

Initial Environmental Examination

August 2016

LOAN 3173-VIE: INTEGRATED RURAL
DEVELOPMENT SECTOR PROJECT IN THE
CENTRAL PROVINCES (Additional Financing)

SUBPROJECT: UPGRADING IRRIGATED CANAL OF
DONG TRON RESERVOIR'S IRRIGATION SYSTEM

CURRENCY EQUIVALENTS

(As of 8 July 2016)

Currency unit	–	Vietnamese Dong (VND)
VND 1.00	=	\$0.0000449
\$1.00	=	VND 22,275

ABBREVIATIONS

ADB	Asian Development Bank
AP	Affected persons
CPC	Communal People's committee
CPMU	Central Project Management Unit
DARD	Department of Agriculture and Rural Development
DONRE	Department of Natural Resources and Environment
DPC	District People's Committee
EIAR	Environmental Impact Assessment Report
EMDF	Ethnic Minority Development Framework
EMP	Environmental Management Plan
DARD	Department of Agriculture and Rural Development
IEE	Initial Environmental Examination
IPM	Integrated Pest Management
IRDSPCP	Integrated Rural Development Sector Project in Central Provinces
LIC	Loan Implementation Consultant
MONRE	Ministry of Natural Resources and Environment
PC	People's Committee
PPC	Provincial Peoples Committee
PPMU	Provincial Project Management Unit
RF	Resettlement Framework
SIR	Subproject Investment Report
The Project	The IRDSPCP – Additional Financing
UXO	Unexploded Ordnance

WEIGHTS AND MEASURES

km	–	Kilometer
kg	–	Kilogram
ha	–	Hectare
m	–	Meter

NOTE

In this report, "\$" refers to US dollars.

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1. INTRODUCTION

1. Loan 2357(SF) for the Integrated Rural Development Sector Project in the Central Provinces (IRDSPCP) was approved by ADB on 15 October 2007. The total cost of the Project was estimated at \$168.2 million and is jointly financed by ADB and Agence Française de Development. The IRDSPCP focuses on upgrading and rehabilitating rural infrastructure (rural roads and irrigation systems, flood control, markets and other key infrastructure). To date, 129 subprojects have either been completed or are nearing completion. Review missions had determined that the quality of construction of subprojects was good. The executing agency (EA) has developed the expertise needed to effectively implement the project and significant benefits are already accruing.

2. At the request of the Government, the potential for additional financing was investigated during the Mid-Term Review in 2011 and two review missions in 2012. About 39 new subprojects were found eligible for consideration in the additional financing. The amount of \$70 million has been recommended and included in the country program for ADB Board consideration in 2013. The IRDSPCP - Additional financing (the Project) aims to rehabilitate and upgrade deteriorated critical productive rural infrastructure in support of the Government of Viet Nam's new National Target Program for Rural Development.

3. In consultation with the relevant provincial government and field investigation by the CPMU, a total of 23-24 eligible subprojects were initially identified based on 7 screening criteria which are focused on social economic development, safeguards, integrated development model, feasibility and sustainability. The types of subprojects are as follows:

(i) Small & medium-sized dam and reservoir improvements e.g., spillways, head-works, reservoir walls, and leakage control;

(ii) Rehabilitation of primary and secondary irrigation canals and riverbank stabilization. Wherever possible key strategic investments such as the lining of critical lengths of canal or the reinforcing of existing water control structures will be chosen; and

(iii) Rehabilitation of commune to district, and inter-commune roads to improve linkages between higher level alignments (provincial and national routes) and lower level commune to village and inter-village roads. In addressing key issues of sustainability, designs will take into account the increased intensity and frequency of climatic hazards anticipated to result from global climate change, the local geology and terrain, potential change in utilization patterns (type and volume of traffic), and the longer-term availability of recurrent expenditure for operations and maintenance (O&M).

4. As part of the Project, UPGRADING IRRIGATED CANAL OF DONG TRON RESERVOIR'S IRRIGATION SYSTEM subproject will be implemented at An Dinh, An Nghiep communes - Tuy An district, and Xuan Son Nam commune - Dong Xuan district, Phu Yen province.

5. To fulfill the requirement of Law on Environmental Protection 2014 of GOV¹, Environmental Impact Assessment Report (EIAR) has been prepared and certified by Phu Yen DONRE on February 2016.

¹ Law on Environment Protection 2014; Decree 18/2015/ND-CP and Circular 27/2015/TT-BTNMT

6. This Initial Environmental Examination (IEE) document has been prepared to meet the environmental safeguards requirements of the ADB². The IEE contains the following information:

- (i) Section 1 - Introduction;
- (ii) Section 2 contains a description of the subproject;
- (iii) Section 3 contains a description of environmental conditions in the vicinity of the subproject;
- (iv) Section 4 contains a describes potential environmental impacts of the subproject;
- (v) Section 5 contains the environmental management plan including mitigation measures, monitoring system and cost estimation for Environmental Monitoring System (EMS) implementation;
- (vi) Section 6 contains activities description on community consultation and subproject disclosure;
- (vii) Section 7 contains conclusion and recommendation including summarization of main impacts and typical mitigation measures in the subproject's implementation.

² ADB Safeguard Policy Statement (2009)

2. PROJECT DESCRIPTION

Table 1 - General information of subproject

DATA ITEM	SUBPROJECT DATA
GENERAL INFORMATION	
Subproject Name	Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System subproject, Phu Yen Province
Subproject Type	Irrigation
Executing Agency	People's Committee of Phu Yen Province
Sub-project owner	Department of Agriculture and Rural Development, Phu Yen Province
Sub-project Management Unit	PPMU of IRDPCP, Phu Yen Province
Address of PPMU's office	77 Phan Dinh Phung, Tuy Hoa City, Phu Yen province
Name and Title of Head of Project owner	Nguyen Doan Duong Title: Director
Telephone, fax and email details of Project owner	Tel: 057.3841869; FAX: 057.3842704
Name of Environmental Officer of PPMU	Tran Con Son
Telephone, fax and email details of PPMU Environmental Officer	0972735248
SUBPROJECT DESCRIPTION	
New project or rehabilitation project	Rehabilitation project
Surface water or groundwater	Surface water
Identification of drainage basin area	Dong Tron reservoir receives water from Cay stream and irrigate – at design capacity – for 833.5 ha cultivation area of An Nghiep, An Dinh communes – Tuy An district and Xuan Son Nam commune, Dong Xuan district and irrigate for 900ha Winter – Spring and Summer – Autumn cultivation crops of Tam Giang Irrigation area. The capacity of the reservoir is $18.31 \times 10^6 \text{ m}^3$. The East primary canal has the total length of 6.525 km and the West Primary canal has the total length of 7.043 km. There is no secondary canal system or other branch canal system has been constructed.
Purpose of the subproject	The subproject will contribute to poverty reduction for local people in An Dinh, An Nghiep communes of Tuy An district and Xuan Son Nam commune of Dong Xuan district through upgrading secondary canal system and some auxiliary works for Dong Tron irrigation system to ensure irrigation water for 833.5 ha cultivation area of An Dinh, An Nghiep and Xuan Son Nam communes as the designed capacity of Dong Tron irrigation system.
Type of subproject	Upgrading the secondary canal system and some auxiliary works for Dong Tron Irrigation system
Components of the subproject	The subproject will upgrade the irrigation system of Dong Tron, the main interventions include: a) Upgrading branch canals of the east and west canal system of

Initial Environmental Examination (IEE)

Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
Integrated Rural Development in Central Provinces Project

DATA ITEM	SUBPROJECT DATA
	Dong Tron reservoir; b) Pump station for west canal system
a) Irrigation canals	Upgrading branch canals of the East canal system with a length of 10.25 km, width of the canal system: varied from 0.25 - 0.6m, and depth of the east branch canals is varied from 0.3 – 0.6m. Upgrade and new construction of 1 bridge canal; 10 road crossing culverts; 6 drainage culverts; 70 intake culverts. Upgrading branch canals of the West canal system with a length of 15.776 km, width of the canal system: varied from 0.25 - 0.6m and depth of the west branch canals is varied from 0.3 – 0.9m. 4 bridge canals; 15 road crossing culverts; 2 drainage culverts; 83 intake culverts will be also new constructed or upgraded along the canals
b) Pump station	Pump station for West canal system with capacity of 330 m ³ /h, irrigate for 50 ha cultivation area
CONSTRUCTION ACTIVITIES³	
Commencement date (month/year)	November 2016 (as expected)
Completion date (month/year)	May 2018 (as expected)
Number of workers	About 50 workers
Necessary camps (Yes/No)	Yes, 01 main camp and camps along the proposed canals
Construction in rainy season (Yes/No)	Yes, in case of favorable weather conditions
Location and area of borrow area or description of material source	Filled soil will be taken from 04 borrow pits located at a distance of 1 - 3.0 km from the construction sites: <ul style="list-style-type: none"> - Hoc Day hill, zone 2, Dinh Phong hamlet, An Nghiep commune - Hoc Rang, zone 5, The Hien hamlet, An Nghiep commune - Hon Chua, zone 9. Trung Luong hamlet, An Nghiep commune - Zone 4, Phong Hanh hamlet, An Dinh commune <p>All of the borrow pits have been certified by An Nghiep, An Dinh CPCs and recorded in the Working Minutes dated 16 November 2015 (EIAR of Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System)</p> <p>Stone will be taken from the licensed Xuan Quang quarry. It is far from the subproject area about 10 Km;</p> <p>Sand will be taken from the licensed mines of Cai river, near Ngan Son bridge. It is far from the subproject area about 25-30 Km;</p> <p>Other material such as steel, cement will be taken from city of Tuy Hoa city located 45-50km from the subproject site.</p> <p>Disposal site: disposal site is planned in Trai Tay area, Trung Luong 2 hamlet with an area of 3ha.</p>
Method on management and balance for excavated soil/surplus soil	The quantity of excavated soil along the route of canals will not large if compared with the compactness soil which is used for filling back the banks. Excavated soil will be reused as much as possible for leveling purpose (about 75%); Excavated soil: 30,829 m ³ ; Filling soil: 69,901 m ³ ; Spoiled soil: 6.165.8

³ Source: Basic Design Explanation of Upgrading canals of irrigation scheme of Dong Tron reservoir Subproject

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DATA ITEM	SUBPROJECT DATA
	m ³ . Excavated soil that could not be reused will be transported to the temporary dumping site in Trai Tay area, Trung Luong 2 hamlet. This area has been used as dumping site for Tuy An district. The contractor will work with An Dinh and An Nghiep CPCs to confirm the license of the dumping site before construction start.
Type and approximate quantity of raw construction materials	Excavated soil: 30,829 m ³ Filling soil: 69,901 m ³ Concrete: 6159 m ³ Stone Masonry: 232 m ³
Quantity of solid waste generated from construction (m ³ / month) - Soil, sand, debris, etc. - Domestic waste	Estimated construction waste volume: 30 m ³ /month Domestic waste: 0.5kg/person/day, in total: 750kg/month
Number and conditions construction vehicles and equipment	The construction equipment/ machines will be mobilized: 01 bulldozer; 01 excavator; 01 compactor; 01 jumping jack compactor; 1 tip truck (5 tons), 01 concrete mixing machine (200-450l), 1 generator. All vehicles and machines are in good conditions and have registration of periodical verification
OPERATION AND MAINTENANCE ACTIVITIES⁴	
Water discharge at the beginning section of the canal: (m ³ /s)	Ensure irrigation ratio of 1 l/s/ha
Irrigation area (ha)	833 ha
Water treatment process	No. Water in Cay stream has been used only for irrigation purpose without sign of pollution. There has not been any water treatment system in the subproject area.
Descriptions of periodical maintenance activities	Annual maintenance: Annual maintenance activities include greasing machines, replacing broken minor parts of machines such as penstocks; dredging sludge of canals, culverts, spillways; repairing banks of canals; removing rubbish in the canals, culverts, troughs, spillways etc.; repairing minor breaks of canal slopes, culverts, spillways and treating extrusion joints, penetration through animal holes and nests of white ants. Annual average cost for Operation and Maintenance Activities estimated 1,352,302,050 VND (count up to 30 June 2019) Periodic maintenance (every 5 years): Periodic maintenance is conducted every five years for canals. Estimated cost for periodic maintenance is 30% of the total cost including repairing significantly damaged works. Detailed activities will be based on the Economic-Technical Report according to the government's regulations on investment management.
RESETTLEMENT AND LAND ACQUISITION⁵	
Affected households	1096 households of which 211 households are policy families, the handicapped, single/female families

