

**Ministry of Agriculture and Rural Development,
Socialist Republic of Viet Nam**

**Master Plan Study
on
Improvement of Rural Living Conditions
in
Northwestern Mountainous Region in Viet Nam**

Final Report

September 2008

Japan International Cooperation Agency

Nippon Koei Co., Ltd.

Sanyu Consultants Inc.



- 1st : General View of Cao Son Commune (left), Move resident's new house by Hoa Binh dam construction (right)
 2nd : Road Construction Project, already paved road (left), The vehicle cannot pass unpaved road after raining (right)
 3rd : Water supply project, however, because the water quality is bad, it is not used as a drinking water. (left & right)
 4th : Kindergarten & Primary school (left), Primary school constructed near the road (right)

Figure 7.3.31 Photograph of Field Survey in Cao Son Commune

FOREWORD

In response to the request from the Government of the Socialist Republic of Vietnam, the Government of Japan decided to conduct “Master Plan Study on Improvement of Rural Living conditions in Northwestern Mountainous Region in Vietnam” and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA dispatched a study team headed by Mr. KOYAMA, Masayuki of NIPPON KOEI, during the period from January 2007 to August 2008. The study team conducted the study with the Vietnamese counterpart team and held a series of discussions with the officials concerned of the Government of Vietnam. After the team returned to Japan, further studies were made and then the report was finally completed.

I hope that this report will contribute to the regional and rural development of the Northwest region of Vietnam, which will lead to poverty eradication of the country.

I wish to express my sincere appreciation to the officials concerned of the Government of Vietnam for their close cooperation extended to the study team.

September 2008

NAKAGAWA, Hiroaki
Resident Representative of Vietnam Office
Japan International Cooperation Agency

September 2008

Mr. NAKAGAWA, Hiroaki
Resident Representative of Vietnam Office
Japan International Cooperation Agency

Dear Sir,

LETTER OF TRANSMITTAL

We are pleased to submit herewith the Final Report on the Master Plan Study on Improvement of Rural Living Conditions in the Northwestern Mountainous Region in Vietnam. The Study aimed at (1) preparation of the Master Plan for four Provinces of the Region, namely Lai Chau, Dien Bien, Son La and Hoa Binh, (2) formulation of Action Plans for the priority programs selected from the Master Plan and (3) transfer of knowledge to the Vietnamese counterpart personnel. This report presents all the results obtained through the study activities in both Vietnam and Japan over 20 months from January 2007 to August 2008.

It is generally understood that the Region is behind the rapid development of the national economy of Vietnam in recent years. However, this does not mean that the Region is limited with development potentials. The Study has precisely assessed constraints, development needs and future prospects of the Region.

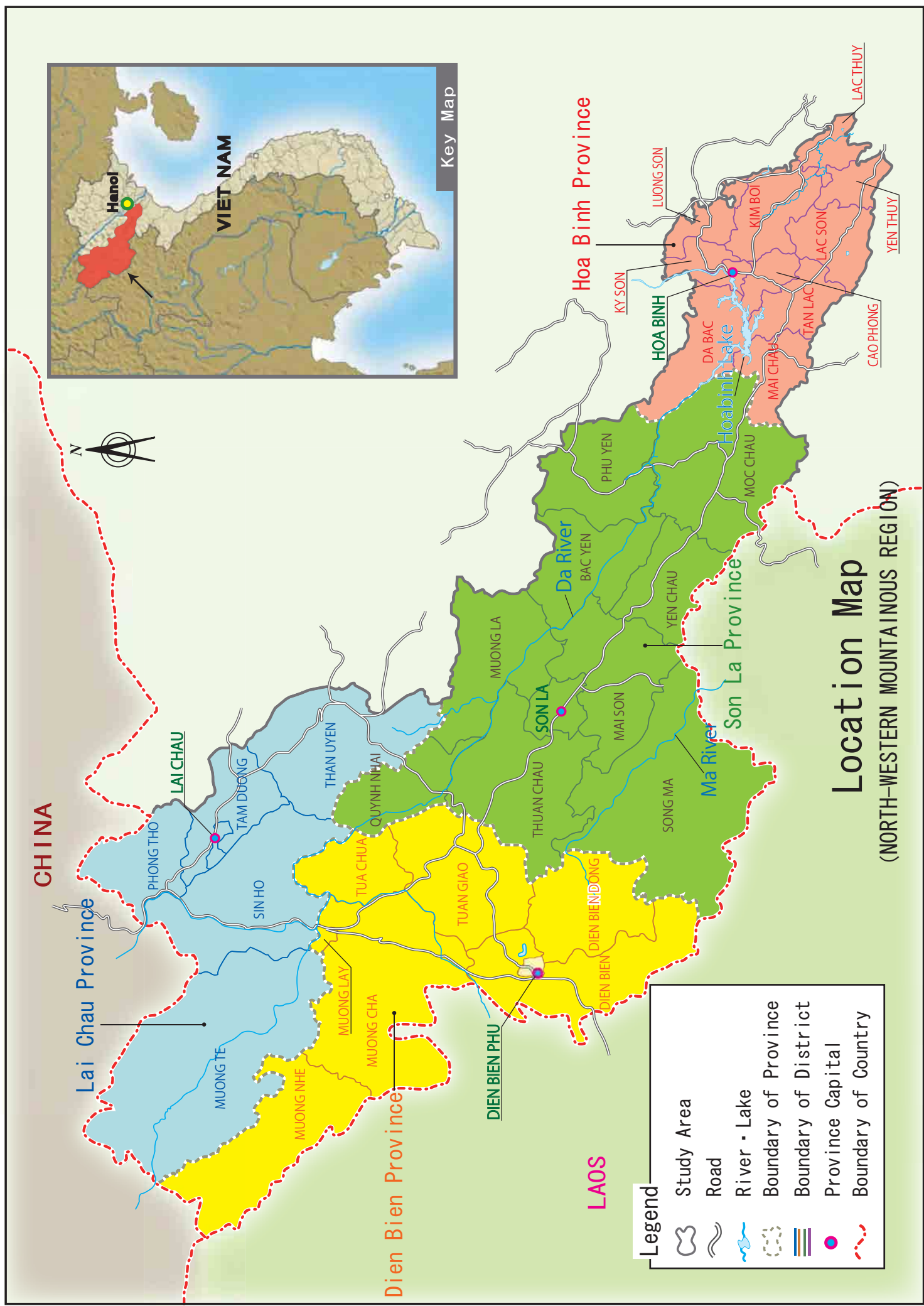
The Master Plan is formulated in line with eight strategies, namely Market-Oriented Agricultural Promotion, Food Security Improvement, Local Revitalization and Diversification of Income Sources, Environmental Conservation and Biomass Energy Development, Irrigation and Water Supply Development, Rural Road Development, Rural Electrification and Capacity Development.

We hope that the Master Plan would contribute to the improvement of farmers' income and living standard and further development of the regional economy.

