CENTRAL HIGHLANDS POVERTY REDUCTION PROJECT (P128072)

(Draft for disclosure)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

JULY, 2013
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<td>CDD</td>
<td>Community-Driven Development</td>
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<td>CHPoV</td>
<td>Center Highlands Poverty Reduction Project</td>
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<td>CPC</td>
<td>Commune People’s Committee</td>
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<td>CPMU</td>
<td>Central Project Management Unit</td>
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<td>DARD</td>
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<td>DONRE</td>
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<td>Environmental and Social Management Framework</td>
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<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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INTRODUCTION

The CHPov would build on previous experiences and lessons learned by the World Bank and other development partners working with EM communities in the Central Highlands and other regions of the country in supporting livelihoods and basic service provision to these and other beneficiary groups through participatory and demand-driven processes. Specifically, the task team and Government will draw on past experiences from the previous Bank-supported Community Based Rural Infrastructure Project the P135-Phase II, Northern Mountains Poverty Reduction Project (I and II), as well as relevant projects supported by the ADB, IFAD and other organizations.

The proposed project would focus on 26 very poor districts in the six contiguous provinces of Dak Lak, Dak Nong, Gia Lai, Kon Tum, Quang Nam and Quang Ngai in the Central Region. These districts have an estimated average poverty incidence of 49 percent and cover a target beneficiary population of approximately 1.2 million people, of whom it is estimated that more than 50 percent are ethnic minorities.

The project would seek to enhance the livelihood opportunities for poor households and communities by: improving access to basic services at community level particularly related to farm production and income earning capacity; addressing constraints to accessing natural resources and market opportunities; and supporting sub-national investments (district level downward) to enhance connectivity. It would seek to strengthen the participation of and benefits for poorer communities in new or on-going economic development initiatives of government within the region and also strengthen the involvement of these communities with selected initiatives being led by the private sector.

Strategies to help ensure the above outcomes would include: improving the voice and agency of EMs in deciding on and managing local level development resources; integrating employment generation and basic occupational skills development support and infrastructure upgrading/maintenance at local level; better linking poorer communities with emerging strategies and programs for ‘sustainable’ commodity development, promoting measures to better manage weather-related and other livelihood risks; targeting support that improves access to off-farm opportunities in and around regional growth poles; capacity building of district level staff to improve integrated medium-term socio-economic development planning; and enhancing linkages and synergies with complementary regional services and programs such as rural roads, rural finance, social protection, etc.

Based on the outcome of the identification mission conducted in late 2011 and subsequent discussions, the principal components and preliminary estimates of Bank financing for the CHPov are presented below. These components and indicative levels of financing would be reviewed and confirmed during project preparation.
CHAPTER 1. PROJECT DESCRIPTION

1.1 Project Objectives

The proposed project development objective of the Central Highlands Poverty Reduction project is to: improve livelihoods of poor households in targeted communes in 26 upland districts of the Central region of Vietnam.

The project will target the 26 poorest districts in six provinces of the Central and Central Highlands regions, namely: Dak Lak, Dak Nong, Kon Tum, Gia Lai, Quang Nam and Quang Ngai. Current targeting strategies propose to reach approximately 284,600 households in the poorest 130 communes in this area. A majority of these beneficiaries would be members of the various ethnic minority groups from these areas.

1.2 Project Components

The project will have four components: village and commune infrastructure development, sustainable livelihoods development, connective infrastructure development and strengthening of linkages, and project management.

1.2.1 Component 1

Village and Commune infrastructure development (estimated US$ … million, of which US$ 52 million would be financed by IDA)

Component 1 would support the design, construction or repair of small-scale village and commune level infrastructure (such as simple access roads, terracing; irrigation/water supply, basic/essential social infrastructure, etc.). Building upon recently completed New Rural Areas communal plans, sub-projects would be prioritized through a participatory planning process and managed by commune and village authorities with the help of community facilitators. Depending on the size and complexity of the identified sub-project investments, community groups would take direct responsibility for managing construction of infrastructure (for sub-projects valued at less than VND 200 million, or US$ 10,000). Communes authorities would oversee the management (i.e., be the “investment” owner) of larger or complex infrastructure. This participatory process is modeled on community-driven development (CDD) approaches used effectively throughout the world and successfully adapted under local projects such as Program 135 and the Northern Mountains Poverty Reduction Project (1 and 2), both of which have received support from the World Bank. Activities and investments would include training and capacity building for village, commune and district level personnel; the recruitment and financing of community facilitators; and all costs associated with planning and implementation of village and commune infrastructure.

1.2.2 Component 2

Sustainable Livelihoods Development (estimated value of US$ … million, of which US$ 33 million is IDA)

Component 2 of the project would support EMs and other households in the Central Highlands to enhance food security and nutrition; productive capacities to create diversified income sources; and agriculture market linkages to create sustainable incomes. The component would consist of two sub-components: (i) self-reliance and income generation; and (ii) market linkages initiatives. Sub-component 2.1 would include two broad sets of activities: (a) strengthening food security and nutrition (such crops as rice, maize, vegetables and fruits through developing home gardens, and small livestock raising); and (b) diversifying income sources through enhancing the productive capacities...
of beneficiaries to improve either existing or additional income sources targeting at local, small-scale and niche markets. Sub-component 2.2 will promote market linkages initiatives for a number of commodities that have potential significant markets. This sub-component will aim to develop productive partnerships (PP) between farmers and agribusinesses (ABs). Sub-component 2.1 would support a majority of chronically poor or at risk households to increase food security through intensified food crop production, soil management, home gardens, small animal raising and nutrition awareness applying farmer to farmer extension techniques shown to be successful in the Vietnam context by FAO and NGOs. Sub-component 2.2 would support a small number of proven commercially viable agriculture/agro-forestry endeavors for which there is farmer interest, adequate and appropriate local natural resources and a viable commercial linkage.

The Department of Agriculture and Rural Development (DARD), the National Targeted Program for Nutrition (NTP-NU) and the Women’s Union (WU) would play key roles in advising on and supporting implementation of sub-component 2.1, and DARD and the private and commercial sector would be engaged as appropriate under sub-component 2.2. Support and assistance would be provided through “livelihoods enhancement groups” (LEGs) that would be registered legal entities and would consist of 10-20 member households, depending on the nature of the livelihood activity. The component would include the financing of a specialized technical assistance team to support, in particular, sub-component 2.2.

Opportunities for support and investments under component 2.1 initially would be identified through the commune-level participatory planning processes organized under component 1. District project management units, in reviewing proposed livelihoods activities, would then mobilize the most appropriate source of technical input/support to further analyze the viability and specific nature of the required support. This additional technical screening and advice would be required for approval of component 2 sub-projects. The component would support technical assistance and consultant services, training and operational costs related to enhancing production practices, and inputs.

1.2.3 Component 3

Connective infrastructure development and strengthening of linkages (estimated US$ … million, of which US$ 52 million financed by IDA).

Component 3 would finance selective intra and inter-commune level infrastructure that would seek to support productive inter-connections within and related to local economic zones (such as roads, bridges, irrigation systems, etc.). Due to the likely size/value of these investments the Districts would manage their implementation, but however their identification and prioritization would happen as a result of the commune-level analysis and sub-project planning process. The component would prioritize investments that help tie together or enhance synergies with component 1 and/or 2 investments. While emphasizing productive connectivity (such as roads connecting productive areas to markets), investments in other infrastructure (or services) deemed to be critical to expanding the networks or linkages EMs may have with areas outside their communes (such as secondary schooling) could be considered. The project would apply the recently developed “rural connectivity index” to measure results under this component. The component would also support integrated district socioeconomic planning and technical capacity building of district staff to support infrastructure planning and implementation at commune level.
1.2.4 Component 4

Project management, monitoring and evaluation (estimated US$ … million, of which US$ 13 million would be financed by IDA)

Component 4 is organized into two sub-components addressing (i) project coordination and implementation, and (ii) monitoring, evaluation (M&E) and learning. Sub-component 4.1 would include the set-up and operation of coordination structures at national level and implementation units/teams at provincial, district and commune levels, and operational costs associated with project management. At commune level existing structures would be strengthened to support project implementation. Sub-component 4.2 would include the design and implementation of a simple management information system (MIS) for project monitoring, the design and contracting of a rigorous impact evaluation, and the recruitment of key personnel at central, provincial and district level to support M&E activities.
CHAPTER 2. PROJECT BASELINE DATA

2.1 General

The Central Highlands’s climate can be categorized into many sub-regions, but the most popular is the tropical and temperate highland climate with two seasons. The dry season (November to April) is cold and dry with low humidity and often has highland wind of class 4-6. The rainy season (May to October) is humid, cool, and very advantageous for plants to thrive. Annual average temperature is a pleasant 24°C with abundant and consistent sunlight. The annual solar radiation average is 240-250 kcal/cm. Average sunlight is 2,200 to 2,700 hours/year. The oscillatory amplitude of temperature between day and night is quite large (15-20°C in the dry season and 10-15°C in the rainy season). Annual rainfall is 1,900 to 2,000mm; mainly concentrated, of course, in the rainy season. In recent years, the climate appears to have changed unpredictably, with the rainy season ending early, the rainfall decreasing, and droughts often occurring.

The forest is a resource of meaningful importance for sustainable development of the Central Highlands. With large forest coverage of 55% and diverse flora and fauna, the Central Highlands has very good conditions for development of forestry and the forest industry. The region also maintains a role of ecological balance and is the origin of the river and stream system of the central and southeast. In recent years, to conserve forest resources and the natural environment, there have been 14 reservation zones and national parks along with tens of small reservation areas and other special-use forest, totaling 460,000ha (accounting for 8.3% of the total natural area).

Because of the characteristics of a humid tropical forest, there are over 3,000 high-class species of plants, including over 1,000 species of valuable and rare decorative plants, and nearly 1,000 species can be used as pharmaceutical products. And finally, 600 large wood species exist. The terrain in some places such as Dak Nong and Lam Dong Provinces is 1,000-2,000m high, and the area in flora becomes more excellent with many valuable and rare species such as conifers, three-leaf pine, and utricle. In undamaged places, there are many high, big, straight trees having a diameter of 1.0 to 1.4m and even some with diameter of over 2m and 40m in height. In some districts of Dak Lak Province there still are extremely rare species existing. One is the glyptostrobus conifer, a “living fossil” that should be strictly protected.

As the terrain and vegetative cover are located in the link chain of Northeastern Cambodia and Southern Laos, the fauna has contributed to the creation of the fauna zone not only diversified in species but also large in numbers, and has been regarded as the zone most plentiful of wild animals in Southeast Asia, a remarkable center of endemic species, including 93 animal species from 26 descents and 16 sets, 197 bird species from 46 descents and 18 sets, nearly 50 reptile species, 25 hermaphrodite species, over 50 freshwater fish species and thousands of insect species and animal species. Among 56 vertebrate species that have been appreciated as rare in Indochina, 17 species have been categorized as valuable and rare species in need of protection by IUCN, namely the rhino, elephants, bears, wild bulls, grey cows, gayals, tigers, gold stags, deer, black gibbon, pheasants, peacocks etc.

According to the document published in 1980 by the Forest Investigate Project Institute in South Central Vietnam, the Central Highlands had a total area of 3,868,400ha, correlative with forest wood reserves of 411,301,215 cubic meters and bamboo reserves of 3.5 billion plants, of which protective forests accounted for 39% and forest of special use 28%. Until now, the forest area of the Central Highlands remains 2,902,000ha, most of which is mixed small tree forest, poor bamboo forest, processed forest after milpa and
dispersal forest. Forest reserves remain 250 million m³ of timber and 2.7 billion of bamboo. Many rare wood species are seriously becoming lacking on reserves, with many species unable to regenerate. The decline of the forest resource is the main reason for unusual weather such as droughts, floods, a long dry season, and higher temperature.

