

**MINISTRY OF AGRICULTURE
REGIONAL GOVERNMENT OF AYACUCHO**

**THE STUDY
ON
THE PROGRAM OF RURAL DEVELOPMENT FOR
POOR PEASANTS AND LOCAL CAPACITY STRENGTHENING
IN
CENTRAL HIGHLANDS**

REPUBLIC OF PERU

FINAL REPORT

SUMMARY

AUGUST 2010

JAPAN INTERNATIONAL COOPERATION AGENCY

**NIPPON KOEI CO., LTD.
KRI INTERNATIONAL CORP.
NIPPON KOEI LATIN AMERICA-CARIBBEAN CO., LTD.**

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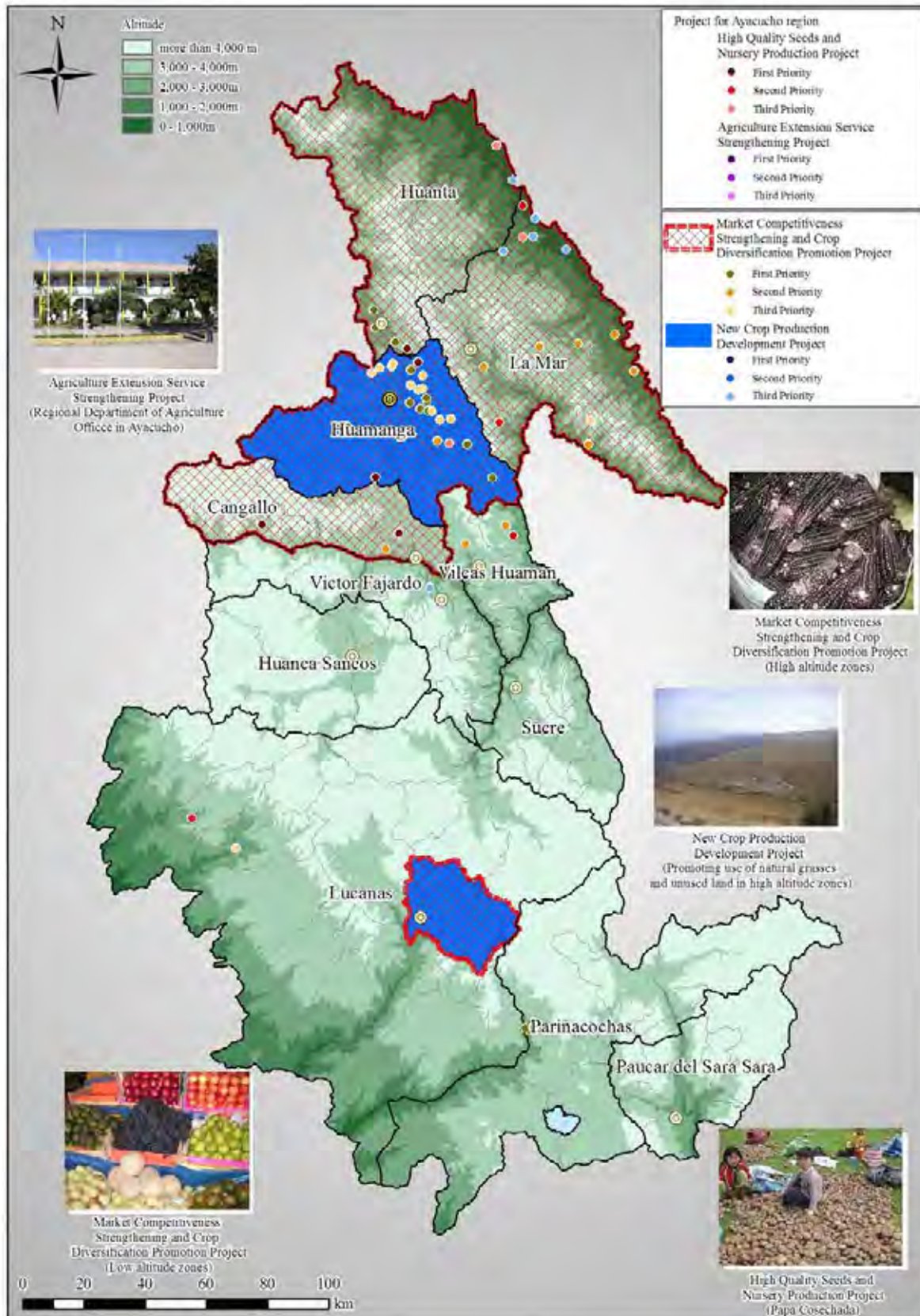
Study Area (Ayacucho Region)

List of Development Projects for Livelihood Improvement

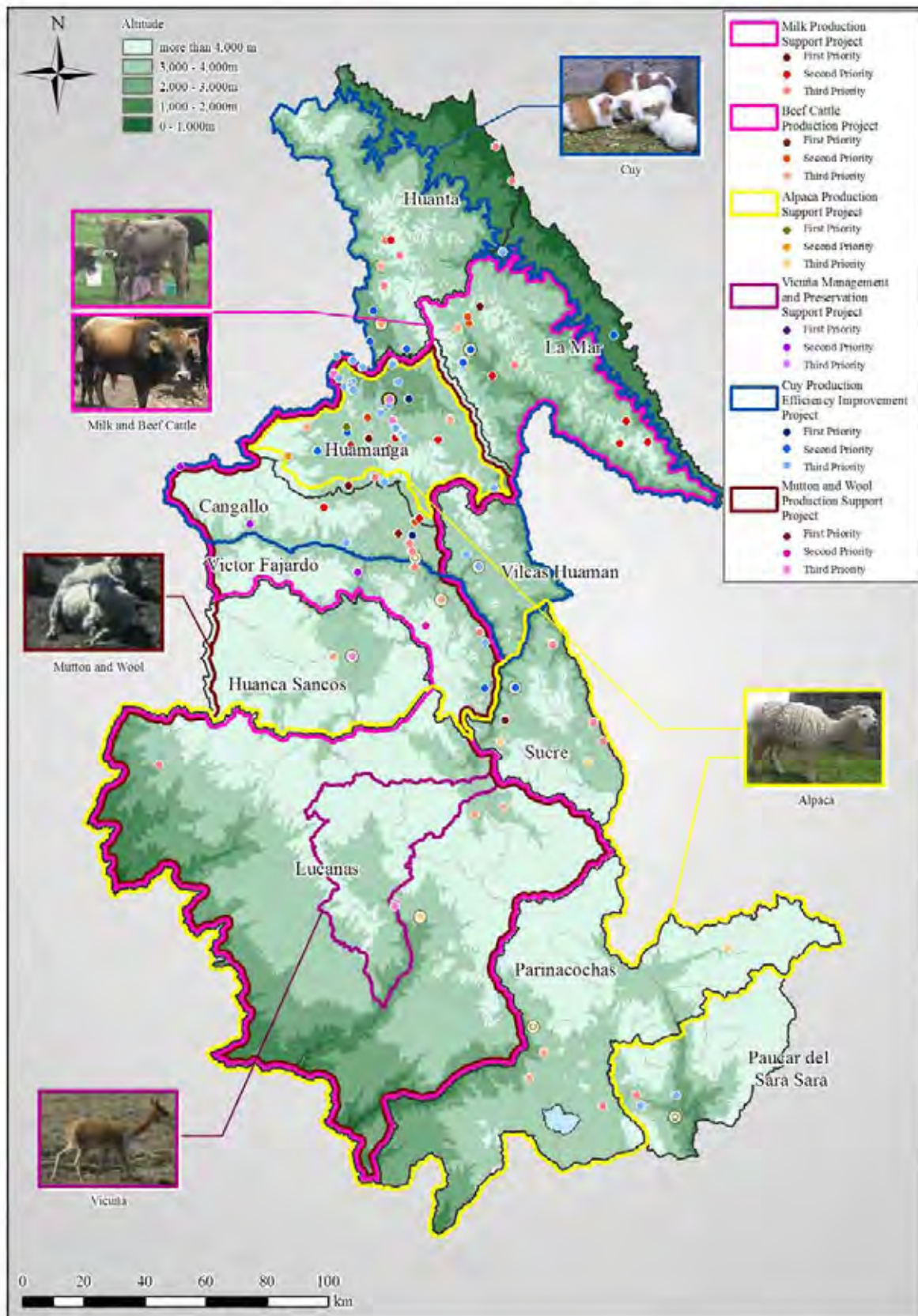
Sector	Project Code	Project
(a) Farming/ Extension	I-(a)- 1:	High Quality Seeds and Nursery Production Project
	I-(a)- 2:	Market Competitiveness Strengthening and Crop Diversification Promotion Project
	I-(a)- 3:	New Crop Production Development Project
	I-(a)- 4:	Agriculture Extension Service Strengthening Project
(b) Livestock	I-(b)- 1:	Milk Production Support Project
	I-(b)- 2:	Beef Cattle Production Project
	I-(b)- 3:	Alpaca Production Support Project
	I-(b)- 4:	Vicuña Management and Protection Support Project
	I-(b)- 5:	Cuy Production Efficiency Improvement Project
	I-(b)- 6:	Mutton and Wool Production Support Project
(c) Inland Fishery	I-(c)- 1:	Inland Fishery Support Institution Capability Strengthening Project
	I-(c)- 2:	Extension System Establishment Project for Small-scaled Aquaculture Production Organization
	I-(c)- 3:	Small-scaled Aquaculture Pond Construction Project
(d) Reforestation/ Environmental Conservation	I-(d)- 1:	Reforestation Plan Preparation Project
	I-(d)- 2:	Production Forestry Creation Project
	I-(d)- 3:	Agroforestry Support Project
(e) Irrigation	I-(e)- 1:	Cuchoquesera Dam Emergency Discharge System Construction Project
	I-(e)- 2:	Ingalla Dam and Irrigation Canals Construction Project
	I-(e)- 3:	Expansion and Improvement Project of Secondary Canal in Tambillo No. 7 Irrigation Unit, Stage II in the Ex PERC Irrigation System
	I-(e)- 4:	New Construction and Expansion Irrigation Project
	I-(e)- 5:	Existing Irrigation Improvement and Rehabilitation Project
	I-(e)- 6:	Technical Irrigation Project
	I-(e)- 7:	Irrigation Basic Information and Database System Building Project
(f) Road	I-(f)- 1:	Road Infrastructure Development Project
	I-(f)- 2:	Acos Vinchos District Main Road Improvement
	I-(f)- 3:	Vilcanchos-Ccaruaccocco District Main Road Construction Project
	I-(f)- 4:	Ayahuanco-Sntillana-Llochegua District Main Road Construction Project
	I-(f)- 5:	Community Roads Participatory O&M Promotion Project
	I-(f)- 6:	Road Improvement and O&M Strengthening Project
(g) Agricultural Production Distribution/ Agro-processing	I-(g)- 1:	Market Distribution System Establishment Project for Agriculture Production
	I-(g)- 2:	Distribution Infrastructure Construction Promotion Project
	I-(g)- 3:	Agro-processing Industry Promotion Project
(h) Institutional Building	I-(h)- 1:	Support Capability Strengthening Project for Production Organization by Local Government
	I-(h)- 2:	Promotion Capability Strengthening Project for Public Investment Works by Local Government

List of Development Projects for Vulnerability Mitigation

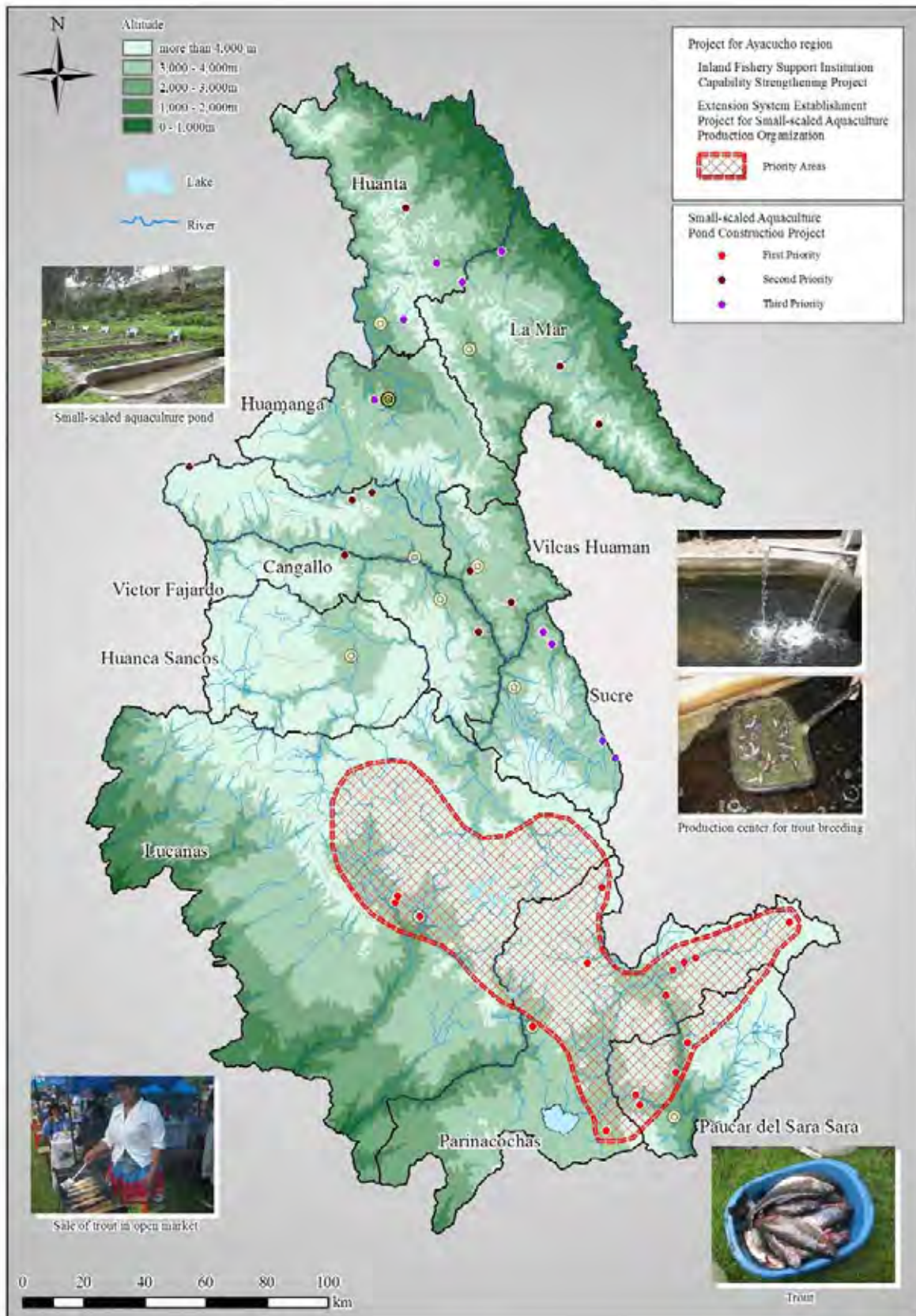
Sector	Project Code	Project
(a) Vulnerability Measures	II-(a)- 1:	Basic Information Arrangement Project for Vulnerability Mitigation Capability Building
	II-(a)- 2:	Climate Monitoring Strengthening and Observation Network System Establishment Project for Vulnerability Mitigation Capability Building
	II-(a)- 3:	Community Vulnerability Mitigation Capability Building Project
	II-(a)- 4:	Urgent Rehabilitation Project for Frequent Disaster Occurrence Roads
(b) Reforestation/ Environmental Conservation	II-(b)- 1:	Soil Conservation Measure Project
(c) Irrigation	I-(e)- 1:	Cuchoquesera Dam Emergency Discharge System Construction Project
	I-(e)- 2:	Ingalla Dam and Irrigation Canals Construction Project
	I-(e)- 3:	Expansion and Improvement Project of Secondary Canal in Tambillo No. 7 Irrigation Unit, Stage II in the Ex PERC Irrigation System
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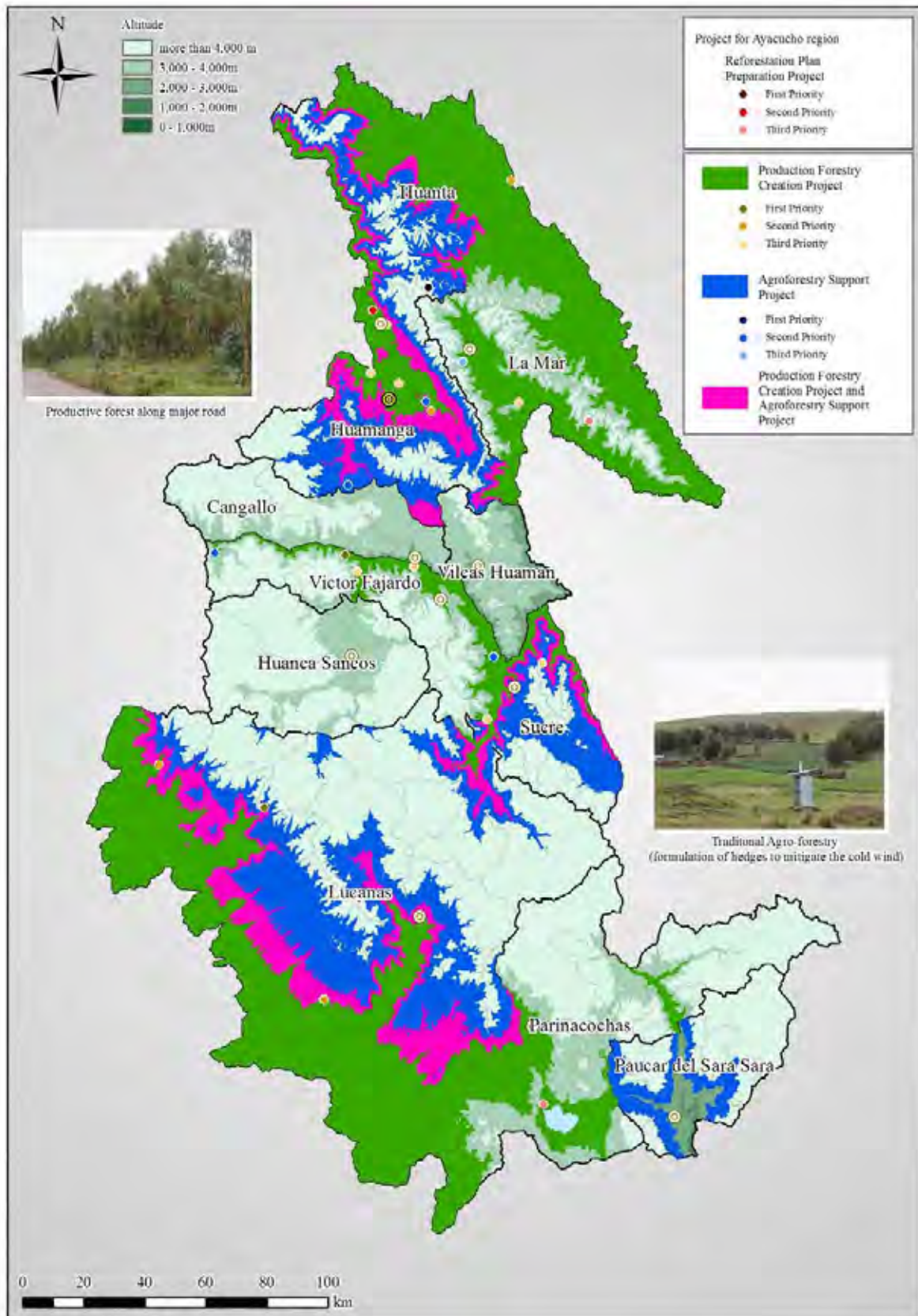
**Regional Development Map by Sector
(Farming / Extension)**