We would like to express our deep appreciation and sincere gratitude to all the officials who extended their extensive assistance and cooperation to the JICA Study Team, in particular Provincial Peoples Committees and Ministry of Agriculture and Rural Development. We also acknowledge the officials of your agency and Embassy of Japan in Vietnam for their support and valuable advices in the course of the Study.

Very truly yours,

KOYAMA, Masayuki
Team Leader for the JICA Study Team
Master Plan Study on Improvement of Rural
Living Conditions in the Northwestern
Mountainous Region in Vietnam



Master Plan Study
on
Improvement of Rural Living Conditions
in
Northwestern Mountainous Region in Viet Nam

Final Report

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Abbreviations

ADB	Asian Development Bank
AIT	Asian Institute of Technology
ASEAN	Association of South-East Asian Nations
AusAID	Australian Agency for International Development
BHN	Basic Human Needs
CEMA	Committee for Ethnic Minority Affairs
CERWASS	Center for Rural Water Supply and Sanitation
CFSCP	Centre for Fisheries Development Consultation and Planning
CIDA	Canadian International Development Agency
CITES	Washington Convention: Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLC	Community Learning Centre
CPRGS	Comprehensive Poverty Reduction and Growth Strategy
DAFPPSI	Department for Agro-Forestry Products Processing and Salt Industry
DANIDA	Danish International Development Assistance
DARD	Department of Agriculture and Rural Development
DFID	UK Department for International Development
DOAE	Department of Agricultural Extension
DOF	Department of Forestry
DOH	Department of Health
DOI	Department of Irrigation
DOLISA	Departments of Labor, War Invalids, and Social Affairs
DONRE	Department of Natural Resources and Environment
DOT	Department of Transport
DPC	District People's Committee
DPI	Department of Planning and Investment
DWRSM	Department of Water Resources and Structure Management
EU	Europe Union
EVN	Electricity of Vietnam
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FSIV	Forest Science Institute of Vietnam
GAP	Good Agricultural Practices
GDI	Gender-related Development Index
GDP	Gross Domestic Products
GIS	Geographic Information System
GMS	Greater Mekong Sub-region
GPS	Global Positioning System
GRDP	Gross Regional Domestic Product
HDI	Human Development Index
HEPR	National Target Program for Hunger Eradication and Poverty Reduction
IBRD	International Bank for Reconstruction and Development
ICD	International Cooperation Department
IDA	International Development Association
IEE	Initial Environmental Examination
IFAD	International Fund for Agricultural Development
IMC	Irrigation Management Company
IMF	International Monetary Fund
IPM	Integrated Protection Management

IUCN	International Union for Conservation of Nature and Natural Resources
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
MARD	Ministry of Agriculture and Rural Development
MOC	Ministry of Construction
MOET	Ministry of Education and Training
MOF	Ministry of Finance
MOFI	Ministry of Fisheries
MOH	Ministry of Health
MOIT	Ministry of Industry and Trade
MOIC	Ministry of Information and Communications
MOLISA	Ministry of Labor, War Invalid and Social Affairs
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
NIAPP	National Institute of Agricultural Planning and Projection
NMPRP	Northern Mountain Poverty Reduction Project
NRWSS	National Rural Clean Water Supply and Sanitation Strategy
NTFP	Non-Timber Forest Product
NTP-PR	National Target Program for Poverty Reduction
ODA	Official Development Assistance
PIM	Participatory Irrigation Management
PMB	Project Management Board
PPC	Provincial People's Committee
PRSP	Poverty Reduction Strategy Paper
REAP	Remote Area Renewable Electricity Facility
RWSS	Rural Water Supply and Sanitation
SAPA	Sustainable Aquaculture for Poverty Alleviation
SCAFI	Strengthening of Capture Fisheries Management
SEA	Strategic Environmental Assessment
SEAFDEC	Southeastern Fisheries development Center
SEDP	Socio-Economic Development Plan
SEDS	Socio-Economic Development Strategy
SIDA	Swedish International Development Cooperation Agency
SPL	Sector Project Loans
Sub-DOF	Sub-Department of Forestry
Sub-DFP	Sub-Department of Forest Protection
TDFP	Technical Demonstration Farm Plots
TOT	Training of Trainers
UNDP	United Nations Development Programme
VFU/FU	Vietnam Farmers' Union
VIFEP	Vietnam Institute of Fisheries Economic and Planning
VMC	Village Management Committee
VNPT	Vietnam Posts and Telecommunications Group
VPCPS	Village Post and Cultural Points
WFP	World Food Program
WSC	Water Supply Company
WTO	World Trade Organization
WU	Women's Union
WUO	Water User Organization

MEASUREMENT UNITS

Extent

km² = square-kilometers (1.0 km x 1.0 km)

ha = hectares (10,000 m²)

Length

mm = millimeters

cm = centimeters (cm = 10 mm)

m = meters (m = 100 cm)

km = kilometers (km = 1,000 m)

Currency

US\$ = United State Dollars

VND= Vietnamese Dong

Volume

m³ = cubic-meters

lit l = Liter (1,000 cm³)

Weight

kg = kilograms (1,000 gr.)

ton = metric ton (1,000 kg)

Time

sec = seconds

min = minutes (60 sec.)

hr = hours (60 min.)

Chapter 1

Introduction

1.1 Objectives of the Study

The Northwestern Mountainous Region of Vietnam is located along the borders with China and Laos. The Region administratively consists of four (4) provinces, namely Lai Chau, Dien Bien, Son La and Hoa Binh, which occupy 37 thousand km² or 11.2% of the national territory. The regional population amounts to 265 million, which is only 3.1% of the national population, with the sparse population density of 71 persons per km². Ethnic minorities occupy over 80% of the regional population.

The 2006 Household Living Standard Survey by General Statistics Office (GSO) verified the poverty rates of the Region to be 39.4% according to the government's criteria and 49% according to the international standard on the basis of daily calorie consumption, respectively. Due to poor accessibility and other difficult conditions, the government has not been able to provide sufficient support such as medical services, education and agricultural extension to the local people. This is perhaps one of the main reasons of the high poverty rate of the Region.

The Northwestern Region is gaining its importance in the national economy due to its geographic positions next to China and Laos. The regional economic activities are likely to be strongly encouraged by border trade especially of export-oriented local products including agro-processed products and horticultural crops.

The Northwestern Region plays an important role in the national energy strategy as a provider of clean energy. Power supply from both Hoa Binh Dam and Son La Dam will meet substantial portions of power demands of the nation owing to enormous potentials of water resources of the Da River.

Against such background, the Government of the Socialist Republic of Vietnam (hereinafter referred to as "the Government of Vietnam") felt a need for a comprehensive plan to exert their efforts to accelerate economic development and poverty reduction of the Region. As a result, the Government of Vietnam requested the Government of Japan to conduct the Master Plan Study on Improvement of Rural Living Conditions in Northwestern Mountainous Region of Vietnam (the Study). In response to this request, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team (the Team) to Vietnam in April 2006 to discuss the Scope of Work (hereinafter referred to as "S/W") for the Master Plan Study with the officials of Ministry of Agriculture and Rural Development (hereinafter referred to as "MARD"). The Minutes of Meetings (M/M) were drawn up so that both sides would have clear understanding of the S/W (Attachments 1.1).