⁴ Source: SIR of Upgrading canals of irrigation scheme of Dong Tron reservoir, Phu Yen Province, 2014

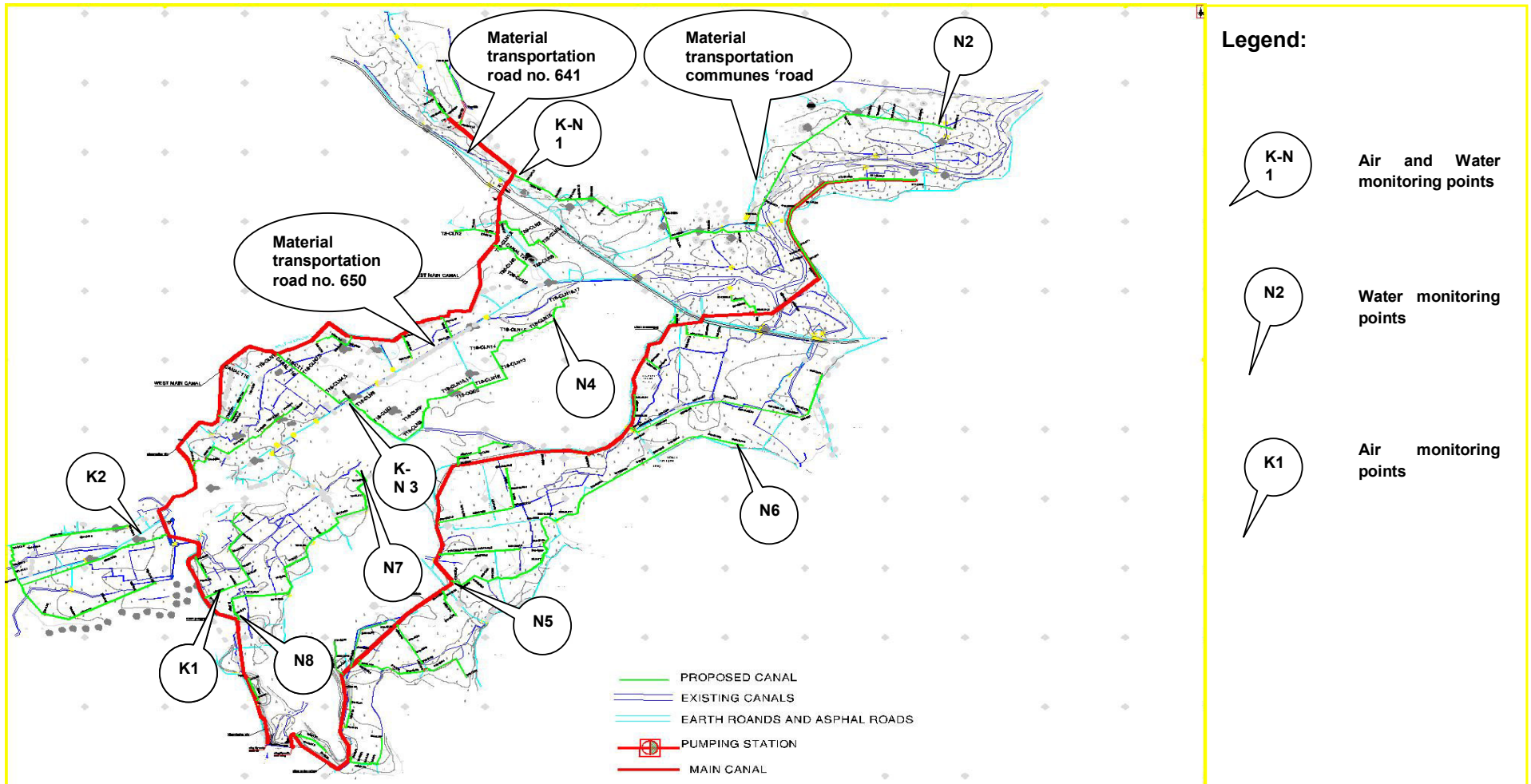
⁵ This data is obtained from Resettlement Plan of the subproject

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DATA ITEM	SUBPROJECT DATA	
Number of severely affected APs	There is no household which loss production land over 10% of total holding land	
Number of APs that must relocate	No house/shop shall be relocated or rebuilt at new place.	
Total land area to be acquired (ha)	Temporary= 0 m ²	Permanent = 108,036 m ²
Agricultural land area to be acquired (ha)	Temporary= 0 m ²	Permanent = 106,006.2 m ²
Forestry land area to be acquired (ha)	Temporary= 0 m ²	Permanent = 0 m ²
Aquaculture land to be acquired (ha)	Temporary= 0 m ²	Permanent = 0 m ²
Residential land to be acquired (ha)	Temporary= 0 m ²	Permanent = 0 m ²
Garden land to be acquired (ha)	Temporary= 0 m ²	Permanent = 2,029.8 m ²
Other land to be acquired (ha)	Temporary= 0 m ²	Permanent = 0 m ²
Affected assets	None	None
<i>SUBPROJECT COST</i>		
Total subproject cost (VND and \$USD)	96,175,611,675 VND/ 4,317,648 USD	

Figure 1: Map of Subproject and Surrounding Area



3. DESCRIPTION OF EXISTING ENVIRONMENT

Table 2. Environmental baseline

DATA ITEM	SUBPROJECT DATA
PROJECT LOCATION	
Commune(s):	An Dinh, An Nghiep and Xuan Son Nam
District:	Tuy An, Dong Xuan
Province:	Phu Yen
Geographic location:	13 ⁰ 17'14" - 13 ⁰ 20'29" N; 109 ⁰ 08'32" - 109 ⁰ 10'48" E
PHYSICAL ENVIRONMENT CONDITIONS	
Air quality, noise and vibration	Air quality & noise: Major activities in the subproject area are agricultural production activities. There are no industrial parks and factories, thus the ambient air quality is still under good condition. According to the results of ambient air quality for environmental impact assessment of the subproject (monitoring air quality at An Dinh, An Nghiep and Xuan Son Nam residential areas), the concentration of TSP was 0.0006 mg/m ³ ; SO ₂ , CO and NO ₂ were not detected and noise is 52.3 dBA on average. They are under Vietnamese standards (QCVN 05:2013/BTNMT – National Technical Standards on Ambient Air Quality and QCVN 26: 2010/BTNMT – National Technical Standards on Noise) ⁶ .
Climate and natural disasters	The rainy season lasts from September to December with the rainfall makes up 70-80% of the total rainfall in a year. And the dry season is from January to August with little rain and much sunshine and the rainfall only shares 20-30% of the total rainfall in a year. Average rainfall reaches about 1606 mm in many years and the average temperature is 26.0 ⁰ C ⁷ . In the recent 5 years, the main natural disasters in the communes are drought but they only happened in local scale that affected local residents from June to August. The nearest flood was happened in November 2009 causing more than 10 casualties in 3 communes and more than 100 cows lost.
Topography and soils	The irrigation area is located on the valley of the mountains and hills. The irrigation area is divided in two parts: west and east areas. The natural surface land elevation of the west irrigation area ranges from 5 m to 9 m while the natural surface land elevation of the east irrigation area ranges from 3 m to 8 m. The soil in the subproject area is divide in 5 layers: <ul style="list-style-type: none"> - Layer 1: Sandy clay with greyish green, grayish brown and black soft-plastic soil. - Layer 2: Greyish green, greyish brown clay hard-plastic soil - Layer 3: Medium to coarse sand mixed with quartz gravel, greyish black or greyish yellow d= 0.2-2cm, 10-15%

⁶ The monitoring has been implemented in 20 October 2015 by Phu Yen Center for Environmental and Natural Resources

⁷ Source: PPMU of Phu Yen province, SIR of upgrading canals of irrigation scheme of Dong Tron reservoir, Phu Yen Province, 2014

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DATA ITEM	SUBPROJECT DATA
	<ul style="list-style-type: none"> - Layer 4: Loose greyish brown and black silty clay - Layer 5: Mixed of coarse sand, gravel and weathering rock, greyish yellow and greyish brown.⁸
Water bodies	Ba River is about 25km from the subproject area. Cay stream start from Ba River, flows North before discharge into Dong Tron Reservoir. The main water sources for Dong Tron reservoir are come from Cay stream. Cai river network is located downstream of Dong Tron reservoir. There is no wastewater of the subproject discharging into them. Water of the river and canals is mainly used for agriculture purpose.
Underground water	Groundwater is at shallow layers. As observed, deep well is 4-8 m from the ground surface. The results of water quality analysis at Long Ba hamlet on 19/03/2013 from Phu Yen Center for Environmental and Natural Resources shows that parameters such as pH, hardness, TS, COD, NH4+, Cr, Fe, Cl-, CN-, NO2-, NO3-, coliform, E.coli are 7.6, 206 mg/l, 80 mg/l, 0.3 mg/l, 0.19 mg/l, <0.005 mg/l, <0.1 mg/l, 17.8 mg/l, <0.005 mg/l, <0.03 mg/l, 2.1 mg/l, 4600 MPN/100ml, 4 MPN/100ml were within allowed limits as regulated in the Vietnamese standard - QCVN 09: 2008/BTNMT ⁹
Water quality	The results of surface water quality analysis in the subproject area in 20 October 2015 from Phu Yen Center for Environmental and Natural Resources ¹⁰ shows that nearly all the parameters such as pH, DO, TSS, COD, BOD, NH4+, NO2-, NO3-, coliform, E.coli... in the 3 sampling locations were within allowed limits as stated in the Vietnamese Standards (QCVN 08: 2008/BTNMT, Column B1). BOD ₅ , COD and TSS at some locations were about 1.3 to 1.5 times higher than the allowed level due to sampling have been taken in rainy condition and the suspended matters in the water could be disturbed due to its rain.
Flooding and drought	The subproject area is not frequently suffered from storm and flooding. However, the most recent flood in November 2009 has killed more than 10 people in three communes and over 100 cows have been lost.
Terrestrial flora and fauna	<ul style="list-style-type: none"> + Terrestrial flora: mainly rice field and fruits and vegetables gardens in residential areas; + Terrestrial fauna: buffalo, cow, pig, chicken, ducks, etc. + Terrestrial flora and fauna in subproject area are not listed in Vietnam's Red Data Book.
Protected areas	In subproject area, there is no historical, historical vestiges or protected area.
Environmental sensitive points	<ul style="list-style-type: none"> - Residential area in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Long Hoa, Phong Nien, Dinh Trung 1 hamlets, An Dinh commune, Tuy An district. Tan Hoa hamlet, Xuan Son Nam commune, Dong Xuan district; - Nguyen Viet Xuan secondary school (200m away from material transportation road DT650), Tu An pagoda (400m from the construction site), An Nghiep clinic at the material transportation road side, An Nghiep primary and kindergarten schools (300m from the construction site); Phong Nien kindergarten is 10m away from An Dinh – An Linh inter-commune road.

