain at 3,143 m and finally lowers gradually to the height of 279 m at Minh Luong Pass in the direction of Than Uyen.

Following Hoang Lien Son mountain range, Lang Cung mountain block is the second biggest mountain with the height of 2,913 m, Khao Pha mountain of 2,577 m, Phu Nam Than of 2,132 m and Phu Nam Sap of 1,706 m.

Bordering with Lai Chau is a low mountain range belonging to the basin of Nam Mu River and Kham Pha-Nam Mu Range at the height of 1,823 m, a catchment of the Nam Mu and Da Rivers. Nam So area with the height of 2,630 m is the peak of Phu Sam Range.

Hong and Chay Rivers are surrounded by the Voi (Elephant) Mountain Range that runs in a northwest-southeast direction with the average height from 500-700 m. On the nornoreast are the Bac Ha-Muong Khuong Mountain Ranges that belong to Chay River basin with an average height from 1,300 to 1,400 m. Lao Cai topography is strongly divided by river and stream systems resulting in difficult transportation between areas in the province.

Lao Cai is also very rich in terms of minerals with 103 mines, of which Cam Duong Apatit is the unique mine in our country with predicted deposit of 2 billion tons and surveyed deposit of 908 tons. Sinh Quyen copper mine comprising copper-gold mixture with the identified deposit of about 600,000 tons of copper, 120,000 tons of Niken, 20 tons gold and 25 tons of silver. Bao Ha steel mine is also a very promising one.

Lao Cai is characterized by interior tropical monsoons, however, high mountainouous topography and Fansipan peak of 3,143 m divide the Lao Cai mountainous area into two parts towards northwest-southeast; east Hoang Lien Son

and west Hoang Lien Son resulting in a complicated division vertically and horizontally.

As regard to hydrography: within Lao Cai territory, there are 107 rivers with the length of over 10 km, belonging to 3 branches of Red River: Thao, Chau and Nam Mu rivers basins. Thao and Nam Mu river basin is vulnerable to rock and flash floods and natural calamities as most of the river branches originated from Hoang Lien Son mountain range at the height of over 1,000 m, with steep sides and fan-shaped river bed concentrating water flow and then leading to the creation of such abovementioned floods.

Being endowed with such a diversified rock layer, the soil layer is also very rich in terms of quantity with 20 different types of soil distributed on 4 different areas. Tropical Feralit soil exists in areas below 900 m height; humus feralit in the area from 900-1800 m; feralit process gradually reduces and finally stops with the presence of humus alit and from the height of 1,800 m onwards, rough humus is dominant.

Vegetation is very luxuriant in mountainous area of Lao Cai, comprising two main zones, tropical vegetation from the height below 700 m and sub-tropical vegetation from 700 m upwards.

In terms of socio-economic status, Lao Cai is known as an agricultural province. According to the population investigation data on 1/9/1999, 492,700 out of the total population of 596,400 people are farmers, accounting for 83% of the entire population. Urban population only makes up 17%. Total agriculture production value, according to estimates in 2000, is about 501.3 billion VND, average income of rural farmer is 1,035.721 d/capita/year (equivalent to 70 USD/capita/year).

Lao Cai has great potential in terms of land, particularly forestland. According to statistical data in December 2000, Lao Cai covers an area of 805,700 ha of which:

- ***Agriculture land: 89,272 ha***

+ cultivated area: 63,927 ha

+ mixed garden: 6,455 ha

+ perennial trees plantation area: 7,904 ha

+ grazing land: 9,633 ha

+ Water surface land for aquaculture production: 1,353 ha

- ***Forested area: 249,440 ha:***

+Natural forest: 204,834 ha

+Planted forest: 44,606 ha

- ***Used land: 11,380 ha***
- ***Living land: 3,118 ha***
- ***Unused land: 452,490 ha***

As forest land, the total forest land area of 543,982 ha is divided into three types of forest: protection forest of 341,335 ha, production forest of 182,656 ha and special-use forest of 19,991 ha. As

Annex 5. HOUSEHOLD SURVEY RESULTS

Buffer zone

#	Issues	Trung Trai commune
1	*2*	*3*
1	Average income per capita (VND mill./person/year)	0.9
	Highest	2
	Lowest	0.08
2	Income from forests (VND mill./person/year)	0.23
	Highest	1.4
	Lowest	0.1
3	Forest assignment for protection from the Nature Reserve	_
4	Total assignment areas (ha)	_
	Largest	
	Smallest	
5	Forest plantation, tending (%)	
6	Household's relationships with the NR Management Board	
	Good (%)	
	Bad (%)	
7	Rewards, fines during assignment time	
	Yes (%)	
	No (%)	
8	Plant short-term crops under the forest coverage	
	Yes (%)	
	No (%)	
9	Terrace field planning	100%
10	Terrace field areas (average ha/household)	0.99
	Largest	4
	Smallest	0.3

11	Clear forests for terrace fields	
	Yes (%)	6.70%
	No (%)	93.3
12	Firewood harvest for sale	
	Yes (%)	3.3%
	No (%)	96.70%
13	Home-made rifles	
	Yes (%)	33.30%
	No (%)	
14	Participation in forest fire control	
	Yes (%)	100%
	No (%)	
15	Attend forest protection meetings	
	Yes (%)	100%
	No (%)	
16	Tourist guuides	
	Yes (%)	
	No (%)	
17	Forest gardens	
	Yes (%)	56.70%
	No (%)	
18	Tree types in forest gardens	
19	Areas of forest gardens (ha)	
	Largest (ha)	14
	Smallest (ha)	0.1
20	Income from forest gardens (VND million)	
	Highest	6
	Lowest	0.1
21	Land allocation for forest plantation	
	Yes (%)	86.70%
22	Develop forest protection princples in villages	100%

Annex 6

LIST OF ENDEMIC SPECIES IN THE NORTHERN REGION NAMED AFTER SA PA AND FANXIPAN

No.	Species
1	Anemone chapaensis Gagnep. (Rauunculiaceae)
2	Michelia Chapaensis Dandy (Magnolia ceac)
3	Cyclea Phanxipangensis Gagnep. (menispermaceae)
4	Holboellia Chapaensis Gagnep.(La rdizabalaceae)
5	Ternstroemia Chapaensis Gagnep (Ternstroemiaceae)
6	Agapetes Chapaensis P Dop (Ericaceae)
7	Enkyanthus Chapaensis P Dop (Ericaceae)
8	Rhododendron Chapaensis P Dop (Ericaceae)
9	Primula chapaensis Gagnep. (Primulaceae)
10	Symplocos chapaensis Guillaum. (Symplocaceae)
11	Staurogyne chapaensis R. Ben. (Acanthaceae)
12	Ficus chapaensis Gagnep. (Moraceae)
13	Pellionia chapaensis Gagnep. (Urticaceae)
14	Quercus chapaensis H. et . C. (Fagaceae)
15	Liparis chapaensis. (Orchidaceae)
16	Epigeneium chapaensis Gagnep. (Orchidaceae)
17	Tainia chapaensis Gagnep. (Orchidaceae)
18	Sarcanthus chapaensis Guillaum. (Orchidaceae)
19	Anae tochilus chapaensis Gagnep. (Orchidaceae)
20	Habenaria chapaensis Gagnep. (Orchidaceae)
21	Smilax chapaensis Gagnep. (Orchidaceae)
22	Sepisorus chapaensis C. chr. et Tard. (Polypodiaceae)

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