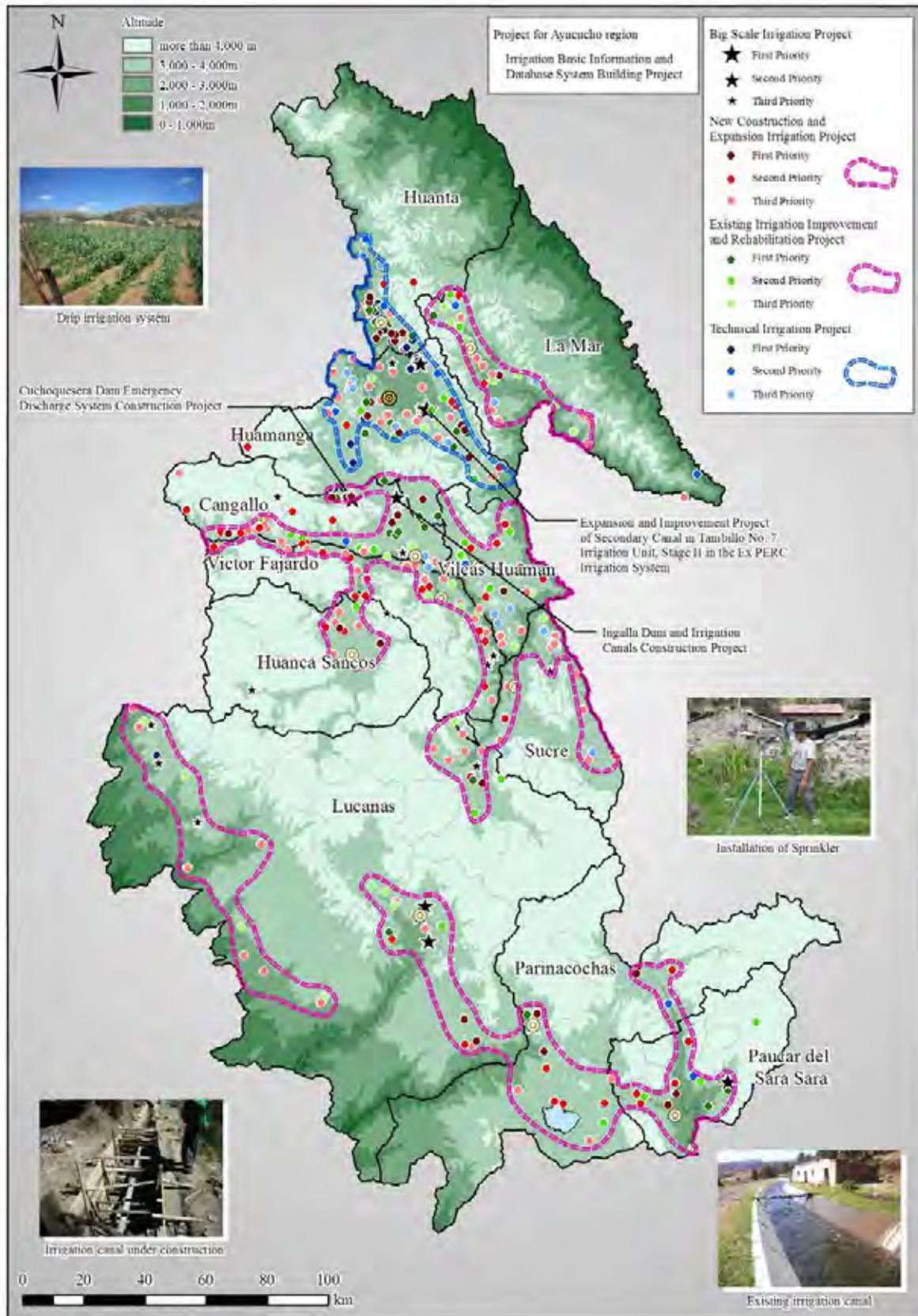
**Regional Development Map by Sector
(Livestock)**



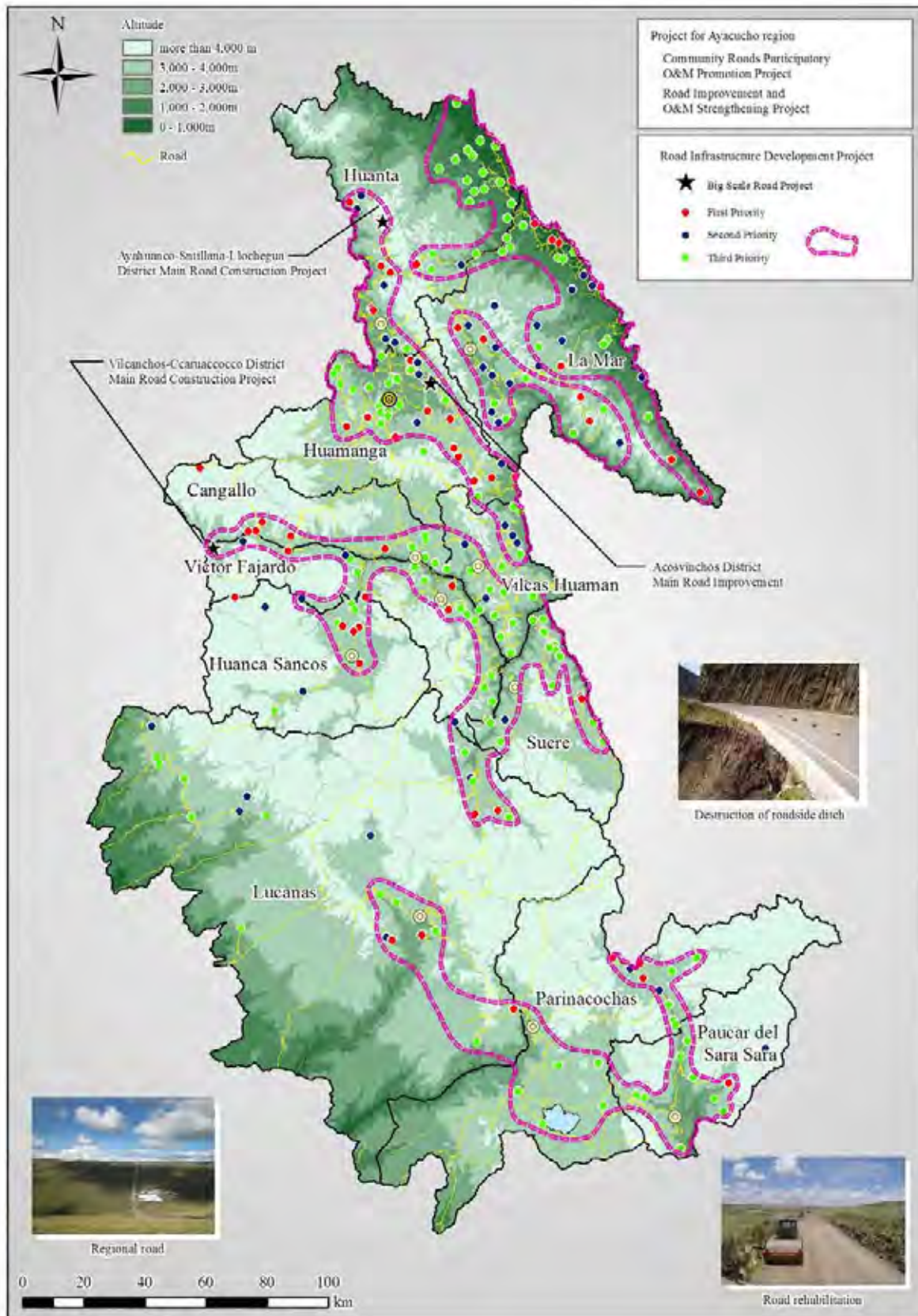
**Regional Development Map by Sector
 (Inland Fishery)**



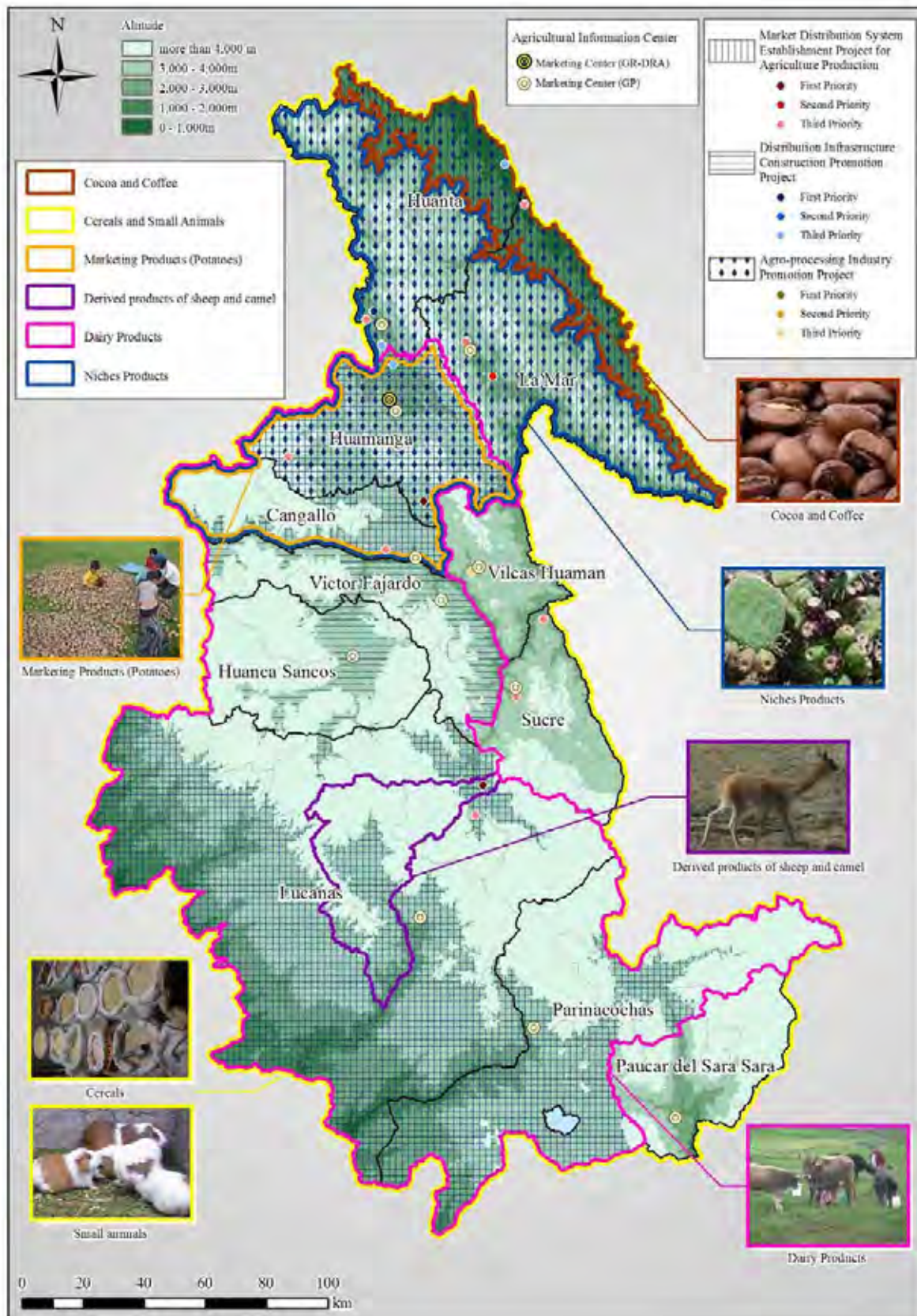
**Regional Development Map by Sector
(Reforestation / Environmental Conservation)**



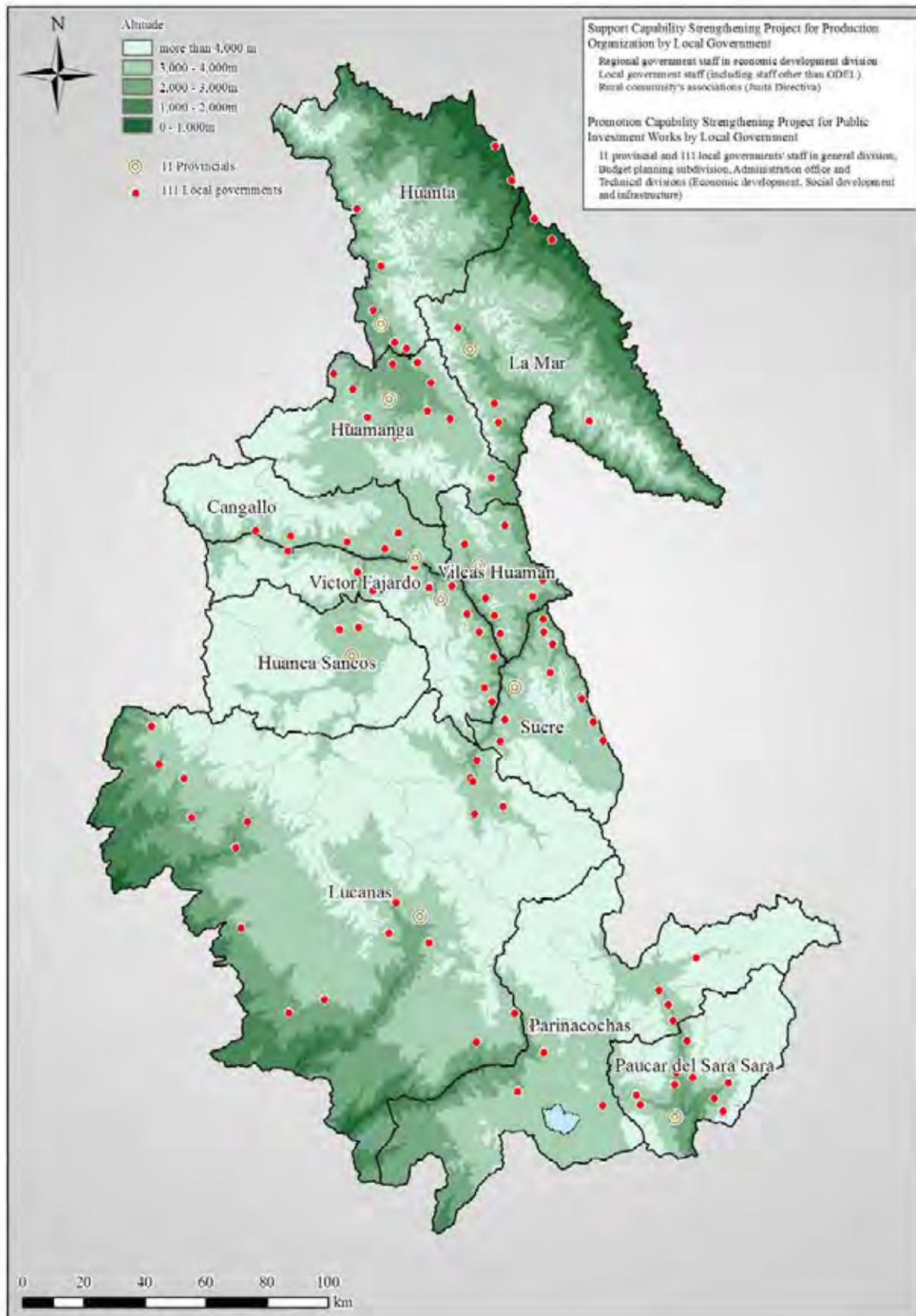
**Regional Development Map by Sector
(Irrigation)**



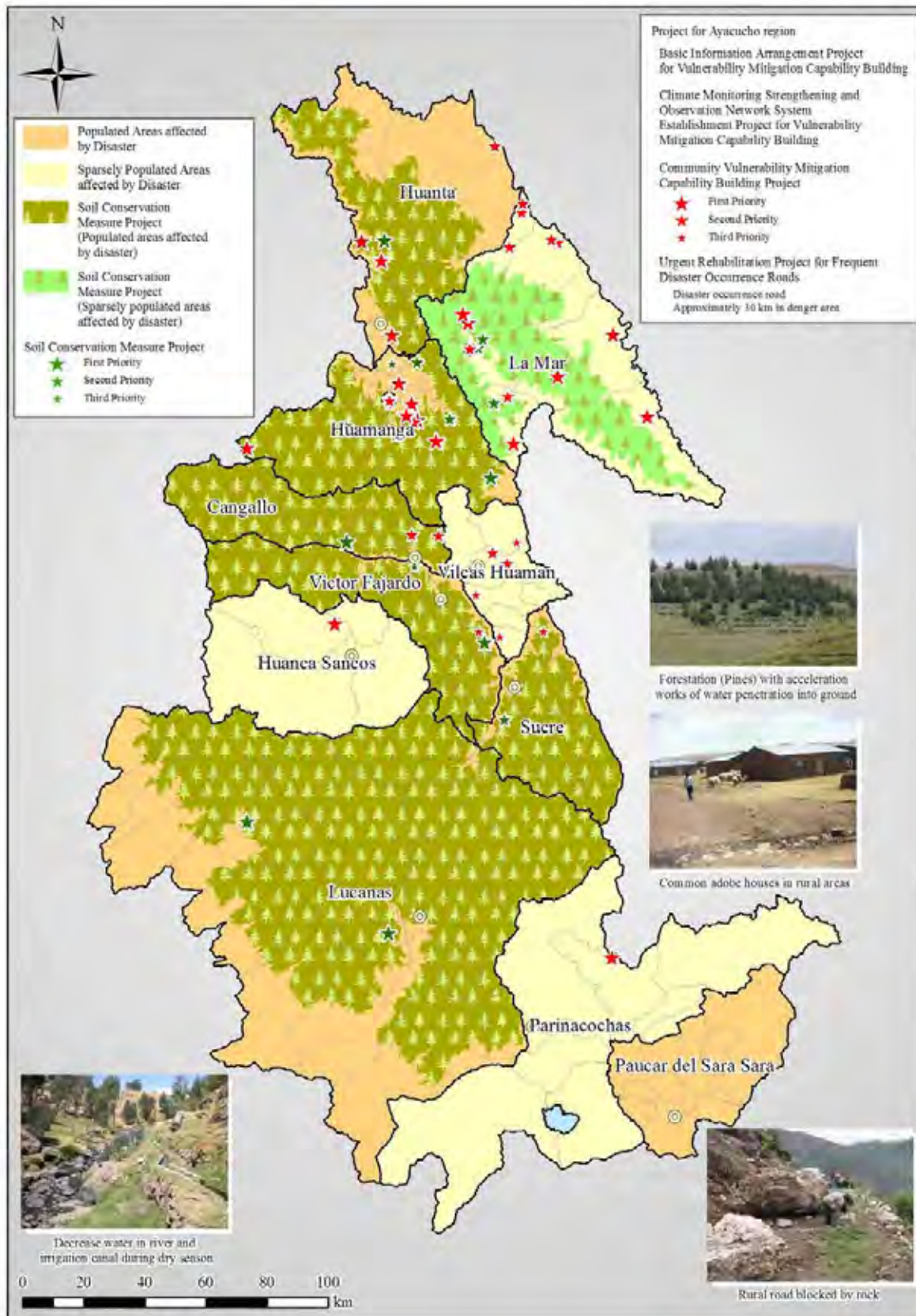
**Regional Development Map by Sector
(Road)**