Along with the forest resource, the Central Highlands has the advantage of soil. The local soil is divided into 11 main groups by the World Reference Base for Soil Resources, focusing on the two main groups of the largest amount, including the grey soil (acrisols) and the red soil (ferrasols). The grey soil is created by degenerated granite soil, found in 45% of the whole natural area, and in almost every commune and city. The red soil group is from basaltic soil that had gone through a weathering process.

This group is mainly in the highlands of Kon Ha Nung, Pleiku, Buon Ma Thuot and Di Linh. This soil includes a large amount of humus, having a structure that is lumpy, of balls and softness. It amounts to the best soil in the world. Further, the Central Highlands has tens of thousands of hectares of black soil, alluvial soil and other types of soil suitable for various plants. The soil resource is the important factor to make the Central Highlands a special zone favorable for agriculture, which is very convenient for the development of a diversified agriculture, with many key products such as coffee, rubber, pepper, cashew, hybrid corn, cotton, tea, vegetables, flowers, and fruit trees.

Minerals in the Central Highlands are quite diverse, and there are large reserves of some of them, namely peat, lignite, kaolin clay, and puzzolan. Particularly great reserves exist of bauxite that are estimated at 4.5 billion tons accounting for 91% of national reserves. It is distributed mainly in Dak Nong, Lam Dong, and Kon Tum Provinces. According to most research, the quality of bauxite ore in the Central Highlands is the best and relatively good compared to other mines of the world. Thus, bauxite in the Central Highlands is rated as a favorable factor for the development of the aluminum-alumina industry. The valuable metal mineral group is of iron, wolfram, antimony, lead, zinc and gold; the precious stones such as sapphire, zircon, corindon, pink quartz and crystal quartz ... are found in large quantity and evenly distributed in every province.

### 2.2 By provinces

The project areas will cover the center highland of 4 provinces (Gia Lai, Kon Tum, Dak Lak and Dak Nong) and two other provinces including Quang Nam and Quang Ngai (figure 1).

#### 2.2.1 Dak Lak province

Located in the Southern part of Vietnam’s central region, Dak Lak Province covers 1,312,537 ha with a population of 1,737 Million. Dak Lak is divided into 14 administrative districts. The province has a good transport network including highway 14, 26 and 27 and the Buon Ma Thuot Airport, which connect Dak Lak with other provinces in the Central Highlands, in the coastal areas and with Ho Chi Minh City and Hanoi.

Dak Lak’s climate is characterised by a distinctive rainy season from April to November and a dry season from December to April. The province’s altitude ranges between 500 to 800 meters above sea level. As such, its climate is affected by both, tropical monsoon and highland conditions resulting in an agricultural potential that is suitable for a wide range of perennial crops, including coffee, pepper, rubber, cashew and cotton.

Land constitutes the strength and potential of Dak Lak. The province boasts over 360,000 ha of basaltic soils, suitable for seasonal and perennial cash crops, especially coffee and rubber. The remaining land consists predominantly of alluvial soils for cultivation of rice and beans. It also has large areas of forests with potential timber reserves,
diverse biological resources and abundant flora and fauna. Many of its rare and precious animals have been listed in the world red list. Dak Lak is abundant of such minerals as kaolin, gold, lead, peat, and precious gems.

The potential for tourism in Dak Lak is great, considering its magnificent landscapes and diverse cultures of various ethnic minorities. Major tourist attractions include Dray Sap Waterfall, Buon Don “The elephant village”, Lak Lake and other eco-tourist spots.

44 ethnic minorities coexist in Dak Lak. Apart from the indigenous groups such as the Ede, M’Nong or Jarai, there are several ethnic groups which originate from other provinces in the Northern regions of the country including the Tay, Nung, Muong, Dao, Thai and H’Mong.

2.2.2 Dak Nong province

Dak Nong Province was formed in 2004 by separating the former Dak Lak Province into two new provinces – Dak Lak and Dak Nong. Dak Nong is divided into 7 districts (Cu Jut, Dak Mil, Krong No, Dak Song, Dak R’Lap, Dak Glong, and Tuy Duc) and Gia Nghia town as a separate municipality. The population is 492,000. Population density is 76 per square kilometer. The number of people of working age is 307,000, making up 62% of the population.

*Topography:* Dak Nong Province with 6,500 square kilometers is located in the southwest of the country’s Central Highlands, bordering Dak Lak Province in the north and northwest, Lam Dong Province in the east and southeast, Binh Phuoc province in the south, and Cambodia in the west with 130 kilometers long of the border.
Figure 1: Location map of Project provinces
Dak Nong has varying and copious topography alternating between valleys, plateaus and mountains, decreasing in elevation bit by bit from east to west and from north to south.

The valley topography includes the lowland parts along the Krong No and Serepok Rivers running through Cu Jut and Krong No districts, having fairly even and flat terrain with a mild slope of 0–30 suitable for food crops, short-term industrial crops and raising livestock and poultry.

Plateau topography is found mainly in Dak Glong, Gia Nghia, Dak Mil and Dak Song with the average height of about 800 meters above sea level, with slopes of 15 degrees. The basalt soil is very appropriate for developing long-term industrial crops, forestry and cattle husbandry. Mountainous topography is found in Dak R’Lap, and the soil is basaltic, suitable for developing long-term industrial crops such as coffee, rubber, cashews, and pepper.

Climate: Dak Nong has a moist tropical highland climate influenced by the dry and hot southwest monsoon. There are two distinctive seasons: dry and rainy. The rainy season is April through October. Ninety percent of the total annual rainfall falls then. The dry season is from November to April. Only superficial rainfall occurs during this dry season.

The annual average temperature is 220 to 23°C, with the highest in April when the temperature can hit 35 degrees. The lowest is 14°C in December. There are years when the temperature abnormally varies; at that time there may be a very hot sun leading to forest fires and drought, strongly impacting agriculture and people’s lives.

Average annual rainfall is 2,300 mm, but can go as high as 3,000 mm in a year. The rainiest months are August and September; January and February the driest. Average humidity is 84%, and the vaporizing rate is 15.2 mm a day in the dry season and 1.6 mm a day in the rainy season. The prevalent wind direction in the rainy season is southwest; in the dry season it’s northeast. Average wind speed is 3.9 m/s and storms are rare, harmless to delicate crops such as coffee, rubber, cashews and pepper.

Land resources: Dak Nong area is 652,000 ha, in which

- Farmland is 574,000 ha, accounting for 88% of the province area, of which long-term industrial crops accounts for the most, with the rest in rice, corn and short-term industrial crops. Notable is that scorched land continues to be quite large.
- The total area of specialized land is 18,000 ha, accounting for 3% of the total area of the province.
- The agricultural land area is 3,249 ha, in which the percentage of land covered by forests is 49%.
- Residential land is 4,101 ha, accounting for 1% of the total.
- There is 38,000 ha of unused land, accounting for 6% of the total area, of which streams and rocky mountains without trees is 667 ha, the rest is flat land (very limited), hills and mountains (36,000 ha), and wetland.

Water resources: Water from rain is rather abundant, meeting the needs of manufacturing and daily living needs. However, influenced by highland climate and located in the west at the end of the Truong Son mountain range, during the dry season, little rain falls and a long-lasting scorching sun leads to drought and water shortage. The latter’s impact on industrial agriculture and daily life is significant.
2.2.3 Gia Lai province

Gia Lai, a mountainous province, is situated in the northern part of the Central Highlands with 15,500 sq.km in area. The province possesses an international key position in the pivotal economic developmental triangle of Vietnam, Laos and Cambodia. It shares a border with Kon Tum Province to the north, Dak Lak Province to the south, over 90km of the country’s border with Cambodia to the west and provinces of Quang Ngai, Binh Dinh and Phu Yen to the east.

Gia Lai has 17 administrative units with population 1,300,000 people, including: Pleiku City (the economic, political, cultural and business center of the province), An Khe Town, Ayun Pa Town and 14 districts: Chu Pah, Chu Prong, Chu Se, Dak Doa, Dak Po, Duc Co, Ia Grai, Ia Pa, K’Bang, Kong Chro, Krong Pa, Mang Yang, Phu Thien, and Chu Puh.

**Topography:** The topography tends to become gradually lower in going from north to south. There are three main types of terrain: mountainous, highlands, and valley. Gia Lai is 800-900m above sea-level on average. Kon Ka Kinh at 1,700m is the province’s highest mountain and located in K’Bang District. The lowest point is the Ba River basin at 100m above sea-level.

**Climate:** Gia Lai, possessing a tropical monsoon climate, has two seasons - a rainy season from May to October and a dry season from November to April. Average rainfall is 2,350mm west of the Truong Son mountain range and 1,500mm east of the Truong Son range. The average temperature is 22-25°C. The climate in Gia Lai is suitable for the development of industrial crops, agricultural-forestry business and for raising cattle.

**Soil:** The province’s soil, as classified by FAO and UNESCO, includes five main types – the alluvial soil group, grey soil group, yellow-red soil group, black soil group, and the stone emerging eroded soil group. Of these, the yellow-red soil group occupies the largest area at 760,000ha or 49% of the province. This group includes plenty of types of soil which are really important, especially the red soil on basaltic stone concentrated in the districts of Pleiku and Kon Ha Nung highlands. This soil is well suited for other types of long-term industrial crops requiring high fertility such as coffee, tea, rubber and many fruit trees.

**Water resources:** The total reserve of surface water in Gia Lai is 23 billion m$^3$ distributed in the main systems of the Ba River, Se San River and a tributary of the Serepok River. Large water reserves of the three rivers together with the dense network of rivers and streams which are short and steep give strength to Gia Lai to develop the hydropower industry (total capacity of 3.383 MW), of which Se San River is the one of the three rivers having the largest hydropower potential in Vietnam, accounting for 11% of the total hydropower potential of the country (behind Da River at 44% and Dong Nai River at 16%).

**Forestry:** Gia Lai has 1,591,000 hectares of forest and 76 million m$^3$ of wood reserves. Gia Lai Province has 28% of the Central Highland’s forests and 38% of the wood reserves. The amount of wood harvested on average in a year in natural and man-grown forests is 160,000-180,000m$^3$ and that meets the demand for wood and laminated MDF wood processing at large scale with high quality. Gia Lai Province further has a large tract of land for forest cultivation and trees grown for pulp for the paper industry and developing rubber trees.

Gia Lai, as a province with immense forests as well as diversified terrain and climate, is well-known for the most diversified quantity and species of creatures in Vietnam. The Biological Resource Ecological Institute has found that the province’s forests are home to
375 species of birds belonging to 42 families and 107 species of animals belonging to 30 families and 12 groups. There are 94 species of reptiles belonging to 16 families and 3 groups, 48 species of amphibians belonging to 6 families and 2 groups; 96 kinds of fish and thousands of species of insects and similar. There are, quite notably, species of rare and precious animals such as rhinos, gayals, tibetan bears, tigers, leopards, flying weasels, flying squirrels, red wolves, black gibbons, harlequin bats, etc; species of birds such as ciconia episcopus (woolly-necked stork), peacocks, *lophura nycthemera* (silver pheasant), *polyelectron germaini* and species of reptiles such as chameleons, worm lizards, and pythons.

### 2.2.4 Kon Tum province

Kon Tum province borders Quang Nam province to the north, Gia Lai province to the south, Quang Ngai province to the east, Laos and Cambodia to the west. The area of Kon Tum is about 9,690.5 km².