⁸ Sources: Subproject Feasibility Report

⁹ Phu Yen Environmental Monitoring Report 2013

¹⁰ Monitoring surface water quality in (i) Dong Tron Reservoir in An Nghiep commune; (ii) 500m downstream of The Hien Weir; (iii) construction area in Xuan Son Nam commune for EIAR 2015

DATA ITEM	SUBPROJECT DATA												
SOCIAL ENVIRONMENT CONDITIONS													
UXO	The proposed canals are located in the area of agriculture fields that the possibly for UXO is low. However, PPMU has signed a contract with Partnership of Truong Son Construction Corporation and North East Corporation for UXO clearance												
Land use	Agriculture land: 3457 ha; other land: 4967 ha. Land is mainly used for agriculture development; Agriculture: mainly plant rice and vegetable, 2 crops/year;												
Nearest residential land	Residential areas are located along the commune's roads and the road No. 650, No. 641 and An Dinh – An Linh inter-commune road including Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune, Long Hoa, Phong Nien, Dinh Trung 1 hamlets, An Dinh commune, Tuy An district; Tan Hoa hamlet, Xuan Son Nam commune, Dong Xuan district. The distance between nearest residential houses and the proposed canals ranges from 15 m to 200 m.												
Rural infrastructure	Provincial Road No.641 (PR641) starts from the junction with National Road No.1A, running in parallel with National Railway (4 km) before connects with Provincial Road No.650 (PR650). The irrigation canal system of the Subproject spread about 6 km on two sides of PR650. PR641 and PR650 are in good condition with surface width of 5-6m and the material is asphalt concrete or cement concrete at some sections. There are several inter-commune and commune roads in the subproject area including An Dinh – An Linh inter-commune road with 3.5m road surface width. The electric cables and communication cables are arranged in parallel with the PR650. There are 2 kindergartens, 1 primary schools, 1 secondary school, 1 medical centers located in the subproject area, closed to the material transportation road via PR650 or commune and inter-commune roads.												
Access to Water Supply & Sanitation and Solid Waste Management	There is no service in rubbish collection and treatment in An Nghiep commune. Local people treat rubbish themselves by burning. There is 80% of people who access to sanitation latrines. Domestic wastewater discharges on the ground or to ponds, lakes and low positions. There are no households accessing to tap water. The percentage of people who use clean water is 61.40%. The domestic water is taken from dug wells or drilled wells. ¹¹												
Agriculture	+ Agriculture: mainly wet rice, bean, corn, water melon;												
Population	The subproject will benefit 21,731 people of 5884 households in the three communes of An Dinh, An Nghiep, Tuy An District and Xuan Son Nam, Dong Xuan District ² . The population of each commune is listed below: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Commune</th> <th>An Dinh</th> <th>An Nghiep</th> <th>Xuan Son Nam</th> </tr> </thead> <tbody> <tr> <td>Population</td> <td>5314</td> <td>8817</td> <td>7600</td> </tr> <tr> <td>Household</td> <td>1666</td> <td>2401</td> <td>1817</td> </tr> </tbody> </table>	Commune	An Dinh	An Nghiep	Xuan Son Nam	Population	5314	8817	7600	Household	1666	2401	1817
Commune	An Dinh	An Nghiep	Xuan Son Nam										
Population	5314	8817	7600										
Household	1666	2401	1817										
Ethnic minorities	5-6 Cham people is living in Xuan Son Nam commune – Dong Xuan district;												
Livelihoods	+ The main employment of the community is agriculture and handicraft production, occupying 98% of the local population; + The average income is VND 15.8 million/person/year;												

¹¹ Phu Yen Environmental Monitoring Report 2013

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DATA ITEM	SUBPROJECT DATA
	+ The level of poverty (following the new poverty line made by the Government): number of poor households in the three communes is 922, make up 17.76% of the population, mainly including policy families, the handicapped, single/female owned households.
Physical and cultural heritage	There is no cultural heritage or preservation area in the subproject region.
Public health	Diseases which often occur in the summer are diarrhea, petechial fever Besides, there are respiratory diseases like sore throat, sinusitis

4. ENVIRONMENTAL IMPACT SCREENING

Table 3 - Environmental impact screening

IMPACT	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCALE
	YES/NO?	IS IT MINOR OR SIGNIFICANT?	IS IT POSITIVE OR NEGATIVE?	IS IT TEMPORARY OR PERMANENT?	
Pre-Construction Stage Impacts					
Disturbance of unexploded mine and bomb (UXO)	Yes	Minor	Negative	Temporary	<p>Description: UXO can be left in some areas that have not been used for construction. Mine detector in subproject area may obstruct moving or agricultural works of local people, effect on life of local people and workers. However, to help in securing safety for people, PPMU has signed a contract with Partnership of Truong Son Construction Corporation and North East Corporation in October 2015 for UXO clearance.</p> <p>Location: Along the East and West canal systems.</p> <p>Objects: Local people living and cultivating in the subproject area.</p> <p>Affected level: Minor due to this affect will be temporary and can be controlled by hiring mine detector team.</p> <p>Time of impact: Temporary</p>
Effects on households from loss of residential or agricultural land	Yes	Minor	Negative	Temporary and permanent	<p>Description: The construction of the canals affects 10.6 ha of agricultural and garden land. Local people whose land are acquired may decrease incomes and living standards as their cultivation area will decrease.</p> <p>Location: Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune, Long Hoa hamlet, An Dinh commune, Xuan Son Nam commune;</p> <p>Affected objects: local people whose agricultural land and garden land will be affected in Trung Luong 1, 2 and The Hien hamlets – An Nghiep commune; Long Hoa, Phong Nien, Dinh Trung 1 hamlets, An Dinh commune and Tan Hoa hamlet, Xuan Son Nam commune;</p> <p>Affect level: Minor, no households must to relocate or loss of residential land in the subproject area. The construction of the canals affects 10.6006 ha of agricultural land and 0.20298 ha of garden land but there is no household will be</p>

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IMPACT	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCALE
	YES/NO?	IS IT MINOR OR SIGNIFICANT?	IS IT POSITIVE OR NEGATIVE?	IS IT TEMPORARY OR PERMANENT?	
					serious affected due to loss more than 10% of total land holding.
Construction Stage Impacts					
Dust, vegetation clearing, noise, water quality or other impacts from development of borrow areas for construction materials	Yes	Minor	Negative	Temporary	<p>Description: Stone, sand will be purchased from mines and quarry as mentioned above. The owners of these mines take responsibilities for any environmental problems related to vegetation clearing or water quality and and PPMU, contractors need to check the permission of all suppliers before purchasing. Soil exploring activities at the borrow pits could impact on the surrounding water quality via water runoff when raining and dust release during sunny days. Material transportation mean will generate noise, dust which affect local people along the transportation routes and near the construction sites.</p> <p>Location: Surrounding the borrow pits, temporary dumping site and along the material transportation route (road No. 650 and No. 641, An Dinh – An Linh inter-commune road and other communal roads)</p> <p>Affected level: Small. The impact is not serious, thanks to (i) location of borrow pit is far from any sensitive objects; (ii) very limited volume of soil will be exploited; (iii) loading capacity of vehicles is less than 10 tons, (iv) communal roads are almost structured of concrete with the width of 3.5-5m, (v) among the total soil about 51,404 m³ must be transported; requires about 14 tip trucks with a capacity of 10 tons/ day within 18 months;</p> <p>Time of impact: 18 months</p>
Erosion or sedimentation caused during clearing or earthworks	Yes	Minor	Negative	Temporary	<p>Description: Erosion or sedimentation could be appeared during excavating and filling the banks of the proposed canals and construction of culverts, water inlets and outlets, spillways. The excavation activities will remove upper vegetable cover, along with raining may lead to erosion and sedimentation. It will be able to cause stuck water follow, interrupt irrigation canals passing through the proposed canals, and create filling situation that affects cultivation areas of residents.</p> <p>Location: the most affected locations will be i) the intersections of the proposed canals and 155 existing irrigation canals and ii) the intersections of the proposed</p>

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	YES/NO?	IS IT MINOR OR SIGNIFICANT?	IS IT POSITIVE OR NEGATIVE?	IS IT TEMPORARY OR PERMANENT?	
					<p>canals and 33 existing drainage canals.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Cultivated land, rice fields nearby the subproject canals - Local people in the project area. <p>Affected level: Minor. Even large area of the subproject will involve in excavated and filled works, most of the excavated volume soil will be reused to for filling up banks of proposed canals. The small amount that could not be used will be transferred to the temporary dumping site in Trai Tay area, Trung Luong 2 hamlet – about 3 km from the subproject site. Moreover, as it is scheduled excavation activities will conducted section by section and during dry season;</p> <p>Time of impact: 18 months</p>
Impacts arising from temporary storage areas including dust, noise and water quality	Yes	Minor	Negative	Temporary	<p>Description: Dust could be generated from sand or soil stockpile if they are not covered carefully especially in dry condition. As large water rice fields located along PR650, runoff water could wash out material from the temporary storage sites into the surrounding fields when its rain, impact on the water quality. Loading and unloading construction material at the temporary storage site could create noise and affect nearby households. Construction material transportation activities could also create noise and dust and affect people living along the material transportation route</p> <p>Location: Temporary storage sites for stone and sand in the subproject area. Water bodies that located near the temporary storage sites and material transportation routes. Residential areas near temporary storage sites in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Long Hoa, Phong Nien and Dinh Trung 1 hamlets, An Dinh commune, Tuy An district and Tan Hoa hamlet, Xuan Son Nam commune, Dong Xuan district.</p> <p>Affected objects: Water rice fields and other water bodies near the temporary storage sites and along PR650. Local people living near temporary storage sites and along PR650, PR641, An Dinh – An Linh inter-commune road and other communal roads.</p> <p>Affected level: Minor, the subproject stretches in a large area, the constructions</p>

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					<p>sites are small and separated thus the temporary material storage sites are small. On the other hands, materials are mainly handled manually and the impact is only in 18 months construction time so the impact will not be significant.</p> <p>Time of impact: 18 months</p>
<p>Pollution of waterways, aquatic environments or underground water from wastes, chemicals, waste water or disturbance of contaminated soils</p>	Yes	Small	Negative	Temporary	<p>Description: In the process of excavating canals and filling banks of canals and constructing on canal structures, oil and grease leakage will be able to cause water and soil pollution. Cleaning chemical substances could enter the surrounding water bodies. Wastewater from construction sites and worker camps could be discharged into surrounding water bodies such as the rice fields along PR650 and impact on the water quality, reduce the productivity of the field.</p> <p>On the other hand, if waste such as spoiled soil, sand will not be collected and controlled strictly then it will able to make water turbidity increased.</p> <p>Location: At the existing canal system of Dong Tron Reservoir; water rice field along PR650 and other communal roads in the subproject area; construction sites in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Long Hoa, Phong Nien, Dinh Trung 1 hamlets, An Dinh commune, Tuy An district; Tan Hoa hamlet, Xuan Son Nam commune, Dong Xuan district.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Water quality of the subproject canals - Local aquatic environments <p>Affected level: Small. The affected level is insignificant because (i) The number of construction machines and their capacity is small; (ii) the construction is scattered over 25km long of the canals, therefore the concentration of the uncontrolled waste, oil and grease leakage is not remarkable; (iii) about 50 workers will be mobilized to work discontinuously and separated in the subproject area.</p> <p>Time of impact: 18 months</p>
Changes of water	No				Upgrading the canals will not affect operation of inlet, thus this will not cause

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quality due to changes in inlet operation which cause sedimentation or aluminiferous intrusion or pollution					sedimentation or aluminiferous intrusion or water pollution
Making sensitive flora disappeared and deteriorated	No				The proposed canals are located on fields or near residential areas. The site clearance for construction of the canals only affects people's crops and weeds. There is no sensitive flora surrounding the subproject area.
Dust or exhaust fumes from construction equipment.	Yes	Minor	Negative	Temporary	<p>Description: Dust is mainly generated from excavating the proposed canals, filling the banks of the canals and transporting materials. Gaseous emissions will also be generated from other construction equipment such as excavators, concrete mixing machines that could cause health problems to nearby local people.</p> <p>Location: Dust, noise are mainly generated by construction and material transport, affecting workers and people living along the roads and construction sites at Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Long Hoa, Phong Nien and Dinh Trung 1 hamlets, An Dinh commune; Tan Hoa hamlet, Tuy An district, Xuan Son Nam commune.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - The subproject workers - Local people in the subproject area. <p>Affected level: Small. However, construction of the canals does not cause serious dust or air pollution because (i) the subproject area is rural, the construction site is spacious, (ii) number of construction machine is not many and distributes over 25 km of length; (iii) vehicles and machines for the construction need to be registered, controlled, maintained periodically as required in current Vietnamese regulations.</p> <p>Time of impact: 18 months</p>