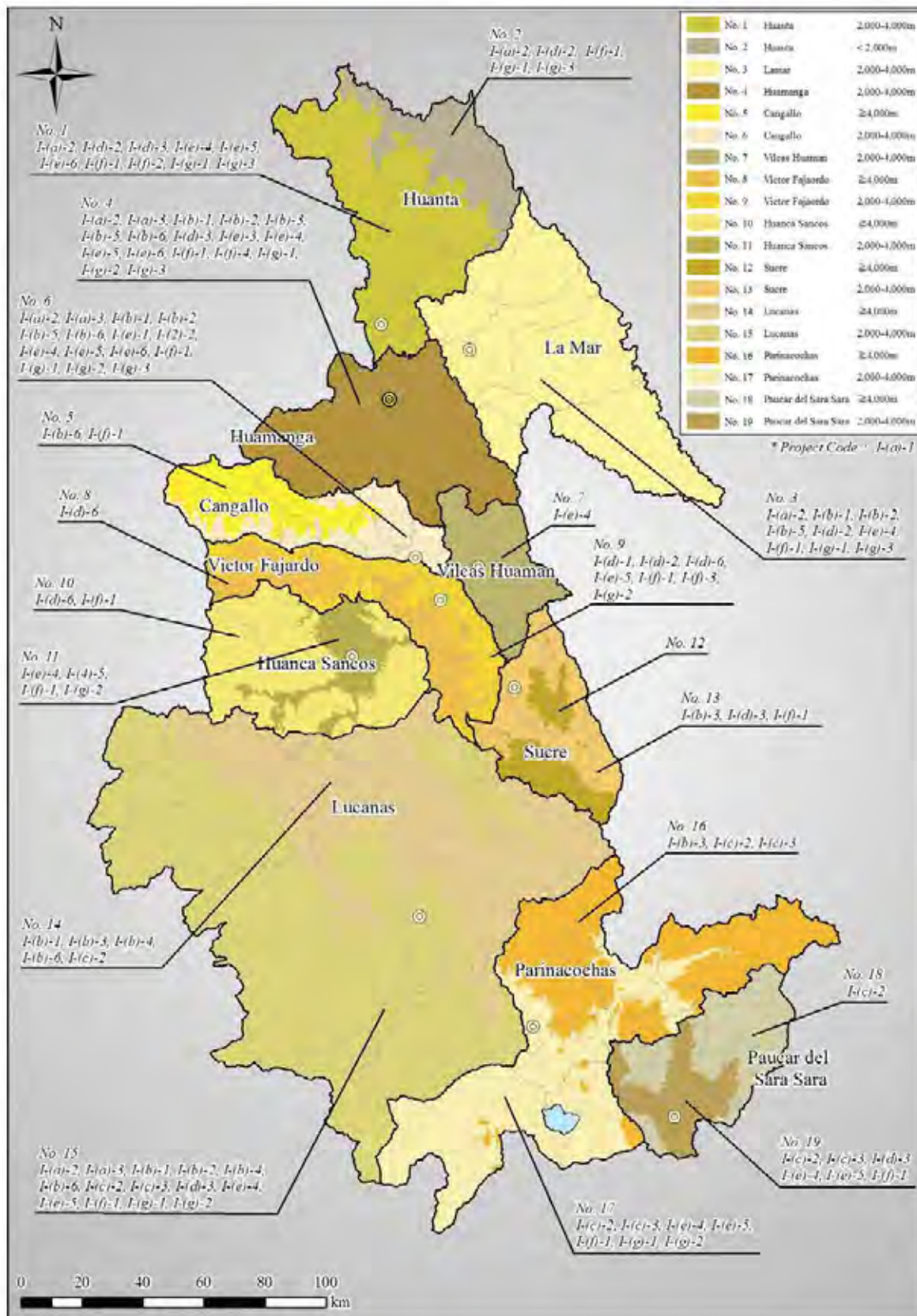
**Regional Development Map by Sector
(Agricultural Production Distribution / Agro-processing)**



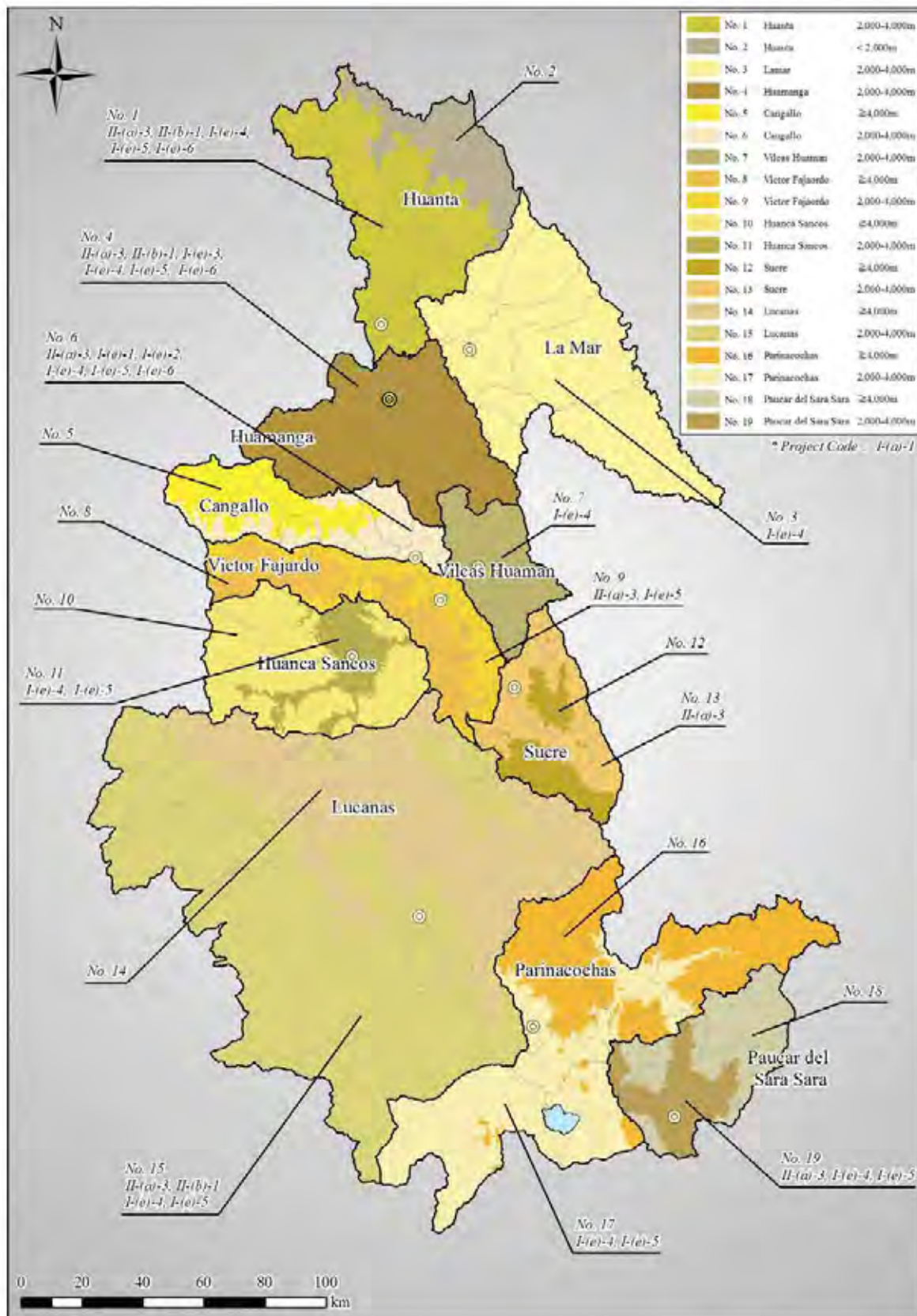
**Regional Development Map by Sector
(Institutional Building)**



**Regional Development Map by Sector
(Vulnerability Measure)**



Map of Elevation-wise Livelihood Improvement by Region



Map of Elevation-wise Vulnerability Mitigation by Province

The Study
on
The Program of Rural Development for Poor Peasants
And
Local Capacity Strengthening in Central Highlands

Final Report

Executive Summary

1 Introduction

1-1 General (1.1)

This report relates the Master Plan and the Action Plan on the Study on the Program of Rural Development for Poor Peasants and Local Capacity Strengthening in Central Highlands (the Study), in accordance with the Scope of Works exchanged between the Government of Peru (GOP: Ministry of Agriculture (MOA), International Cooperation Agency of Peru (APSI) and Regional Government of Ayacucho (GRA)) and Japanese International Cooperation Agency (JICA) on December 12, 2008.

1-2 Background (1.2)

GOP declares the growth accompanying the employment and poverty reduction in the rural area as the center pillar of important policies of the country and thus promotes the rectification of regional disparities and poverty reduction in the Sierra area. Under such policy, GOP requested the Government of Japan (GOJ) to provide the Study for the Ayacucho Region which belongs to the higher poverty category in the Sierra area. In reply to this request, the Scope of Works (S/W) was exchanged on December 12, 2008, and the Study Team was hereby dispatched to Peru on March 14, 2009.

1-3 Purpose of the Study (1.2)

- (1) To formulate the program of the rural development for the poor peasants and the local capacity strengthening in the central highlands with the purpose of linking the poor peasants with local, regional, and central markets to improve their income, activity and life, and
- (2) To carry out capacity development of Peruvian counterpart personnel in the course of the study so as to manage and coordinate the implementation of the above program.

1-4 The Study Area (1.3)

The Study Area is the Ayacucho Region consisting of 11 provinces and 111 districts.

2 National Policy on Poverty Reduction and Decentralization

2-1 National Policy on Poverty Reduction (2.3)

The present government regarded the poverty reduction as the most important issue and worked out the CRECER program clearly showing the guiding principle which the poverty reduction/social development program aims at, putting the foundation on the basic policy

stated in the National Plan of Poverty Reduction 2004 -2006 prepared previously. In line with this guiding principle, the government aims to accomplish the “vertical adjustments” (adjustments of the roles among the governments in the ongoing process of decentralization) and the “horizontal adjustments” (adjustments in the diverse programs for poverty reduction and social development conducted by different agencies).

2-2 National Policies on Decentralization (2.4.1, 2.4.2, 2.4.3, 2.4.4)

In July 2002, the Decentralization Basis Act was enacted, starting the current decentralization process. The current sub-national administration responsible for local administration has two levels: the regional government and local government. The local government is further composed of provincial municipalities and district municipalities. In October 2006, the 20 measures of decentralization were announced, so that its course became clear. Thus, it could be said that the decentralization has steadily progressed. In order to raise the administrative execution capability, the transference of financial resources is also made, which is necessary for administrative execution and preparation and enforcement of capacity development plan for local governments. On the other hand, there is the problem in the transference of financial resources, which the inequitable distribution of mining royalty having comparatively high occupation in annual revenue for local governments, brings about the disparity of public finance among them.

3 General Conditions of Ayacucho Region and Development Plans

3-1 Natural Conditions (3.1.1)

Ayacucho Region is located at the foot of the Andes Mountains. Seventy five percent of the region is located at high land more than 3,000 m in elevation, and 65% of the region belongs to the steeply sloped area with more 15%. The climate of Ayacucho Region shows the diversity by elevation, and is classified into the following 6 categories:

Climatic Classification of Ayacucho Region

	Climatic Classification	Elevation (m)	Characteristics
1	Steppe Climate	2,000 ~ 3,000	Annual Rainfall: 50 ~ 250 mm Average temperature in summer: 15°C Winter season (Apr.-Sept.) is cold and sunny, but summer season is cloudy.
2	Boreal Climate with a Dry Winter	3,000 ~ 4,000	Rainfall in summer season ranges 200 ~ 400 mm, and winter season is dry. Average annual temperature is 7°C ~ 11°C with severe cold. It is seen at eastern sloped and western sloped areas of the Andes Mountains.
3	Highland Climate	Andes Highlands 4,000 ~ 5,000	Annual rainfall: 400 ~ 900 mm. Average annual temperature is less than 7°C. Due to highland dry climate, daytime has high insolation and the maximum temperature is 18°C. In winter season, there are often severe cold.
4	Highland Ice and Snow Climate	≥5,000	In this area, rain water is stored in rainy season, and water by thawing of snow flows into river. This is important source for irrigation and domestic water.

	Climatic Classification	Elevation (m)	Characteristics
5	Temperate Climate with a Dry Winter	2,000 ~ 3,000	Rainfall in summer season ranges from 300 to 1,000 mm, and that in winter season is less. Average annual temperature is 9°C ~ 18°C. This climate occurs at ravine of eastern side of the Andes Mountains.
6	Savanna Climate	Apurimac River ravine	Rainfall in summer season is beyond 1,200 mm, and that in winter season is less. Average annual temperature ranged from 18°C to 24°C.

Source : Plan Vial Departmental Participativo Ayacucho

The Regional Government of Ayacucho (GRA) prepared the production potential map based on the natural conditions. The production potential was evaluated using 3 indexes of soil conditions, slope and elevation, so that the region was classified into 18 areas. In the Study, these 18 areas were further studied and re-classified into 8 areas from the categories of agriculture, livestock, forestry and protection use. As a result, the high potential area for agriculture use was estimated at 1,960 km², even including the area presently cultivated in the protection area, it came to 4,192 km², equivalent to only 9.6% of the total regional area. The Huamanga and Lucanas Provinces were categorized as high potential area for agriculture use, but as in the Victor Fajardo, Huanca Sancos, and Sucre Provinces there exist much high potential areas for livestock although being no potential for agriculture use.

3-2 Economic Conditions (3.1.2, 3.1.3, 3.1.4)

GDP of Ayacucho Region in 2007 was estimated at S/1,457 million at 1994 constant price. This was equivalent to 0.84% of the national GDP. The average annual growth rate of the country from 2005 to 2007 was 8.30%, but that of Ayacucho Region was 13.55%. Such high growth rate was caused mainly due to the mining sector (108.5%), construction sector (13.2%) and agriculture sector (11.5%). The agriculture sector contributes to 25.3% of GDP and plays an important role on economic activities in Ayacucho Region. The population of Ayacucho Region has increased with annual average growth rate of 1.3% for 10 years from 2000 to 2009, and has come to approximately 643,000 in 2009. However, that of 5 provinces located at central region of Ayacucho has decreased during the same period. Agriculture in Ayacucho Region is largely classified into some sub-sectors such as fishery (inland fishery), livestock, and crops including forestry. The growth rate of agriculture sector was about 31% from 1996 to 2007. As for sub-sectors, the growth rate of crop sub-sector (47%) and that of livestock sub-sector (85%) is conspicuous. On the other hand, the inland fishery centering on aquaculture of rainbow trout is so small in operation size and its total production is considerably small, too.

3-3 Comprehensive Development Plan of Ayacucho Region (3.2)

GRA prepared the “Comprehensive Development Plan of Ayacucho Region 2007-2024 (PDRC; so-called Wari Plan) in November 2007. This Comprehensive Development Plan is composed of 4 steps. In particular, the Step 4 presents the future concept and four development fields toward the year of 2024. The four development fields mean (i) social development, (ii) economic development/production improvement, (iii) natural resources/environment, (iv) institutional strengthening/decentralization. The development strategy and concrete measures

(projects and activities) are prepared along these fields. The subjects and indexes of (ii) economic development and production improvement field closely related to the Study are 1) Non-preparation of lifeline (road traffic energy, communication facilities, etc.), 2) Non-development of tourism resources, 3) Lack of access to high technical jobs and low income level, and 4) Reverse and spilt farming and livestock activities.

3-4 Local Administration (3.3.1, 3.3.2, 3.3.3)

The local administration is enforced by regional government, provincial office and district office. In the organization of GRA, there is the regional assembly, the legislative organ, where the governor is assigned as the chief of its execution. In addition to these decision and executing organ, the consultation organ called the Regional Coordination Board is established separately, which is in charge of deliberating on the important subjects, development plans and budget for the region and offering the reference opinions. The technical divisions are largely classified into four divisions. These are (i) Economic development division, (ii) Social development division, (iii) Infrastructure preparation division, and (iv) Natural resources and environmental management division. The organization structure of provincial government is almost similar with that of regional government. Basically, the provincial council is set as the decision-making body and a mayor is assigned as a top of executive organ. At the district level, the District Council exists and the chief of district is assigned as a top of executive organ.

3-5 Relevant Agencies to Agriculture Sector (3.4)

There exist many relevant government agencies offering the services in the agricultural sector in Ayacucho Region, such as the Program of Rural Agrarian Productive Development (*AgroRural*), National Institute of Agrarian Innovation (*INIA*), National Service of Agrarian Health (*SENASA*) and National Institute of Natural Resources (*INRENA*). Out of them, *AgroRural* provides wide services on whole agriculture such as irrigation facilities, activation of agriculture, management of natural resources, market and distribution and dissemination of technology.

3-6 Land Use and Land Holding System (3.5)

According to the agriculture and livestock census in 1994, the land use in whole Ayacucho Region is as follows:

Land Use in Ayacucho Region (ha)

Arable Land	Perennial Crops	Mixed Cropping	Natural Pasture	Mountainous land and Grass land	Others	Total
168,141	32,051	8,144	1,234,184	135,942	136,746	1,715,208
9.8%	1.9%	0.5%	72.0%	7.9%	8.0%	100.0%

Source : Agriculture/Livestock Census 1994

The arable land area in Ayacucho Region is estimated at 168,141 ha, equivalent to only 9.8% of the region area. In case of including the perennial crop area and mixed cropping area, it becomes to 208,336 ha, equivalent to 12% of the region area. The main reason of less arable land is due to topographic constraints such as elevation and slope. In other provinces except

Huamanga Province, there could not find the new increase of arable land due to topographic constraints. On the other hand, according to the agriculture and livestock census in 1994, the land holding area of small farmers is 1.18 ha on an average. The household survey conducted in the Study shows that it is 1.6 ha.