Kon Tum province includes the town of Kon Tum and 8 districts: Đắk Glei, Đắk Hà, Đắk Tô, Kon Plông, Kon Rẫy, Ngọc Hồi, Sa Thầy, Tu Mơ Rông with population of 389,900 people.

**Topographic:** Kon Tum has various types of terrain include mountain, highland and valley. In general, the terrain slightly slopes from the north to the south and from the east to the west.

**Water resources:** Hydrographic net in Kon Tum is derived from Sesan valley, including 3 large rivers: DakBla, KrongPoko and Sa Thay. Streams and brooks are condensed but largely distributed. Total annual water flow is 10-11 billion m³. Kon Tum has a big potential in hydroelectricity and irrigation.

**Land resources:** Kon Tum has an area of 961.450 hectares. There are 4 kinds of land:

- Grey soil: 93.44% of total area.
- Red soil: 3.36%.
- Alluvial soil: 0.88%.
- Alit humus: 0.71%.

The soils are unequally distributed, poor in nutrition, low in acidity and base. Only grey soil and alluvial soil bear potential in agriculture development.

**Mineral resources:** There are 214 ore and mineral mines, 40 kinds of minerals in Kon Tum. Several minerals are of potentiality and importance to socio-economic development. Some has big reserves such as limestone, biocide, dolomite, felspat, clay, soil, pebble, etc.

Forest resources and biological diversity:629,942 hectares of the province is forest land (occupies about 64% of total land), natural forest covers 597,328 hectares in which 93,226 hectares is occupied by specialized forest, consisting of Chư Mom Ray National Park (50,734 hectares), Specialized Forest Đăk Uy (700 hectares), Ngoc Linh Reservation Forest (41,420 hectares), plantation area (372.4 hectares). Total wood reserves are more than 60 million m³ and about 950 million bamboos.

Kon Tum is diversified in forest ecosystem. There are some popular kinds of forests such as closed needle forest, mixed broadleaf evergreen tropical rainy closed forest, semi-deciduous broadleaf tropical moist forest, subtropical rainy evergreen closed forest, and firewood sparse trees dry forest (*Dipterocarpaceae*).
According to the initial survey, Kon Tum has 1,610 species constituted from 734 botanical genus and 175 families. Many of them are recorded in Red Data List such as Ngoc Linh ginseng, *Coscinium usitatum*, *Pomu*, *Aquilaria crassna* Pierre, etc.

*Fauna:* The province’s fauna are diversified and bounteous with some rare and valuable species such as *Bos Gaurus*, *Bos sauveli*, *Panthera tigris*, *Bubalus bubalis*, *Trachypithecus*, deer, gibbon, monkey, hornbill, etc.

*Flora:* According to the initial survey, Kon Tum has 1,610 species constituted from 734 botanical genuses and 175 families. Many of them are recorded in Red Data List such as Ngoc Linh ginseng, *Coscinium usitatum*, *Pomu*, *Aquilaria crassna* Pierre, etc.

Forests were so heavily damaged by many kinds of chemical toxics in the war that some parts of the woods are not able to recover and even to replant.

Quota of timber cutting set from 1976 to 1988 was much higher than the annual capacity of reforestation and development while plantation was carried out in small scope. Furthermore, deforestation for farming and illegal timber logging in protected forests and nature preservation zones, resulting in fast reduction in forest area and forest quality.

However, plantation in Kon Tum has good signals since 1992, resulting from investment in forest localization, natural forest recovery and afforestation, the implementation of the “close the gate” policy, reduction in annual quota of timber cutting (from 70,000 m³ in 1992 to 25,000-30,000 m³). Many afforestation yards become plantation centers with their key operation on forest restoration.

2.2.5 *Quang Ngai province*

Quang Ngai is a coastal province of Central Vietnam, bordering Binh Dinh province to the South, Quang Nam province to the North, Kon Tum province to the West and the East Sea to the East. The area of Quang Ngai province is about 5,152.7 km² with population 1,288,900 people.

The province is divided into 1 city (Quang Ngai city) and 13 districts: Binh Son, Son Tinh, Tu Nghia, Nghia Hanh, Mo Duc, Duc Pho, Tra Bong, Tay Tra, Son Tra, Son Tay, Minh Long, Ba To, and Ly Son.

Quang Ngai plays an important strategic role in the Pivotal Economic Central Vietnam and East - West Economic Corridor bordering with Laos, and Myanmar for its advantage of geographical central point of Vietnam are facilities for road and waterway system, including the National Highway VietTrans Railway running through the province, the National Road 24 B link Highland Provinces, Dung Quat deep seaport Northeast of Quang Ngai province International Airport, 35 km North of Quang Ngai. In addition, in the year 2004 projects namely Da Nang – Quang Ngai Expressway, the inter provincial routes Tra Bong – Tra My – Tacpo – Dacto, linking to Ho Chi Minh Highway, are under facilitating the new orientation of the development of tourism and industry province.

Situated in the pivotal economic area of the Central Vietnam, right on the National Highway 1A and the Trans-Viet Railway, connected with the Central Highland by the Access Road 24A, Quang Ngai - a coastal province of 130Km of coastal line with two large seaports of Dung Quat and Sa Ky - have proved themselves places favorable for communication and development.

*Topographic:* Topography consists of mountain (accounting for 63% of the total natural area), midland and plain (accounting for 37%).

*Natural resources:* The province has 513,520 hectares of natural land, including 99,055 hectares of agricultural land, 144,164 hectares of forestry land, 20,979 hectares of
specialized area, 242,910 hectares of unused, streams, rivers and rock mountains. The province has over 130 km of coastal line with a large fishing area of 1,100 km² which can be effectively exploited (mainly surface fish with the reserve of 68,000 tons of all kinds). This is the key industry of the province. Quang Ngai is endowed by nature with mineral resources such as graphite mine in Son Tinh, bauxite mine in Binh Son, peat mine in Binh Son, etc.

**Agriculture:** It is planned to make changes in term of quality, quantity and effectiveness; apply new technology in production; invent new breeds; make changes in the sector’s structure to increase the proportion of breeding. Forestry: increase centered and protection forests, implement afforestation, increase forestry coverage as guided by the Central authority. Fishery: it is planned to change the sector’s structure to increase the proportion of seafood growing and processing; invest on constructing fishing ports, fishing villages and fishing supporting services.

**2.2.6 Quang Nam province**

The province is bounded by Da Nang and Thua Thien Hue provinces to the North, by Quang Ngai and Kon Tum to the South, by Laos to the West and by the South China Sea to the East. The province area is about 10,438.3 km² with population 1,484,300 people.

**Topographic:** Topography consists of both mountain and plain. There are many mountains (even high mountains) and hills (accounting for 72% of the total area). Besides, there are coastal delta (accounting for nearly 25% of the total area), mainly found in the East along the national highway.

Administrative units: The province is divided into 2 towns (Tam Kỳ, Hội An) and 15 districts: Đông Giang, Tây Giang, Nam Giang, Phước Sơn, Hiệp Đức, Tiên Phước, South Trà My and North Trà My, Điện Bàn, Đại Lộc, Duy Xuyên, Thành Bình, Quế Sơn, Núi Thành and Phú Ninh.

**Natural resources:** The province has the total natural land area of 1,040,514 hectares including 388,958 hectares of unused land (accounting for 37.38%). It has 125 km of coastal line with large fishing area of approx. 40,000 km². The province’s annual seafood output is 90,000 ton. Besides, the province is rich in mineral resources, in which the largest ones are coal, gold, titan, graphite, tin, kaolin, limestone, granite, mineral water, etc. It also has large area of forestry land (512,800 hectares) with the annual exploitation output of 60,000-80,000 m².

Transport system is quite convenient with 4 major means of transportation: roadway, waterway, railway and airways. Roadway: The province has over 400 km of national highways (No. 1A, 14B, 14D, 14E and Ho Chi Minh route), especially the national highways of 14B, 14D, 14E which are the important ones connecting the province with Laos through Dac Oc border gate (in Nam Giang district). Airway: At present, Chu Lai airport is used for domestic flights only and in the future, it will be improved to be for international flights in North-Asia, Pacific regions. Railway: the province has 95 km of North-South railway route with stations of Tra Kieu, Phu Cang, Tam Ky, Diem Pho and Nui Thanh. Seaway: The province’s Ky Ha deep water port situated in Chu Lai open economic zone and near Dung Quat economic zone (Quang Ngai province). From here goods will be transported to any country in the world and this place can be a convenient transit for international goods ships.

**Agriculture:** it is planned to change to commodity production to ensure food safety, to increase the proportion of breeding to 50-55% of the total agricultural product value. Forestry: newly grow 22,000 trees annually; develop industrial crops such as cinnamon,
rubber, tea, cocoa trees, timbers, local original paddy. Fishery: develop ships with high capacity of over 90 CV (over 500 ships for offshore fishing.

**Industry:** It is planned to focus on key industries such as agriculture – forestry – fishery product processing, mineral mining and processing, construction material production, textile – garment – footwear, engineering, electronics, assembly, traditional handicrafts.
CHAPTER 3. POLICY, LEGAL AND ADMINISTRATION FRAMEWORK

National laws and regulations

The following national laws and regulations would apply, as appropriate, to the work of the CHPov:

- Law on Environmental Protection No.52/2005/QH11
- Law on Forest Development and Protection No. 29/2004/QH11
- Law on Biological Diversity No. 20/2008/QH12
- Law on Cultural Heritage No. 28/2001/QH10
- Law on Construction No. 16/2003/QH11
- Law on Labour 2002
- Law on Water resources, dated 20th May 1998
- Law on grievance 1998 and revised version 2005
- Decree 80/2006/ND-CP on detailed regulations and guiding on executing some articles of law on environmental protection
- Decree 21/2008/ND-CP on adjustment and supplement to some articles of Decree No.80/2006/ND-CP
- Other current Vietnamese environment regulations.
- Technical regulations (QCVN)
  - QCVN 03:2008/BTNMT - National technical regulation on the allowable limits of heavy metals in soil.
  - QCVN 05:2009 - National technical regulation on ambient air quality
  - QCVN 07:2009/BTNMT - National technical regulation on hazardous waste thresholds
  - QCVN 08:2008/BTNMT - National technical regulation on surface water quality
  - QCVN 09:2008/BTNMT - National technical regulation on ground water
  - QCVN 14:2008/BTNMT - National technical regulation on domestic wastewater quality
  - QCVN 26:2010/BTNMT - National technical regulation on noise
World Bank Safeguards Policies triggered

Environmental Assessment (OP/BP 4.01): Because the project implementation involves construction and rehabilitation subprojects of small-scale infrastructure schemes, it may have potential negative environmental and social impacts. In most cases the environmental and social impacts of such subprojects are expected to be minor, temporary, site-specific, reversible, and limited to the construction phase. They include typical construction related impacts such as, noise vehicle emissions and dust generation during construction, small-scale vegetation loss, management of construction waste, and temporary and intermittent elevated noise levels. Potential adverse impacts would be easily mitigated through a combination of a negative list of inappropriate types or locations of subprojects, and subproject specific Environmental Codes of Practice (ECOPs). Therefore, the Bank requires that an environmental assessment (EA) of the project be carried out to help ensure the environmental and social soundness and sustainability of investment and support integration of environmental and social aspects of the Project into decision making process. Given the demand-driven nature of the project, the type and location of most of the subproject investments are not yet known. Thus, the environmental assessment for the CHPov involves the preparation of this environmental and social management framework (ESMF) document, which includes ECOPs for various types of infrastructure schemes and livelihoods.