The objectives of the Study defined in the M/M are as follows:

- 1) To formulate the Master Plan to reduce poverty and improve rural living conditions in the Northwestern Mountainous Region

- 2) To formulate Action Plans for the priority projects which are to be selected in the process of Master Plan formulation; and
- 3) To carry out technical transfer of development plan formulation to the counterpart organization staff

1.2 The Study Area

The Study Area consists of four provinces in the Northwestern Mountainous Region; (Lai Chau, Dien Bien, Son La and Hoa Binh Provinces, hereinafter referred to as “the Region”). General conditions of the four provinces are as follows:

Table 1.2.1 General Conditions of the Northwestern Mountainous Region

Province	Area (km ²)	Population (thousand)	Population of minority (%)	Density (person/km ²)	Administrative division
Lai Chau	9,112	332	87	36	5 districts, 1 town
Dien Bien	9,563	468	80	49	8 districts, 1 city, 1 town
Son La	14,174	1,024	83	72	10 districts, 1 town
Hoa Binh	4,684	830	80	177	10 districts, 1 city
Region	37,534	2,650		71	33 districts, 2 cities, 3 towns, 608 communes

Note: Based on information provided by the four provinces

The administrative structure was rearranged in three (3) Province of the Region in 2008. In Dien Bien Province, Muong Ang Commune was separated from Tuan Giao District and recognized to be the district. In Hoa Binh Province, four Communes of Luong Son District were separated and integrated into Hanoi city. In addition, Xuan Nha Commune of Moch Chau District in Son La Province was divided into three communes. As a result, the Region administratively consists of four provinces, which were further divided into two (2) cities, three (3) towns and 33 districts as of August 1, 2008.

1.3 Organization of Counterpart and Steering Committee

The counterpart agencies for the Study are the National Institute of Agricultural Planning and Projection (NIAPP) under the MARD and the Department of Agriculture and Rural Development (DARD) of the four Provincial Governments. The Steering Committee, organized for smooth execution of the Study, consists of the followings:

Central Level

- 1) Ministry of Planning and Investment (MPI)
- 2) Ministry of Agriculture and Rural Development (MARD)
- 3) National Institute of Agricultural Planning and Projection (NIAPP)

Provincial Level (in each province)

- 1) Provincial People's Committee (PPC)
- 2) Department of Planning and Investment (DPI)
- 3) Department of Agriculture and Rural Development (DARD)

The Minutes of Meeting of the Steering Committee Meetings held throughout the study period are presented in Attachments 1.2 to 1.5.

1.4 Work Schedule

The Study was carried out for 21 months from January 2007 to September 2008, and divided into the following two phases:

Phase 1 January 2007 ~ March 2008 (Formulation of Master Plan)

Phase 2 April 2008 ~ September 2009 (Formulation of Action Plans)

The Phase 1 study consisted of (1) Preparatory Work in Japan, (2) 1st Field Work in Vietnam, (3) 2nd Field Work in Vietnam, (4) 1st Home Office Work in Japan and (5) 3rd Field Work in Vietnam. The Phase 2 study consisted of (6) 4th Field Work in Vietnam and (7) 2nd Home Office Work in Japan.

Chapter 2

Policy Background

2.1 Overview of National Economy

(1) Doi Moi and Market Economy

In 1986, the new economic policy (*Doi Moi*: renovation) was introduced to shift the centrally-planned economy to market-oriented one and further to link itself with global economy. Compared to other ASEAN members, Vietnam recorded remarkable economic growth with annual growth rates of Gross Domestic Products (GDP) nearly 10% in the 1990s. However, reform and privatization of the state companies were delayed as a result of the policy favoring them. Although the foreign currency control policy was reformed to encourage the private sector, the performance of foreign direct investment remained far below the expectation of the government. This was due to the monetary system favoring state companies, increase in market interest rate, shorter loan periods, unfavorable and inefficient taxation system, etc.

(2) Economic Growth under Market Mechanism

From 1996, the Vietnam's economy was hit by the Asian financial crisis resulting in serious economic recession with a sharp drop of the GDP growth rate to 4% per annum. Because of substantial expansion of the foreign trade and rapid growth of the local private sector, the national economy gradually recovered and recorded the GDP annual growth of 8.4% in 2004. This economic development in Vietnam was due to several reasons: 1) It has long coast lines for marine trade, 2) It can serve as a hedge country against risk of investment concentration in China, and 3) It has gateways to Laos and further to Thailand. In addition, Vietnam directs its effort toward internationalization of its economy by affiliating with ASEAN and WTO, and concluding such treaties as the U.S.-Vietnam Bilateral Trade Agreement (BTA) and the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and China.

Recently, expansion of import has been shrinking, changing the trade balance. The reasons for this shrinkage are 1) the decline of international market prices of rice and coffee and 2) serious competition with China in international trade of textile and garment. To ensure the expansion of foreign exports, it is crucial for Vietnam to remove constraints and barriers in quality control and quarantine of local products.

(3) Private Sectors

Growth of the private sector of Vietnam is a key to its long-term economic development. The government's commitment to continuous economic reform will obviously encourage the private sector. The private sector is currently dependent upon foreign direct investment. For further economic growth, however, more actions will be required in institutional reform of the state companies and the state commercial banks, improvement of financial environment for foreign direct investment and assistance to the private sector.

Private companies have contributed to recover from the national economic recession since the introduction of the Enterprise Law in 2000. However, they confront several constraints and difficulties such as difficult fund-raising and land acquisition, insufficient technology, high transport and telecommunication cost, etc. Furthermore, foreign private companies confront constraints that supporting industries for local parts procurement are less developed. Thus, further assistance and development of the private sector are necessary.

2.2 Overview of Agricultural Sector

(1) Development of the Sector

The agricultural sector has rapidly improved under the market mechanism in the last 15 years since the introduction of the *Doi Moi* reform. Vietnam is currently one of the largest exporters of agricultural products in the international markets including rice, coffee, marine products, etc. The major reasons of this change are recognized as increased production under privatization, improvement of function and management of cooperatives and easy access to land since the enactment of the land law.

The rice sector plays the leading role in the expansion of export products. Vietnam embarked on rice export in 1989. The rice export increased by 1.7 times in 1999 and Vietnam became the second largest rice exporting country next to Thailand. Despite annual fluctuations, Vietnam remains one of the leading rice producing country in the world as results of wide range of efforts including 1) area expansion of paddy field, 2) improvement of cropping intensity by adoption of double and triple cropping of paddy, 3) maximization of unit yield by introduction of improved varieties, extensive use of fertilizers and pesticide and improvement of irrigation water supply, and 4) increase of producers' incentives after *Doi Moi*.