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Noise and vibration from construction equipment and transport activities	Yes	Moderate	Negative	Temporary	<p>Description: Construction activities such as clearance, excavation of foundation; transport of redundant spoils to the disposal site through unpaved roads, etc. will cause the generation of noise and vibrations to be felt with the construction sites and adjacent areas. Noise and vibration from construction equipment when they are in operation, which may cause disturbance to workers and the activity of local people, especially the sensitive receivers such as schools and medical centers, pagoda.</p> <p>Location: At the construction sites and along the transport roads (PR650, PR641, An Dinh – An Linh inter-commune road and other communal roads); residential areas in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Long Hoa, Phong Nien, Dinh Trung 1 hamlets, An Dinh commune; Tan Hoa hamlet, Tuy An district, Xuan Son Nam commune. Nguyen Viet Xuan secondary and junior high school, An Nghiep primary and kindergarten, Phong Nien kindergarten, An Nghiep medical center, Tu An pagoda.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - The subproject workers - Local people in the subproject area. - Student at the schools, kindergartens. <p>Affected level: Moderate. Affected level is average due to the subproject area close to residential areas with various sensitive points such as schools, kindergartens, medical center and pagoda. However, the number of construction machine is not many (01 bulldozer; 01 excavator; 01 compactor; 01 jumping jack compactor; 1 tip truck, 01 concrete mixing machine) and distributes over 25 km length; construction sites are mainly on the field, about 300 m away from sensitive points and residential areas so the negative impact is not so serious.</p> <p>Time of impact: 18 months.</p>
Increasing time and area of flooding	Yes	Minor	Negative	Temporary	<p>Description: The banks of the proposed canals will be built in a level, which is higher than natural ground level. It could reduce capacity of the water flow discharge to Ba River in the flood season thus increase time and area of flooding in the flooding season.</p>

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					<p>Location: Subproject area in An Nghiep, An Dinh commune and Tan Hoa hamlet, Xuan Son Nam commune - downstream of Dong Tron Reservoir.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Cultivation activities in the subproject area - Local people who cultivated in the subproject area <p>Affected level: Insignificant, the affected level is insignificant because of the short construction time (18 months) and the main construction activities will be implemented in dry season. On the other hand, Dong Tron Reservoir has well - operated for flood control in the subproject area and there is no big flood has happen in the subproject area since 2009.</p> <p>Time of impact: 3 to 4 months in the rainy season of 18-month construction duration).</p>
Impact on traffic or conditions for property access	Yes	Minor	Negative	Temporary	<p>Description: Material transportation will affect on movement demand, transporting goods of local people, disturbance to individual households and cause risk for safety traffic. Construction activities can affect on travelling for local people as increasing the density of traffic or block traffic movement. Temporary material storage at roadside, construction machines and construction waste could also block the movement of people who travel on the road. Construction activities, construction machines and material storage sites could also impact on the students on their way to schools, kindergartens especially Phong Nien kindergarten located about 10m from An Dinh – An Linh inter-commune road with only 3.5 m width.</p> <p>Location: A long the material transportation roads including the An Dinh – An Linh inter-commune road, PR650, PR641 and other commune's roads). Access road to Nguyen Viet Xuan junior high and secondary schools, and at the construction sites.</p> <p>Affected objects: Local people living in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Phong Nien, Long Hoa, Dinh Trung 1 hamlets, An Dinh commune, Tuy An district; Tan Hoa hamlet, Xuan Son Nam commune; Student</p>

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					<p>of Nguyen Viet Xuan junior high and secondary school; An Nghiep kindergarten and primary school; Phong Nien kindergarten.</p> <p>Affected level: Small, due to impact on traffic is minor because the traffic in the subproject area in low density with main transport vehicles of local peoples are motorbike and bicycle; people can use branch route in the communes to travel during construction.</p> <p>Time of impact: 18 months</p>
Impact on public infrastructure such as communication, electricity wires, inter-commune road, etc.	Yes	Minor	Negative	Temporary	<p>Description: Electricity cables were arranged in parallel with PR650, PR641, An Dinh – An Linh inter-commune road to the residential areas of An Nghiep and An Dinh communes. They cross the commune's road to Dinh Trung 1, Trung Luong 1, The Hien, Phong Nien hamlets of An Dinh and An Nghiep communes. Cay Cam Bridge locates at the T-junction of PR641 and PR650. Railway overpass Bridge located at the start point of PR650. These public infrastructure and PR650, PR641, commune's roads themselves may be affected by the transportation activities. The existing primary East and West canals could also be affected by the construction activities especially at the connection point to the secondary canals</p> <p>Location: Along PR650, PR641, An Dinh – An Linh inter-commune road and other commune's roads; the existing East and West primary canals</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Low voltage electricity cables along PR650, An Dinh – An Linh inter-commune road, especially the crosspoints with commune's roads to Dinh Trung 1, Trung Luong 1, The Hien, Phong Nien hamlets - Cay Cam and Railway Overpass Bridges at the T-junction of PR650 and PR641. - Existing West and East Primary Canals of Dong Tron Reservoir <p>Affected level: Minor. Small number of construction and transportation</p>

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					<p>machines and small capacity. Current roads for material transportation are in good condition. The construction time is only 18 months so the impact is not large.</p> <p>Time of impact: 18 months</p>
Employment or livelihood benefits from employment of local people	Yes	Minor	Positive	Temporary	<p>Description: As agreed in the Loan agreement, contractors will use local laborers for simple works such as moving soils, give priority to poor families, female householders, woman if they need jobs. It aims to raise their income, create more jobs and contribute to poverty reduction for community.</p> <p>Location: Local people in the subproject areas such as An Dinh, An Nghiep and Xuan Son Nam communes.</p> <p>Affected objects: Local people in the subproject area in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune, Long Hoa hamlet, An Dinh commune, Tuy An district, Xuan Son Nam commune.</p> <p>Affected level: Small. This is a positive impact, however, it requires the coordination between the contractor and CPC of subproject communes and nearby communes in recruiting local labors (contractors often prefer to engage their own trained workforces rather than training unskilled laborers)</p> <p>Time of positive impact: 18 months</p>
Effects on nearby heritage items such as graves, pagodas etc.	No				<p>The subproject does not affect any national or local heritage items such as pagodas, temples, grave stones nearby the proposed canals.</p>
Construction workers cause social disruption	Yes	Minor	Negative	Temporary	<p>Description: Affect directly on workers and indirectly on the community near the construction site. Workers have to get temporary residence certificate to avoid social disruption in the subproject area. Some social problems can appear such as gambling, drug addiction, prostitute, violence, conflict amongst workers, or between workers with local people.</p>

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					<p>Location: Workers' camps along the proposed canals and residential area at Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Phong Nien, Long Hoa, Dinh Trung 1 hamlets, An Dinh commune, Tuy An district; Tan Hoa hamlet, Xuan Son Nam commune, Dong Xuan district.</p> <p>Affected objects: Workers and local people in the subproject area.</p> <p>Affected level: Small</p> <p>Impacts are at unremarkable levels because the construction activities of workers can be controlled by working regulation in the construction site and construction duration is not long (within 18 months expected);</p> <p>Time of impact: 18 months</p>
Pollution of surface water by generation of excess spoil	Yes	Minor	Negative/Positive	Temporary	<p>Description: Excess spoil could runoff into surrounding and cause pollution of surface water of the surrounding water bodies such as the rice field in the subproject area. Temporary soil dumped at roadside could make the road dirty, slippery and create bad odor. The construction of the new secondary canals will involve excavation of 30829 m³ soil. However, most of excavated soil will be reused for canal bank filling. The small amount of excess spoil that could not be reused will be transferred to the agreed temporary dumping site in Trai Tay area (an old borrow pit) of Trung Luong 2 hamlet, about 3 ha. Local people usually take this spoil to fertilize their garden land. Representatives of An Nghiep and An Dinh CPCs has agreed that CPCs on managing and supporting local people to use the soil for fertilizing land.</p> <p>Location: Along construction sites in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune, Phong Nien, Long Hoa, Dinh Trung 1 hamlets, An Dinh commune, Tuy An district; Tan Hoa hamlet, Xuan Son Nam commune. Along the transportation roads: PR650, PR641, An Dinh – An Linh inter-commune road.</p> <p>Affected objectives:</p> <ul style="list-style-type: none"> - Local people who cultivate in the subproject area

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					<ul style="list-style-type: none"> - Local people living near the construction areas - People who travel on the material transportation roads - Student of Nguyen Viet Xuan junior high and secondary schools; An Nghiep primary and kindergarten; Phong Nien kindergarten. <p>Affected level: Minor</p> <p>This is a minor impact because the estimated filling soil volume is 69901 m³ and most of the excavated soil will be utilized for filling. Only small amount of soil that the quality does not matched for filling purpose will be transferred to Trai Tay area. Moreover, local people could take some part of the excess soil to fertilize their land.</p> <p>Time of impact: 18 months</p>
Risk to health and safety to local people or construction workers	Yes	Moderate	Negative	Temporary	<p>Description: Dust, exhaust gas and noise generating from earthworks, transporting material, construction activities and operation of machines, etc. These factors have direct affects on health of workers and local residents. Accidents may occur if during the construction, workers are not provided with safety equipment and obey construction regulations.</p> <p>Material transport may create the risk of affects on traffic safety and houses structure on road sides of PR650, PR641, An Dinh – An Linh inter-commune road and other commune's roads in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune, Phong Nien, Long Hoa and Dinh Trung hamlets, An Dinh commune, Tuy An district; Tan Hoa hamlet, Xuan Son Nam commune;</p> <p>The construction material arranges at the construction sites, along the roads, temporary storage sites and construction waste, and the construction machines locate at the construction sites could block the movement, make difficulties for people to access their office, student to access their schools and children to the kindergarten, increase the safety risk of local people and people who travel on the road, especially the sensitive receivers such as student of Nguyen Viet Xuan</p>

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					<p>junior high and secondary schools, An Nghiep primary school and kindergarten, Phong Nien kindergarten, An Nghiep medical center, Tu An pagoda.</p> <p>Sewage from construction activities and domestic use of workers. This causes some respiratory diseases for local people as well as workers. Workers living together in a small area of workers camps with poor hygiene condition could also increase the risk of infectious diseases.</p> <p>Location: Residential areas located nearby the construction sites and material transportation roads (PR650, PR641, An Dinh – An Linh inter-commune road and other commune's roads; construction sites along the proposed canals.</p> <p>Affected objects: affect directly on workers and indirectly on the community near the construction site.</p> <p>Affected level: This is a medium impact. The construction sites are mainly on the field, in open air with small quantity of construction volume, low transport frequency of trucks (14 trips/day) and short construction period (within 18 months as expected) so the exhaust fume, dust and noise do not have remarkable affects on residents. However, the access road to the construction sites and the material transportation road (PR641, PR650, An Dinh – An Linh inter-commune road and other commune's roads) go through residential area of several hamlets in An Dinh, An Nghiep and Xuan Son Nam communes with a lot of environmental sensitive points such as schools, kindergartens, medical center, pagoda... with higher safety risk during construction period.</p> <p>Time of impact: 18 months</p>
Causes waste disposal problems from solid waste generated during construction activity or municipal waste generated in construction camps	Yes	Minor	Negative	Temporary	<p>Descriptions: Solid waste that will be generated from construction mainly includes domestic waste of workers and scraps of transported soil and stone, debris, mud. On estimation, about 30 m³ of construction waste and 750 kg domestic waste from workers will be generated in a month during construction time. If they are not regularly collected and properly disposed, it could make odor and could be carried away by surface run-off into surrounding water bodies (mainly water rice cultivation field) and pollute surface water. There is no waste</p>