Indigenous Peoples OP/BP 4.10: Since the CHPov will work in geographic areas and involve activities affecting various ethnic minority groups, this policy is triggered to design and implement the Project in a way that fosters full respect for Indigenous Peoples’ dignity, human rights, and cultural uniqueness and so that they: (a) receive culturally compatible social and economic benefits; and (b) do not suffer adverse effects during the development process. The Bank requires that the project include measures to (a) avoid potentially adverse effects on the Indigenous Peoples’ communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects. Thus, Social Assessment (SA) has been prepared for this project.

Involuntary Resettlement (OP/BP4.12): Given that the project may require land acquisition and involuntary resettlement that may cause the loss of livelihoods for affected households, groups or communities unless appropriate measures are carefully planned and carried out, the Bank requires the Government to implement this policy with the objectives of (a) involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs, (b) where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs, and (c) displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. Thus, a resettlement Policy Framework (RPF) has been prepared for this Project.

Pest Management (OP 4.09): Since proposed agricultural livelihood models under component 2 may include or lead to the purchase of pesticides, this policy is triggered to minimize and manage the environmental and health risks associated with pesticide use and promote and support safe, effective, and environmentally sound pest management. A set of guidelines on sustainable use of pesticides and fertilizers have been included in ECOPs.

Forests (OP/BP 4.36): Because livelihoods activities under component 2 may also involve agro-forestry activities, this policy is triggered. The objective of this policy is to
assist Government and the participating communities to harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development, and protect the vital local and global environmental services and values of forests. During the Project preparation, an assessment of the adequacy of land use allocations for the management, conservation, and sustainable development of forests, including any additional allocations needed to protect critical forest areas will be prepared.

*The World Bank policy on Access to Information:* The Bank requires that during EA process the Government conducts meaningful consultations with stakeholders such as project-affected groups and local NGOs about the project’s environmental and social aspects, and takes their views into account in the design of the project. All draft safeguard instruments are disclosed locally in an accessible place and in a form and language understandable to key stakeholders, and in English at InfoShop before the beginning of the appraisal mission.
CHAPTER 4. SCREENING AND SCOPING OF PROJECT POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

4.1 General

CHPOV is expected to result in both positive and negative effects but overall, the project is seen as being generally positive with respect to social and environmental impacts. Where impacts may be negative they are expected to be minor due to the small overall scale and scope of the investments and their dispersed nature. In addition, most impact are likely to be temporary, site-specific, reversible, and limited to the construction phase. Such types of impacts would be addressed through the application of both Environmental Codes of Practice (ECOPs) and a specific list of ineligible subproject types or locations (a “negative list”), such as… and any infrastructure schemes in nature reserves, national parks, protection or special use forests. Otherwise, mitigation measures will be designed and apply to the proposed project to address adverse environmental and social impacts in accordance with GoV regulations and WB policy requirements.

The potential environmental impacts of the proposed project have been analyzed on the basis of field visits to project sites, interviews with local villagers, discussions with government staff at national, provincial, district, commune and village level, and review of documentation and maps.

The project strongly emphasizes bottom-up participatory planning as the basis for its implementation. The EA is based on a review of a number of typical subprojects observed in several different project areas that will be broadly representative of the future investments. The environmental assessment is thus applicable to these investments while the specified mitigation and monitoring measures can be used as guidelines with adjustments according to the local situation. Procedures for subproject environmental screening, scoping, assessment and monitoring are also included in the project design.

Where there are negative impacts foreseen, mitigation and monitoring measures are expected to be sufficient to reduce or eliminate them. The process of their implementation offers a low-risk opportunity to integrate environmental issues within the development process and to build capacity for environmental assessment, management and monitoring at all levels. Some mitigation and monitoring measures will be required and these are outlined below (?).

4.2 Potential impacts associated with types of subprojects

Rural roads/bridges rehabilitation and construction

Inspection of a number of rural roads identified as possible sub-projects showed many existing problems, particularly a lack of cross-drainage, land slips and slide especially on the upper slopes above the roads and poor disposal of waste from the construction works. In addition, the roads were in poor condition, with rutted surfaces of varying quality, a lack of proper guttering, no signs indicating potentially dangerous locations and broken bridges requiring dangerous crossings over single wooden planks. The CHPOV project will continue to support the proper rehabilitation of these roads including provision of adequate cross-drainage, soil compaction, gutters, surface, signing, new embankments, bridges and erosion protection. Roads will be constructed in locations where there are existing tracks, so no natural habitats or cultural/historical/burial sites will be disturbed. However, these activities may cause minor land acquisition and loss of assets and properties. A focus of the project will be on organizing and training local villagers for recurrent maintenance of the completed roads. This will keep the roads in good condition.
for a long period of time and include education on the dangers to pedestrians of higher-speed traffic.

This investment will thus result in a broadly positive impact on the environment for the repaired or upgraded roads.

Further detailed potential negative environmental and social impacts and relevant mitigation measures associated with the activities of rural roads/bridges rehabilitation and construction are shown in the ECOPs attached in Annex 2.

**Rural water supply**

The project may construct a number of sanitary water points in the project villages including piped water systems from spring sources. These water points will be a significant improvement over the existing water sources of the villagers and so will have a positive impact on health. The water points will be constructed using best practice, including proper well siting with no unsealed openings and adequate drainage and disposal of wastewater. Another concern in terms of sanitation and hygiene are behavioral practices to ensure that the benefits of safe water in terms of improved health are attained. Even a proper water point will have a limited impact if there is poor handling and use of the water. Thus, such subproject activities would include an emphasis on water use education to address the root cause of poor hygienic practice.

An additional concern is the possibility that water sources may be contaminated. Thus a program of initial testing and on-going monitoring of water quality is required to ensure that the water source is providing the positive impact intended. Piped water supply is not a habitat for dengue mosquitoes. It is important that these are covered to prevent them from becoming breeding grounds for the dengue mosquitoes. Therefore with proper design it is felt that the project will not result in an increase in dengue fever incidence and this is not a significant impact. Further details for mitigating negative environmental and social impacts associate with construction of this water supply scheme are shown in ECOP attached in Annex 2.

**Small-scale irrigation/drainage rehabilitation and construction**

The upgrading and construction of small-scale irrigation systems will mainly consist of building small permanent weirs on small streams and improving the irrigation and drainage canal systems for water distribution. More importantly, farmers will be trained and organized to properly manage their irrigation systems to improve the water use efficiency and to maintain the infrastructure.

The more intensive use of the existing agricultural land that would result from these types of investments will increase local people incomes, intensify agricultural activity within the lowlands and provide them with more food. As a result they will have less time and reason to go hunting or to expand upland agriculture that would degrade the catchment. In addition, an increased dependence on lowland agriculture will provide an incentive for maintaining the upper catchment in good condition under local management. The major impact of irrigation investments is therefore positive and includes increased food production and higher household incomes. Increasing incomes will in turn have numerous multiplier benefits such as improved education for children who will also study better because of being well-fed. Families will be able to purchase needed preventative and curative medicines and make longer-term investments that they would otherwise not be able to make because of living day-to-day.

The ECOPs presented in Annex 2 provides further detail of the potential negative environmental and social impacts, and relevant mitigation measures including generic
safety measures to assure quality and safety in the design and construction, in relation to irrigation and drainage rehabilitation and construction.

**Small-scale buildings and sanitation and waste facilities**

Construction work of small building such as rural market, multi-purpose houses, sanitation and waste facilities etc. can cause impacts in terms of the contamination of the construction site and nearby environment with dust, waste, oil and other residues from the equipment, accidents to labour and casual labourers hired for the construction work, borrow pits from soil excavation that fill with wastewater and therefore provide a source for disease vectors, improper disposal of spoil from cut and fill operations, etc. These potential impacts can be avoided by following best practices in construction work shown in the attached ECOPs.

**Small-scale agricultural livelihoods**

Introduction of agricultural livelihoods models may lead to the introduction of exotic or new plant and animal species, changes in land use, changes in management, utilization and protection of forests or plantations, soil erosion and degradation, and improper use of chemical pesticides and fertilizers. Soil, water and air may be polluted and human health problem may arise. Mitigation measures are shown in the attached ECOP for livelihoods in Annex 2.
CHAPTER 5. MEASURES TO MANAGE POTENTIAL NEGATIVE ENVIRONMENTAL AND SOCIAL IMPACTS

To ensure that the potential negative impacts of the Project are properly identified and mitigated during the implementation of the Project and to comply with above-mentioned safeguards policies, during the project preparation an environment and social management framework (ESMF) has been prepared in close consultation with the concerned government agencies and the World Bank. An ESMF is used in response to the Bank’s EA requirements to examine environmental and social issues and impacts when a project consists of a series of activities or subprojects that are yet to be identified and therefore the impacts cannot be determined. The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts as subprojects are identified. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts. The ESMF also provides guidelines for the preparation of an environmental management plan (EMP) for investment subprojects included under the project, including environmental requirements to be included in the construction contracts (namely the environmental codes of practice (ECOP), a guideline to prepare an environmental protection commitment (EPC). The ESMF also follows Government of Vietnam (GoV) regulations related to EIA (Decree No 80/2006/ND-CP, Decree No. 21/2008/ND-CP and Decree 29/2011/ND-CP). The ESMF as said earlier will be applied to all the subprojects to be implemented under the Project.

5.1. Screening for exclusion

To ensure the project will not cause any significant environmental and social impacts, PPMU is required to carefully conduct a screening to exclude any subprojects that involve significant adverse environmental impacts and to ensure that the appropriate safeguard documents and mitigation measures are being prepared. The list of negative subproject types is found in Annex 4.

5.2. Environmental Safeguards Instruments

After screening, any eligible subproject must be prepared with an appropriate environmental safeguards instrument in accordance with World Bank policy requirements and national laws. For CHPOV, two environmental safeguards instruments are required…. On the Bank side, two environmental safeguards instruments are required in accordance with OP/BP 4.01, including:

- Environmental Management Plan (EMP) to address environmental and social impacts related to implementation of Category B infrastructure subprojects. The EMP details (i) the mitigation, monitoring and institutional measures to be taken during the implementation and operation of the subproject to eliminate or offset adverse environmental and social impacts or to reduce them to acceptable levels; (ii) measures to enhance positive environmental and social impacts; and (iii) the actions needed to implement these measures. The content and format of the EMP is attached in Annex; and

- Environmental Codes of Practice (ECOP) to address construction-related impacts, which are mostly temporary and similar in different locations. They should be included in the bidding documents for construction contractors. An ECOP contains guidelines on good practices in managing construction activities, standard environmental conditions for an activity based on relevant national
regulations/standards/specifications, and criteria that determine when and to what extent a code applies to an activity, and advisory notes on actions needed to assist in reaching compliance with the standard environmental conditions. There are various samples of ECOPs applied for different types of infrastructure schemes under this Central Highland Poverty Reduction Project and they are attached in Annex 2.

5.3 Social safeguards instruments

- **Social Assessment (SA):** An assessment of a sample of the Indigenous Peoples’ (Ethnic Minorities’) communities in the project area, based on the principles of free, prior, and informed consultation, was carried out to determine the potential adverse and positive effects of the project. Critical to the determination of potential adverse impacts is an analysis of the relative vulnerability of, and risks to, the affected Indigenous Peoples’ communities given their distinct circumstances and close ties to land and natural resources, as well as their lack of access to opportunities relative to other social groups in the communities, regions, or national societies in which they live. This assessment provides guidance as to how best the project should work with these communities to ensure that IPs/EMs receive culturally appropriate social and economic benefits; and when potential adverse effects on Indigenous Peoples are identified, those adverse effects are avoided, minimized, mitigated, or compensated for. Further details are shown in a separate SA report.