3-7 Poverty • Rural Society • Gender (3.6.1, 3.6.2, 3.6.3)

According to the 2007 census in Peru, Ayacucho Region is one of the poorest regions. Its poverty ratio attains 78% and the extremely poverty reaches 41%. In the distribution condition of poverty districts for each province, the “district where the poor population is more than half of total population” attains 91% of whole districts in the region. The “district where the poor population is more than 80% of total population” comes to 41% of whole districts in the region. Such poverty condition, farmers aim at improvement of life at individual level and household level, and also at improvement of rural life through ayni (mutual recompense for labor) and ayllu (blood relation/regional relation group) which are traditional mutual assistance system, and cooperative activities in community organization and farmers organization. However, there is a limitation in poverty measures by community organization and farmers organization, so that it is all that most of farmers and communities only keep and protect the present rural life. Women in rural area in Ayacucho Region are indispensable for executing the rural area life and agricultural production. Their roles range widely over housework, cooking, education for children, health for family, farm work, taking care of livestock and collection of firewood. However, they are burdened with social, cultural and economic constraints like traditional custom of predominance of men over women called “machismo”, so that they still hold down various socioeconomic issues for the ground of home, production, and community.

4 Industrial Structure of Rural Area in Ayacucho

4-1 Agriculture Production (4.1.2, 4.1.3, 4.1.6, 4.1.7, 4.1.9)

Agriculture production in Ayacucho Region played a role of economic base, following the service sector. If observing the change over the years for production amount of crops, it has largely increased from 1997 to 2008, but its composition has not almost changed. The agriculture production in Huamanga Province occupied 35% of that of whole region, and such a tendency has not been changed largely since 1997. As for crop yield, Huamanga Province is prevailing, especially that for potato is overwhelming for other provinces. Agriculture in Ayacucho Region is characterized by temperature depending on elevation. In more than or equal 4,000 m in elevation, pasturage is dominant. The area between 3,000 m and 4,000 m in elevation is cultivated with root and tuber crops like potato and cereal, and that between 2,000 m and 3,000 m in elevation is cropped with vegetables, pulses, fruit trees and grain crops like maize. In the area between 1,000 m and 2,000 m in elevation, pulses, vegetables, fruit trees are cultivated, and the selva area with 1,000 m in elevation (around the Apurimac River) is cultivated with cacao, coffee and paddy. Most of farmers consume the

production in-house. In whole region, many crops except vegetables and a part of grain crops in Huamanga Province show the high self-consumption rate. There are fewer farmers who purchase and use the agriculture inputs. It can be said that a majority of farmers have a farming pattern of self-consumption with less agriculture inputs. Although Ayacucho Region has less rainfall, most of farmers are forced to depend on rainfall. In September, just before the rainy season, cropping is started, and harvesting is conducted in May and June. Consequently, there is a falling trend in prices of agricultural products in May and June when the harvesting is concentrated. INIA selected 84 crops as important ones for commercialization from crops being cultivated in Ayacucho Region, and then further selected as priority crops from two viewpoints of (i) productivity, adaptability, intention for consumption, product and technology, and (ii) quality, price, market and seasonal trend. Subjects on agricultural product aspect toward livelihood improvement of farmers are (i) Inefficient agricultural production due to lack of infrastructure for production, (ii) Reduction of efficiency of agricultural production and farmers' income and (iii) Low agricultural productivity due to low farming technology.

4-2 Agricultural Supporting System (4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5)

The Regional Agricultural Strategic Plan prepared by GRA takes up the strengthening of (i) competitive in agriculture considering the economic corridor, (ii) solidarity with private sector toward agricultural development, and (iii) agricultural technology development, as strategic axis for agricultural product technology supporting services. In this framework, GRA is executing the various MINAG's programs for agricultural support. These are the watershed conservation/environmental conservation, use of organic fertilizer, AgroRural supporting comprehensively the agriculture sector from the indirect aspect of agriculture development, Innovation and Competitiveness for Peruvian Agriculture (*INCAGRO*) aiming at study, development and extension on agricultural innovation technology, as representative support programs. Agriculture Department of GRA mainly carries out extension activities. In addition, INIA is conducting development and extension of agriculture and livestock technology through study, research, technology dissemination and technical guidance. As organizations receiving the agricultural support, 116 producer organizations were registered to GRA as of 2007. Eighty-seven organizations equivalent to 75% of all 116 producer organizations, target potato and cow milk. Most of these organizations aim at production, and are limited to organic vegetable cultivation and agricultural commercialization. On the other hand, in Ayacucho Region, 10 organizations offer agriculture credit and micro-finance service. The credit amount is 70% of production cost at maximum and its interest rate is 19% per annum for support to production cost. In case of capital investment, its interest rate ranges from 12% to 16%, and then 3% of total credit amount is paid as handling charge. The repayment period of credit is one year for support to production cost and 4 years for capital investment at maximum. Major NGOs in Peru, such as FINCA PERU and PRISMA are also offering the micro-finance. FINCA PERU provides mainly the poor women with training for capacity building as well as saving and credit through the communities established by itself.

The subjects for agriculture support aspect toward improvement of livelihood of farmers, are (i) Reduction of efficiency of agricultural production due to lack of agricultural information, (ii) Insufficient extension and supporting activity, and (iii) Insufficient research, trial and production activity.

4-3 Livestock (4.3.1, 4.4.2, 4.4.3, 4.4.4, 4.4.9)

In the livestock sector, the improvement of technology and the development of organization are promoted from viewpoints of sociality, economic efficiency and productivity as well as training of relevant persons. In addition, a plan to clarify a course of support activities by public and private sectors is worked out. The necessary policies cover a wide range of strengthening of organization with sustainability, promotion of public and private sectors services under decentralization, improvement of producers' access to markets, and development of value-added livestock products. In particular, a focus is given to development of livestock sector by mutual cooperation of government agencies and private sector. The livestock in Ayacucho Region is strongly influenced by factors such as sociality (cooperative works), commerciality and road network. The livestock contributing to livelihood of farmers are cow, sheep, alpaca and vicuña. Most of livestock in large number are raised for self-consumption for farmers themselves. The characteristics of raising of livestock are different for northern, central and southern areas. In the northern area where Ayacucho City, the largest consumption city is located, chicken and cuy are largely raised. The central area shows the large number of livestock, especially sheep, llama and alpaca. In the southern area, llama, alpaca and vicuña are mainly raised using the vast natural pastureland. Most of small-scaled farmers raise livestock for the purpose of emergency expenditures for (i) self-consumption, (ii) ceremonial occasions and (iii) education. While, the medium-scaled farmers do it for (i) self-consumption and (ii) sale. For any cases, raising is conducted using the natural pasture and cultivated one. The artificial insemination technology was introduced in 1999 when the liquid nitrogen custody facility was constructed in the Comprehensive Livestock Improvement Project in Ayacucho Region. However, the breed improvement and artificial insemination of livestock are used only by a part of successful farmers (large-scaled farmers) and in systematic livestock (association). The provincial and district offices have focused on the dissemination of the breed improvement and artificial insemination centering on cow milk producers. Consequently, the artificial insemination technology has been improved, so that the successful rate of artificial insemination (107 examples) has attained at 60% at present instead of 33% in 2001-2002. The problems envisaged by livestock industry in Ayacucho Region are largely classified into (i) severe production environment, (ii) low production technology/facilities, and (iii) poor processing and sale technology.

4-4 Inland Fishery (4.4.1, 4.4.2, 4.4.4)

In the Comprehensive Development Plan of Ayacucho Region 2007-2024 prepared in 2007, GRA has considered the inland fishery as an important industry in economic development

and thus shows the medium and long term development plan on creation of job opportunity and income improvement of small peasants. Main product of inland fishery in Ayacucho Region is rainbow trout, which is reared in mountain area ranging from 3,200 m to 4,100 m in elevation. As of 2007, 47 producers associations were registered in the fishery section of DIREPRO. There has been an increase in fish farms as well as in producers associations, especially remarkable increase in La Mar Province. In Ayacucho Region, besides the hatcheries, natural trout fishing is practiced in all provinces. In 2005, the fishery in rivers and lagoons represented 13% of the total production. The size of fish farms and producers' association in Lucanas Province is relatively higher than that in other provinces. On the other hand, the sizes in the provinces of Huamanga, Cangallo and Vilcas Huaman are quite small. The problems and constraints against promotion of inland fishery in Ayacucho Region are (i) Shortage of basic and latest aquaculture technology, (ii) Development of only food processing technology based on needs of consumers, (iii) Shortage of project management capability considering profitability, (iv) Lack of opportunity of capacity building of newcomers of aquaculture, and (v) Lack of technology exchanges among producers association.

4-5 Reforestation/Environmental Conservation (4.5.1, 4.5.3, 4.5.4, 4.5.5)

MINAG prepared the National Reforestation Plan (*Plan Nacional de Reforestacion:2005*) in December 2005, to execute aggressively the forest development through review of previous forest policy. According to the plan, it is regarded that forest of 73,880 km² out of territorial land of 1,285,216 km² was disappeared, and thus reforestation will be made at rate of 1,045 km²/year and finally 8,645 km² in total for 20 years from 2005 to 2024 in Costa, Sierra and Selva. On the other hand, in Ayacucho Region, AgroRural prepared the reforestation plan 2006 to 2011 in September 2007. This plan aims at reforestation of 8,420 ha for of production forest and 12,667 ha for watershed conservation for 5 years from 2007 to 2011. As actual results, it is reported that then PRONAMACHCS (presently AgroRural) conducted reforestation of 36,114 ha from 1981 to 2007, and the Agricultural Department of GRA carried out reforestation of 10,224 ha by 2009. Timber products in Ayacucho Region are estimated at 3,609 m³ in 2007 and 5,386 m³ in 2008 for which the major markets are mines in neighbor regions such as Ica and Huancavelica. Timbers in mines are mainly used as supports with small caliber. Non-timber forest products in Ayacucho Region are mostly cochineal (*Dactylopius coccus*) used as dye, Tara (*Tara :Caesalpinia spinosa*) used as dye and tanning of leather and Barbasco (*Barbasco: Lonchocarpus urucu*) used as insecticide. According to the household survey, it was clarified that 1,070 households out of 1,100 households used firewoods as cooking fuel. The problems related to reforestation and environmental conservation are that disappearance and deterioration of forest bring about soil erosion, leading to decrease in production of agriculture and livestock, lack of reforestation plan as Ayacucho Region, lack of coordination at central and regional levels and insufficient management and supervision of forest work.

4-6 Agro-processing (4.6.1, 4.6.2, 4.6.6)

The Ministry of Production holds up the following policy concerning agro-processing: “Respecting environmental aspect, the government will take effort to create the Peruvian companies toward the internationally competitive companies. As the specific objectives, through the strategy of efficient use of natural resources, the government will promote the industrial sector to convert the international competitive companies that can produce in accordance with the international norms and regulation.” The contribution of the industrial sector in the Economic Structure of the Region is insignificant and activities are almost nil. The slightly active industries are the home manufacturing companies of transformation of foods and milk, especially dairy products such as cheese and yogurt which are only for consumption within local area, being operated as rudimentary industries. At present, the Andes products (maca, raw materials for medicines, honey product, alcohol for wine, sauco, jam product of tuna, tara powder for tanning leather, dye produce by cochineal) are made at experimental level, but not made by large-scaled companies. The main reasons why agro-processing has not been developed in Ayacucho Region are that (i) relevant entities don't know how to establish the agro-processing factory, (ii) Investment system to promotion of private agro-processing is insufficient, (iii) It is necessary to promote the agro-processing to cope with production expansion in the future, but promotion system is not established, (iv) Potential of local resources is not effectively used, (v) Sanitary level for enabling food processing is low, etc.

4-7 Distribution and Marketing (4.7.1, 4.7.3, 4.7.5, 4.7.6, 4.7.9)

As one of causes of vulnerability for agriculture in Peru, lack of appropriate distribution system is taken up as fundamental factor. Lots of strategies are proposed as countermeasures. Major strategies related to poor peasants are execution of program which the poor peasants can take part in market, strengthening of post-harvesting and distribution capability, promotion of agro-processing project at rural area, and strengthening of infrastructure related to agriculture and livestock products having high economic efficiency and sustainability. Based on the central government policy, the regional government plans the distribution policy focusing on strengthening of competitive products. In the agricultural sector, it is considered to implement the sustainable projects by promotion of crops with high marketability. In livestock sector, consideration is given to business expansion paying attention to marketability of vicuña. Most of agricultural products in Ayacucho Region are for self-consumption purpose, and the crops distributing to markets are potato, cacao, coffee, tuna and vegetables. The agriculture and livestock products to transport from Ayacucho Region to the Lima Metropolitan area are mostly potatoes, followed by cow and sheep. In addition, tuna and coffee as commercial crops are transported. The transportation volume of potato to the Lima Metropolitan area is almost constant and in saturation. In order to increase the sale of potato at the Lima Metropolitan area from now on, it is necessary to strengthen competitive power at quality and price. Besides, if considering the energy demand, it is expected to heighten the demand of agricultural products which can become raw materials

for ethanol. From this viewpoint, it can be said that introduction of sugar beet is one of potentials. The major problems on market and distribution are as follows. As for market, it is not developed due to deficiency of transportation system (road and cooler truck) linking the production sites with consuming areas although there is room to expand the market in the region (cow milk, vegetables and cereal powder). In addition, it is necessary to develop the market at the Lima Metropolitan area, in order to expand the agriculture and livestock because the market size in the region is small. The problems on distribution system are that (i) Structure on distribution and agro-processing for heightening competition of potential agricultural production in Ayacucho Region is not established, (ii) Market size in Ayacucho Region is small, (iii) Information and know-how on establishing distribution system supporting potential products are insufficient, (iv) Distribution infrastructure for potential products and areas is not sufficient, etc.

4-8 Tourism and Handicraft (4.8.1, 4.8.2, 4.8.4)

As for tourism, in 2008, the Ministry of Foreign Trade and Tourism (*MINCETUR*) prepared the National Strategic Tourism Plan 2008 -2018 aiming at regional development through the implementation of infrastructure improvement and activation of tourism resources. In particular, MINCETUR has a plan to be conducive to diversification in Peruvian tourism except internationally famous tourist destinations such as Cuzco and Macchu Picchu, which are contribution to not only economic development, but also poverty reduction through activation of tourism business focusing on the tourism development of rural communities. In addition, MINCETUR prepared the Plan to Strengthening Handicrafts Exports 2003-2013 in Mach 2004, and has promoted it. On the other hand, GRA worked out the Tourism Development Plan in Ayacucho Region 2004-2014 and the Handicraft Development Plan 2005-2015, aiming to raise and promote the relevant industries. Besides, GRA planed the efficiency pf promotion by concentrating the priority area on tourism and handicraft development plan on surrounding areas of 5 tourism corridors/routes. The number of tourists was beyond 100,000 in 2005, and came to 137,000 in 2008. As a trend since 2005 in Ayacucho Region, the domestic tourists occupy around 96% to 97% of them and the remaining 3% to 4% were foreign tourists. As comparing with national tendency, the percentage of foreign tourists is low. A steady number of tourists could not be ensured throughout a year. Tourists and lodgers are concentrated only in long term holidays such as carnival in February, Holy weeks in Ayacucho Region in March and April, Independence Day in July, and end and beginning of year. The problems on promotion of tourism business in Ayacucho Region are poor infrastructures, limited use of tourism resources, inadequate behaviors around tourism sites, and shortage of tourism commodities due to poor private investment. Due to these causes, promotion of tourism becomes insufficient, so that tourists visiting Ayacucho Region become unstable in number. In addition, tourism facilities and services are poor, which results in bad reputation of tourists. Such inappropriate cycle causes the stagnation of tourist activities. As for handicraft promotion, the similar cycle occurs, and handicraft activities are stagnant.

5 Social Infrastructure Condition in Ayacucho Region
5-1 Classification of SNIP Subprojects by Sector (5.1)

In Ayacucho Region, subprojects applied to SNIP by central and local governments were 4,871 in number as of April 2009. Out of them, the subprojects to be analyzed in the Study are 3,940 sub-projects except the completed and rejected ones. The classification of them was made from 4 categories of “approved”, “submitted”, “under revision” and “under evaluation” which are mentioned in SNIP. In the application of sub-projects to SNIP, the local governments applied 2,366 sub-projects equivalent to 60% of 3,940 sub-projects registered in SNIP, the regional government applied 751 sub-projects equivalent to 19% of them and the central government 823 sub-projects equivalent to 21% of them. The application number of SNIP sub-projects was 2,032 sub-projects for northern region (52%), 1,199 sub-projects for central region (30%) and 709 sub-projects (18%). In comparison of central region with southern region, central region has higher application number of SNIP sub-projects than southern region although the population number is almost the same. Out of 3,940 sub-projects applied to SNIP in Ayacucho Region, 1,676 sub-projects (43%) are categorized as agriculture and transportation subprojects. The requested budget for them are S/. 2,380 million equivalent to 56% of total one. Agriculture sub-projects are 915 in number, of which the total amount becomes S/.1,470 million. In agriculture, irrigation is highly demanded, namely 520 sub-projects of which the total requested amount comes to S/.1,000 million. If classifying the SNIP sub-projects from process condition, 74% of total sub-projects were already approved. Seventy percent of agriculture sub-projects and 79% of transportation sub-projects were in approved situation. As for investment amount, agriculture sector occupies 62% and transportation sector 38% of total one.