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					<p>collection and treatment program in the 3 communes. CPCs have assigned some areas for waste burning and dumping in the commune. Domestic waste from workers will be transferred to these temporary dumping sites.</p> <p>Location: Workers' camps along the proposed canals in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune; Phong Nien, Long Hoa, Dinh Trung 1 hamlets, An Dinh commune, Tuy An district; Tan Hoa hamlet, Xuan Son Nam commune; cultivation area along the proposed 25 km secondary canals.</p> <p>Affected level: Small, due to number of worker is not big, total about 50 workers, construction activities mainly include excavating 25 km of the proposed canals; therefore, generation of construction wastes are not so much about 30 m³/month (construction waste) and 750 kg/ month (domestic waste). Construction waste will be transferred to Trai Tay area, Dinh Trung 2 hamlet, An Nghiep commune as agreed with An Nghiep CPC.</p> <p>Time of impact: 18 months</p>
Impacts on irrigation activities	Yes	Minor	Negative	Temporary	<p>Description: The construction works could interrupt the cultivation activities in the cultivation area of An Dinh, An Nghiep and Xuan Son Nam communes. The work of excavating proposed canals and filling the canal banks, if excavated soil is not collected then siltation will be occurred. It will be able to cause stuck in other irrigation canals that pass through the proposed canals and interrupt irrigation activities.</p> <p>Location: included the intersections of the proposed canals and 155 existing irrigation canals and cultivation area along 25 km of the proposed canal</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Farmers using irrigation canal's water that affected by construction activities - Cultivated area irrigated by existing canal. <p>Affected level: Minor. Affected level is minor due to short construction times and construction work will separated over 25 km of the proposed canals.</p> <p>Time of impact: 18 months</p>

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Environmental Recovery	Yes	Minor	Negative	Temporary and Permanent	<p>Description: if construction sites are not cleaned up upon the completion of the canals construction waste and domestic waste from construction camps will pollute local environment. If contractors do not implement site restoration properly in accordance with environmental regulations then environmental problems such as soil erosion, sedimentation and accident may occur.</p> <p>Location: construction sites, disposal areas and borrow areas.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - People living near the proposed canals, camp sites, waste disposal and borrow areas - Land and water near the proposed canals, waste disposal and borrow areas. <p>Affected level: Small, due to construction waste and domestic waste will be collected every week so the remains of the waste at the construction sites will be small. Campsites are assumed in small size and simple structure.</p> <p>Time of impact: temporary to permanent</p>
Impacts in operation stage					
Inundation of sensitive vegetation from operation of the canals	No				Building new canals of the subproject will not cause flooding situation due to increment of irrigation area. On canal structures such as inlets, outlets and other controlling systems will be operated properly to handle flood. Moreover, there is no sensitive vegetation in the subproject area.
Excessive exploitation of surface water will make water supply capacity cannot catch up with demands and/or cause conflicts among households	No				Reasonably exploit the surface water according to approved design task of the works with an irrigation capacity of 833.5 ha for 2 rice crops/year; Increase the ability to meet the water demand for agriculture, especially the area has not been watered for long time; thereby harmonize the conflicts between households using water.

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Water quality is changed due to salinity intrusion, aluminiferous water or sedimentation	No				The subproject area is not affected by seawater or tide, so it is not affected by salinity intrusion or aluminiferous; The proposed canals will be lined by concrete so the water will not be polluted by sediment.
Water is exploited at sensitive ecological places/or reservation areas	No				There is no sensitive ecological areas or protection areas in the subproject area;
Productivity is improved by increase of irrigation capacity	Yes	Significant	Positive	Permanent	<p>Descriptions: Fully functioning the irrigation capacity of Dong Tron Reservoir to reach its designed capacity (833.5 ha). The completion of the subproject will irrigate for all cultivation area in An Nghiep, An Dinh and part of Xuan Son Nam communes through 25 km secondary canals. It will reduce water lost and provide sufficient water for the cultivation area thus increase the productivity.</p> <p>Location: Cultivation area of An Dinh, An Nghiep and Xuan Son Nam communes.</p> <p>Affected objects: local people in beneficiary area</p> <p>Affected level: Significant</p>
Cultivation habits will be changed due to the turning of land use for agriculture purposes	Yes	Significant	Positive	Permanent	<p>Descriptions: The utilization area of agricultural land will be increased thanks to the sufficient irrigation water. Currently, there is no secondary canal system, local people using earth canal to take water from primary canal. The completion of the subproject will reduce water loss and ensure irrigation water for 833.5 ha cultivation area in An Dinh, An Nghiep and Xuan Son Nam communes at less cultivated area where often lack of irrigation water in subproject area.</p> <p>Location: Cultivation area in An Dinh, An Nghiep and Xuan Son Nam communes;</p> <p>Affected objects: local people in beneficiary area.</p> <p>Affected level: Significant</p>

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IMPACT	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCALE
	YES/NO?	IS IT MINOR OR SIGNIFICANT?	IS IT POSITIVE OR NEGATIVE?	IS IT TEMPORARY OR PERMANENT?	
Reduce nutrition in the soil due to over-irrigation	Yes	Minor	Negative	Permanent	<p>Description: There is not statistics or research in the area regarding the percentage loss of nutrients. Actually, the rate of soil nutrient loss is very small due to the cultivation in the plain with small slope that can not cause drift of soil when it rains or excessive irrigation. After the proposed canals are completed, the regulating system will be facilitated and more flexible, hence, the land will not lose nutrients due to excessive irrigation.</p> <p>Location: beneficiary area in An Dinh, An Nghiep and Xuan Son Nam communes.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Soil quality of cultivated land - Local people in beneficiary area <p>Affected level: Small</p>
Soil erosion or scouring of streams or canals,	No				The canal is built from concrete so that soil erosion and land slide will not occur;
Congested canals cause flooding situation	Yes	Negative	Minor	Permanent	<p>Description: In case of improperly operation and regulation of the culvert system, water will cause overflows and broke the canals. In addition, waste on the canals can cause stuck in the canals.</p> <p>Location: Along the proposed canals.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - The subproject canals - Local people in beneficiary area <p>Affected level: Small</p>

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IMPACT	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCALE
	YES/NO?	IS IT MINOR OR SIGNIFICANT?	IS IT POSITIVE OR NEGATIVE?	IS IT TEMPORARY OR PERMANENT?	
Risks caused by natural calamity	Yes	Minor	Negative	Permanent	<p>Description: Natural calamity will have serious affects on resident life as well as economic growth in the region.</p> <p>Location: The subproject area, especially in An Dinh, An Nghiep and Xuan Son Nam communes.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Local people in the subproject area - The subproject canals <p>Affected level: Small</p> <p>However, directly impacts on canals are minor because their positions are in paddy field, not directly suffered from river or dynamic flow damage</p>
Affecting water quality due to the increased volume of pesticide or chemical used for water treatment or increasing the waste water	Yes	Negative	Minor	Permanent	<p>Descriptions: After constructing the canals, the cultivated area will increase about 833.5 ha. Consequently, the quantity of pesticides or chemical fertilizers will be increased.</p> <p>The amount of pesticides on field surface and drainage system will affect the quality of agricultural land and irrigation water, possibly groundwater. The risk will increase if the management of pesticides is not reasonable.</p> <p>Location: Irrigation area in An Dinh, An Nghiep and Xuan Son Nam communes.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Water quality in the subproject area - Local people in the subproject area <p>Affected level: Small due to application of advanced technology in agriculture and proposed training for local people such as IPM</p>
Affects on employment or livelihood	Yes	Positive	Significant	Permanent	<p>Description: Increase incomes and living standards for people in the subproject area by means of increasing the agricultural land area for production, cultivation productivity and diversification plants of seasonal crops.</p> <p>Location: The subproject area in An Dinh, An Nghiep and Xuan Son Nam communes.</p>

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IMPACT	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCALE
	YES/NO?	IS IT MINOR OR SIGNIFICANT?	IS IT POSITIVE OR NEGATIVE?	IS IT TEMPORARY OR PERMANENT?	
					<p>Affected objects: Local people in the subproject area</p> <p>Affected level: Significant</p>
Impacts on ethnic groups	No				There is only 4-5 Cham people in the subproject area and their land is not affected by the construction activities of the subproject.
Generating solid and liquid waste	Yes	Negative	Minor	Permanent	<p>Description: Agricultural waste after harvested or garbage from other farming activities such as pesticide covers and straw is popular. Currently, waste has not polluted severely to the canal water quality, soil, crops and farming areas. However, in the long-term, it will affect increasingly to soil and water quality and plants if the management authorities do not control and minimize;</p> <p>Location: The subproject area in An Dinh, An Nghiep and Xuan Son Nam communes.</p> <p>Affected objects: Canals and farming areas</p> <p>Affected level: Small because of proper management purpose will be applied.</p>
Occupying land of canal bank and canal safety corridor for individual purposes	Yes	Negative	Minor	Permanent	<p>Description: The occupying land for planting perennial trees or for personal purpose in the right of way (ROW) of the canals and weir corridors are remain. Occupying land for planting perennial trees are violate regulations of the Ministry of Agriculture and Rural Development on protection corridor canals and makes difficulties in implementing compensation and project execution during upgrading of the work;</p> <p>Location: the right of way (ROW) of the corridors of canals of the sub-project in An Dinh, An Nghiep and Xuan Son Nam communes.</p> <p>Affected objects:</p> <ul style="list-style-type: none"> - Subproject canals - Local people in beneficiary area <p>Affected level: Small because of Regulations of the Agriculture and Rural Development on protection corridor canals were issued to deal with this issue.</p>

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OUTLINE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

4.1 Environmental Mitigation Plan

Table 4 - Environmental mitigation plan

POTENTIAL IMPACTS	MITIGATION MEASURES	RESPONSIBILITY	COST
Pre-construction stage			
Disturbance of unexploded mine and bomb (UXO)	<ul style="list-style-type: none"> ▪ Supervise and monitor the contract with Partnership of Truong Son Construction Corporation and North East Corporation for UXO clearance. ▪ Install signs and alarms system at the UXO removal area while implement to warns people from entering the area. ▪ Checking the construction site and UXO clearance certificate upon the UXO removal complete. 	Phu Yen PPMU	No marginal cost, included in UXO removal contract
Effects on households from loss of residential or agricultural land	Implement mitigation measures outlined in the subproject Resettlement Plan	Phu Yen PPMU	Included in resettlement activities
Construction stage			
Dust, vegetation clearing, noise, water quality or other impacts from development of borrow areas for construction materials	<ul style="list-style-type: none"> ▪ Operation license of the 4 borrow pits and Xuan Quang quarry have been approved by Phu Yen DONRE. The operation licenses and approved environmental certificate need to be checked before starting purchase soil and stone from these borrow pits and quarry. ▪ In the exploitation process of the 4 borrow pits and Xuan Quang quarry, contractors will follow environmental protection issues, including: <ul style="list-style-type: none"> - Working machines must be under periodically quality controlled; - Oil and other chemical pollutants from working machines will be strictly controlled and stored separately, avoiding leakages; - Workers use protective equipment while working within the Site; - Temporary earth drainage system and ditch should be formed to store waste water safely in rainy season to reduce turbidity before releasing water into cultivated area; - Water should be regularly sprayed within borrow areas to reduce dust generation ▪ Cover trucks that transport materials purchased from Hoc Day, Hoc Rang, Hon Chua and Zone 4 borrow pits, Xuan Quang quarry (along provincial road No.650, provincial road No. 641, An Dinh - An Linh inter-commune road and other communal roads) 	Contractor	No marginal cost and included in the civil work contract