- **Resettlement Policy Framework (RPF)** to clarify resettlement principles, organizational arrangements, and design criteria to be applied to subprojects to be prepared during project implementation. Further details are shown in a separate PRF.

- **Resettlement Plan (RP):** The plan is based on up-to-date and reliable information about (a) the proposed resettlement and its impacts on the displaced persons and other adversely affected groups, and (b) the legal issues involved in resettlement. Further details are shown in a separate RPF report. RP will be prepared on an annual basis and at provincial level.

To meet relevant Government of Vietnam environmental safeguard requirements, the investment owner would be required to prepare an Environmental Protection Commitment (EPC) is required in accordance with Circular 26/2011/TT-BTNMT dated July 18, 2011 to address minor environmental and social impacts associated with small-scale infrastructure investment that do not trigger an Environmental Impact Assessment (EIA) as stipulated in Decree 29/2011/ND-CP dated April 18, 2011.
CHAPTER 6. PROCEDURES FOR REVIEW, CLEARANCE AND DISCLOSURE

6.1 Procedures for Review and Clearance

During Project preparation MPI is responsible for preparing the Environmental and Social Management Framework (ESMF), the SA and the RPF, which are submitted to the World Bank for review and clearance before project appraisal.

During Project implementation, the Subproject owner is responsible for preparation of subproject environmental assessment and PPMU is responsible for preparation of resettlement plan in accordance with the Bank safeguards policies, as detailed in this ESMF, and national laws. On the Government side, subproject environmental assessment report in the form of environmental protection commitment (EPC) is submitted to District People’s Committee (DPC) for review and clearance. Simultaneously, depending upon the scale of subproject, EMP or ECOP is prepared for subproject and submitted to the Bank for review and clearance. All environmental safeguards instruments prepared for identified subproject during implementation secure clearance prior to subproject appraisal/approval.

6.2 Procedures for disclosure

According to OP/BP 4.01, MPI discloses all draft environmental safeguards instruments at project areas (i.e. provincial website, and the office of district people’s committee and communal people’s committee) in Vietnamese language before project appraisal. Once MPI officially submits draft environmental and social safeguards instruments, including ESMF, RPF, SA and ECOP to the Bank, the Bank makes them available in English through its InfoShop and VDIC in Vietnamese language. Disclosure of draft environmental and social safeguards instruments will be made before the beginning of the appraisal mission and at least 120 days before the Board date. EMP and/or ECOP of subprojects prepared during project implementation are disclosed locally at subproject sites in Vietnamese language prior to appraisal/approval of these subprojects by subproject owners.

According to Article 22 and 34 of Decree 29/2011/ND-CP, EPC after approved by responsible agency (i.e. DPC) - is disclosed at communal people’s committee office where public consultations was conducted to notify local people for monitoring and supervision.

Similarly, social safeguards instruments such as RPF, SA are disclosed locally in project areas and in the Bank’s InfoShop and VDIC prior to project appraisal. Social safeguards instruments (i.e. RP) prepared for subprojects during project implementation are disclosed locally at subproject sites before appraisal/approval of these subprojects.
CHAPTER 7. INSTITUTIONAL ARRANGEMENTS

During project implementation, the project’s environmental and social safeguard management will be implemented in accordance with the Bank safeguards policies and national environmental protection law. To assure good implementation of relevant policies, the roles and responsibilities of relevant agencies, the need for training, the mechanisms for monitoring and reporting, setting up communication program and grievance redress mechanism are specified as early as project preparation. The role and responsibility of responsible units for implementing social safeguards policies are shown in respective social safeguards instruments such as, SA, RPF and RP.

7.1 Role and responsibility

Table 1. Role and responsibility for environmental and social management implementation

<table>
<thead>
<tr>
<th>Responsible unit</th>
<th>Actions to be taken</th>
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<tbody>
<tr>
<td>MPI/CPMU</td>
<td>• Overall monitoring and evaluation of project environmental and social safeguards compliance</td>
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<td></td>
<td>• Strengthening environmental and social safeguards capacity for PPMUs</td>
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<tr>
<td></td>
<td>• Assisting PPMUs in reviewing environmental assessment and resettlement plan for subproject prepared during implementation so that it is accordance with policy requirements</td>
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<td></td>
<td>• Preparing periodical monitoring reports to share with the Bank</td>
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<tr>
<td>PPMU</td>
<td>• Preparing Resettlement Plans (RPs)</td>
</tr>
<tr>
<td></td>
<td>• Monitoring and evaluation of environmental and social safeguards performance at subproject level</td>
</tr>
<tr>
<td></td>
<td>• Strengthening environmental and social safeguards capacity for subproject owners and contractors</td>
</tr>
<tr>
<td></td>
<td>• Coordinating with subproject owners, contractors and local communities to address complaints and grievances</td>
</tr>
<tr>
<td></td>
<td>• Preparing periodical monitoring reports to submit to CPMU and copy DONRE (as necessary)</td>
</tr>
<tr>
<td>Subproject owners (i.e. DPC and CPC)</td>
<td>• Preparing subproject environmental assessment report (i.e. EMP, ECOP and EPC)</td>
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<td></td>
<td>• Monitoring contractor’s compliance with environmental covenants in the contract</td>
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<td></td>
<td>• Preparing monitoring reports to submit to PPMU</td>
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<td></td>
<td>• Providing training in IPM for farmers</td>
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<tr>
<td>Environmental Safeguards monitoring consultants (ESMC) hired by Central PMU</td>
<td>• Resolving complaints and grievances</td>
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<tr>
<td>• Assisting CPMU in strengthening environmental safeguards capacity for PPMUs</td>
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<tr>
<td>• Assisting CPMU in reviewing environmental monitoring reports submitted by PPMUs</td>
<td></td>
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<tr>
<td>• Assisting CPMU in monitoring and supervising project environmental safeguards compliance</td>
<td></td>
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<tr>
<td>• Preparing environmental monitoring reports once every six months on environmental safeguards compliance including issues of environmental quality</td>
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<tr>
<td>Local community including community monitoring board, affected peoples and local NGOs</td>
<td>• Participating in identifying and preparing subprojects</td>
</tr>
<tr>
<td>• Supervising and monitoring subproject implementation in terms of environmental and social safeguards</td>
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<tr>
<td>• Coordinating with DPMU, PPMU and contractors to address complaints and grievances</td>
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<tr>
<td>• Participating in operation and maintenance of infrastructure works</td>
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</tbody>
</table>

### 7.2 Training and Capacity Building

Given strengthening capacity of PPMUs on environmental safeguards, training courses on environmental management and monitoring during project implementation will be set forth for those who are in charge of monitoring and evaluation of environmental safeguards compliance at project and subproject levels. The training courses will be also provided for staff at district and commune levels subject to their needs. CPMU will be responsible for organizing such training courses once a year at least. CPMU will prepare a plan for training including timing, venue, contents, trainer, numbers of trainees, and cost estimates.

### 7.3 Communication Program

The Communication Program will be implemented by PPMUs in project provinces with the aim of propagating and disseminating information to the local communities throughout project implementation. Information includes project type, the scale of project, project location, implementation schedule, contractors, and hotlines and those who are responsible for receiving and dealing with environmental and social issues.

The main methods of media are public consultation/meeting, radio broadcasting of commune/district, television, and especial leaflets in Vietnamese language can be applied to remote areas where there is no radio and/or television.

### 7.4 Grievance redress mechanism

Any complaints or grievances from affected peoples will be addressed in a timely and sound manner through coordination between responsible sides in accordance with Vietnam grievance law. Sides responsible for dealing with grievances and complaints are community monitoring board, contractors, district people’s committees, and provincial people’s committees.
CHAPTER 8. PUBLIC CONSULTATION

Public consultation during project preparation is required by the Bank and Government. For meaningful consultation, MPI provides project relevant material to the project-affected groups and local NGOs (e.g., women union, farmer association, youth union, veteran association, and fatherland front) prior to consultation. Given CHPov’s underlying bottom-up, demand-driven approach, extensive consultations with affected peoples by subproject owners (principally communes and districts) will be an essential element of subproject preparation and implementation. MPI and PPMUs would ensure that the communes and districts conduct such public consultations throughout project implementation as necessary to address EA-related issues that affect local people. Below are details about public consultation conducted for project preparation.

Public consultation will be conducted 2 times in 2 different levels, the 1st round will be held in district and provincial level, the 2nd round at the commune level. Consultations at the commune level will be focused on villages and communities. This consultation also identifies the responsibilities of the community in monitoring the activities of the sub-projects as well as for the environmental management plan.

8.1. Objective

The objective is to inform local communities about project preparation, environmental and social issues associated with project implementation, measures to be applied to mitigate, minimize, reduce or offset negative environmental impacts including setting up the negative list that would be used for subproject exclusion and enhance environmental benefits, and obtain and take their views into account project preparation in terms of environmental safeguards.

8.2. Method

Public consultations were carried out in accordance with the Bank safeguards policies and national laws.

World Bank requirements for category B sub-projects have at least one time of consultation. This consultation will provide information on the following aspects: a) the purpose of the project, b) environmental assessment, and c) presents additional research needed in case they are applied. Project preparation team of MPI has conducted public consultations with key stakeholders including representatives of provincial DPI, districts, and local NGOs (e.g., women union, farmer association, fatherland front...) during June 2013.

All project relevant documents were sent to project-affected groups at least one week ahead of consultations. Public consultations were organized with face-to-face meetings. Comments and suggestions from project-affected groups and local NGOs as well as responses from MPI were recored in the meeting minutes.

Community consultation was carried out by the method of combining group interviews directly by the PRA method (Participatory Rapid Appraisal) and expert methods. The specific stories of the people involved were consulted experts analyzed to determine the possible negative impact from the sub-project and the mitigation measures in accordance with the actual conditions of the local. Expert method is used to specify the contribution of the community in terms of science. From there, build up the mitigation measures and monitoring mechanisms, this content will be incorporated into a contract for the subproject owners.
8.3. Participants

- Representatives of the Department of Planning and Investment in each project province;
- District leaders and specialized divisions of the district, local NGOs such as women's associations, farmers' associations, fatherland front;
- Number of participants: 12-15 people for each province

8.4. Comments and suggestions

Representatives of project provinces and districts (where the sub-project implementation in each province) to support the content of the consultation and give a lot of questions, suggestions and requirements for the implementation of the project, as follows:

- All of the people and local governments in the project area to support the implementation of the project. The proposed sub-projects are based on community consultation (commune), thus consistent with the economic conditions, social and natural in each locality;
- Project management units in each province are responsible for public dissemination of information related to the project and ensure the implementation of the mitigation measures are highly effective, in accordance with natural conditions, of each local society;
- The scale of the sub-projects under component 1 and 3 are not large when compared with similar projects which have been implemented in each district by government funding. Thus, the negative impacts on the environment due to the project implementation will be minor, localized, temporary and manageable;
- The sub-project focuses on the upgrading of existing roads in the village, commune, district; expected small compensation and to create space for the project will not have immigration. The irrigation will be built on a small scale, including plumbing and spillway to increase the water supply for agricultural production. Items will be built in safe places for resources and the environment, for the purpose posed no threat to the wild animals and plants as well as natural sources of surface water;
- To minimize the negative impact on the environment and society in each district, the components of the project should proceed quickly in good weather conditions and definitely complete each phase of each sub-project, do not build a massive project on the entire route with a lack of planning;
- At the scene of the sub-project implementation, project management should take into account the comments of local people in order to make reasonable adjustments compatible with the local actual conditions to minimize, mitigate, reduce or offset negative environmental impacts;
- Suggest investment owners and contractors commit to comply with the commitment to reduce the negative impact that the project will create such as sound environmental management, monitoring of environmental quality, taking account of the use of local labor and personnel management for each sub-project;
- All localities have proposed a rule to use sanctions or even unilateral termination of the contract with the contractor if they do not comply with their commitments. In particular, environmental monitoring system needs to fully implement and
periodically in accordance with environmental protection program and must be disclosed to the local community;