In the past, Vietnamese rice was exported mainly to the Asian countries such as Indonesia, Philippines and Malaysia. From the 1990s, Middle East (Iraq in particular) and America (Cuba) increased their imports of Vietnamese rice.

Together with rice, expansion of industrial and horticultural crop production is also a reason for the agricultural sector's growth. In the late 1990s, the areas of perennial industrial crops increased due to nation-wide crop diversification. These crops included coffee, rubber, pepper, cashew and tea in addition to vegetables, soybeans, fruits, etc.

(2) Vietnamese Products in International Market

It is generally understood that the local products are competitive not in quality but in prices. For instance, the FOB prices of Thai rice and Vietnamese rice in 2004 were US\$270/ton and US\$233/ton, respectively, showing a significant gap. The main importers of Vietnamese rice are thought to be developing countries which generally prefer a lower import price. Quality of tropical fruits and tea of Vietnam is not high enough to get the expected prices in the international market.

The issue of coffee trade symbolizes the course of agricultural products of Vietnam. Coffee plantation

expanded in the Central Highlands in 1990s. Vietnamese coffee sharply increased its deals in the international market from the late 1990s to 2000. As a result, excess supply of Vietnamese coffee triggered collapse of the international prices. This is indicated by the fact that Vietnam increased its export volume of coffee by 29% in 2001, while its export value was dropped by 20% due to the lowered export price of coffee. In order to improve the quality of coffee, MARD has paid special attention to optimization of planted area and introduction of Arabica coffee.

(3) Sector Share

Due to continuous industrialization, the tertiary sector of Vietnam expanded its share to 40%, while the primary sector reduced its share from 31% in 1990 to 21% in 2006. This resulted in the large income gap between urban and rural areas where 73% of the Vietnamese people live.

Under the pressure liberalizing international agriculture trade, it is necessary to expand production scale which enables more efficient and intensified agriculture production. However, the rural areas currently confront increasing poverty due to shortage of farm land and decreasing job opportunity.

(4) Promotion of Rural Industry

Industrialization is one of the main policies of Vietnam to achieve economic growth. In the past, both public and private investment contributed to large expansion of the tertiary sector. Activities concentrated more in the urban areas because of availability of man-power. In future, industrialization in the rural areas will become more important as it gives positive impact to the national economy. Local industry is expected to play an important role in creating job opportunity for rural population.

2.3 Economic Development

2.3.1 Socio-economic Development Strategy 2001-2010

The Government of Vietnam embarked on the economic reform under the *Doi Moi* policy in 1986. The national economy has been steadily growing at higher rate of 7 to 8% per annum especially after 1992, although it faced several difficulties in both international and domestic economy. The national economy of Vietnam suffered from the Asian monetary crisis in 1998 resulting in the lowest economic growth of 4.8% per annum in 1999 followed by crucial economic recession.

The economic recovery was initiated by rapid expansion of the external trade with crude oil, marine products, textiles and garments in 2000. In 2005 and 2006, the economic growth was over 8% per annum. Introduction of the company law in 2000 also encouraged investment in the private sector. Furthermore, Vietnam became WTO's member in January 2007. Vietnam is expected to continue expanding its share in the international trade together with economic reform in the domestic market. Urgent issues include improvement of chronic trade deficit, i.e. deficits of US\$ 4.56 billion in 2005 and US\$ 4.8 billion in 2006, and conditions of private investment.

The major objectives of the Socio-Economic Development Strategy (SEDS) for 2001-2010 include:

- 1) GDP will be doubled in 2020 compared to 2000.
- 2) Industrialization will be promoted with sector shares, i.e. 16% to 17% for agriculture, 40% to 41% for industry and mining and 42% to 43% for service.
- 3) Human Development Index (HDI) will be improved, i.e. 108th among 177 countries in 2005)
- 4) Population growth rate will be reduced 1.1% to 1.2%
- 5) The number of poor households will be reduced
- 6) Unemployment rate in urban area will be reduced to less than 5%.
- 7) Average life expectancy will be 71 years and more.
- 8) Quality of life will be improved.
- 9) More infrastructure will be developed

The strategies for agriculture sector are stipulated as follows:

- 1) Industrialization and modernization in rural areas (involving rural labor force in industrial sector and raising agricultural productivities).
- 2) Reforming the sector structure for appropriate production (food security and promotion of rice export, increasing cash crop production, increasing livestock sub-sector share, seeking export potential of fishery sub-sector, and promoting reforestation).
- 3) Strengthening of technology and improving extension quality.
- 4) Development of irrigation systems.

For the Northwestern Region, the following strategies are set:

- 1) Promotion of cash crops, fruits, medical trees and cattle raising
- 2) Promotion of micro-hydropower and rural electrification as well as supply of safe water
- 3) Security and economic development of border areas
- 4) Improvement of livelihood of ethnic minorities

2.3.2 Socio-economic Development Plan 2006-2010

Vietnam has achieved average economic growth as high as 7.5% per annum in five years from 2001 to 2005. Household income has also increased at 12.1% per annum in the same period. Indicators of poverty reduction such as HDI have shown good performance. The Government of Vietnam set up the new SEDP for 2006-2010, envisaging further reform of economic structures, more competitiveness in international trade, improvement of urban-rural imbalance, etc.

SEDP 2006-2010 makes much of further economic development, improvement of quality of live, and industrialization focusing on information technology (IT) development. The targets of SEDP are stipulated below.

- 1) GDP in 2010 will be increased 2.1 times as large as one in 2000.
- 2) Per capita economic growth will be 7.5% to 8.0%.
- 3) GDP in 2010 will reach 1,690 trillion to 1,760 trillion VND, which is equivalent to US\$1,050 to

US\$1,100 per capita.

- 4) Total population will be 89.0 million with an annual growth rate of 1.14%.
- 5) Poverty rate will be 10% to 11%.
- 6) Forestry coverage will be 42% to 43%.

SEDP emphasizes the development of the northern areas as well as mountainous areas with a special attention on food security, poverty reduction, economic imbalance, improvement of infrastructure, ethnic identity protection, and socio-economic development harmonized with environmental conservation. The development targets are;

- 1) Per capita GDP at US\$460 to US\$530
- 2) Sector share in GDP, i.e. 30% for agriculture, 29.8% for industry and construction and 40.2% for services
- 3) Reducing poverty rate of the Northwestern Region from 44% in 2005 to 24% by 2010

2.4 Agricultural Development and Resource Management

2.4.1 Agricultural and Rural Development Sector Plan 2006-2010

According to the Five Years Development Plan of MARD, the following overall objectives are stipulated:

- Sustainable and steady development of the sector,
- Improvement of social environment and living conditions of rural poor,
- Natural resource and environmental management through participatory approach,
- Institutional and legal reforms for public service improvement and capacity building of public administration

Detail strategies and indicators for each objective are summarized below.