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POTENTIAL IMPACTS	MITIGATION MEASURES	RESPONSIBILITY	COST
	<ul style="list-style-type: none"> Construction vehicles, machines and equipment need to meet standards of exhaust, noise, and vibration as regulated by the Government. The Contractor needs to submit the Engineer documents proving that all construction vehicles, equipment, and machines are checked and meet requirements concerning noise and vibration generation of the current Vietnam standards. 		
Erosion or sedimentation caused during clearing or earthworks	<ul style="list-style-type: none"> Install sediment fences and/or sediment traps at intersections of the proposed canals and existing primary East and West canals; Construct temporary drainage canals to reducing affects on residential areas in An Dinh, An Nghiep and Xuan Son Nam communes; Avoid excavation activities during the rainy season where possible. 	Contractor	No marginal cost and include in the civil work contract
Impacts arising from temporary storage areas including dust, noise and water quality	<ul style="list-style-type: none"> Material stockpile location need to be at least 300 m away from the sensitive receivers such as Nguyen Viet Xuan junior high and secondary schools, An Nghiep primary school and kindergarten, Phong Nien kindergarten, An Nghiep medical center... Building up appropriate plan of material management to reduce material stagnated on the site. Store material at high place with impervious surface and at least 10 m away from the water bodies (water rice field). Cover material stockpile with canvas when they are not in used; Material transportation is strictly forbidden in the evening when stores are located next to residential areas; 	Contractor	No marginal cost and include in the civil work contract
Pollution of waterways, aquatic environments or underground water from wastes, chemicals, waste water or disturbance of contaminated soils	<ul style="list-style-type: none"> Store cleaning chemical substances in secure area, with concrete floor and weatherproof roof, at least 10m away from watercourses and floodplains; Ensure construction equipment and vehicles are maintained in good conditions to avoid leakage; Use mobile sanitary toilets following regulations of Health Ministry and washing facilities at construction camps (QCVN 01: 2011/BYT on National technical regulation on Hygienic conditions for Latrines). Provide rubbish bins at camping sites and construction sites. Transport waste regularly from the sites to Trai Tay disposal site in Trung Luong 2 hamlet, An Nghiep commune, Tuy An district (This will be committed by the contractor and the contractor can hire an environmental company to transport the rubbish). 	Contractor	No marginal cost and include in the civil work contract

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POTENTIAL IMPACTS	MITIGATION MEASURES	RESPONSIBILITY	COST
	<ul style="list-style-type: none"> ▪ Management of hazardous materials and waste need to be followed the requirements, which stated in Decree 36/2015/TT-BTNMT. ▪ The wastewater and solid waste will not be allowed to through on surrounding water bodies (water rice fields, ponds, primary East and West canals of Dong Tron reservoir) 		
Noise, dust or exhaust from construction equipment and transport activities	<ul style="list-style-type: none"> ▪ Spray water at least one time per day in the dry/hot day in transportation road section goes through the areas in front of 3 schools, 2 kindergartens, Tu An pagoda, An Nghiep medical center and CPC. ▪ Cover all trucks carrying raw materials to and from the construction area and along the transport routes as PR641, PR650, An Dinh – An Linh inter-commune road and other commune's roads. ▪ Mobile concrete batching equipment to be arranged a distance of 500m away from residential areas of An Dinh, An Nghiep, and Xuan Son Nam communes and only allows operating during daytime. ▪ Operation schedule of noise generated equipment/vehicles need to be avoid the rest time of local people, especially in the location close to residential areas in An Dinh, an Nghiep and Xuan Son Nam communes and along the transport route of PR641, PR650, An Dinh – An Linh inter-commune road and other commune's roads. ▪ Provide adequate protective equipment for workers who run noise generated machines ▪ Equipment needs to meet standards of exhaust, noise, and vibration as regulated by the Government and they need to be properly maintained. 	Contractor	No marginal cost and included in the civil work contract
Increasing the flooding area and time	<ul style="list-style-type: none"> ▪ Inform construction schedule/ scope in advance to An Dinh, An Nghiep and Xuan Son Nam CPCs. ▪ Discuss with agricultural and irrigation staff of Tuy An and Dong Xuan DPCs to identify suitable construction time. ▪ Complete construction section by section before start a new one to avoid long construction time. ▪ Construction equipment shall not be allowed to take place on the irrigation and drainage canals 	Contractor	No marginal cost and included in the civil work contract
Affects on traffic or conditions for property access	<ul style="list-style-type: none"> ▪ Inform construction schedule and scope in advance to An Nghiep, An Dinh, Xuan Son Nam CPCs ▪ Avoid material transportation in the rush hours when student go to schools, people go to work and back home (6h30 7h30 am; 11h30-13h30; 16h30-17h30) 	Contractor Contractor	No marginal cost and included in the civil work contract

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POTENTIAL IMPACTS	MITIGATION MEASURES	RESPONSIBILITY	COST
	<ul style="list-style-type: none"> ▪ Collaborate with traffic police to adjust traffic (if needed) ▪ Install additional - signal lamps and sign panels at some transportation route that closed to residential area. ▪ Limit the speed of means of transport on the route; ▪ In case unavoidable block the access to schools, kindergarten, medical clinic... the contractors should construct a temporary access route. ▪ Reinstate as pre-project condition for any damage caused by construction activities. 		
<p>Impact on public infrastructure such as communication, electricity wires, inter-commune road, etc.</p>	<ul style="list-style-type: none"> ▪ Consulting the sub-project engineering staff to identify public infrastructure and avoid or minimize physical impacts on their infrastructures; ▪ Work with local authorities to obtain agreement in using any public facilities; ▪ Prohibited overload/ oversize transportation to avoid impacts on low-voltage lines in villages during transport of materials and construction machinery; ▪ Limit the speed and load of material transportation truck in rainy season (September to December) to avoid accidents or damage road; ▪ Contractors must repair local roads, electricity lines and other local infrastructure if they are damaged by the construction activities. ▪ Warning and set rule for workers to follow traffic regulations (limit the velocity of trucks especially when travel in the sensitive areas of schools, kindergartens, medical center, pagoda...); ▪ Install warning signs and avoid crashes to electric poles and houses. 	<p>Contractor</p>	<p>No marginal cost and included in the civil work contract</p>
<p>Generation of excess spoil</p>	<ul style="list-style-type: none"> ▪ Utilise excavated spoil for filling purpose, as much as possible, to minimize the volume of excess spoil (estimated volume of filling soil is 69901 m³ and excavated soil is about 30829 m³); ▪ Temporary spoil disposal site shall be located at least 50 m from water bodies, like water rice fields, ponds, the primary East and West canals of Dong Tron reservoir, and shall be protected from erosion by avoiding formation of steep slopes; ▪ Unused excavated soil need to be transported to and disposed at Trai Tay dumping site. 	<p>Contractor</p>	<p>No marginal cost and included in the civil work contract</p>
<p>Construction workers cause social disruption</p>	<ul style="list-style-type: none"> ▪ Consult with An Dinh, An Nghiep and Xuan Son Nam CPCs to arrange accommodation for workers (to avoid any negative impacts on local people's activities) and register temporary residence card for them; 	<p>Contractor</p>	<p>No marginal cost and included in the civil work contract</p>

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POTENTIAL IMPACTS	MITIGATION MEASURES	RESPONSIBILITY	COST
	<ul style="list-style-type: none"> ▪ Recruit local people for simple work such as soil moving, road compaction... ▪ Consider house leasing in locality in comparison with site camps and consultation with competent staff in planning local housing for workers in the local community ▪ Request workers to collect waste as regulation and ensure that their construction camps are maintained in clean and hygienic conditions; ▪ Raise workers' awareness of environmental sanitation, infectious diseases as well as prevention of HIV/AIDS and sexually transmitted diseases and dissemination on social evils like drugs, gambling, prostitution, violence, stealing, etc. 		
Risk to health and safety to local people or construction workers	<ul style="list-style-type: none"> ▪ Inform An Dinh, An Nghiep, Xuan Son Nam CPCs in advance on construction schedule and scope ▪ Consult representatives of Nguyen Viet Xuan junior high and secondary schools, An Nghiep primary school and kindergarten, Phong Nien kindergarten, An Nghiep medical center, Tu An pagoda on construction schedule and scope, working hour... before commencement. ▪ Collaborate with infrastructure staff of the three CPCs to install warning sign boards, road hump (if applicable) near the sensitive areas; ▪ Provide workers with full safety equipment and train them how to use properly. ▪ Install mobile toilets at worker camps and provide sufficient domestic water 	Contractor	No marginal cost and included in the civil work contract
Causes waste disposal problems from solid waste generated during construction activity or municipal waste generated in construction camps	<ul style="list-style-type: none"> ▪ Provide rubbish bins (02 bins at the main camp; 01 bin for each camp along the canal sides and request workers to collect waste and not to leave litter into any water resources; ▪ Collect used oil and grease in a place with cover roof and impervious ground and at least 10 m far from the water body. ▪ Collect solid waste regularly and transport to Trai Tay disposal site in Trung Luong 2 hamlet, An Nghiep commune, Tuy An district which is located at a distance of 1-2 km from the construction sites. ▪ Management of construction waste, domestic waste and hazardous waste as per proposed on waste management items. 	Contractor	No marginal cost and included in the civil work contract
Impacts on irrigation activities	<ul style="list-style-type: none"> ▪ The Contractor need coordinate with irrigation authority (Dong Cam Irrigation One Member Limited Company), the 3 commune's irrigation staffs and relevant cultivation households during the construction of the branch canal system of Dong Tron reservoir to reach agreement on water supply time (when construction suspension), construction time 	Contractor	No marginal cost and included in the civil work contract

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POTENTIAL IMPACTS	MITIGATION MEASURES	RESPONSIBILITY	COST
	<p>(should be implemented at the time when irrigation activities are not done);</p> <ul style="list-style-type: none"> ▪ Inform An Dinh, An Nghiep, Xuan Son Nam CPCs in advance on construction schedule and scope ▪ Construct package by package and complete one section before move to the next one to avoid long construction time in the whole area along 25 km of the proposed canal; ▪ Restoration of areas cleared for the construction sites right after the construction complete; ▪ Phu Yen PPMU and the Contractor need pay attention to mitigation measures to reduce damages or to implement compensation for arising impacts due to water supply cut off for construction activities. 	Phu Yen PPMU, Contractor	No marginal cost and included in the civil work contract
Impact by inappropriate environmental recovery responsibilities	<ul style="list-style-type: none"> ▪ Remove all of the construction machines and construction tools out of the construction sites upon construction complete. ▪ Upon construction complete, perform industrial clean at that site and temporary acquired land area and before hand over the land area back to local authorities. ▪ Compensate adequately for the temporary acquired land area that could not be recovered ▪ Plant tree to recover the vegetation coverage. ▪ Taking photos of the clearance site before clearance and after recovery process complete to ensure the vegetation coverage has been recovered adequately. 	Phu Yen PPMU Contractor	No marginal cost and included in the civil work contract
Operation stage			
Reduce nutrition in the soil due to over-irrigation	Coordinate with agriculture authority/ Agricultural extension units to ensure that farmers are trained on proper irrigation method;	DARD of Phu Yen province	Provincial budget
Congested canals cause flooding situation	<ul style="list-style-type: none"> ▪ Operate regulation works canal properly, flexibly with real condition to avoid waste and water overflow at the proposed canals; ▪ Periodically dredge irrigation canal system after harvesting crop, heavy rain and flood; ▪ Periodically inspect and maintain canals and on canal structures. 	Dong Cam Irrigation One Member Limited Company	Provincial budget
Risks caused by natural calamity	<ul style="list-style-type: none"> ▪ Ensure that subproject design will meet all safety standards on prevention of flooding, storms and other potential natural calamity; ▪ Irrigation works exploitation factory need repairs and maintain the works periodically to ensure the operation capacity. 	PPMU Dong Cam Irrigation One Member Limited Company	No marginal cost Provincial budget
Affecting water quality due to the increased quantity of fertilizer or	<ul style="list-style-type: none"> ▪ Coordinate with agriculture authority to ensure that farmers are trained on irrigation method; ▪ Solid waste from pesticide, insecticide as well as other substance such as herbicide should be stored in safety tanks at cultivation area 	Dong Cam Irrigation One Member Limited Company/ DARD	Provincial budget and other assistance funds

POTENTIAL IMPACTS	MITIGATION MEASURES	RESPONSIBILITY	COST
pesticide or chemical substances or waste water	<ul style="list-style-type: none"> before transport to dumping area; Ensure weed and other floating waste are periodically cleaned along the canals; Coordinate with Agriculture Extension Center to ensure that farmers are trained on Insect Prevention Method (IPM). 		
Generated solid and liquid waste	<ul style="list-style-type: none"> Periodically collect waste in canals and field surface; Build waste collection system; Improve the awareness of local people of waste management and collection in the field, canals via training courses. 	Dong Cam Irrigation One Member Limited Company/ DARD	Provincial budget
Occupation of canal and canal safety corridor for individual purposes	<ul style="list-style-type: none"> Implement strict management measures to protect the canal banks and reservoir protection area from being reoccupied (for tree planting and other encroachment) by regular check and establishment of regulations on treatment of violations (if any) 	Dong Cam Irrigation One Member Limited Company	Provincial budget

4.2 Environmental Monitoring Plan

4.2.1 Environmental effects monitoring

7. Environmental effects monitoring is carried out to examine impacts of project in relation to ambient environmental conditions.