- All provinces will create favorable conditions and maximum support for the project, as supporting the sub-project area preparation, ensure the proper implementation of policies on compensation and resettlement of the government and the World Bank; Cooperation with project management and contractors to implement the mitigation measures to prevent negative impacts on the environment and society;

- Agree with these measures reduce environmental pollution is expected to be included in the ESMF. Establishment of inter-agency management with the participation of local communities in monitoring the implementation of environmental protection commitments for contractors; and

- Local communities will collaborate with project management units to solve problems arising in the course of project implementation

8.5. MPI feedback

After receiving comments and suggestions from participants, the Ministry of Planning and Investment has the following responses:

- The local community aware of the negative impact may come from the sub-projects. The proposed sub-project from the commune to be consistent with natural conditions, social and local to hopefully bring the highest benefit to the community. The MPI agree with the contents of the community consultation record;

- Agree on the measures proposed by the community to minimize negative impacts on the environment and society; proposed building code practice environment is realistic, meets the requirements of the community in monitoring the negative impact on the environment;

- Receptive to suggestions and comments of the community. MPI will add, adjust the sub-projects as well as strengthening the project management to minimize the negative impact on the environment and society;

- Recommendation to leaders of provinces and districts enhance effective support for the project.
ANNEX

Annex 1. Content of an Environmental Protection Commitment (EPC)

I. General Information

1.1. Name of the investment project: the project's name must be set as in the project (feasibility study report or equal document).

1.2. Name of project owner agency/company: ...

1.3. Contact address of project owner agency/company: ...

1.4. The head of the project owner agency/company: ...

1.5. Communications of project owner agency/company: (phone number, fax number, E-mail, etc.).

1.6. Location of the project

   Describe the geographical location (coordinates according to current standards, boundaries) of the location of the project accompanied with illustration schematic that indicates natural objects (rivers, lakes, roads, etc.), the objects of socio-economic (urban residential zones; production facilities and business; services; cultural, religious, historical, etc.), current state of land use and other objects around the project area.

   Specify what the source of receiving wastewater, emissions of the project is, together with the standards, technical regulations about the current environment applying to these resources.

1.7. Scale of production, business and service

   Describe summarily the size/capacity of production; production technologies; list the list of equipment and machinery together with their status.

1.8. Demand for materials, fuel use

   – Demand for materials, fuel for production is calculated by the day, month or year and mode of supply.

   – Demand and supply of electricity and water for production.

Requirements:

– For the project, plans to renovate, expand, upgrade and increase the capacity of the production facilities, business and services which are operating is stipulated in Point b, Clause 1, Article 45 of this Circular, the content of Part I of this Appendix should be supplemented: information of operating enterprises, particularly information related buildings, equipment, facilities, and technology that will be further used or removed or replaced, modified and supplemented.

– For investment projects which are specified in Clause 2, Article 45 of this Circular, the contents of Part I of this Annex, it is necessary to clarify the construction status of work items of the project and the information of the changes relating to the location, scale and capacity.

II. The environmental impacts

2.1. The types of waste generated

   2.1.1. Exhaust fumes: ...
2.1.2. Waste water: ...
2.1.3. Solid waste: ...
2.1.4. Other wastes: ...

For each types of waste must be contained enough information about: sources, the total amount generated per unit of time, the waste composition and the content/concentration of each component.

2.2. Other impacts

Summarize the impact (if any): erosion, sliding, falling, landslides, land subsidence; erosion on river bank, stream bank, shore and coast; sedimentation of river-bed, stream-bed, heart lake; the changes of surface and underground water; saline intrusion; alkaline intrusion; micro-climate change; environmental components degradation; biodiversity change and other factors.

III. Mitigation Measures for Negative Impacts

3.1. Waste

– Each type of waste generated must be accompanied by the corresponding treatment measures, explaining the feasible extent, performance/handling efficiency. In the event that it could not be addressed the measure or have, but it is difficult to be applied in the project case, it must be clearly stated the reasons and specific recommendations to relevant agencies in order to find solutions and decisions.

– It must be demonstrated that, after application of countermeasure how extent the waste will be treated and compare with current standards and regulations. The case that does not meet the specified requirements must be clearly stated reasons and specific recommendations to the relevant agencies to find solutions and decisions.

3.2. Mitigation measures for other impacts

Each type of waste generated must be accompanied by the corresponding treatment measures, explaining the feasible extent, performance/handling efficiency. In the event that it could not be addressed the measure or have, but it is difficult to be applied in the project case, it must be clearly stated the reasons and specific recommendations to relevant agencies in order to find solutions and decisions.

Requirements:

– For investment projects that are stipulated in Point b, Clause 1, Article 45 of this Circular, the content of Part III of this Annex should state clearly the result of adverse impacts mitigation measures application, environmental incident prevention and response of the active enterprise and analyze the causes of these results.

– For investment projects that are specified in Clause 2, Article 45 of this Circular, in the context of Part III of this Annex, it must state clearly the changes of adverse impacts mitigation measures, prevent and respond to incidents environmental of investment projects, plans for production, business and services.

IV. Environmental remediation works, environmental monitoring program

4.1. The environmental remediation works

– List all the environmental remediation works for solid waste, liquid waste, exhaust fumes and other wastes within the project area; accompany with specific construction schedule for each work;
– The environmental remediation works must be clarified the types, technical specifications, and essential quantity.

4.2. Environmental monitoring program

Require monitoring the flow/total amount of waste and monitoring characteristic pollution parameters of the waste in the project in accordance with current standards and regulations of Vietnam, with minimum frequency a time every six months. The monitoring places must be specified on the diagram with clear legends and coordinates according to current standards.

Requirements: For investment projects which is stipulated in Point b, Clause 1, Article 45 of this Circular, the content of Section 4.1 of this Appendix must clearly state the current status of the project, the existing environmental protection measures of the active enterprise and the relationship of this work with the works and environmental protection measures system of the renovate, upgrade, upgrade capacity project.

V. Undertaking

Commitment to implementing waste treatment measures, other impacts mitigation that were stated in commitment; commitment to meeting the treatment standard, the current environmental technical regulations; commitment to implementing the other environmental protection measures in accordance with the current Vietnamese law.
## Annex 2. Environmental Codes of Practice (ECOP)

### 1. ECOPs Applicable to most construction activities

<table>
<thead>
<tr>
<th><strong>Safeguard issue</strong></th>
<th><strong>Mitigation measures to be taken</strong></th>
</tr>
</thead>
</table>
| Loss of land or use of land; acquisition or removal of assets (structures, crops, trees) | • Consult with lease-holders and other stakeholders;  
• Consult with local authority and request resumption of land (as per RPF);  
• Prepare and implement RAP as per the RPF |
| Dust generation; impacts on air quality; nuisance | • Spray water on exposed surfaces during dry periods;  
• If required, install dust screens when working adjacent to residential areas/schools/clinics;  
• Ensure that vehicles carrying materials are either damped down or are covered with tarpaulin or similar;  
• Cover stockpiles of aggregate materials to avoid dispersal during windy days  
• Do not burn site clearance debris (trees, undergrowth) or construction waste materials; and  
• Carry out monitoring as necessary to ensure that the air quality meets QCVN 05:2009/BTNMT |
| Soil Erosion | • Schedule construction during dry season;  
• contour and minimize length and steepness of slopes;  
• use mulch, grasses or compacted soil to stabilize exposed areas;  
• cover with topsoil and re-vegetate (plant grass, fast-growing plants/bushes/trees) construction areas quickly once work is completed;  
• Design channels and ditches for post-construction flows and line steep channels/slopes (e.g., with palm frowns, jute mats, etc.) |
| Noise impacts on communities/sensitive uses (schools/clinics) | • Ensure that vehicles transporting materials for works are well maintained and equipped with mufflers;  
• Advise managers of sensitive uses (schools/clinics) of works in the area and possibility of periods of unavoidable noise;  
• Carry out activities during the day and only during working hours i.e. between 8am and 5pm;  
• Use noise-control methods (fences, barriers) or maintain a buffer zone (open space, trees) between project site and residential areas; and  
• Carry out monitoring as necessary to ensure that noise level meets QCVN 26:2010/BTNMT |
| Removal of significant or shade trees | • Work carefully in such areas; and  
• Avoid tree removal where possible |
| Aggregate/gravel/sand extraction | • Use already identified/approved quarries or aggregate/gravel/sand sources;  
• Refill borrow pits to avoid standing water and disease vectors (mosquitos, etc.); and  
• Prohibit illegal extraction of construction materials |
| Inappropriate spoil/waste disposal | • Re-use spoil/cut wherever possible in other road repair activities;  
• Waste and spoil stockpiles to be stored at least 100m from waterways;  
• Protect excavated spoil and waste from erosion by covering and providing interception drains if left overnight;  
• Use secure area for refueling and transfer of other toxic fluids distant from settlement area and ideally on hard/non-porous surface;  
• Rubbish stored in neat/tidy piles awaiting collection;  
• No burning or burying of rubbish; and  
• Disposal of rubbish/waste only in approved dump sites or designated areas |
| --- | --- |
| Pollution of water sources; degradation of water quality in streams and rivers | • Material stockpiles to be stored at least 100m from a waterway;  
• No soiled materials, solid wastes, toxic or hazardous materials should be poured or thrown into water bodies for dilution or disposal;  
• Vehicles not to drive in stream or river beds and will not be parked adjacent to waterways while delivering materials;  
• Accidental spills to be cleaned up immediately; and  
• Run-off from site or activities to be directed to temporary settling basin/sediment trap |
| Traffic problem | • Inform local people about construction plan;  
• Neatly organize construction materials to avoid disturbance of traffic;  
• Design and construct temporary routes to keep normal traffic as necessary;  
• Properly use trucks on local roads; and  
• Comply with traffic safety regulations |
| Health and Safety | • Train and inform workers about safety rules;  
• Provide safety tools for workers throughout construction period;  
• Provide for basic first-aid kit at each site and identify from where and how qualified first-aid can be secured;  
• Make a sign and fence at dangerous places;  
• Prohibit unauthorized persons entering construction sites;  
• Ensure that technical design covers safety measures;  
• In case of use of inflammable and explosive materials, strictly comply with instructions of manufacturer;  
• Provide adequate signboards at construction site;  
• Ensure the light at night at construction site; and  
• Comply with Circular 19/2011/TT-BYT on guidelines on management of labour sanitation, worker health and occupational disease |
| Environmental hygiene and ponding issues | • Provide workers with (a) clean water meeting QCVN 01:2009/BYT, (b) mobile toilets, and (c) garbage bins;  
• Avoid ponding at construction sites as mosquito habitats;  
• Avoid blocking water flows by designing appropriate culverts; and  
• No soil ed materials, solid wastes, toxic or hazardous materials should be poured or thrown into water bodies for dilution or disposal;  
• Vehicles not to drive in stream or river beds and will not be parked adjacent to waterways while delivering materials;  
• Accidental spills to be cleaned up immediately; and  
• Run-off from site or activities to be directed to temporary settling basin/sediment trap |
| Chance finds of Physical Cultural Resources | Subproject investment owner and contractor must temporarily stop construction activities and inform Department of Culture, Sports and Tourism in a timely manner. When receiving the information, this agency must have measures to tackle in a timely manner to meet construction progress. In the case that suspending construction is necessary to preserve the status quo of resource, this agency must inform higher responsible agency for making decision. In the event that probe and excavation are essential, the budget for this activity is decided by the Government (article 37 of law on cultural heritage No.28/2001/QH10) |
| Unexploded ordnance (UXO) | If UXO was found during construction, contractor must stop construction, protect this dangerous site and inform the investment owner (commune or district) immediately; Investment owner to inform nearest office of the Vietnamese Army; The relevant office of the Army to apply special measures/techniques to probe, control and remove UXO in a timely manner to meet construction progress; and Construction to be continued only when relevant office of the Army declares the site to be safe |