(1) Sector Development in National Economy

Targets are set toward globalization and industrialization through expansion of cultivation areas, improvement of productivity, enhancement of international competition. It also emphasizes on export promotion through enhancement of forestry and NTFP production, registration of the trademarks and improvement of marketing system. As numeric targets, the sector GDP growth rate is set at 3.4-5% per annum, while maintaining crop production share at 60% of the sector GDP. In addition, targets are set with regard to introduction of science and technology into the sector and foreign direct investment. These targets are considered to undertake a driving force for agricultural modernization in Vietnam. The major strategies are listed below.

- 1) Implementation of agro-forestry and intercropping practices, and promotion of non-agriculture production,
- 2) Preparation of general conditions for introducing science and technology, improving production technique, expanding investment,

- 3) Establishment of quality control and marketing system for international markets.

(2) Poverty Reduction

The strategies include various supports for ethnic minorities and women, based on the results of precedent and on-going poverty reduction programs. In particular, these include the supports on rural infrastructure development in mountain areas and poor communes, agro-processing for diversified income sources, rural credit services and animal hygiene. The major strategies are follows:

- 1) Creation of job opportunities for raising rural income (supports for non-agricultural production activities),
- 2) Infrastructure development for the poor and preventive measures against natural disasters,
- 3) Human resource development to enable fair income distribution for ethnic minorities and women.

(3) Environmental Conservation

The strategies include implementation of environmental assessment, participatory natural resources management for their conservation and sustainable use. It is also mentioned that accountability is required for forest and water resource use in addition to drainage treatment in rural areas.

- 1) Efficient protection of diversified ecosystem through identification of environmentally important areas and resources,
- 2) Expansion of sustainable natural resource management through participatory approach, and establishment of environmental management system.

(4) Capacity Building of Public Administrations

The strategies mention about improvement of operation and maintenance, involvement of private sector, ownership creation for beneficiaries, in order to achieve institutional reform for more efficient and dynamic sector management. It is also stated that it is necessary to improve human and institutional frameworks so as to utilize ODA and foreign direct investment.

- 1) Preparation of guidelines for the sector development and human resource development
- 2) System Improvement (centralized information and data management system, establishment of project monitoring system, and computerized information management).

2.4.2 Five Million Hectare Reforestation Program (Program 661)

Five Million Hectare Reforestation Program is a national program for forest protection in Vietnam. This program was planned to succeed the former Program 327. Program 661 is divided into three terms. Overall target and targets of each term are shown in the Table 2.4.1.

Table 2.4.1 Targets of 5 Million Hectare Reforestation Program

Target	Whole plan (1998-2010)	Term-I (1998–2000)	Term-II (2001–2005)	Term-III (2006–2010)
Overall target	Recovery of 5.0 million ha forests	1.05 million ha	1.95 million ha	2.0 million ha
- New plantation	Establishment of production forests (3.0 million ha)	New plantation (0.7 million ha)	New plantation 1.3million ha)	New plantation (2.0 million ha)
- Forest restoration	Restoration of protection forests and special-use forests (2.0 million ha)	Supplementary planting and assisted natural regeneration (0.35 ha)	Supplementary planting and assisted natural regeneration (0.65 ha)	
Forest Coverage Ratio	43% (2010)			43% (2010)

Source: National Five Million Hectare Reforestation Program (1998 – 2010)

Chapter 3

Regional Vision

3.1 Introduction

The Northwestern Region seems not fully taking part in the recent economic development of Vietnam. However, this does not mean that its development potentials are limited. Several advantageous features and future prospects of the Region are pointed out by stakeholders including academic researchers who are knowledgeable about the Region. This Chapter summarizes the future prospects of the Region by referring to the existing information.

3.2 Regional Vision 1: Clean Energy Promotion Region

Due to the rapid increase of energy consumption in Vietnam in accordance with the significant economic progress and livelihood change in Vietnam, the electricity demands are expected to grow by eight times from 46,000 GWh in 2005 to 381,000 GWh in 2025¹. Vietnam is an oil and coal producing country, and most of the commercial energy in Vietnam depends much on the conventional thermal power generation by oil, gas and coal at this moment. However, the fossil fuel resources are likely to be depleted in the near future. From the viewpoints of energy security and the reduction of emission of carbon dioxide, the conventional thermal power generation should be replaced by the hydropower generation, and the renewable energies such as micro-hydro power, wind power, biogas, and photovoltaic power (solar power) should be developed².

Development of the renewable energy is an urgent task for Vietnam, and the Region has the significant potential for energy production, especially by hydropower. That is, the existing Hoa Binh hydropower station can generate approximately 43% (1,920MW) of the total power capacity of the Northeastern and Northwestern Regions in Vietnam. In terms of the power supply in Vietnam the Son La Dam (to be completed by 2012) will be added to generate 40% (11 billion kWh) of the total hydropower supply. The Region continues to have a potential for the energy sector development in Vietnam. Therefore, the conservation of the watersheds of the Da River and other watersheds should be included in the development plan of the Region in terms of sustainable energy production.

New alternative energy sources to fossil fuels should be developed and utilized to reduce the global warming and develop the sustainable society. Nearly 70% of Vietnam's population live in the rural areas, where biomass energies such as firewood, agriculture residues, and so on, are utilized as the main energy sources, as in case of other ASEAN countries. Development and efficient usage of biomass energies will be needed.

Recently, the *Jatropha curcas* L., namely Physic nut, has been getting considerable attention in Vietnam as

¹ The Study on National Power Development Plan for the Period of 2006-2015, Perspective up to 2025 in Vietnam, Final Report (JICA, 2006)

² The 6th Power Development Plan (PDP)

a biodiesel source. Biodiesel produced from the seed oils of *Jatropha curcas* L. seeds has been developed and utilized in many countries such as India and Malaysia. In Vietnam, “Project proposal on development of biofuel until 2015 and vision to 2025” (Prime Minister’s Decision No. 177/2007/QĐ-TTg) was launched in November 2007. According to this Decision, MARD issued “Minister’s Decision No. 1842/2008/QD-BNN-LN concerning the approval of the program on research, development and product use of *Jatropha curcas* L. in Vietnam in period 2008-2015 and vision until 2025” in June 2008.

Approximately 40% of the lands in the Northwestern Region are registered as the forest lands. However, many parts of the forest lands have been converted to treeless, denuded lands by excessive slash-and-burn activities. Conservation of the Da River watershed has been sought to prevent from soil sedimentation to the Hoa Binh Dam Reservoir and newly developing Son La Dam Reservoir from their upstream. As many parts of the Region are located in the high-elevated areas, the suitable tree species for the Region are limited in number. *Jatropha curcas* L. can be one of the well-grown tree species in the mountainous areas up to 1,400 m a.s.l. Moreover, they can generate income for the rural residents as they bear fruits from a year after planting³.