Table 5 - Environmental effects monitoring plan

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
Construction stage						
Minimization of noise generation	Noise level	At nearest residential areas of the proposed canals and residential areas near material transportation roads in Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune, Long Hoa hamlet, An Dinh commune, Tuy An district, Xuan Son Nam commune	Observation and community consultation using equipment to measure noise dB (A), if that is the big noise levels was observed	Weekly, monthly or when community's feedback is raised	Construction Supervision Consultant (CSC)	Included in the contract with Supervision contractor
				Every 3 months during construction duration or if there is feedback about high noise levels from the community	Construction Supervision Consultant (CSC)/ Environmental Officer at PPMU	Included in the contract with Supervision contractor
				Every 6 months during construction period or when	Monitoring consultant on environmental safeguard policies of LIC team	Included in separated contract with CPMU

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Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
				community's feedback is raised	PPMU and CMPU environmental officers	
Minimization of dust generation	Dust concentration	The same monitoring locations of noise	Observation and community consultation using equipment to measure dust level (TSP mg/m ³) if high dust level was observed	Weekly, monthly or when community's feedback is raised	Construction Supervision Consultant (CSC)	Included in the contract with Supervision contractor
				Every 3 months during construction duration or if there is feedback about high noise levels from the community	Construction Supervision Consultant (CSC)/ Environmental Officer at PPMU	Included in the contract with Supervision contractor
				Every 6 months during construction period or when community's feedback is raised	Monitoring consultant on environmental safeguard policies of LIC team PPMU and CMPU environmental officers	Included in separated contract with CPMU
Control of surface water quality	Sedimentation, rubbish, lubricating oil and solid waste	The intersections of the proposed canals and 155 existing irrigation canals;	Visual Observation; Sampling and analysis	Weekly and after large rain evens	Construction Supervision Consultant (CSC)/ Environmental Officer at PPMU	Included in the contract with CSC
				Based on requirement of water supply	Local people, Community monitoring committee Local irrigation staff (commune) Environmental Officer at PPMU	Province budget PPMU operation budget
				Once every 6 months during construction or in case of at any time or in case of	Monitoring consultant on environmental safeguard policies/LIC, PPMU and CMPU	Included in separated contract with CPMU CPMU, PPMU

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Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
				complaints of residents	environmental officers	operation budget
Labor safety and community safety	Number, use of labor equipment; signal system Obey for traffic law of transportation mean of construction material	In construction sites and on material transportation roads along residential areas of Trung Luong 1, 2 and The Hien hamlets, An Nghiep commune, Long Hoa hamlet, An Dinh commune, Tuy An district, Xuan Son Nam commune;	Observation and community consultation	When community's feedback is raised	Local people, Community monitoring committee	Without marginal cost
				Weekly/monthly or when community's feedback is raised	Construction Supervision Consultant (CSC)/ Environmental Officer at PPMU	Included in the contract with CSC PPMU operation budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies/LIC	Included in separated contract with CPMU
Operation stage						
Surface water quality	Turbidity	Location: At 08 points: the beginning and the end of canal T30, T6, DT16, DT 26	Observation and community consultation	Twice a year in two first years of operation (1 time in rainy season and 1 time in dry season)	DARD, Dong Cam Irrigation One Member Limited Company	Included in operation cost of Dong Cam Irrigation One Member Limited Company
Waste management	Conditions on environmental sanitation within the subproject area; temporary waste storage yard	Throughout the subproject area	Observation and community consultation	Once every 6 months in first 2 years of operation	Dong Cam Irrigation One Member Limited Company	Budget provided following regulations at Decree No.115
Periodical canal maintenance	Level of canal sedimentation and conditions of sluices, equipment and works on the main canal	Along the proposed canals	Field survey, community consultation	Once every 6 months in first 2 years of operation	DARD/ Dong Cam Irrigation One Member Limited Company	Local budget
Re-occupation of canal corridor	Occupation area, type of occupation (for planting)	Along the proposed canals	Field survey, community consultation	Once every 6 months in first 2 years of operation	DARD/ Dong Cam Irrigation One Member Limited	Local budget

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
	trees or other purposes)				Company	

4.2.2 Environmental Compliance Monitoring

8. Environmental compliance monitoring is carried out to test compliance with operating procedures, technical standards and/or contractor specifications in the EMP.

Table 6 - Environmental Compliance Monitoring

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
Pre - construction Stage						
Environmentally responsible procurement	Inclusion in bid docs	All canal alignment	Checking documents	Bid preparation, before start of civil works	Phu Yen PPMU	Included in the design contracts
Plan construction materials management	Meeting minutes and agreement with local authorities	All canal and proposed route alignment	Checking documents	Prior to start of site works and throughout construction phase	Phu Yen PPMU	Included in the design contracts
Plan spoil and waste disposal	Meeting minutes and agreement with local authorities	All canal and proposed route alignment	Checking documents	Prior to start of site works and throughout construction phase	Phu Yen PPMU	Included in the design contracts
UXO removal	UXO clearance process and certificate	Through out the construction sites	Checking documents/ Observation	Before construction start	Phu Yen PPMU	There are separate bidding packages
Resettlement	Compensation process and certification	Through out the construction site	Checking documents/ Public consultations	Before construction start	Phu Yen PPMU	There are separate bidding packages
Construction Stage						
Erosion and sediment controls	Condition and capacity of controls, Implementing of mitigation measures in Table 4	Throughout construction sites	Observation Document review and public consultation	Weekly, monthly, quarterly, and after heavy rain	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets

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Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
						Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Materials storage	Condition of materials storage areas Implementing of mitigation measures in Table 4	Throughout construction sites	Observation Document review and public consultation	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Construction equipment and vehicles	Noise and exhaust generation; covering of trucks; oil/fuel leaks Implementing of mitigation measures in Table 4	Throughout construction sites	Observation document review and public consultation, interview workers on the site	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Construction camp conditions	Cleanliness; waste disposal facilities; general conditions And Implement mitigation measures in Table 4	All site camps	Observation , interview workers on the site and documents review	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
				Once every 6 months during	Monitoring consultant on environmental	Included in contract with CPMU;

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Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
				construction or in case of at any time if necessary	safeguard policies of LIC and CPMU safeguard staff	CPMU operation budget
Construction workers cause social disruption	Provision of sign boards, relation with local authorities and implement mitigation measures in Table 4	Throughout construction site	Observation Document review and public consultation	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Risks to health and safety of local people and construction workers	Check implementation of all items. Check compliance to Labour Code of Vietnam and other relevant regulations and implement mitigation measures in Table 4	Throughout construction sites	Checking documents, observation and community consultation	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Water pollution	Checking equipment certificate, surface water quality and implement mitigation measures in Table 4	Through out construction sites	Checking documents, observation and community consultation	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Flooding	Checking	Along	Checking	Weekly,	Environmental	Included in

Initial Environmental Examination (IEE)

Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
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Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
	construction schedule and implement mitigation measures in Table 4	proposed drainage canals	documents, observation and community consultation	monthly, quarterly	Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	CSC contracts PPMU operation budgets Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Property access	Rehabilitate the possibility of temporary and fixed access	Affected assets: roads in commune and affected assets during construction	Observation and community consultation	Once during construction works and once after finishing construction Every six months	Construction Supervision Consultant Local Community Monitoring Boards Environmental Specialist of LIC Team	Included in the Contracts signed with Construction Supervision and Loan Implementation Consultant Team (LIC) Local budget
Waste disposal	Environmental sanitation at construction site and temporary waste storage area and implement mitigation measures in Table 4	Throughout construction site	Checking documents, observation and community consultation	Weekly, monthly, quarterly Once every 6 months during construction or in case of at any time if necessary	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in CSC contracts PPMU operation budgets Local budget Included in contract with CPMU; CPMU operation budget
Public infrastructure	Construction schedule, machine registration, warning signs board, speed limit and implement	Throughout construction site	Checking documents, observation, public consultation	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget

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Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
	mitigation measures in Table 4			Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Impacts on irrigation activities	Checking construction schedule and implement mitigation measures in Table 4	Throughout construction site	Checking documents, observation public consultation and working with local authorities	Weekly, monthly, quarterly	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
				Once every 6 months during construction or in case of at any time if necessary	Monitoring consultant on environmental safeguard policies of LIC and CPMU safeguard staff	Included in contract with CPMU; CPMU operation budget
Environmental recovery	Vegetable recovery on the sites and implement mitigation measures in Table 4	Throughout construction area	Observation, public consultation, interview workers on the site	Completed Construction	Environmental Consultant in CSC team and PPMU safeguard staff Local Community Monitoring Boards	Included in CSC contracts PPMU operation budgets Local budget
Operation Stage						
Waste management	Site cleanliness and conditions of temporary waste storage areas; recent waste disposal method	Throughout sub-project area	Observation	6 monthly for first 5 years of operation	DARD/ Dong Cam Irrigation One Member Limited Company	Provincial budget
Using irrigation water	Using matter	Households near canals	Observation and community consultation	Once every 6 months in first 5 years of operation	PPMU/ DARD/ Dong Cam Irrigation One Member Limited Company	Budget provided following regulations at Decree No.115
Soil erosion	Conditions	At sections	Observation	Once every		Budget

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
or land slide in canal	of canal; level of sludge in water	which have not be rehabilitated		6 months in first 2 years of operation	PPMU/ DARD/ Dong Cam Irrigation One Member Limited Company	provided following regulations at Decree No.115
Prevention of soil erosion and land slide in canal	Conditions of canal bank	At some representative locations in subproject area	Observation and community consultation	Once every 6 months in first 5 years of operation	PPMU/ DARD/ Dong Cam Irrigation One Member Limited Company	Budget provided following regulations at Decree No.115

4.3 EMP Implementation Arrangements

Table 7 - EMP Implementation

Organization	Roles and Responsibilities		
	Subproject Preparation	Subproject Implementation	Subproject Operation
CPMU	Advice to PPMU Safeguards Officer on IEE and EIAR preparation Review and provide "no-objection" on IEE and EIAR submitted by PPMUs	Suggest to PPMU Safeguards Officer on EMP implementation during construction Monitor progress during construction Consolidate environmental reporting from PPMU	Advice to PPMU Safeguards Officer on EMP implementation during first 2 years of operation Monitor progress during first year of operation Consolidate PPMU environmental reporting
Phu Yen PPC	Sign-off on environmental assessment documents prior to submission for approval Approval of any subprojects requiring EIAR that are not subject to MONRE approval	Project owner with ultimate responsibility for environmental performance of subproject during construction	Project owner with responsibility for operation stage environmental performance including implementation of EMP during operation
Phu Yen DONRE	Provide advice and guidance on environmental issues as required during subproject preparation	Monitoring implementation of EMP through their own internal monitoring system	Monitoring implementation of EMP through their own internal monitoring system
Phu Yen PPMU	Engage consultant and have overall responsibility for IEE or IEE/EIAR preparation and submission for approval Ensure staff are adequately trained in environmental issues	Responsibility for EMP implementation during pre-construction and construction Ensure that contract specifications and bud documents include environmental requirements Undertake inspections and	Responsibility for EMP implementation during first year of operation Undertake inspections and monitoring of environmental issues during first year of operation Assist project owners to incorporate

Initial Environmental Examination (IEE)

Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
Integrated Rural Development in Central Provinces Project

Organization	Roles and Responsibilities		
	Subproject Preparation	Subproject Implementation	Subproject Operation
		monitoring of environmental issues during construction Coordinate environmental monitoring reporting to CPMU	environmental requirements into infrastructure O&M procedures
Tuy An and Dong Xuan DPCs	Approval of subproject EIAR in accordance with GOV legislative requirements	Monitoring implementation of EMP through their own internal monitoring system	Monitoring implementation of EMP through their own internal monitoring system
Subproject Support Teams (SST) of Tuy An and Dong Xuan districts	Assist in IEE preparation as required Assist PPMU to review bidding documents, contract documents, and tenders to ensure environmental issues are adequately addressed	Day to day supervision of contractors' in district including compliance with environmental management requirements Undertake environmental monitoring and coordination of local community environmental monitoring activities	Undertake environmental monitoring and coordination of local community environmental monitoring activities for first year of operation
Commune Supervision Boards (CSBs) and local community members ¹²	Involvement in consultation and participation activities to identify and develop subprojects Ability to comment on environmental assessment documentation upon disclosure	Involvement in environmental monitoring activities under the direction of SSTs	Involvement in environmental monitoring activities under the direction of SSTs
Construction contractor	n/a	Prepare detailed Site EMP to meet the Subproject EMP general requirements Allocate adequate resources to meet the requirements and obligations of Site EMP	n/a
DARD/ Dong Cam Irrigation One Member Limited Company	N/a	N/a	Monitoring mitigation measure in the operation phase
LIC Team on environmental safeguard policies	N/a	Implement spot check environmental monitoring at subproject area once every 6 months. Monitoring	N/a

¹² CSBs have been established under Decree 80 Regulation for Participatory Investment Supervision. Article 8 of Decree 80 provides the community with opportunities to inspect compliance, monitor implementation and evaluate the results of investments in the commune, including environmental impacts.