5-2 Irrigation (5.2.1, 5.2.2, 5.2.4, 5.2.6)

The Ministry of Agriculture (*MINAG*) is responsible for irrigation development. The Cooperation Fund for Social Development (*FONCODES*) under the Ministry of Women and Social Development (*MIMDES*) is also implementing small-scale irrigation projects in Sierra. According to the "Multi-annual Strategic Plan of Agriculture Sector 2007-2011", the targets to be attained by 2011 are (i) New irrigation development of 200,000 ha in Costa and Sierra, (ii) New technical irrigation development of 30,000 ha in Sierra, (iii) Creation of beneficiary farmlands of 347,600 ha through construction, improvement and rehabilitation of irrigation canals. At the regional level, the Regional Department of Agriculture (*DRA*) and Irrigation and Integrated Rural Development Regional Program (*PRIDER*) are in charge of irrigation development. The Strategic Plan on Agriculture Sector in Ayacucho Region 2009-2015 shows that the goals to be achieved by 2015 are (i) Technical irrigation facilities for 630 ha and (ii) Rehabilitation of 2,610 ha farmlands. There is no available data showing the definite irrigation area in Ayacucho Region. The General Department of hydraulic Infrastructures (*DGIH*) indicates the irrigation area of more than 135,000 ha. On the other hand, as the existing irrigation development plans, there are 520 irrigation subprojects in Ayacucho Region which are registered to SNIP and 7 sub-projects taken in the Preparatory Study on

Program of Small and Medium Irrigation Infrastructure in Sierra. The operation and maintenance of irrigation facilities is executed by irrigation committees under technical support by government. At present, there are 691 irrigation committees of which the members are 44,340. The irrigation area commanded by the committees is 47,813 ha. The problems envisaged with the irrigation projects are economical and technical problems caused by topographic condition, ineffective development due to intervention by many government agencies and inappropriate coordination among central, regional and local government under decentralization.

5-3 Road (5.3.1, 5.3.2)

In 2007, the Ministers Council Presidency formulated the national transportation policies 2009. Based on these policies, the Ministry of Transportation and Communication (MTC) prepared the plan on road maintenance and improvement at the regional level and arranged the budget for it. Especially, the plan focuses on construction of bridges, execution of rehabilitation and regular operation and maintenance of national roads which are important for physical distribution. MTC is also promoting the devolution to regional and local governments in line with the Peruvian decentralization. In Ayacucho Region, all provincial governments prepare the individual road development plans and promote the operation and maintenance of regional and local roads in cooperation with regional inhabitants. In the transportation plan for Ayacucho Region, the road maintenance and improvement plan was prepared aiming to ensure the appropriate road network linking the production areas with markets and consuming areas and for regional integration through maintenance of road facilities, ensuring of accessibility and offer of transportation services. In Ayacucho Region, there are no roads without hindrance against ordinary services. Especially, the roads in rural area, which ordinary services are possible, are limited, so that most of communities are suffered from smooth physical distribution. Besides, even in the areas where the roads are well constructed, have the serious problem such as lack of maintenance, and consequently community people are burden with high maintenance cost for roads. The poor condition of physical distribution becomes constraint against improvement of productivity and growing of regional economy, especially brings about various abuses for inhabitants in rural area. The substantial increase in transportation cost is obliged to purchase the expensive agricultural inputs and restrict the access to market, which result in difficulty in sales of products. These cause the poverty in rural area.

5-4 Water Supply and Sewerage (5.4.1, 5.4.3, 5.4.4, 5.4.6)

The Institutional Strategic Plan 2008-2015 which is the national strategy, aims at diffusion rate of water supply and sewerage in rural area by 16.6% and 18.6%, respectively by 2015. In addition, it plans to install water supply pipes for 330,340 households during 8 years from 2008 to 2015. Ayacucho Region is suffered from lower diffusion rate of water supply and sewerage systems than that of national level. The water supply and sewerage systems in rural areas are much less developed than those in urban areas. The operation and maintenance works of the systems are conducted by Administrators Group of Sanitary Services (JASS). The problems on water supply

and sewerage are high construction cost, delay in system development due to security reason and lack of inhabitants' awareness on need of water supply and sewerage systems from the viewpoint of sanitation.

5-5 Rural Electrification (5.5.1, 5.5.2, 5.5.5)

According to the National Plan of Rural Electrification 2009-2015, the electrification rate of rural area is planned to be raised by 57.9% by 2011 and 70% by 2017. As for Ayacucho Region, 64 projects of which the total investment cost is US\$ 60 million and the beneficiaries are 241,094, are included in the plan. PDRC 2007-2024 targets the non-electrification household for decreasing from 48% to 32% for 7 years from 2005 to 2011. The electrification rate of Ayacucho Region is 52.3%, which is remarkably lower than 75.2% of national average one, and is ranked fourth from the bottom in whole country. In Ayacucho Region, Huamanga Province, capital of region, shows comparatively higher rate, while the northern region except Huamanga Province and the central region are delayed in electrification. The reasons of delay in rural electrification are high construction cost, social difficulty by security problem and low cost performance.

5-6 Other Rural Infrastructures (5.6.1, 5.6.2, 5.6.3)

As for education, both national and regional policies state the improvement of school attendance rate and literacy rate, and completeness of school facilities. Those in Ayacucho Region are below the national average. Especially, the literacy rate in Ayacucho Region is ranked third from the bottom. The problems envisaged with diffusion of education are incompleteness of infrastructures like school, lack of teachers and poor school attendance circumstances. As for healthcare, completeness of medical facilities is a policy. PDRC 2007-2024 aims to construct 2 hospitals equipped with modern medical apparatus by 2011. The southern region is more blessed with medical facilities per person as compared with other regions. The problems on healthcare development are shortage of budget, delay in construction of infrastructures and deficiency of doctors and nurses. The telecommunication condition in Ayacucho Region is worse as compared with the national average. For instance, the rate of households which have no telecommunication means at all is 46.7% for the national average, but 78.6% for Ayacucho Region. In the region, the rate of households for Huamanga Province is 46.7% which is near the national average, but other provinces shows higher rate, say more than 80% and are largely delayed in provision of telecommunication infrastructure.

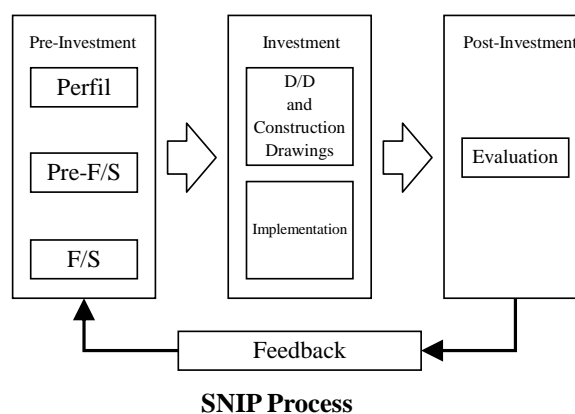
5-7 Study on Process of National System of Public Information (5.7.3)

Organization of SNIP consists of Implementation Unit and Formulating Unit (*UF*), Investment Programming Office of Regional Government (*OPI-GR*) and Investment Programming Office of Central Government (*OPI-GN*) to evaluate and approve the proposed programs under the jurisdiction of General Directorate of Multiannual Programming of Public Sector (*DGPM*) of *MEF*. Formulating Unit is an agency requiring to prepare the subprojects and to obtain the approval from Investment Programming Office (*OPI*). It is also requested to execute the study necessary for SNIP process as required. Implementation Unit

is an agency to ensure the budget and to implement the projects after obtaining the approval of SNIP. In implementation of the projects, the required budget should be included in PIA. In case of emergency or availability of budget in central government, such process is not always required. Basically, the sub-projects prepared by the regional government and/or the local government could be authenticated by Investment Programming Office of Regional Government (*OPI-GR*). In case of implementation of sub-projects under foreign aid, it is essential to obtain the approval of DGPM. General process of The SNIP process is planned so as to make more effective public project investment by dividing it into the Pre-investment, Investment and Post-investment. The Pre-investment stage is further divided into the following 4 stages, for which the required study contents are different by the project scale.

Project Division	Investment Amount	Required Study
Simple Investment	<S/.1,200,000	Simple PERFIL(prepared based on form)
Small scale	S/. 1,200,00 – S/.6,000,000	PERFIL
Medium scale	S/. 6,000,00~ S/. 10,000,000	PRE-F/S
Large scale	> S/.10,000,000	F/S

The simple and small-scaled projects could be implemented by the study at PERFIL level. The medium-scaled project and the large-scaled projects could be implemented through the approval by the study at Pre-F/S level and F/S level, respectively. In order to implement the project with approval only, it is necessary to procure the budget by each Formulating Unit (*UF*) itself.



6 Grappling of Donor Agencies and Trend of Donors and NGOs in Ayacucho Region

6-1 Grappling of Donor Agencies and Action of Government of Peru (6.1)

According to the data of the Development Assistance Committee (*DAC*) of Organization for Economic Cooperation and Development (*OECD*), the total of gross receipt amount by GOP shifted from US\$ 610 million in 2001 to US\$ 7.4 million in 2007. The gross receipt amount from the DAC member countries has decreased year by year, but that from international agencies is tended to increase although the amount is not large. On the other hand, GOP established the Peruvian International Cooperation Agency (*APCI*) in April 2002, to promote the cooperation and coordination between donors and GOP. Since February 2005, APCI has held a donors' meeting at the rate of once a month, and prepared the strategic framework papers "International Cooperation Strategy" mentioning the fields requiring the foreign aids (grant) in June 2006. In addition, APCI established the taskforce in June 2007, to have meetings among donors toward the actualization of Paris declaration.

6-2 Priority Fields of Major Donors in Assistance (6.2)

As international agencies, World Bank (*WB*), European Commissions (*EC*), Inter-American Development Bank (*IDB*) and United Nations Development Program (*UNDP*) are in operation. The priority fields in assistance are wide. Major fields are modernization of nation, social development, poverty reduction, democratic governance, and improvement of production. On the other hand, bi-lateral aid donors are Japan, United States of America, German, Spain and Canada for which the assistance fields are democratization, poverty measures, environmental measures and economic development in a similar trend with those by international agencies.

6-3 Activities of Donors and NGOs in Ayacucho Region (6.3.1, 6.3.2)

International agencies working in Ayacucho Region are UNICEF and FAO as of May 2009. Major activity fields are education, health and agriculture. The bi-lateral aid donors are United States of America, German, Belgium and Netherlands. The supporting activities are policy support, economic development, human rights problem, and agricultural development. As for NGOs, 6 NGOs are working in Ayacucho Region. Major activities target environment, hygiene and agriculture. The targets are communities and support size is small.

7 Study on Participatory Approach in Ayacucho Region

7-1 Significance of Participatory Approach (7.2)

The experiences and lessons learned on the participatory approach executed in the agricultural development projects so far under the decentralization reform, lead to (i) improvement of transparency of projects, (ii) promotion of decentralization, (iii) promotion of consent formation among regions, (iv) promotion of consent formation among sectors, (v) reflection of inhabitants' needs, (vi) saving of project cost, (vii) improvement of capability of O&M of project facilities, and (viii) mitigation of friction of social culture. With expecting the above-mentioned effects, the participatory approach is widely introduced at preparation stage for each development plan in Ayacucho Region.

7-2 Method of Participatory Approach (7.3)

The application of participatory approach in Ayacucho Region, conducted in accordance with the following regulations in Peru. In particular, in the agriculture development projects in the Ayacucho Region, attention is paid upon the community participatory at the stage of preparation of development plan and implementation plan in the region. Even in the agriculture development project at community level in Ayacucho Region, it is required that community participatory approach is positively applied to the stages from planning to implementation and O&M. As the typical example of community participatory approach at community level, the small river basin management project by the PRONAMACHCS is taken up. In this project, the chiefs of district offices and communities who were locally influential persons, were positively used in advance, to promote the community participatory at the the stages from planning to implementation and O&M, which brought about the

successful result.

7-3 Problems and Subjects on Participatory Approach (7.4)

As mentioned above, the community participatory approach is actively employed to the agricultural development project in Ayacucho Region. However, the community participatory approach is not always used in a suitable manner for measure, methodology and time, so that there are not less projects which have not sufficient effects from it. With the experiences and lessons learned from agriculture development projects executed so far in Ayacucho Region, the clarified problems and subjects are lack of communication, limited available time for participation, extant traditional gender discrimination in home, poor accessibility to participation site by inhabitants, difficulty in reflection of needs of poverty people, weakening of traditional cooperative concept, lack of active capability of planning by community, community participatory system oriented by administration and insufficiency and lack of facilitator in administration side.

8 Preparation of Zoning Map and Land Use Map

8-1 Objective of Zoning (8.2.1)

Most parts of Ayacucho Region are located in the highland areas under various topographic and soil conditions. However, the appropriate land use was not realized because of limited high potential areas for agriculture and pasture, which are the main income sources for local farmers in Ayacucho Region. Therefore, most farmers living under the low potential areas are vulnerable under the undesirable climate for the above agricultural practices, and thus this is one of the main reasons of poverty in the region. In Ayacucho Region under such natural and social situations, the packaged simple development approach is no effective. It is necessary for preparation of effective and efficient poverty reduction strategy to categorize the region by natural and socio-economic environment, to prepare different development programs by each category, and to prioritize the activities in each program based on the characteristics of each category. In the Study, therefore, a zoning map was prepared for whole Ayacucho Region as basic information for preparing the poverty reduction plan centering on livelihood by agriculture and livestock industries from the viewpoints of income stabilization (vulnerability mitigation) of poor peasants and livelihood improvement which are the purpose of the Study.

8-2 Basic Information of Zoning (8.2.3)

The basic data for zoning map are individually developed by the different organizations. As preprocessing for zoning and regional development planning, the data accuracy and availability were checked and finally integrated into a GIS database, namely Ayacucho GIS database. All the existing GIS and statistic data were provided by the counterpart organizations. Because GIS data at national level and outputs of the past studies were included, the data were used for the zoning. In parallel with the collection, interview survey on data management and utilization was carried out to the counterpart organization. The collected GIS data and statistic information were reviewed from the data accuracy and availability points of view. As a result, the employed data are land use potential map and

monetary poverty rate.

8-3 Preparation of Zoning Map (8.2.4)

To minimize the number of zones in the zoning map, the following zoning criteria were set. The region was finally categorized into 27 zones in total.

Zoning Criteria

Data Type	Before Classification	After Classification	
Monetary poverty rate	Less than half of the population is economically poor.	P1 (Poor)	
	More than half of the population is economically poor.	P2 (Very Poor)	
	More than 4 in 5 persons are economically poor	P3 (Extremely Poor)	
Land use potential map	Suitable land for agriculture	A	A: Suitable land for agriculture
	Arable lands with conservation efforts	Xa	
	Suitable land for grazing	P	P: Suitable land for grazing
	Grazing lands with conservation efforts	Xp	
	Suitable lands for forest production	F	F: Suitable lands for production forest
	Lands for forest production with conservation efforts	Xf	
	Conservation land	X: Conservation land	
	Residential area	CP: Residential area	
Lake	L: Lake		

Source : JICA Study Team

The zoning map and table prepared based on the zoning criteria mentioned above, are shown below. In most of all suitable areas for agricultural activities, areas with conservation efforts are mainly dominated. These areas are assumed to be high risk zone for agricultural activities such as low fertility lands, water shortage, soil erosion, etc. Therefore, if the areas need to be used for agricultural activities, conservation efforts should be coupled. However, the suitable areas without conservation efforts are limited. In addition, such conservation areas are actually used for the agricultural activities. Under these conditions, the areas with conservation efforts were categorized in the potential land for agricultural activities in this Study.

Area	Area (km ²)	
	Total	(with conservation efforts)
P1-A	403.66	(317.07)
P1-P	1,147.16	(1,062.45)
P1-F	194.65	(191.48)
Total of suitable areas for agricultural activities	1,745.47	(1,571.00)
P1-X	2,758.83	(2,758.83)
P1-CP	4.09	
P1-L	2.33	
P1 Total	4,510.72	(4,329.83)
P2-A	2,345.04	(1,458.17)
P2-P	12,193.03	(8,341.72)
P2-F	932.23	(249.94)
Total of suitable areas for agricultural activities	15,470.30	(10,049.83)
P2-X	6,594.87	(6,594.87)
P2-CP	0.93	
P2-L	56.21	
P2 Total	22,122.31	(16,644.70)
P3-A	1,443.41	(456.56)
P3-P	6,914.83	(4,301.11)
P3-F	1,821.35	(163.78)
Total of suitable areas for agricultural activities	10,179.58	(4,921.45)
P3-X	6,687.11	(6,687.11)
P3-CP	0.00	
P3-L	8.44	
P3Total	16,875.14	(11,608.56)

Source: Prepared by JICA Study Team, based on land use potential map provided by INRENA and data from National Census from INEI, 2007

8-4 Preparation of Land Use Map (8.3.2)

The land use map is basic information for preparing the future land use plan and also is important for clarifying the characteristics of zones prepared based on the survey and confirmation of dependability of statistic data. In the Study, the land use map was prepared by visual interpretation of the satellite images based on the field investigations and the parallel use of color satellite images and panchromatic satellite images. Categories of the map are: (i) Agricultural lands; (ii) Pasturelands; (iii) Forests; (iv) Residential areas; (v) Lakes; and (vi) shrub lands/bare ground. The area of grasslands and shrub lands/bare grounds was 85% of the Ayacucho Region. On the other hand, agricultural lands were limited only 5% and mainly distributed in the 4 northern provinces of the region.

8-5 Analysis on Land Use Map (8.3.3)

In the comparison of the agricultural statistics in 1994 with the land use map, the area of agricultural lands in the region seemed not to be drastically changed in the past 15 years, but the area in Huamanga and Cangallo Provinces has been largely increased. The area of land use by elevation and slope indicates a trend which higher elevation areas with low temperature at night are mainly dominated by grasslands, shrub lands and bare ground. On the other hand, most of agricultural lands and residential areas are distributed in the areas of lower than 4,000 m in elevation which are under moderate climate condition. These facts imply farmers' measures against vulnerability on climate. Similar measure is observed in land use by slope steepness. Agricultural lands are rarely distributed in the steep areas with more than 75% of slope, and such steep areas are remained as grasslands or forests. Forests are mainly in slope areas with 30-75% of steepness. These areas are not suitable to use for agricultural activities such as crop harvesting and animal husbandry because they have a high possibility of degradation of soil fertility by erosion.

In comparison with the results of zoning, in the relation to poverty rate, agricultural areas and pasturelands in the poor areas (P1) are relatively smaller than in the very poor areas (P2) or extremely poor areas (P3). On the other hand, residential areas and shrub lands/bare ground in P1 areas are larger than in P2 or P3 areas. It is assumed in P2 and P3 areas that unstable areas for agriculture and pasture cannot help developing for agricultural activities because only the way to improve their income is to pioneer the limited lands as much as possible.

9 Analysis on Vulnerability Encountered by Poor Peasants and Development Needs

9-1 Characteristics of Vulnerability in Ayacucho Region (9.3.1)

GRA established the National Institute of Civil Defense of Ayacucho discussing the measures and monitoring of vulnerability, of which the members are the subordinate departments. This committee prepared the Regional Plan for Prevention of Disaster in 2006 and analyzed the threats of natural disaster (vulnerability) which occur frequently. This analysis indicates that the natural disasters like drought, heavy rainfall and cold-weather damage, influence every

sectors such as transportation, communication and education as well as agriculture. Namely, GRA regards the damages caused by natural disasters as vulnerability. As the results of analysis on the Regional Plan for Prevention of Disaster mentioned above, it was clarified that there were 3 factors or characters in the vulnerability in Ayacucho. These are (i) factors and phenomenon which bring about the lowering of living standard, (ii) deficiency of capability executing the avoidance of occurrence of factors and phenomenon, and (iii) deficiency of capability minimizing the damages when deficiency of capability occur. With the analysis results mentioned above, the vulnerability of poor peasants in Ayacucho Region in the Study, means the “deterioration of circumstances of poor peasants’ life caused by natural disasters”.