If the Da River watershed conservation and biomass energy development are undertaken as government support, the Northwestern Region will be developed as a leading area of a sustainable environmentally-sound and clean-energy-production in the future (Figure 3.2.1).

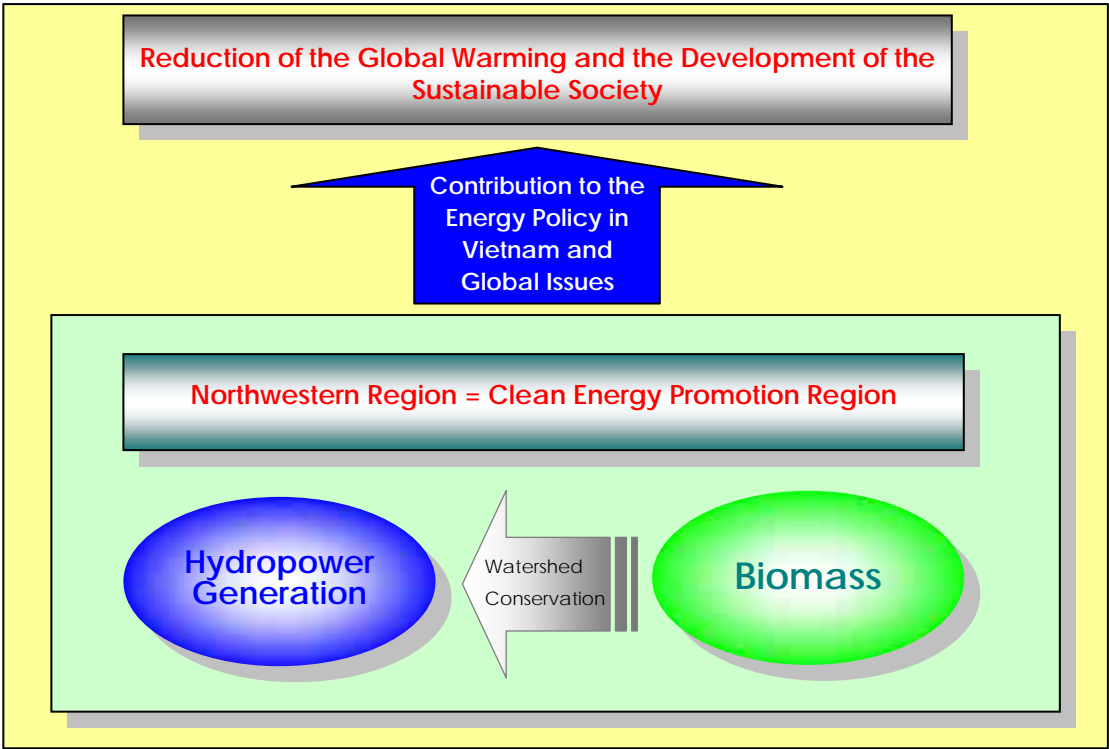


Figure 3.2.1 Basic Concept for the Clean Energy Promotion Region

³ Strategy of Jatrofa development (Draft) (MARD, 2008)

3.3 Regional Vision 2: Supplier of Safe Food

Safe foods currently have high added values in the international markets. Food safety has become one of the worldwide topics under the globalization of food trade. Agricultural sectors of the exporting countries are facing challenges of how to convince confidence consumers about the safety of perishable foods such as vegetable, fruits and sea foods, and processed foods including frozen foods produced in their countries. All the stakeholders in Vietnam including the government, private enterprises and farmers are keen on this issue so that it can maintain its position as one of the leading food exporters in the international markets.

Da Lat of Lam Dong Province is well-known as the leading producer of safe vegetables with cool climate and rich soils for horticultural farming. Currently, some 800,000 tons of vegetables are produced under a modern farming system of 29,000 ha with greenhouses and irrigation facilities. Vegetables produced there widely penetrate into not only domestic markets but also international markets after being processed. In recent years, private enterprises are interested in investment in production of safe vegetables, taking into account sharply growing demands in Japan, Korea, Taiwan, Europe and America. The marketing support by the Government has resulted in expansion of vegetable production.

New market trend is also recognized in food processing. Food manufactures often move their factories from China to Vietnam. Japan rapidly increased food import from Vietnam in 2000, and reached JPY 2.3 billion or 330 billion VND in 2004. Safe vegetables from Da Lat are sold at higher prices, i.e. some 15% higher than the average retail prices, in large domestic markets such as Ho Chi Minh City and other major urban areas.

Vegetable production in the Northwestern Region is currently limited only to 1.6% of the total national vegetable production. However, vegetables produced in the Region have comparative advantage in terms of food safety. Use of agro-chemicals in the Region is very limited. No signs of air and water pollutions were found in the Region. These conditions can appeal to consumers with a brand image of clean and safe vegetables from the Region. This is a significant advantage when their marketing strategy is established.

The Region has another advantage in cropping patterns differed from the ones in the south and central Vietnam. Compared to other regions in Vietnam, climatic conditions with lower temperature allow the farmers in the Northwest Region to grow different vegetables or the same vegetables as those grown in other regions, but in different seasons.

Poor accessibility often hinders long transportation of vegetables from remote areas in the Region. Water transport will change the flow of vegetable distribution patterns after the completion of the Son La Dam. Vegetables produced in the areas surrounding the dam reservoir can be transported to the Dien Bien airport, which links with major cities of Vietnam as well as international markets through Hanoi.