### 2. Specific ECOPs by subproject type

#### a. Rural roads/bridges rehabilitation and construction

<table>
<thead>
<tr>
<th>Sub-project type</th>
<th>Issues and Mitigation measures to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Roads</td>
<td>To avoid erosion, avoid construction in unstable soils, steep slopes and nearby river banks. Additional measures need to be applied should there be no alternatives for road alignments (see below); Avoid road construction through primary forests as it gives access to illegal logging; Sediment control structures should be applied where needed to slow or redirect runoff and trap sediment until vegetation is established; Spray water on dirt roads, cuts, fill materials and stockpiled soil to reduce wind-induced erosion, as needed; Plant locally available, fast-growing grass on slopes prone to erosion; Provide interceptor ditch, particularly effective in the areas of high intensity rainfall and where slopes are exposed to intercept and carry away surface run-off from erodible areas and slopes before reaching the steeper slopes, thus reducing the potential surface erosion; Use terracing/stepped embankments for steep slopes; Rocks (riprap) can be used in addition to protect the slope; Use retaining wall (with weeping holes for drainage) at the</td>
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</tbody>
</table>
lower part of the unstable slope;
- Prevent uncontrolled water discharge from the road surface by sufficiently large drainage ditches and to drain water away from the down slope;
- Any sealing activities to be carefully managed through mixing sealant in approved locations only and prevention of on-site mixing;

<table>
<thead>
<tr>
<th><strong>Gabions:</strong></th>
</tr>
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<tbody>
<tr>
<td>o The slope of gabions should be in the ratio of at least 1 vertical: 2 horizontal. Flatter slopes may be adopted depending on the site terrain.</td>
</tr>
<tr>
<td>o The filling of the gabions should be from strong and competent rock which is laid very closely packed to maximise the weight.</td>
</tr>
<tr>
<td>o Bracing wire should be used to prevent the gabion bulging out. The bracing wire should be placed at each third of the gabion height.</td>
</tr>
<tr>
<td>o The gabions should be firmly anchored into the ground by founding the gabions below the expected scour depth level.</td>
</tr>
<tr>
<td>o In cases where stone pitching is not provided, the top layer should be covered by soil to encourage the growth of grass and the stabilisation of the slopes.</td>
</tr>
<tr>
<td>o Stone pitching may be provided as an adequate erosion protection measure in those cases where the erosion potential is deemed minimal. Stone pitching is not very resistant to strong water current and is mainly used as the top finish on gabion walls.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Water Quality and Fauna:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>o restrict duration and timing of in-stream activities to lower flow periods (dry season) and avoid periods critical to biological cycles of valued flora and fauna (e.g., spawning)</td>
</tr>
<tr>
<td>o use techniques to divert water flow or isolate work area to reduce flow of sediments in moving water</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Culverts</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>o Remove all formwork from inside the culvert (after concrete has reached full strength). Formwork that is not removed will rot eventually, drop down and obstruct the free flow of water</td>
</tr>
<tr>
<td>o Place large stones at the outlet of the culvert to prevent erosion</td>
</tr>
<tr>
<td>o Keep the culvert inlets free from sand and gravel – the water must flow through the culvert</td>
</tr>
<tr>
<td>o Ensure that the water of the adjacent road sections can flow freely into the roadside ditch</td>
</tr>
</tbody>
</table>

### b. Small-scale irrigation/drainage canals rehabilitation and construction

<table>
<thead>
<tr>
<th><strong>Environmental issues</strong></th>
<th><strong>Mitigation measures to be taken</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>• Masonry walls (along the road) or stone riprap should be built to prevent erosion on a sloped bank.</td>
</tr>
</tbody>
</table>
• May use bamboo as bank protection along the rice fields as the loads are low.
• A bar screen (vertical bars; about 20mm diameter with an approximate 10 cm clear distance for easy maintenance) is essential in front of any inlet structure (upstream) to prevent large objects and debris blocking the irrigation canal. The angle between the bottom of the canal and the screen shall be between 45 to 80 degrees

c. Small-scale agricultural livelihoods

<table>
<thead>
<tr>
<th>Environmental issues</th>
<th>Mitigation measures to be taken</th>
</tr>
</thead>
</table>
| Appearance of new plant and animal species; changes in land use; changes in management and protection of forest and plantation; soil erosion and degradation | • Prohibit introduction of exotic or new plant and animal species that are not certified by a responsible agency (i.e. DARD);
• Prohibit shifting forest land in agricultural land;
• Increase vegetative coverage and limit clearance; and
• Apply appropriate land preparation and irrigation methods                                                                                     |
| Use of chemical pesticides and fertilizers that leads to soil and water pollution and human health problem | • Provide training for farmers on Integrated Pest Management (IPM) by DARD and District Agriculture Division;
• Apply organic fertilizers and restrict use of chemical fertilizers; and
• Use legal pesticides and strictly comply with instructions of manufacturer
• Provide farmers with the list of pesticides stores certified by the responsible agency (i.e. DARD)                                             |
| Agricultural wastes including organic residuals, animal wastes, and pesticide containers | • Do not dispose wastes on the surroundings
• Treat organic residuals and animal wastes to produce manure
• Collect pesticide containers and dispose of at authorized dump sites and to be further treated by an environmental agency.                         |


d. Rural water supply schemes

<table>
<thead>
<tr>
<th>Environmental issues and subproject types</th>
<th>Mitigation measures to be taken</th>
</tr>
</thead>
</table>
| General                                  | • Design and site water tanks in such a way that to avoid creating mosquito habitat
• Periodically test water quality to ensure that it meets MOH’s standards (QCVN 01:2009/BYT and QCVN 02:2009/BYT |
| Wells                                    | • Include slab around the well for easier drainage, a crossbeam and a pulley to support the use of only one rope and bucket for collecting water. One rope and bucket is more hygienic for the well and water.
• Steel rungs (placed inside wall of a deep well) are essential for maintenance of a well or in case of an emergency.
• Provide a cover/roof/wire mesh on top to protect this area |
<table>
<thead>
<tr>
<th>Rainwater Harvesting</th>
<th>Pipelines from natural springs or surface water sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>from falling leaves or debris.</td>
<td>from falling leaves or debris.</td>
</tr>
<tr>
<td>• Locate wells upstream of the septic tank soakaway. Minimum 15 meters distance from septic tank is recommended to maintain quality of the drinking water</td>
<td>• PVC water transmission and distribution piping need to be buried underground (coverage 50cm minimum) to prevent pipe against external damage (e.g. passing vehicles, solar UV radiation, etc). Exposing PVC pipe to UV radiation causes the plasticiser in the PVC pipe to evaporate resulting in loss of integrity and becoming brittle.</td>
</tr>
<tr>
<td>• Rainwater storage reservoir should be intact, connected to roof gutter system, with all faucets and piping intact.</td>
<td>• Pipe shall be laid in a straight line, over a constantly falling slope.</td>
</tr>
<tr>
<td>• If distribution pipes are attached into the storage reservoir, install pipes 10cm above the storage/tank bottom for better use of the storage capacity</td>
<td>• When conditions do not allow piping to be buried (i.e. pipe is used above ground), then metal pipe must be used, and supported/braced as excessive movement may lead to leaks and breaks.</td>
</tr>
<tr>
<td>• Cover must be fitted tightly onto the top of the storage reservoir to avoid overheating and growth of algae (from direct sunlight), and to prevent insects, solid debris and leaves from entering the tank</td>
<td>• Outlet pipes and fittings from water storage/basin shall not be PVC pipe due to exposure to solar UV/sunlight. Metal piping and fittings are preferred.</td>
</tr>
<tr>
<td>• A ventilation pipe with fly screen should be placed in the cover to help aerate the tank/reservoir</td>
<td></td>
</tr>
<tr>
<td>• Roof gutters need to be cleared regularly, as bird and animal waste and leaf litter on roofs or guttering can pose a health risk if washed into the reservoir tank</td>
<td></td>
</tr>
<tr>
<td>• Reservoir tanks need overflow so that heavy rain, the excess water can drain away. The overflow should be designed to prevent backflow and stop vermin/rodents/insects entering the system. A good design will allow the main storage tank to overflow at least twice a year to remove build-up of floating sediment on the top of the stored water and maintain good water quality</td>
<td></td>
</tr>
<tr>
<td>• Build a structure with roof over the water source to prevent leaves or other debris from entering into the basin</td>
<td></td>
</tr>
<tr>
<td>• Use fence to protect water source (springs particularly) from public access and risk of contamination</td>
<td></td>
</tr>
<tr>
<td>• Include filter and sand trap, which needs to be regularly cleaned</td>
<td></td>
</tr>
</tbody>
</table>

**e. Sanitation and Waste Facilities**
<table>
<thead>
<tr>
<th>Subproject types</th>
<th>Mitigation measures to be taken</th>
</tr>
</thead>
</table>
| Public latrines/toilets | - All toilets must have a septic tank to provide primary treatment of waste.  
- PVC pipe used to connect pour-flush toilet to a septic tank must be buried underground or covered over (with cement) for protection and to prevent exposure to sunlight.  
- Metal pipe is a preferred choice to be used as the gas vent pipe on septic tanks. Never use PVC pipe as it is unable to withstand long-term exposure to sunlight.  
- Septic tanks must have a vent pipe to prevent the build up of gas inside the chamber and shall have a ‘manhole’ that provides access inside the tank if needed.  
- A toilet should be at least 20 metres from water sources  
- Septic tanks must be inspected periodically and accumulated sludge emptied every few years to continue functioning properly  
- Do not discharge septic tank effluent to an open drain or other surface water. The effluents need to be treated before final disposal. This may be achieved through: (i) an underground leachfield, (ii) a vegetated leachfield, or (iii) a pit for soaking away |
| Solid waste/garbage disposal | - Solid waste depots/disposal need to be located on hard-standing areas that prevent waste entering surface or groundwater  
- Waste depots/storage/disposal should be contained, sealed and/or roofed/covers to prevent stormwater contamination. Wastes need to be emptied regularly. |

**f. Small buildings construction**

<table>
<thead>
<tr>
<th>Environmental issues</th>
<th>Mitigation measures to be taken</th>
</tr>
</thead>
</table>
| General issues | - Provide adequate drainage in the building’s immediate surroundings to avoid standing water, insect related diseases (malaria, etc.) and unsanitary conditions  
- Include sanitary facilities such as toilets and basins for hand-washing  
- Avoid use of asbestos cement tiles as roofing  
- Tiled floors are preferred for easier cleaning and more hygienic |
| Specific concerns | - SCHOOLS/CLINICS: Maximise natural light and ventilation systems to minimise artificial light needs; use large windows for bright and well ventilated rooms.  
- CLINIC: Provide adequate area for treatment, waiting area and patient’s rooms, all of which should be well ventilated  
- CLINIC: Include facilities for proper disposal of health and biological wastes (syringes, blood, etc.)  
- MARKET: Provide garbage/waste disposal that can be emptied regularly  
- MARKET: Ensure stalls/shops have covers/rooves to |
| avoid standing water during rainy season |
Annex 3. Outline of a short Environmental Management Plan (EMP)

1. Introduction - provide brief but concise information on subproject (e.g., subproject name, subproject scale, subproject owner, construction schedule, and a layout)

2. Potential impacts and mitigation measures – provide results of the safeguard screening following the criteria in the ESMF, identify potential impacts (positive and negative) and mitigation measures; the impacts should be described for pre-construction, construction, and operation phases; using a matrix format could help understanding connection between the impacts and mitigation better. Mitigation measures should include communication program and grievance redress mechanism to address social impacts.