- 9-2 Problems and Constraints against Development which Poor Peasants Envisage (9.3.2, 9.3.3)
In the PCM workshop which the officials of GRA attended, the trees of problems and constraints on mitigation of vulnerability were prepared. According to these trees, “deficiency of accessibility”, “drought” and “climatic fluctuation” were set, so that it was pointed out that the poverty in rural area in Ayacucho Region becomes chronic by the problems such as “socio-economic isolation”, “occurrence of self-consumption and population drain” and “loss of agricultural capital”.
- 9-3 Tackling of Climatic Vulnerability (9.3.4)
GRA prepared the Disaster Prevention and Counter Plan in 2006. The agriculture sector worked out the measures against drought, flood, landslide, hail, snowfall and man-made disaster. In particular, in the rural area, vertical dispersion of agricultural land, cultivation by mixing plural varieties, hedge, pile-up farming and greenhouse are applied, which result in certain successful results.
- 9-4 Traffic Network Vulnerability (9.3.5)
In Ayacucho Region, delay in provision of road network becomes a large constraint for access to rural markets. Incomplete road network is recognized as vulnerability of the Region causing delay in activities at emergency time for climatic disaster and health and education services as well as the access to rural markets mentioned above. The critical places of roads are estimated at 10,080 m in total. Out of 10,780 m, 2,900 m is for mudflow, 5,830 m for landslide and 1,350 m for land collapse which show the characteristics of mountain area. The said Disaster Prevention and Counter Plan, indicates the measures to be conducted at short, medium and long terms.
- 9-5 Livelihood Improvement for Poor Peasants (9.4.1, 9.4.2)
The problems and constraints against improvement of life circumstances of poor peasants were clarified using the PCM (*Project Cycle Management*) workshop, attended by staff of GRA and the local authorities being engaged in agriculture and rural area development. Namely, the attendants at the workshop decided the main theme as the “low productivity of agriculture and livestock”. And then, they pointed out that this theme causes the “low profit of agricultural and livestock products”, and then brings about the “shortage of supply of agricultural and livestock products to markets” and the “loss of motivation to agricultural

and livestock production”, which further lead to the deterioration of life conditions of poor peasants in Ayacucho Region. In consideration of the present situations of agriculture and rural communities, they found out 4 items of “Marketing”, “farming technology”, “environment” and “financing” as problems causing the “low productivity of agriculture and livestock”. In the future, the regional government and local administrations need to tackle the subjects abstracted from these 4 problems and support the livelihood improvement of poor peasants, in order to improve the life conditions of them in Ayacucho Region.

9-6 Capacity of Local Governments Supporting Mitigation of Vulnerability and Improvement of Livelihood (9.5, 9.5.1, 9.5.2)

Along with the decentralization process, the local governments’ role is essential in supporting mitigation of vulnerabilities and livelihood improvement for poor peasants. Until now, local governments in Ayacucho Region have supported mitigation in vulnerability of the poor peasants and livelihood improvement applying measures to poverty reduction and regional development. However, they have to efficiently utilize the limited local resources such as human resources, natural resources, social capitals, finance and get an important role in the project implementation. The PCM workshop, attended by staff of GRA and the local authorities being engaged in agriculture and rural area development, indicated the 4 problems such as the “limited capacity of regional government”, “limited capacity of provincial and district municipalities”, “limited capacity of community organizations” and “lack of coordination between local government authorities”. Toward further progress of decentralization process, the local government authorities in Ayacucho Region should heighten their capability as government organization by tackling the subjects such as awareness enlightenment on leadership of managerial staff of regional government, reorganization and establishment of administration system, and strengthening of coordination among local government authorities for decentralization.

9-7 Development Needs of Poor Peasants (9.6)

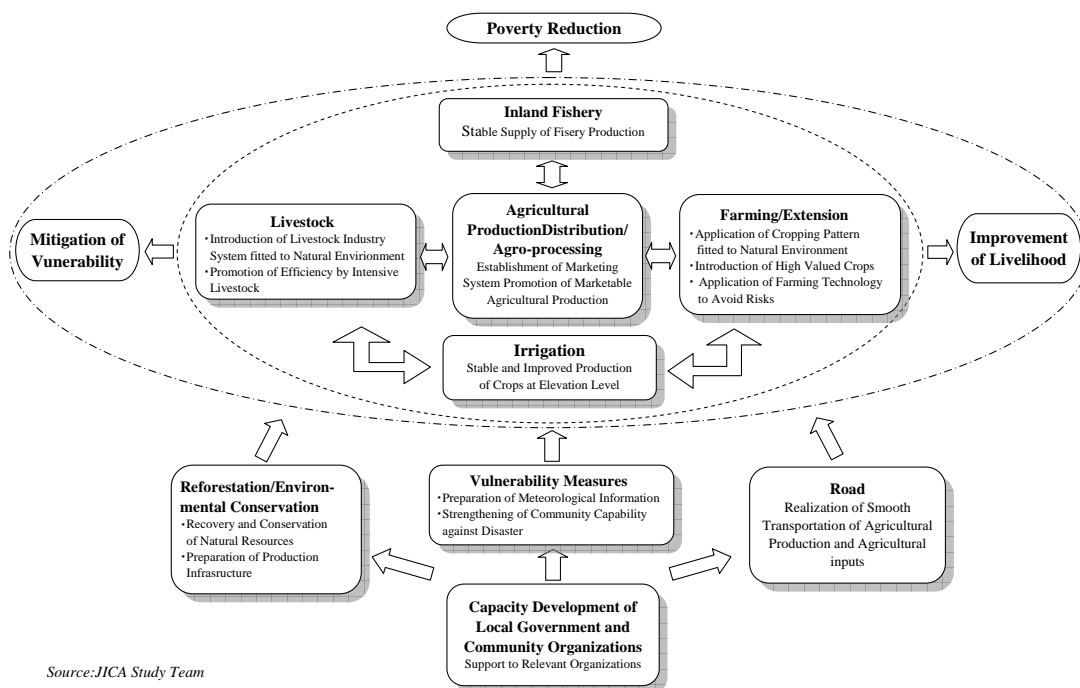
The poor peasants in Ayacucho Region face several problems and constraints regarding vulnerability and livelihood improvement, and yet they have to face solving a lot more issues. It can be said that the development needs of poor peasants in Ayacucho Region are the poverty reduction measures to cope successfully with them. According to the household survey conducted in the Study, the sector in greater need of development was the agricultural sector. Out of 9 provinces, 8 provinces, except by Paucar del Sara Sara Province, need the agricultural development, because mitigating vulnerability and raising their life conditions are closely linked to agricultural promotion. Two sectors considered priority for agricultural promotion are irrigation and agro-processing. All the communities which do not have irrigation indicated these two aspects as priority. The agro-processing was indicated as a priority in the southern central part of Ayacucho Region, where the livestock activity is more practiced, but remote from Huamanga Province, the great consumer center. Other development needs are improvement of road networks, installation of basic sanitation

services and construction of schools. These development needs are basic infrastructure and human resources development which are essential to achieve vulnerability mitigation and livelihood improvement for the poor peasants in Ayacucho Region.

10 Basic Plan of Development Strategy and Development Strategy

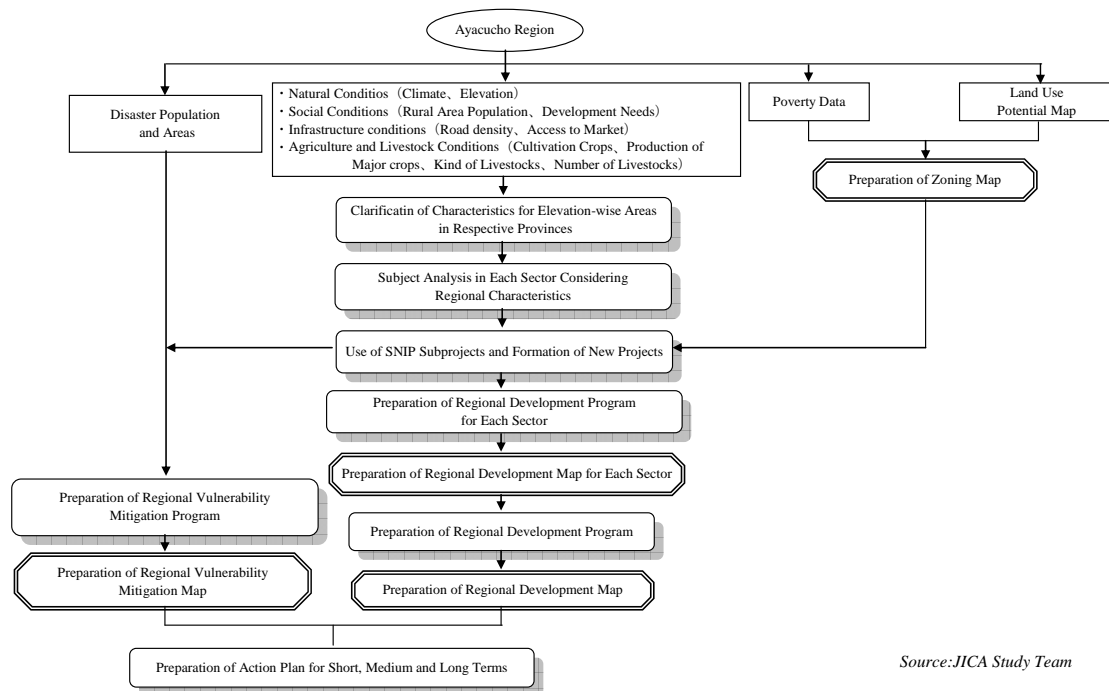
10-1 Basic Plan of Development Strategy (10.2)

As the basic plan of development strategy in the Study, the “Roles of Respective Relevant Sectors to Achieve Goal” and “Development Approach Focusing on Regional Characteristics” were taken up. In the former, many sectors are concerned in achieving the goal, so that clarification is made for how to relate them. The clarified relation among them toward achieving the goal is shown below:



Source: JICA Study Team

In the latter, taking it into account that Ayacucho Region shows the diversity of natural and social environments, it was judged that preparation of development plan reflecting the regional characteristics was indispensable for attaining the goal. The characteristics of elevation-wise areas for each province were clarified based on the natural conditions, social conditions and infrastructure conditions, and then the regional subjects were analyzed for each sector. Based on these, it was decided that the regional development program was prepared. As for the vulnerability measures, the regional vulnerability mitigation program was prepared in a similar manner. The following figure shows the development approach considering the regional characteristics.



10-2 Strategic Development Goal, Vision, Future Target and Basic Idea (10.3.2, 10.3.3)

The strategic development goal in the Study is that “to reduce the poverty through the attainment of not only mitigation of vulnerability but also improvement of livelihood of the poor peasants in Ayacucho Region”. The vision, future target and basic idea were determined as follows. That is, the vision was defined as the image of future of Ayacucho Region and the future target was regarded as the target to realize this vision. The basic idea was decided as fundamental consideration to attain this target.

Vision: Successful region (advanced region) on measures to poor peasants

Future Target: Stabilization of life condition by improvement of tackling capacity against natural disasters (mitigation of vulnerability) and the income improvement by strengthening and diversification of means of livelihood

Basic Idea: Reflection of regional characteristics and effective use of regional resources

10-3 Abstraction of Priority Development Fields and Priority Development Subjects and Their Respective Objectives (10.3.4)

There are many subjects to be settled for attaining the mitigation of vulnerability and the improvement of livelihood of poor peasants of Ayacucho Region. The priority development fields and the priority development subjects should be therefore determined aiming to work out the measures effectively to settle these many subjects. From the results of analysis on existing data and household survey, it was confirmed that (i) Mitigation of vulnerability of poor peasants, (ii) Improvement of livelihood of poor peasants, and (iii) Capacity building of local organizations were the priority development fields. In addition, the following priority development subjects composing the priority development fields were abstracted from the PCM workshop.

Priority Development Fields and Priority Development Subjects

Priority Development Fields	Priority Development Subjects
(1) Mitigation of Vulnerability of Poor Peasants	(a) Countermeasures to cold-weather damage
	(b) Countermeasures to drought-weather damage
	(c) Tackling of weather change
	(d) Reinforcement and O&M of roads
(2) Improvement of Livelihood of Poor Peasants	(a) Strengthening of production technology
	(b) Strengthening of distribution of agricultural products
	(c) Conservation of Production Resources
	(d) Strengthening of Fund Procurement
(3) Capacity Development of Local Organizations	(a) Capacity development of regional government
	(b) Capacity development of local government
	(c) Strengthening of coordination among local governments
	(d) Capacity development of community organization
	(e) Strengthening of Agricultural extension service system

Source: JICA Study Team

10-5 Reflection of Existing Plans (10.3.6)

As the results of inventory survey, it is found that the sub-projects applied to SNIP in Ayacucho Region are estimated at 4,871 as of April 2009. Out of them, the number of the sub-project categorized as “Already implemented”, “On-going”, “Refused” are 157,646 and 128 respectively, of which the total number is 931. These sub-projects are omitted from the Study. In addition, the remaining sub-projects are narrowed from relevant sectors to the Study. Finally, the following 1,913 sub-projects are taken up for the Study.

SNIP Sub-Projects for the Study

Sector/Sub-sector	Under Evaluation	Approved	Total
(1) Agriculture	432	1,159	1,591
(a) Farming technology	(65)	(85)	(150)
(b) Irrigation	(106)	(411)	(520)
(c) Reforestation/Environmental Conservation	(17)	(70)	(88)
(d) Livestock	(76)	(47)	(123)
(e) Fishery	(7)	(34)	(41)
(f) Road	(158)	(518)	(676)
(2) Social support	143	65	208
(3) Administration	53	61	114
Total	628	1,285	1,913

Source: Inventory Survey

These 1913 sub-projects are regarded as the existing plans for the Study. If these sub-projects are deemed to contribute to the strategic development goal of the Study and located at poverty area, these would be incorporated into the Master Plan.

10-6 Development Scenario (10.3.9)

The Master Plan is formulated with a target year of 2020, and thus Action Plan is prepared for 10 years from 2011 to 2020. As the effective and comprehensive way, the priority development fields are determined, and then priority development subjects for each priority development field are determined based on the results of present conditions. The priority development subjects are themes to attain the objectives of the priority development fields. In other words, the priority subject becomes a program consisting of plural projects. These

projects are newly prepared or follow the existing plans, in consideration of the basic idea of “*reflection of regional characteristics and effective use of regional resources*”. As for the study on the existing plans, the sub-projects applied to SNIP and the on-going Japanese loan projects are taken up in the Study.

11 Master Plan (M/P)

11-1 Composition of Master Plan (11.1)

There are lots of existing plans which are closely related to attainment at strategic development goal as mentioned previously. In each sector, these existing plans are classified into some development projects. In addition, the new development projects are formed and proposed to cope with the subjects that the existing plans could not settle. These are the projects composing the Master Plan.

11-2 Preliminary Estimate of Development Investment Amount (11.2)

The development investment amount necessary for the implementation of Master Plan was estimated. The development investment amount was preliminarily estimated using the growing rate of GDP. As a result, the development investment budget for 10 years from 2011 to 2020 in Ayacucho Region was estimated at S/.5,635 million, S/.6,656 million and S/.6,916 million for 3%, 6% and 7% of growing rates of GDP, respectively. This estimated budget covers all sectors. Accordingly, the development investment budget for the Master Plan being mainly composed of agriculture, livestock and road sectors, should be picked out from the estimated development investment budget. According to the past data, the development investment budget for agriculture, livestock and road sectors, would occupy about 60 % of total one. In addition, the development investment budget applicable for the Master Plan was assumed to be 20 % of that for agriculture, livestock and road sectors since no data are available for the cost for presently on-going projects and O&M cost of completed ones as well as the new projects to be proposed in the future. Consequently, the development investment budget applicable for the Master Plan was estimated to be about S/.676 million, S/.799 million, and S/.830 million for 3%, 6% and 7% of growing rates of GDP, respectively.

11-3 Vulnerability Measures (11.3)

Development Purpose (11.3.1)

The Vulnerability Measures Program aims at “stabilization of farming activities and life conditions by improving the tackling capacity for vulnerability mitigation by GRA, local governments and communities”, by regarding the “shortage of tackling capacity against natural disasters” as vulnerability in Ayacucho Region.

Basic Policies for Formulation of Development Program (11.3.2)

It was decided that the basic policies for formulation of Vulnerability Mitigation Program to cope with present conditions and subjects, were (i) Improvement of capacity of regional government through development of regional basic information, (ii) Improvement of

farmers' capacity on mitigation of vulnerability through concentration of related knowledge, (iii) Improvement of communities' capacity on mitigation of vulnerability through strengthening of organizational activity, (iv) Improvement of capacity on mitigation and analysis through strengthening of monitoring and analyzing of meteorological, and 5) Effective mitigation of vulnerability through intensive improvement of roads frequently damaged.

Outline of Development Program (11.3.4.1)

Based on trend of SNIP sub-projects and the basic policies, the development program consisting of 4 projects was formulated as shown below:

Project	Purpose	Type
Basic Information Arrangement Project for Vulnerability Mitigation Capacity Building (New Project)	<ul style="list-style-type: none"> - Enhancement of regional government's capacity on analysis of vulnerability through development of basic information - Enhancement of community's capacity on vulnerability measure through community risk analysis - Enhancement of farmers' capacity on vulnerability measure through collection, organization and distribution of measures for mitigation of vulnerability 	Short Term Preventive Measure (Regional, Provincial and Farmers' Level)
Climate Monitoring Strengthening and Observation Network System Establishment Project for Vulnerability Mitigation Capacity Building (New Project)	<ul style="list-style-type: none"> - Enhancement of capacity of regional government on analysis of meteorological monitoring through development of monitoring system - Enhancement of capacity of farmers on mitigation of agricultural vulnerability through provision of agricultural meteorological information 	Long Term Preventive Measure (Regional and Farmer's Level)
Community Vulnerability Mitigation Capacity Building Project (Project based on SNIP sub-project)	<ul style="list-style-type: none"> - Enhancement of community's capacity on vulnerability measures through activation of organizational activity and provision of multi-purpose community hall - Enhancement of community's physical capacity against natural disaster through construction of multi-purpose community hall with shelter function. 	Short Term Preventive Measure (Community Level)
Urgent Rehabilitation Project for Frequent Disaster Occurrence Roads (New Project)	<ul style="list-style-type: none"> - Prevention of isolation of community through improvement of road frequently damaged 	Short Term Urgent Recuperative Measure (Regional Level)

Source: JICA Study Team

11-4 Farming/Extension (11.4)

Development Purpose (11.4.1)

Agriculture in Ayacucho Region faces many constraining factors in climate conditions such as topography (slope land), high altitudes and low temperatures. In addition, there exist various problems on farming system such as lack of farming budget and access to markets. Therefore, integrated countermeasure for both production and supply systems is required to link agricultural product of the Ayacucho Region with market. The Farming / Extension Sector Development Program aims at improvement of livelihood of poor peasants through strengthening of competitiveness of agricultural products by improving "agricultural production system" and "agricultural supporting system".