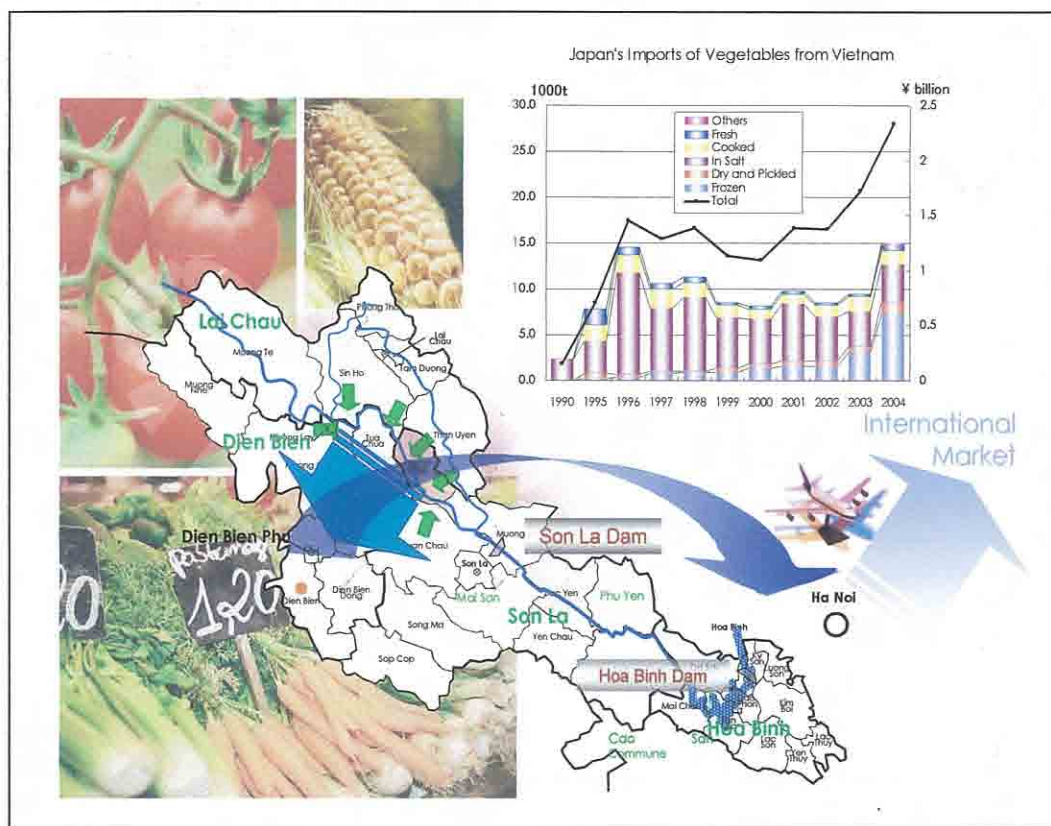


Figure 3.3.1 Promotion of Safe Vegetables in the Region

MARD embarked on a nation-wide promotion program of safe vegetables, which covers 28 provinces consisting of 22 in the south and 6 in the north. Under the program, MARD recommends GAP (Good Agricultural Practices) and IPM (Integrated Pest Management). The appropriate farming guidelines were prepared for eight horticultural crops such as sweet corn, baby corn, cabbage, tomato, French beans, cucumber, pea and melon.

To promote globalization of vegetables of the Region, integrated supports will be required. For instance, official certificate of safe vegetables whose chemical analyses are done at authorized laboratories will be compulsory when they are exported to international market. The government support for farmers will also be required to settle additional costs associated with safe vegetable production.

3.4 Regional Vision 3: Diverse Regional Resources

People of the Region have maintained their traditional livelihood and culture for long period by adapting their life styles to natural conditions.

The Region is characterized by scattered pieces of farmland on rolling hills and mountains. The Region is not so suited for crop production and animal husbandry in general. However, it does not mean that the development potentials of the Region are limited. Local farmers have utilized local resources of the Region under a re-cycle system to a certain extent (Figure 3.4.1). Yet, it is necessary to re-assess the local resources with a strategic view to encourage the local economic activities.

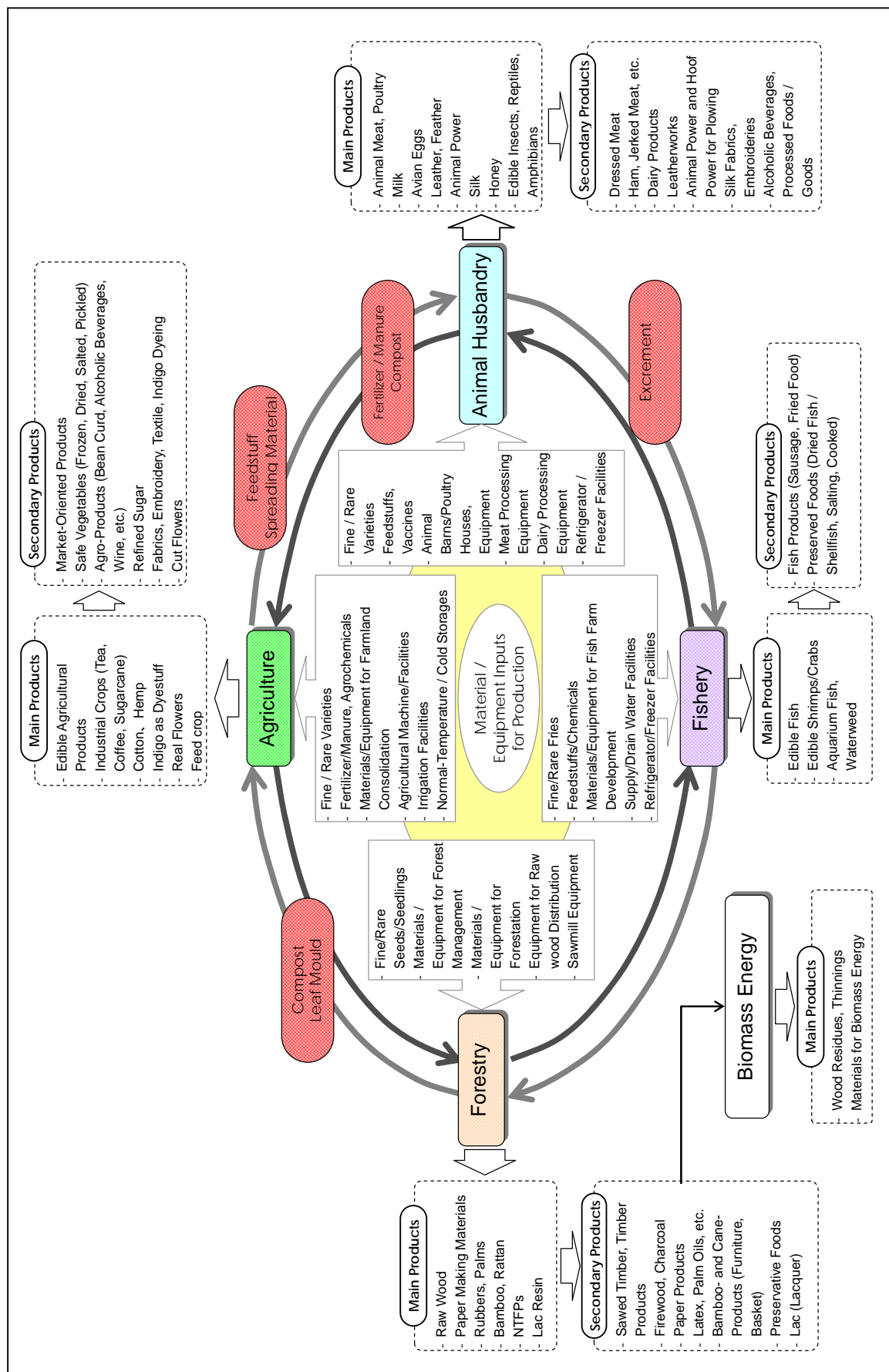


Figure 3.4.1 Concept Drawing on Recyclable Resource Production Systems

The regional resources are categorized broadly into two, namely a) fixed resources such as nature, culture and people that exist and are utilized within a region and b) mobile/non-fixed resources such as agricultural products, industrial products, etc. that are utilized outside a region. The fixed resources of the Region are represented by huge natural forest extending over the tropical forests in the Vietnam's Annamites Mountain Range (enormous biomass resources and sustainable water resources). In addition, the Region is endowed with rich mining resources. Cultural and human resources derived from 23 ethnic minorities are noticeable. Their cultures and customs including traditional arts are precious resources and heritage in the Region.