3. Monitoring – Environmental monitoring during project implementation provides information about key environmental aspects of the project, particularly the environmental impacts of the project and the effectiveness of mitigation measures. Monitoring provides (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

4. Implementation arrangement – explain responsible agencies (including their capacity to carry out the activities identified in the EMP and the need for training), implementation schedule, cost estimate, and how the EMP will be integrated into the subproject, including state explicitly that the ECOP will be included in the bidding documents of contractors.

5. Consultation and information disclosure – provide summary on consultation activities and stakeholders on the EMP at subproject level (This can be combined with RP) and concerns raised and responses. Locations and dates of EMP to be disclosed should be provided.
Annex 4. Negative list

This negative list would be used for screening ineligible subprojects at district and commune levels in terms of environmental and social impacts – If a proposed subproject falls within this negative list then it is considered as an ineligible subproject and recommended to be excluded from the project

| Located adjacent to or within environmentally sensitive sites such as protected area, wetland, mangrove, estuarine, buffer zone of protected area, special area for protecting biodiversity |
| Located in area with at high risk of natural disaster such as earthquake, landslide, flashflood, subsidence and erosion |
| Involves activities affecting physical cultural resources such as graves, temples, pagodas, churches, historical relics, archeological sites, and other cultural structures |
| Involves activities of purchasing and using dangerous substances such as toxic chemicals, explosives, and inflammables |
| Involves activities of introduction of exotic or new flora and fauna species that are not permitted by responsible agency |
| Causes loss of precious ecological values (e.g. result of encroachment into critical forests/swamplands or historical/cultural buildings/areas, disruption of hydrology of natural waterways, regional flooding, and drainage hazards |
| Causes conflicts in water supply rights and related social conflicts |
| Causes potential irreversible ecological problems due to increased soil erosion and siltation, leading to decreased stream capacity |
| Involves rehabilitation, repair and construction of dams with 15 meters or more in height |
| Would require a full EIA study in accordance with World Bank policy requirements and national laws |
| Involves activities of trading of wildlife |
| Involves illegal activities of natural resources exploitation |
| Involves activities of changing forest land in agricultural land |
Annex 5. Maps of Project Provinces

Figure 2. Dak Lak Province
Figure 3. Dak Nong Province
Figure 4. Kon Tum Province
Figure 5. Quang Nam Province
Figure 6. Quang Ngai Province
Figure 7. Gia Lai Province
Annex 6. Details about public consultations

6.1. Dak Nong Province (17/6/2013)

- Dak Nong provincial leaders as well as leaders of agencies and specialized organizations have endorsed consensus in all the sub-projects building;
- Due to the size and scope of the project is in small supply, so the negative impact on the environment and natural resources derived from the sub-projects under component 1 and 3 are negligible. The negative impact is due to noise, dust, emissions, solid waste during construction and transport;
- Particularly investor commitments: recommend investors to appoint supervisors in the implementation of the construction process to reduce negative impacts on the environment and activities of the households in the project area;
- Recommend World Bank, MPI and the provincial specialized agencies to accelerate early implementation projects to stabilize production, and socioeconomic development;
- Recommend contractors when implementing the sub-projects have publicly about the parameters, specifications and a commitment to environmental protection. Recommend investors have done work compensation before implementation of project;
- Agree with the measures taken to mitigate the negative impacts on the environment. The project owners have committed serious implementation of such measures during construction to ensure the project's activities do not cause much impact on the environment and health of local people in the area. On the other hand, suggest the provincial and district government to set up inspection and supervision to ensure that all projects implement the measures described above;
- For sub-projects belongs to the sustainable livelihoods component: proposed project owner organizes training on farming techniques, livestock specifically for local people. Need to raise awareness of the people in the use of fertilizers and pesticides that do not harm the environment and human health;
- Paying attention to farming practices of local people in the adoption of agroforestry models;
- Raising awareness of the people in the livestock: livestock area must be isolated from residential areas to reduce pollution affecting the health of the community.

6.2. Dak Lak province (18/6/2013)

- Dak Lak provincial leaders as well as leaders of agencies and specialized organizations have endorsed consensus in all the sub-projects building;
- Due to the size and scope of the project is in small supply, so the negative impact on the environment and natural resources derived from the sub-projects under component 1 and 3 are negligible. The negative impact is due to noise, dust, emissions, solid waste during construction and transport;
- In the livelihood component: the proposed plant varieties and animal breeds have been successfully tested at each location and brings high performance, contributing to poverty reduction, there is no negative impact to natural resources and the environment, consistent with soil conditions and farming practices of local people;
- For livestock: recommend PMU and local authority should be planning for grazing and organization of training courses, delivered highly effective technique for locals;
Currently, the use of pesticides is difficult to manage, local people are not aware of environmental protection. Forecast, in the project operation phases, the use of pesticides fertilizers can be added, this would cause a negative impact on the environment and people's health. So, there should be communication, technical training for local people on how to use fertilizers and pesticides less impact on the environment and health;

Recommend contractors when implementing the sub-projects have publicly about the parameters, specifications and a commitment to environmental protection. Recommend investors have done work compensation before implementation of project;

Agree with the measures taken to mitigate the negative impacts on the environment. The project owners have committed serious implementation of such measures during construction to ensure the project's activities do not cause much impact on the environment and health of local people in the area. On the other hand, suggest the provincial and district government to set up inspection and supervision to ensure that all projects implement the measures described above.

6.3. Gia Lai province (19/6/2013)

Gia Lai provincial leaders as well as leaders of agencies and specialized organizations have endorsed consensus in all the sub-projects building;

Due to the size and scope of the project is in small supply, so the negative impact on the environment and natural resources derived from the sub-projects under component 1 and 3 are negligible. The negative impact is due to noise, dust, emissions, solid waste during construction and transport;

For sub-projects under component 1 and 3: Building materials mined locally, shore erosion problem will not happen because the mining area has been planned and placed under the supervision of the Department of Natural Resources and Environment;

The use of 30% local workers involved in the project is not feasible because local people do not have technical expertise, they can participate in simple stages. In addition, the current salary for workers will be difficult to persuade local people to participate. The solution is to project management with district vocational training centers conduct technical training for local people. There must be a commitment to use local labor in the contract with the contractor;

Livelihood component: no impact on the environment. There are social implications, such as the use of local labor, changes in farming practices, especially to improve the market but this is a big challenge for the local geographic isolation;

The implementation of the compensation policies of the World Bank, will make it difficult for local governments because of differences with the projects funded by the government. Let the local government decided to respond flexibly in accordance with the actual conditions of local;

Recommend contractors when implementing the sub-projects have publicly about the parameters, specifications and a commitment to environmental protection. Recommend investors have done work compensation before implementation of project;

The project owners have committed serious implementation of such measures during construction to ensure the project's activities do not cause much impact on the environment and health of local people in the area. On the other hand, suggest the provincial and district government to set up inspection and supervision to ensure that all projects implement the measures described above.
6.4. Kon Tum province (20/6/2013)

- Kon Tum provincial leaders as well as leaders of agencies and specialized organizations have endorsed consensus in all the sub-projects building;
- Due to the size and scope of the project is in small supply, so the negative impact on the environment and natural resources derived from the sub-projects under component 1 and 3 are negligible. The negative impact is due to noise, dust, emissions, solid waste during construction and transport;
- The use of 30% local workers involved in the project is not feasible because local people do not have technical expertise, they can participate in simple stages. In addition, the current salary for workers will be difficult to persuade local people to participate. The solution is to project management with district vocational training centers conduct technical training for local people. There must be a commitment to use local labor in the contract with the contractor;
- Until now, monitoring the activities of a project has an impact on the environment without the involvement of the community. Recommendations to strengthen community participation in monitoring, need to build simple monitoring criteria to create favorable conditions for the participation of the community in the environmental impact assessment;

6.5. Quang Ngai province (21/6/2013)

- Quang Ngai provincial leaders as well as leaders of agencies and specialized organizations have endorsed consensus in all the sub-projects building;
- Due to the size and scope of the project is in small supply, so the negative impact on the environment and natural resources derived from the sub-projects under component 1 and 3 are negligible. The negative impact is due to noise, dust, emissions, solid waste during construction and transport;
- Recommend contractors when implementing the sub-projects have publicly about the parameters, specifications and a commitment to environmental protection. Recommend investors have done work compensation before implementation of project;
- The impact of the sub-project to society is negligible levels. However, to minimize the negative impact on society, all projects require registration lists labor participation and strengthen management;
- The compensation will not be large, mainly crop compensation. However, the need to establish a clear list for damages.
- Until now, monitoring the activities of a project have an impact on the environment without the involvement of the community. Recommendations to strengthen community participation in monitoring, need to build simple monitoring criteria to create favorable conditions for the participation of the community in the environmental impact assessment;

6.6. Quang Nam province (21/6/2013)

- Quang Nam provincial leaders as well as leaders of agencies and specialized organizations have endorsed consensus in all the sub-projects building;
Due to the size and scope of the project, it is in small supply, so the negative impact on the environment and natural resources derived from the sub-projects under component 1 and 3 are negligible. The negative impact is due to noise, dust, emissions, solid waste during construction and transport;

Recommendations to strengthen community participation in environmental monitoring, need to build simple monitoring criteria to create favorable conditions for the participation of the community;

The compensation will not be large, mainly crop compensation. However, the need to establish a clear list for damages;

The impact of the sub-project to society is negligible levels.
Annex 7. List of proposed infrastructure investments in the 18-month plan

**Dak Lak Province**

<table>
<thead>
<tr>
<th>Type of infrastructure investments</th>
<th>Quantity</th>
<th>Cost (billion VND)</th>
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<tbody>
<tr>
<td>Smal-scale rural roads</td>
<td>17</td>
<td>28.5</td>
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<tr>
<td>Smal-scale irrigation canals</td>
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<td>18.5</td>
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<td>Other</td>
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**Dak Nong Province**

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<td>Smal-scale irrigation canals</td>
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<tr>
<td>Water supply</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>44.0</strong></td>
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**Gia Lai Province**

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<td>Smal-scale rural roads</td>
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<td>Smal-scale irrigation canals</td>
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**Kon Tum Province**

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<tbody>
<tr>
<td>Smal-scale rural roads</td>
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<td>Smal-scale irrigation canals</td>
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<td>Water supply</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>53.9</strong></td>
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### Quang Nam Province

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<td>10.2</td>
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<tr>
<td>Small-scale irrigation canals</td>
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<td>Other</td>
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<td><strong>Total</strong></td>
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### Quang Ngai Province

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<td>Small-scale rural roads</td>
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<tr>
<td>Small-scale irrigation canals</td>
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<tr>
<td>Water supply</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>29.7</strong></td>
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