Basic Policies for Formulation of Development Program (11.4.2)

The basic policies for formulation of Farming/Extension Sector Development Program are (i) Reflection of character of region and natural conditions, (ii) Utilization of unused resources and Regional peculiar resources, (iii) Consideration for characteristics of poor peasants' farm management, (iv) Improvement of efficiency of farming management, (v) Improvement of access to extension service, (vi) Expansion of activity for technology development, and (vii) Enhancement of supporting activity to reduce peasants' risk to introduce new crops.

Outline of Development Program (11.4.4.1)

Project	Purpose
High Quality Seeds and Nursery Production Project	<u>Countermeasure for improvement of productivity and quality of new and existing crops</u> The Project aims at improvement of productivity and quality mainly existing crops which are cultivated in very wide area of Ayacucho Region
Market Competitiveness Strengthening and Crop Diversification Promotion Project	<u>Countermeasure for improvement of market value of agricultural productions and for acceleration of crop-diversification</u> The Project aims at strengthening of competitiveness of agricultural productions through acceleration of crop-diversification by introducing valuable crops and varieties.
New Crop Production Development Project	<u>Countermeasure for entry and creation of new market</u> The Project aims at development of production system and technology of new products with high demand in the future
Agricultural Extension Service Strengthening Project	<u>Countermeasure for strengthening of peasants supporting system</u> The Project aims to enhance farmers' organization, acceleration of crop-diversification, and improvement of quality of agricultural productions through strengthening of peasants supporting system.

11-5 Livestock (11.5)

Development Purpose (11.5.1)

Agriculture and livestock are the most important income sources in rural area. Seventy percent of rural population of Ayacucho Region is engaged in agriculture and livestock. However, livestock in Ayacucho Region is extensive and its productivity is low. In addition, overgrazing without pasture management is causing several problems such as deterioration of vegetation. Taking into consideration such situations, the Livestock Development Sector Program aims at the "promotion of livestock and improvement of livelihood by livestock through the sustainable use of natural resources".

Basic Policies for Formulation of Development Program (11.5.2)

From the results of analysis on current subjects envisaged, the basic policies for formulation of Livestock Sector Development program were determined to be (i) Introduction of sustainable system of livestock fitted to natural character of Andes Area, (ii) Development of stable supply System of high quality feedstuff, (iii) Improvement of environment for production, (iv) Sustainable utilization of wild camelid, and (v) Formulation of commercial base producers' organization.

Outline of Development Program (11.5.3, 11.5.4)

Project	Contents
Milk Production Support Project	<ul style="list-style-type: none"> - Improvement of Pasture - Training and Strengthening of Producers' Association - Establishment of Demonstration Farm and Technical Assistance on Milk Production Management - Development of Infrastructure for Livestock
Beef Cattle Production Project	<ul style="list-style-type: none"> - Technical Assistant on Pasture Management and Production - Formulation and Strengthening of Producers' Association - Establishment of Demonstration Farm and Technical Assistance on Beef Cattle Production Management - Development of Infrastructure for Livestock
Alpaca Production Support Project	<ul style="list-style-type: none"> - Technical Assistant on Pasture Management and Production - Formulation and Strengthening of Producers' Association - Installation of Infrastructures for Livestock - Technical Assistance on Management for Alpaca Production (Feed Production, Sanitary Management, Breeding etc.)
Vicuna Management and Protection Project	<ul style="list-style-type: none"> - Technical Assistance for Pasture Production and Management - Formulation and Training of Vicuna Producers' Association - Development of Infrastructure for Protection of Vicuna - Technical Assistance on Vicuna Management and Protection
Cuy Production Efficiency Improvement Project	<ul style="list-style-type: none"> - Production of Feedstuff for Cuy (Guinea Pig) - Formulation and Strengthening of Producers' Association - Technical Assistance on Technology on Cuy Breeding - Development of Facilities for Cuy Breeding
Mutton and Wool Production Support Project	<ul style="list-style-type: none"> - Technical Assistance for Pasture Production and Management (Natural and Cultivated Pasture) - Establishment of Demonstration Farm and Technical Assistance on Sheep Management - Formulation and Training of Producers' Association - Development of Infrastructure for Livestock

11-6 Inland Fishery (11.6)Development Objective (11.6.1)

The inland fishery in Ayacucho Region is positioned as a new industry which can contribute to the activation of new rural economy, which depends greatly on agriculture and livestock. Nevertheless, the environment for the production of inland fishery in Ayacucho Region is not developed enough in comparison to other regions which are more developed regions. In consideration of the above, the objective of the development program is to contribute to the creation of employment opportunities as well as a higher income for the poor peasants and improve living conditions in rural area through the promotion of inland fishery in Ayacucho Region.

Basic Policies for Formulation of Development Program (11.6.2)

In order to attain the objective mentioned above and in consideration of present subjects, the basic policies for formulation of development program were decided to be (i) Support to small-scaled business, (ii) Women participation and (iii) Environmental considerations for lakes, lagoons and rivers.

Outline of Development Program (11.6.3, 11.6.4)

Project	Contents
Inland Fishery Support Institution Capability Strengthening Project	The objective of the Project is to promote inland fishery for the poor peasants through strengthening of institutional building under a development plan of inland fishery in Ayacucho Region. Its concrete contents are as follows: - Preparation of Regional Development Plan for Inland Fishery - Strengthening of Institutional Building for Inland Fishery
Extension System Establishment Project for Small-scaled Aquaculture Production Organization	The objective of the Project is to promote inland fishery for the poor peasants through establishment of extension system in Ayacucho Region. Its concrete contents are as follows: - Organization and Strengthening of Producers' Associations for Inland Fishery - Establishment of Extension System for Inland Fishery
Small-scaled Aquaculture Pond Construction Project	The objective of the Project is to promote community-based inland fishery with producers' associations through the construction of small-scale fish farms in Ayacucho Region. Its concrete contents are as follows: - Construction of Small-scaled Aquaculture Ponds - Strengthening of Operation and Maintenance for Aquaculture Ponds

11-7 Reforestation/Environmental Conservation (11.7)Development Objective (11.7.1)

The livelihood of poor peasants in Ayacucho Region is due to mainly by agriculture and livestock. The soil conservation and water resources conservation play an important role of conserving the production base for agriculture and livestock and the water resources for irrigation, and of supporting the development of these industries indirectly. From these facts, the objective of the Reforestation/Environmental Conservation Sector Program is decided as provision of indirect support for the activities of the main sectors such as agriculture, livestock industry and irrigation.

Basic Policies for Formulation of Development Program (11.7.2)

The basic policies for formulation of development program toward settling the problems and constraints for reforestation development are determined as (i) Reforestation for conservation of production base, (ii) Reforestation for productive forests, (iii) Promotion, training and dissemination of agro-forestry, and (iv) Preparation of Ayacucho reforestation development plan.

Outline of Development Program (11.7.3, 11.7.4)

Project	Contents
Reforestation Plan Preparation Project	The development policy of reforestation will be prepared by conducting the clarification of development potential of forest resources in whole Ayacucho Region, determination of necessary areas for reforestation, and investigation of causes of present problems. In addition, systemization of technology will be made for the capacity development for the officials and training and dissemination of the farmers.
Soil Conservation Measure Project	The soil erosion prevention measures will be applied for agricultural fields, pasture fields, watershed, and degraded lands (former forests, bare lands, etc.), where serious erosion would bring about significant damage on the production base. In addition, the Project includes improvement of water penetration of soil for effective use of less rainwater.
Production Forestry Creation Project	The Project will create the forest which will produce timber, firewood, and non-timber forest products.

Project	Contents
Agro-forestry Support Project	The Project aims at promotion of the traditional agro-forestry, improvement of technology, and dissemination of its know-how to communities (farmers).

11-8 Irrigation (11.8)

Development Objective (11.8.1)

Ayacucho Region lies mostly in Andean mountains above El 3,000 m. Its climate is semidry with annual rainfall of some 100 mm, and a year is clearly divided into the rainy season from October to March and the dry season from April to September. By this situation, stable agricultural production throughout the year is difficult, and the development in agriculture sector is limited. In addition, the farmland is disposed to the risk of frequent draught caused by the abnormal weather in recent years. To cope with these vulnerabilities, it is indispensable to introduce proper irrigation system. From these viewpoints, the objective of the Irrigation Sector Development is to increase and stabilize the yields of agricultural products through providing irrigation water to farmlands, and finally to improve the living standard of the poor farmers.

Basic Policies for Formulation of Development Program (11.8.2)

As the results of analysis on present situations and problems, the basic policies for formulation of development program are decided as (i) Introduction of suitable irrigation Facilities, (ii) Strengthening of irrigation committees for sustainable management and (iii) Establishment of basic information system for preparation of appropriate irrigation development plan.

Outline of Development Program (11.8.3, 11.8.4)

Project	Contents
Large Investment Projects	Taking into consideration SNIP process and effective implementation, the projects with more than S/.6 million are categorized as the Large Investment Projects. These are Large Investment Projects: -Cuchoquesera Dam Emergency Discharge System Construction Project (SNIP No. 86821) -Ingalla Dam and Irrigation Canals Construction Project (SNIP No. 87269) -Expansion and Improvement Project of Secondary Canal in Tambillo No. 7 Irrigation Unit, Stage II in the Ex PERC Irrigation System (SNIP No. 87235)
New Construction and Expansion Irrigation Project	In addition to the large investment irrigation projects, the development of small-scaled irrigation is also strongly desired. The main water resources for small scaled irrigation are small streams and springs. Mainly traditional gravity irrigation is applied. In the existing irrigation system, new farmlands are developed as far as the water resources and farmlands are available in the viewpoint of effective use of regional natural resources.
Existing Irrigation Improvement and Rehabilitation Project	In Ayacucho Region, irrigation systems already exist in some parts. However, most of them are not functioning effectively due to deteriorated facilities and inappropriate maintenance. This project aims at efficient irrigation water distribution and application to farmlands through improvement of the existing irrigation facilities.
Technical Irrigation Project	Irrigation water resource is not abundant in Ayacucho Region. On the other hand, it has an advantage that hydraulic head for irrigation is available by its topographic characteristics. Under such situation, water saving irrigation such as sprinkler or drip irrigation is being introduced to enable efficient irrigation. This project aims at promotion of water saving irrigation system.

Project	Contents
Irrigation Basic Information and Database System Building Project	The actual status of irrigation development in Ayacucho Region is presently unknown. Without this information, future strategic development planning, and diffusion of irrigation practice and O&M will be difficult. It is recommended to complete these data at the possible soonest. Therefore, the purpose of this Project is to prepare a database of the basic information regarding irrigation, which should be easy to convert, and build up a system for timely update of the database.

11-9 Road (11.9)

Development Objective (11.9.1)

In consideration of support to distribution of products of agriculture and livestock which are major economic activities in rural area of Ayacucho Region, the development objectives of the road sector are decided as (i) Integration of production and distribution through construction, rehabilitation and O&M of road infrastructures, (ii) Promotion of strengthening of sustainable O&M of roads by rural communities, and (iii) Support to strengthening of O&M organization undertaking the expansion and O&M of community roads.

Basic Policies for Formulation of Development Program (11.9.2)

Taking into consideration the results of exchange of opinions with the related government organizations on present road conditions, the basic policies for formulation of development program were decided as (i) Improvement of road network of region, to realize the integration of production and distribution by preparation of roads, (ii) Mitigation of impact of natural phenomenon by proper O&M of roads, (iii) Improvement of traffic conditions by improvement of quality and durability of roads, (iv) Promotion of participatory O&M of roads by communities, (v) Capacity building of local governments on O&M of roads, and (vi) Training of technical staff on efficient O&M of roads.

Outline of Development Program (11.9.3, 11.9.4)

Project	Contents
Road Infrastructure Development Project	This Project is classified into three components from the viewpoint of similarity of investment size, construction materials and construction process in view of database on SNIP sub-projects. These are (i) Road construction and maintenance component, (ii) Road rehabilitation component and (iii) Bridge and roadside structures construction component.
Acos Vinchos District Main Road Improvement Project	This Project consists of improvement of trouble places by rehabilitation of unpaved road, modification of road route, construction of retaining wall and prevention of weathering of soil. This Project includes not only road rehabilitation, but also setting of traffic sign and traffic safety education to prevent traffic accidents. In addition, the Project includes the reforestation to mitigate environmental loads such as cutting of trees by removal of earth and sand, blasting and excavation of sloped area, and scattering of fuel and lubricant.
Vilcanchos-Ccarhuaccocco District Main Road Construction Project	This Project aims at construction of gravel road with 18.39 km in total, and also includes construction of platform, pavement, related structures, drainage facilities (retaining walls, drops, drains, side ditches), and traffic safety facilities such as traffic safety sign. Also it includes construction of 2 bridges on the Pampas river, of which the type is of combination of steel piers and concrete plates and the length is 30 m.

Project	Contents
Ayahuanco-Santillama-Liochegua District Main Road Construction Project	The Project aims to connect the center of Huanta Province with Ayahuanco, Santillana and Llochegua which are isolated at the northern part of Huanta Province. The road length is about 95 km and a concrete bridge with 6 m span will be constructed at the Samarinahuayco valley and Jatumpampa valley respectively.
Community Roads Participatory O&M Promotion Project	This Project aims to, in consideration of experiences in rural road development program being executed by the Ministry of Transportation and GRA, promote the participation to O&M of community roads by the poor peasants in Ayacucho Region. Since there is a limitation in government budget on O&M of roads, it is planed to establish a Pilot Project to create the small-scaled fund to procure necessary tools for O&M by applying to O&M small amount taxes obtained from productions by communities in the future.
Road Improvement and O&M Strengthening Project	This Project aims at strengthening of capability of government organizations undertaking the development of road infrastructure and transportation in Ayacucho Region. The related organizations are the departments of infrastructure and transportation. The technical support will be conducted by the experts on the reengineering related to the organization and its roles, road infrastructure, management and operation of transportation and coordination of transportation. In addition, the Project will support the procurement of O&M equipment being requested by local governments.

11-10 Agricultural Products Distribution and Agro-processing (11.10)

Development Objective (11.10.1)

Most of farm income generally depends on income from the cash crops cultivated in small area and income from domestic animals. The Income of these farmers depends on the small quantity sales of the surpluses produced in the small property and of the dairy by-products. Moreover, their products are of low quality and unstable in the quantity of production depending on the climatic vulnerability. It is very difficult for the farmers, to leave the chain of poverty, because of the difficulties to improve their production, causing by various factors. To take off from the chain of poverty, it is necessary to take measures to improve the production with better quality, assuring their market and of added bigger value. With these circumstances, the objective of development program was decided to improve the sales prices of products by value added and to expand the market of productions that poor peasants produce, through promotion of agricultural products distribution and agro-processing, and finally to improve the conditions of rural life and to assure the agricultural economy in Ayacucho Region.

Basic Policies for Formulation of Development Program (11.10.2)

In formulation of development program of agricultural products distribution and agro-processing, consideration should be given to how to occur the maximum effect at the priority development fields and the priority development subjects mentioned previously. Hence, the basic policies for formulation of development program were decided as (i) Improvement of agricultural products distribution and agro-processing, (ii) Support to distribution system of agricultural products markets on potential items, (iii) Improvement of distribution infrastructure for potential items and areas, (iv) Improvement of agro-processing

structure aiming at expansion of market for production items in the Region.

Outline of Development Program (11.10.3, 11.10.4)

Project	Contents
Market Distribution System Establishment Project for Agriculture Production	<p>The Project will implement the pilots projects with the purpose to seek for the appropriate measures of participating in the market and applying different types of pilot sub-projects in a potential products, such as the improvement of mechanisms of popularization of information of markets, improvement of distribution channels, and strengthening of the association. The contents of activities are as follows:</p> <ul style="list-style-type: none"> - Support to Establishment of Markets Information Center on Agricultural Products - Support to Improvement of Distribution Channels of Cocoa and Coffee - Support to Improvement of Distribution Structure of Cereals - Support to Improvement of Distribution Chain of Market Products (Potatoes) - Support to Improvement of Market Chain of Derived Products of Sheep and Camel - Support to Improvement of Distribution Chain of Dairy Products - Support to Improvement of Distribution Chain of Niches Products
Distribution Infrastructure Construction Promotion Project	<p>The Project aims to structure the base of the possible projects of distribution infrastructure for potential crops and promoted crops, through institutional strengthening to support the installation of distribution infrastructure center, with the objective of enlarging the market and the competitiveness of the products of Ayacucho in the medium and long term. In addition, it would require to install the distribution infrastructures to be able to align the production with the demands of the market so as to ensure the new market for potential crops. The contents of activities are as follows:</p> <ul style="list-style-type: none"> - Support to Installation of Distribution Infrastructure Center - Support to Construction of Infrastructure for Local Markets - Support to Construction of Slaughterhouse - Support to Installation of Wholesaler Market - Support to Storing Facilities
Agro-processing Industry Promotion Project	<p>This Project will provide the value added to the products in rural area and develop the new markets through agro-processing industry, to expand the new market. The contents of activities are as follows:</p> <ul style="list-style-type: none"> - Institutional Strengthening to Motivate Installation of Agro-processing Promotion Center - Support to Installation of Private Agro-processing - Support to Community Facilities of Agro-processing - Support to Promotion of Facilities for New Type Agro-processing - Support to Installation of Beneficiaries Plant for Wool of Sheep, Alpaca and Vicuña - Support to Improvement of Sanitary Control Technology

11-11 Institutional Capacity Building/Training Plan (11.11)

Development Objective (11.11.1)

The development objective is to carry out local institutional reinforcement and training in order to reinforce the rural organizations (*GRA, local governments and rural communities*) aiming at the priority subject "improvement of living standard and mitigation of vulnerability of the poor peasants".