Diverse local resources in the Region are identified as presented in Table 3.4.1.

Table 3.4.1 Opportunity of Regional Resource Development

Category of Resources	Resources	Opportunity of Regional Resource Development
Fixed Resources		
Indigenous Resource	Climate	Cool climates compared to the southern Vietnam providing opportunities in more varieties of crop selection and also potential in tourism development
	Geography and Topography	Favorable locations for border trade with China and Laos providing opportunities for expansion of export-oriented products. Tourism spots close to Sa Pa connecting Lao Cai and further China. High elevation providing opportunity in more varieties of crop selection.
	Human Resources	Population inflow to rural urban centers providing opportunity for establishment of new industries
Natural Resources	Primary Resources	Bio-diversity with rare species of fauna and flora as scarce gene resources
	Secondary Resources	Forests play important roles in watershed conservation for preservation of water resources and their long-term use. They also provide diverse development opportunities for production of timbers and NTFPs and function as supplier of forest by-products and organic matters such as plant residues and litters with value of biomass energy.
	Wildlife	Ecology with rare species of fauna and flora provides chances for eco-tourism for trekkers apart from their value of scarce gene resources from academic viewpoint
	Energy Resources	Renewal energy, i.e. micro-hydropower, solar, wind, etc.
	Water Resources	Clean-water-flowing three major rivers including the Da River provides development opportunity not only for drinking water but also for semiconductor chip manufacturing and hydropower. Dam lakes for fishery and tourism development.
	Environment	Mountainous landscape with terraced farmland has high value for tourism development. Rich nature in mountains and rivers attracts urban people.
Historical Resources		War memorial spots in Dien Bien have high value for tourism development. They already attract over 200,000 tourists yearly.
Culture and Social Resources		Traditional cultures of 23 ethnic minorities have strong potential for further economic development, i.e. handicraft, rural industries, tourism, etc.
Architectural Resources		Traditional houses of ethnic minorities can be utilized as guesthouses and restaurants, and existing mountain paths can be developed as trekking paths. Duty free shops and shopping centers can be attached around the border gate for the sales of local products.
Human Resources	Technology	Traditional technologies including weaving, food processing, etc. are suited to local conditions. With some improvement, their productivities and quality of products will be improved.
	Related Resources	Traditional mutual assistance, linkage between communities and communication network among communities can be utilized for distribution of information for development activities.

Information Resources	Social capitals including norms and rules in local communities are important when development activities are introduced, e.g. organizational set-up for land and water resource development.
Fluid/Non-Fixed Resources	
Local Products	Industrial crops such as tea, coffee and sugarcane can be processed for further products such as bottled soft drink, instant coffee, etc. The Region has already local brands such as Dien Bien rice and Moc Chau dairy products. Bamboo pulps are locally produced in Dien Bien. In recent years, export of agro-products is increasing. Major export crops are litchi and cardamom for China. In addition, sericulture and apiculture are also encouraged. As the Region is rich in varieties of sub-sectors such as agriculture, forestry, animal husbandry, and inland fishery, such resources-combined products can be developed. Differential products or brands can also be developed. For instance, embroidered packaging for local products is worth consideration.
Transitional Products	Lumber from thinning and scrap wood can be utilized to make various goods. By-products and plant residues/remnants can also be used for various purposes, i.e. bagasse and sugarcane tops for animal feed, coffee shells, straw and husks. Organic matters in forest areas can be utilized for organic farming for safe vegetables, etc.

For successful development of local resources, outsiders' observation is also important. Moreover, intervention of private investors will accelerate the resource development of the Region. For instance, the bio-fuel businesses are encouraging the development of regional resource, i.e. cereals and sugarcane, in Hoa Binh province. For regional resources development, it is increasingly important to involve private sector. (Figure 3.4.2).

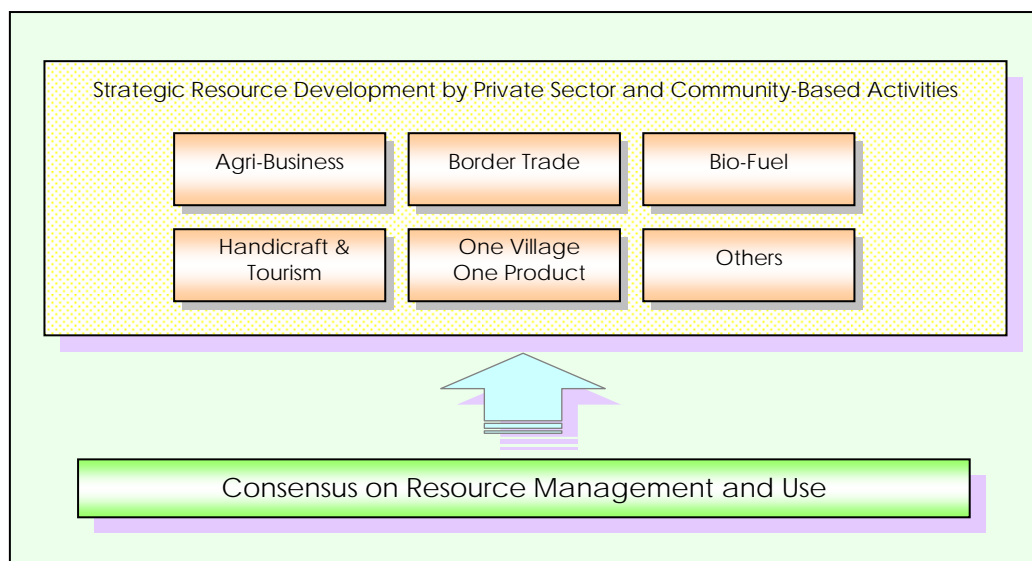


Figure 3.4.2 Strategic Resource Development

Expansion of micro-enterprises for agri-business, which have more market information of agro-products, will also accelerate the resource development of the Region. Introduction of new industrial crops is awaited in addition to the traditional ones such as tea and coffee. Food processing (boiled bamboo, wine and starchy food) and NTFP (lac, rattan, mushroom, paper, etc.) will be potential resources for private investment in the Region.

Bio-fuel business is also promising in the Region. One of Japanese NPOs plans to plant *Jatropha* for some

20,000 ha in Vietnam. Border trade is another advantage for development of local resources in the Region, while it requires strategic view point for marketing in China and Laos.

Community-based local industries including handicraft industry has strong potential for rural industrialization and job creation. It is important for the Government to provide a wide range of supports to the handicraft industry, i.e. development of high value-added products, registration of product trademark, marketing, etc. Development of handicraft industry will be more effective in collaboration with rural tourism development, which requires providing services and products to meet tourists' needs.

However, regional resource development requires a mechanism that can be harmonized with local beneficiaries, sustainable use of the limited resources. Thus, the government responsibility in resource management will be increasingly important.