Basic Policies for Formulation of Development Program (11.11.2)

As the results of analysis on present conditions and subjects for Institutional Capacity Building/Training Plan Sector, the basic policies for formulation of development program were decided as (i) Priority to the institutions/organizations and themes which have more relevance to the development challenges of this Study, (ii) Strengthening of coordination among organizations through joint training, (iii) Efficient planning by absorbing lessons from

the existing donor-assisted projects and training programs offered by the private sector

Outline of Development Program (11.11.4)

Project	Contents
Support Capability Strengthening Project for Production Organization by Local Governments	This Project aims to set and strengthen ODEL to support for producers' organizations, employment acceleration, and farmers' income increase. The concrete activities of the Project are as follows: - Support for ODEL Establishment - Joint Training Focusing on Rural and Economic Development - Technical Assistance to ODEL of Local Governments
Promotion Capability Strengthening Project for Public Investment Works Promotion by Local Governments	This Project will conduct the training for the 11 provincial and the 111 local governments' staff in general division, budget planning subdivision, administration office and technical divisions (economic development, social development and infrastructure) on SNIP and project cycle management, so that the local governments become able to implement the public investment projects smoothly. The concrete activities of the Project are as follows: - Establishment of OPI - Training on SNIP and Project Cycle Management

12 Action Plan

12-1 Basic Consideration for Preparation of Action Plan (12.1)

Based on the development strategies, the Master Plan proposed 39 projects from various sectors concerned. In preparation of the Action Plan for these 39 projects for 10 years from 2011 to 2020, the following basic considerations were employed:

- Development in Consideration of Avoidance of Occurrence of Regional Disparity : Projects should be commenced at the same time as much as possible, to avoid the Occurrence of Regional Disparity
- Use of Combined Effect : The combined effect should be realized by combining the independent project/sub-project.
- Consideration of Development Budget Amount Applicable : The applicable budget should be estimated based on the past actual expenditures, to prepare the practicable Action Plan.

12-2 Target (12.2.1)

Based on the Sierra Exportadora and the “water for everybody” program, the Comprehensive Development Plan of Ayacucho Region 2007-2024, the strategic target and basic idea mentioned previously, the target of Action Plan was determined to be the “*contribution to mitigation of vulnerability and improvement of livelihood of poor peasants considering the regional characteristics*”.

12-3 Development Program by Region (12.2.2)

In the Master Plan, the development program for each sector was prepared in consideration of elevation-wise characteristics by each province. In addition, the vulnerability measures program was prepared based on the regional disaster condition. Using these results, the development program by region aiming at improvement of livelihood and the vulnerability mitigation program by region aiming at vulnerability mitigation were prepared as follows

Livelihood Improvement Program by Region

The program by region for each sector consists of the following development projects:

Sector	Project Code	Project
(a) Farming/ Extension	I-(a)- 1:	High Quality Seeds and Nursery Production Project
	I-(a)- 2:	Market Competitiveness Strengthening and Crop Diversification Promotion Project
	I-(a)- 3:	New Crop Production Development Project
	I-(a)- 4:	Agriculture Extension Service Strengthening Project
(b) Livestock	I-(b)- 1:	Milk Production Support Project
	I-(b)- 2:	Beef Cattle Production Project
	I-(b)- 3:	Alpaca Production Support Project
	I-(b)- 4:	Vicuña Management and Protection Support Project
	I-(b)- 5:	Cuy Production Efficiency Improvement Project
	I-(b)- 6:	Mutton and Wool Production Support Project
(c) Inland Fishery	I-(c)- 1:	Inland Fishery Support Institution Capability Strengthening Project
	I-(c)- 2:	Extension System Establishment Project for Small-scaled Aquaculture Production Organization
	I-(c)- 3:	Small-scaled Aquaculture Pond Construction Project
(d) Reforestation/ Environmental Conservation*	I-(d)- 1:	Reforestation Plan Preparation Project
	I-(d)- 2:	Production Forestry Creation Project
	I-(d)- 3:	Agroforestry Support Project
(e) Irrigation	I-(e)- 1:	Cuchoquesera Dam Emergency Discharge System Construction Project
	I-(e)- 2:	Ingalla Dam and Irrigation Canals Construction Project
	I-(e)- 3:	Expansion and Improvement Project of Secondary Canal in Tambillo No. 7 Irrigation Unit, Stage II in the Ex PERC Irrigation System
	I-(e)- 4:	New Construction and Expansion Irrigation Project
	I-(e)- 5:	Existing Irrigation Improvement and Rehabilitation Project
	I-(e)- 6:	Technical Irrigation Project
	I-(e)- 7:	Irrigation Basic Information and Database System Building Project
(f) Road	I-(f)- 1:	Road Infrastructure Development Project
	I-(f)- 2:	Acos Vinchos District Main Road Improvement
	I-(f)- 3:	Vilcanchos-Ccaruaccocco District Main Road Construction Project
	I-(f)- 4:	Ayahuanco-Sntillana-Llochegua District Main Road Construction Project
	I-(f)- 5:	Community Roads Participatory O&M Promotion Project
	I-(f)- 6:	Road Improvement and O&M Strengthening Project
(g) Agricultural Production Distribution /Agro-processing	I-(g)- 1:	Market Distribution System Establishment Project for Agriculture Production
	I-(g)- 2:	Distribution Infrastructure Construction Promotion Project
	I-(g)- 3:	Agro-processing Industry Promotion Project
(h) Institutional Building	I-(h)- 1:	Support Capability Strengthening Project for Production Organization by Local Governments
	I-(h)- 2:	Promotion Capability Strengthening Project for Public Investment Works by Local Governments

In addition, the relation between these projects and the elevation-wise areas by province is shown below.

Sector	Project Code	Project
(b) Reforestation/ Environmental Conservation	II-(b)- 1:	Soil Conservation Measure Project
(c) Irrigation	I-(e)- 1:	Cuchoquesera Dam Emergency Discharge System Construction Project
	I-(e)- 2:	Ingalla Dam and Irrigation Canals Construction Project
	I-(e)- 3:	Expansion and Improvement Project of Secondary Canal in Tambillo No. 7 Irrigation Unit, Stage II in the Ex PERC Irrigation System
	I-(e)- 4:	New Construction and Expansion Irrigation Project
	I-(e)- 5:	Existing Irrigation Improvement and Rehabilitation Project
	I-(e)- 6:	Technical Irrigation Project
	I-(e)- 7:	Irrigation Basic Information and Database System Building Project

In addition, the relation between these projects and the elevation-wise areas by province is shown below.

Region	No.	Province	Elevation (m)	Vulnerability Measures				Reforestation/ Environment Conservation	Irrigation							
				II-(a)-1	II-(a)-2	II-(a)-3	II-(a)-4		II-(b)-1	I-(e)-1	I-(e)-2	I-(e)-3	I-(e)-4	I-(e)-5	I-(e)-6	I-(e)-7
All Provinces				⊙	⊙	⊙	⊙									
Northern	1	Huanta	2000-4000			⊙		⊙					⊙	⊙	⊙	
	2		<2000			○										
	3	La Mar	2000-4000			△		○					⊙	○	○	
	4	Huamanga	2000-4000			⊙		⊙				⊙	⊙	⊙	⊙	
Central	5	Cangallo	≧4000			○							○			
	6		2000-4000			⊙		○	⊙	⊙		⊙	⊙	⊙		
	7	Vilcas Huaman	2000-4000			△		△					⊙	○	○	
	8	Victor Fajardo	≧4000			○							△	△		
	9		2000-4000			⊙		○					○	⊙	○	
	10	Huanca Sancos	≧4000			△							△			
	11		2000-4000			△		△					⊙	⊙		
	12	Sucre	≧4000			○										
	13		2000-4000			⊙		○					○	○	△	
	14		≧4000			○								○		
Southern	15	Lucanas	2000-4000			⊙		⊙					⊙	⊙	○	
	16		≧4000			△										
	17	Parinacochas	2000-4000			△		△					⊙	⊙	○	
	18		≧4000			○								○		
	19	Paucar del Sara Sara	2000-4000			⊙		△					⊙	⊙	○	

Remarks : ⊙ (Contribution Large) , ○ (Contribution Medium) , △ (Contribution Small)

: List of Development Projects

II-(a)-1 Basic Information Arrangement Project for Vulnerability Mitigation Capability Building

II-(a)-2 Climate Monitoring Strengthening and Observation Network System Establishment Project for Vulnerability Mitigation Capability Building

II-(a)-3 Community Vulnerability Mitigation Capability Building Project

II-(a)-4 Urgent Rehabilitation Project for Frequent Disaster Occurrence Roads

II-(b)-1 Soil Conservation Measure Project

I-(e)-1 Cuchoquesera Dam Emergency Discharge System Construction Project

I-(e)-2 Ingalla Dam and Irrigation Canals Construction Project

I-(e)-3 Expansion and Improvement Project of Secondary Canal in Tambillo No. 7 Irrigation Unit, Stage II in the Ex PERC Irrigation System

I-(e)-4 New Construction and Expansion Irrigation Project

I-(e)-5 Existing Irrigation Improvement and Rehabilitation Project

I-(e)-6 Technical Irrigation Project

I-(e)-7 Irrigation Basic Information and Database System Building Project

This table clarifies that which projects should be developed at which areas in the Vulnerability Mitigation Program by Region as well as the Livelihood Improvement Program by Region, to realize the good effects.

12-4 Implementation Schedule (12.2.3)

The implementation schedule was worked based on the following basic considerations:

- Application of the short term (2011-2014), medium term (2011-2017) and long term (2011-2020)
- Implementation order among sectors
- Efficient occurrence of effect of projects

The Action Plan was studied for the following 3 cases:

Case 1

This case targets the implementation of 1st development priority group in SNIP sub-projects. This case shows the total project cost of S/.516 million, including contingency amount (15% equivalent). The cost corresponds to 76% of development investment budget (S/.676 million) with annual growth rate of 3% in GDP, and 65% of development investment budget (S/.799 million) with annual growth rate of 6% in GDP. This case indicates still enough room for the budget

Case 2

This case includes the implementation of 1st and 2nd development priority groups in SNIP sub-projects. The total project cost was estimated at S/.1,109 million including contingency amount (15% equivalent). This cost largely exceeds the development investment budget (S/.799 million) with annual growth rate of 6%, say 39% higher than the budget.

Case 3

This case targets the implementation of 1st development priority group in SNIP sub-projects for irrigation and road sectors, and the implementation of 1st and 2nd development priority groups in SNIP sub-projects for other sectors. The main reasons that only 1st development priority group in SNIP sub-projects for irrigation and road sectors is taken up, are the remarkably higher cost than other sectors, the larger number of sub-project than other sectors and the limited executing capacity of regional and local governments. In particular, consideration was also given to start of implementation of 7 sub-projects (6,134 ha in total) under the small and medium irrigation infrastructure development program in Ayacucho Region. The total project cost for Case 3 was estimated at S/.665 million. This cost is almost the same with the development investment budget (S/.676 million) with annual growth rate of 3% and is equivalent to 83% of the development investment budget (S/.799 million) with annual growth rate of 6%.

With the study results mentioned above, it is proposed to apply Case 3 in the Study.

In addition, 39 projects were studied for commencement time “among sectors” and “in sector”.

Study on Commencement Time among Sectors

- The projects for institutional building is planned to be started early since these are considered indispensable for project sustainability.
- The vulnerability measurements should be executed centering on the short term taking it into consideration that the vulnerability is serious problem to be urgently settled for the poor peasants.
- The projects for irrigation and road sectors should be commenced in early stage because these are related to the preparation of infrastructures for production.

- The agricultural production distribution projects should be started in early stage taking it into account that the farming/extension, livestock and inland fishery sectors aim at livelihood improvement by putting the point of view on market.
- The reforestation/environmental conservation except soil conservation related to vulnerability measures should be executed from the medium to long terms.

It is difficult to concurrently start all these projects due to the limited budget and number of staff. To this end, these projects were prioritized in commencement from their characteristics.

(76% - 92%) in the past 4 years in Ayacucho Region is at higher level as compared with other regions. If this situation is considered, the total investment amount of S/. 665 million for the Master Plan can be judged to be appropriate. In addition, the investment amounts per capita for respective development programs are low as a whole, and be within the minimum-maximum investment amounts per capita of SNIP on-going and completed subprojects, so that these are judged to be appropriate. Furthermore, a study was made for the effect of the projects composing the each program, to the priority development subjects. Consequently, it was clarified that each project contributes to 2 to 3 priority development subjects and the Master Plan totally contributes to whole priority development subjects.

In addition to the above, a preliminary economic evaluation was made for the projects which directly relate to the production activities on agriculture and livestock (farming/extension, livestock, inland fishery, reforestation/environmental conservation, irrigation), so that it was confirmed that these projects were generally economically feasible. Furthermore, for the projects (vulnerability measures, road development, information system development, planning and institutional strengthening), which indirectly relate to production activities, the expected results were analyzed and described in the report.

13 Environmental and Social Considerations

13-1 Evaluation of Potential Environmental and Social Impacts to be caused by Proposed Projects and Mitigation Plans

The Master Plan consists of 39 proposed projects from 9 sectors to attain the improvement of livelihood and the mitigation of vulnerability. With an aim to mitigate the negative environmental and social impacts by the Master Plan, the proposed projects in the Master Plan were evaluated based on the current JICA Guidelines for Environmental and Social Considerations. As a result, during the planning stages, some extent of negative impacts would be expected for the land use and utilization of local resources. Also, some negative impacts would be expected at the following construction stages such as land use and utilization of local resources, inequality between beneficiaries and project-affected people, water use right and common land use right, sanitation, disaster (natural risk) and epidemic as HIV, topography and geology, soil erosion, flow regime of lake and river, flora and fauna, air pollution, water pollution, waste and accidents. At the operational stages, some negative impacts on 12 components, such as, sanitation, disaster (natural risk) and epidemic as HIV, soil erosion, flow regime of lake and river, flora and fauna, landscape, air pollution, water pollution, soil pollution, waste, bottom sediment and accident.

13-2 Study on Alternative Plans (13.4.2)

As for the proposed projects in the Master Plan, comparison and study were made for their possible environmental impacts with or without Master Plan as well as mitigation measure. As a result, the implementation of Master Plan and the mitigation measures shall positively

impact on the local economies, such as employment and livelihood, and the poverties. In addition, the negative impacts are mitigated especially on the existing social infrastructures and services, and environmental components, such as fauna and flora, and biodiversity through the implementation of Master Plan.

14 Conclusion and Issues

14-1 Conclusion (14.1)

The study was made for measurements to settle the subjects on mitigation of vulnerability and improvement of livelihood of poor peasants from perspective of agriculture and livestock. In particular, the Master Plan was formulated taking into consideration diversity on natural environmental aspects and social environmental aspects, say regional characteristics. As a result, 5 development projects toward mitigation of vulnerability and 34 development projects for improvement of livelihood were formed.

The investment amount of S/.655 million required for the implementation of Master Plan is equivalent to 80% - 83% of the estimated development investment budget applicable for 10 years from 2011 to 2020. The digestibility of investment budget (76 – 92%) in the past 4 years in Ayacucho Region is at comparatively higher level as compared with other regions. If this situation is considered, the total investment amount of S/.665 million for the Master Plan can be judged appropriate. On the other hand, the investment amount per capita for respective projects is generally low and is between the minimum and maximum ones of the completed and on-going subprojects of SNIP, so that it could be judged to be reasonable.

It should be noted that the prioritization of subprojects proposed in the Study is provided as a broad indication for implementing the Action Plan. It was decided based on the available data at present. When these are implemented, it is therefore recommended that the priority order of them should be re-examined in due consideration of the change of circumstances surrounding the Ayacucho Region, by making reference with the proposed priority order in the Study.

14-2 Subjects to be tackled toward Implementation of Action Plan (14.2)

There are many areas that have the potential to act as constraints to the smooth implementation of Action Plan after GOP has endorsed it. In addition, there is need for many preparatory actions if the full benefits of the projects are to be realized. What follows are some recommendations on the basic preparatory actions and prerequisites that are considered necessary prior to commencement of implementation.

Preparatory Work

Centralization of management is expected for smooth implementation of Action Plan. Hence, it is proposed to establish the Action Plan Implementation Unit in the Ayacucho Regional Government in advance. The duties of the Action Plan Implementation Unit is to form a

implementation team functioning as a key of respective projects, to monitor the implementation conditions and problems occurred for each project, and to prepare the monitoring report compiling them. Based on the monitoring report, GRA should hold the annual meeting and to give the basic reconsideration to the projects proposed in the Action Plan.

Regular Meeting among Donor Agencies and NGOs

If the Action Plan is realized from now on, further development activities will be executed in the Ayacucho Region. It is therefore proposed to have regular meeting with donor agencies and NGOs, in order to share the progress condition and problems of project, to keep the consistency with assistance and to heighten the assistance effect.

Coordination among Central, Regional and Local Governments

In the Action Plan, many projects including SNIP sub-projects will be implemented, thus, it is expected that the implementation should be smoothly carried out under the coordination among central, regional and local governments. In particular, the decentralization process progresses and now authority including budget is transferred from central government to local government. Taking into account such situation, it is recommended that GRA should take an initiative to strengthen the coordination among relevant agencies and promote the smooth implementation of Action Plan under the deep understanding of them.

Action Plan and SNIP

In the Action Plan, lots of new projects are included. These projects should be given to the SNIP process. In order to make smooth execution of the Action Plan, such SNIP process should be taken into consideration.

Further Measures to be taken by GRA in terms of Environmental and Social Considerations

From now on, the regional government is expected to be in charge of (i) the implementation of the projects and (ii) the provision of the assistance to the local governments for the implementation of the projects. The measures to be taken by GRA for each case in terms of the environment and social considerations are described as follows. Firstly, the necessity of the application of SEIA to the projects shall be confirmed. If the projects are covered by SEIA, such as the classification of the projects, implementation of the environmental study, acquisition of the environmental certifications, and implementation of the described activities by the environmental study, including the mitigation measures and monitoring. In addition, the due consideration for the enhancement of the public participation shall be given in each phase of the projects. If the some relevant studies have been conducted to apply the projects for SNIP, the contents of the existing studies shall be revised in comparison to TOR of the environmental study required by SEIA and the further studies shall be implemented for the lacking components, in consultation with the competent agencies. In case that the local governments are the implementing agencies, GRA shall be responsible for sharing

information on the methods of SEIA with the local governments, and coordination with the competent agencies in order that the local governments can obtain the environmental certifications. Furthermore, it would be desirable that the regional government continues the support to the local governments in the implementation of the mitigation measures and monitoring.

14-3 Possibility of Application of Study Results (14.3)

In the Study, the Master Plan and the Action Plan were formulated aiming at poverty reduction through attainment at the mitigation of vulnerability and the improvement of livelihood in consideration of the regional characteristics in Ayacucho Region. The Ayacucho Region is characterized mainly by the high poverty, high elevation with topographical undulation, and livelihood by agriculture and livestock. Out of 25 regions in Peru, 7 regions of Huancavelica, Apurimac, Puno, Huanuco, Amazonas, Cusco and Cajamarca have similar characteristics mentioned above. In these 7 regions, it seemed that the development approach worked out in the Study could be applied for them if these regions required the Master Plan aiming at poverty reduction.