Organization	Roles and Responsibilities		
	Subproject Preparation	Subproject Implementation	Subproject Operation
		results will be included in the report, which will be sent to CPMU.	
Construction Supervision Consultant	N/a	Implement construction supervision at construction sites every day. Implement environmental monitoring at subproject area every week. Monitoring results will be included in the report, which will be sent to PPMU.	N/a

4.4 Monitoring and Reporting System

Table 8. Monitoring and Reporting System

Project Phase	Type of Report	Frequency	Responsibility	Submitted To Whom
Construction	Site Environmental Performance Report indicating compliance with EMP and monitoring results	Monthly	Construction Supervision Consultant	Phu Yen PPMU
	EMP Compliance Report indicating compliance with subproject EMP and monitoring results	Quarterly	Phu Yen PPMU	CPMU
	EMP Compliance Report indicating compliance with subproject EMP and monitoring results	Bi-annually or twice during construction depending on construction duration	CPMU	ADB
	Subproject Environmental Report indicating overall subproject environmental performance and EMP compliance	At completion of subproject	CPMU	ADB
Operation	EMP Compliance Report: Operation indicating compliance with subproject EMP commitments during operation	Every six months for first two years of operation. Ongoing frequency to be determined based on review after 2 years	DARD/ Dong Cam Irrigation One Member Limited Company	ADB and Town and District People's Committee

4.5 EMP Budget

Table 9 - EMP Budget

Item	Marginal Costs for Pre-Construction	Marginal Costs for Construction	Marginal Costs for Operation	Marginal Costs Sub-Total
Mitigation				
Compensation and land clearance	In a separated item on project compensation and resettlement	No	No	Included in other items
Monitoring				
PPMU's Internal monitoring	Included in management cost of PPMU	Included in the Contracts with the Contractor and CMC as well as in PPMU's management cost	Local and provincial budget	Included in contracts or other operation capital sources
Community monitoring	Not available (n/a)	Local budget (as in Decision No.80/2005/QĐ-TTg)	Local budget (as in Decision 80/2005/QĐ-TTg)	Local budget
Independent monitoring consultant on environmental safeguard policies	n/a	Included in a separate contract with CPMU	n/a	
Training on capacity enhancement on environmental monitoring capability	n/a	Included in operation budgets of PPMU and CPMU	Local budget	n/a
Public disclosure	Defined in consultancy contract on IEE	Included in a separate contract with CPMU	n/a	Public disclosure
TOTAL <i>(Intensify the capability and public disclosure)</i>				

5. PUBLIC CONSULTATION AND DISCLOSURE ACTIVITIES

5.1 Description of Activities to Date

Table 10 - Public consultation and public disclosure activities

CONSULTATION METHOD	DETAILS OF ACTIVITIES	
Correspondence and meetings with local authorities (District and Commune PCs, Commune Fatherland Front, Women's Union, Youth Union and others)	Date of correspondence	05 /05/ 2014
	Dates of meetings (if requested)	12-13/05/2014
	Minutes of meeting attached (Yes / No)	Yes
Public meetings	Date(s) held	12-13/05/2014

CONSULTATION METHOD	DETAILS OF ACTIVITIES	
	Location(s) held	PC's meeting hall and cultural house of An Nghiep, An Dinh, Xuan Son Nam communes.
	Invitees	Commune PCs, stakeholders, village heads, Young Communist League, Fatherland front, Farmer Association, Women Union of the communes.
	Methods of invitation	Radio announcement and letter, coordinate with Women Union to mobilize women's participation in meetings
	Agenda attached (Yes / No)	Yes
	Minutes of meeting attached (Yes / No)	Yes
	Number of participants	Total have 83 people Men: 63 people Women: 20 people (The list of participants will be closed in the minutes of consultation)

5.2 Outcomes of Public Consultation to Date

Table 11 - Results of public consultation

Description of Issue Raised	By Whom?	Required Follow-up Actions?
Detailed design	Local people of An Dinh commune	In the surveying and detailed design period, the consulting firm is expected to coordinate with local authorities to find suitable water inlets.
Restoration of construction site	Local people	It is desired that the sites will be restored after completing the construction
Traffic disturb when transporting material on road 650 and commune's roads	Local people	Do not transport materials at rush hours (6 am to 7 am; 11 am -12 pm; 5 pm- 6pm)
Traffic safety on road 650, 641 and commune's roads	Local people	The Contractors are supposed to slow down when transporting materials by the residential area along road 650, 641 and commune's roads. It is necessary to plant construction signposts and speed limit signs
Construction workers cause social disruption and sanitation problems	Local people	It is requested that the workers maintain sanitation and public order; Register temporary residence card for workers; Request workers to collect waste as regulation and ensure that their construction camps are maintained in clean and hygienic conditions.
Dust from construction equipment	Local people	When transporting construction materials, implement strictly dust suppression measures such as watering of exposed surfaces and covering the trucks with canvas;

5.3 Additional public consultation for the preparation of Environmental Impact Assessment

9. Additional public consultation activities have been implemented in 23 October 2015 at the meeting rooms of An Nghiep CPC. The participants are representatives of CPCs, village heads, Young Communist League, Fatherland front, Farmer Association, Women Union and local people from 3 communes. The discussion focus on potential environmental impacts during the construction phases and recommendation from local people for mitigations measures. Public consultations have been implemented by Phu Yen Center for Environmental and Natural Resources.

10.

5.4 Future Public Consultation Activities

Table 12 - Proposed community consultation activities

Activity	Participants	Expected Outcomes	Schedule	Cost Estimate
Kick-off meeting prior to construction commencement	PPMU, Contractor, Construction Supervision Consultant, community representatives at project area	Public construction contents, schedule and plan for water supply	1 week prior to construction commencement	Be estimated in EMP budget
Periodical meetings	Contractor, Construction Supervision Consultant and representatives of local authority, organizations and community at project area	Periodically check mitigation activities and arising problems Propose treatment alternatives and reach agreement on implementation	Once every month from construction commencement	Included in contract signed with parties

6. CONCLUSION AND RECOMMENDATIONS

11. The subproject "Upgrading canals of irrigation scheme of Dong Tron reservoir subproject, Phu Yen Province" will be implemented by Phu Yen PPMU under IRDPCP in Tuy An and Dong Xuan districts, Phu Yen province.

12. An environmental assessment of the project has been carried and the main negative potential environmental impacts of the sub-project during construction and operation stages include:

- Dust, vegetation clearing, noise, water quality or other impacts from development of borrow areas for construction materials;
- Erosion or sedimentation caused during clearing or earthworks;
- Impacts arising from temporary storage areas including dust, noise and water quality;
- Pollution of waterways, aquatic environments or underground water from wastes, chemicals, waste water or disturbance of contaminated soils;
- Dust and air pollutant or exhaust fumes from construction equipment and transport activities;
- Noise and vibration from construction equipment and transport activities;
- Increasing time and area of flooding;
- Impact on traffic or conditions for property access;
- Impact on public infrastructure such as communication electricity wires, inter-commune road, etc.;
- Construction workers cause social disruption;
- Generation of excess spoil;
- Risk to health and safety to local people or construction workers;
- Causes waste disposal problems from solid waste generated during construction activity or municipal waste generated in construction camps;
- Impacts on irrigation activities;
- Improper environmental recovery.

13. A range of mitigation and monitoring measures has been developed for the sub-project, which includes the following activities:

Mitigation measures:

- Inform construction schedule and scope in advance to An Dinh, An Nghiep and Xuan Son Nam CPCs
- Construction vehicles, machines and equipment need to meet standards of exhaust, noise, and vibration as regulated by the Government. Cover truck with canvas during the transport of construction materials, watering the road surface in the dry/hot day, especially in the borrow pits and mines area, near the schools and kindergartens. Besides, other measures may include installing wheel washing equipment's at construction sites and regularly maintaining vehicles and machines.
- The Contractors do not transport materials at rest hours (7 pm to 6 am in the next day) and to be supposed to slow down when transporting materials by the residential area and to plan construction signposts and speed limit signs

- Provide rubbish bins to store domestic waste at the construction site; request workers not to leave litter; provide containers to store construction waste at construction sites; install sediment fences and/or sediment traps to collect sediment before it enters waterways;
- The Contractor should coordinate with irrigation authority (Dong Cam One Member Irrigation Limited Company), commune's irrigation staff and cultivation households in water supply area of the subproject to reach agreement on water supply duration (construction suspension), construction time (should be implemented at the time when irrigation activities are not done)
- During exploitation process, management authority should disseminate and consult the local authority/water users to limit the excessive use of water; establish regulated procedures and detailed water supply plan; update information year by year to inform users, implement dissemination and training on scientific irrigation to the community for understanding and implementation,
- Avoid deteriorating soil/water quality by increasing quantity of fertilizer and pesticide Phu Yen PPMU should coordinate with Agriculture Extension Centre to ensure that farmers are trained on Integrated Pesticide Management (IPM)
- Phu Yen PPMU should ensure that subproject design will meet all safety standards on prevention of flooding, storms and other potential natural calamity

Monitoring activities:

14. In order to ensure the compliance of measures to mitigate negative environmental impacts caused by the subproject, these monitoring activities must be carried out:

- The contractor must implement measures to mitigate environmental impacts in residential areas near the construction sites, along the material transportation roads and construction sites, worker's camps etc. Their implementation can be monitored by observing and measuring water quality, air quality and frequency of implementing these measures. Moreover, the contractor must arrange adequate resources to meet general requirements and compulsory regulations on EMP at the construction sites;
- During operation stage, O&M agency (Dong Cam Irrigation One Member Limited Company) have to periodically manage water quality according to recent Vietnamese Standards and National Technical Regulations;
- PPMU should intensify the contractor's compliance with environmental regulations on material storage, construction equipment, waste disposal, air quality, dust, noise and vibration to ensure safety for the community during construction stage and operation stage; coordinate with local authorities to formulate and implement EMP.
- PPMU should ensure that subproject design will meet all safety standards on prevention of flooding, storms and other potential natural calamity
- PPMU Coordinate with Agriculture Extension Centre to ensure that farmers are trained on Integrated Pesticide Management (IPM).

Conclusion:

15. Upgrading canals of irrigation scheme of Dong Tron reservoir subproject, Phu Yen Province will supply irrigation water for 833.5 ha of agriculture land and improve livelihoods and reduce poverty for local people in the subproject area. It is expected to directly benefit 17,647 people in 3 communes namely An Dinh, An Nghiep and Xuan Son Nam. Thus, the subproject will contribute to promote socio-economic development and modernize rural area;

16. Negative environment impacts caused by the subproject mainly generate during the construction stage. However, these impacts are temporary and they will end when the canals are put into operation. Upon completion, the proposed canals will help supply irrigation water to farmers. On the other hand, it will bring positive impacts to the environment and promote economic development for the subproject area. Thus, based on the Initial Environmental Examination, the consultants and Phu Yen PPMU would like to recommend as follows:

- (i) There will not be any significant impacts to the environment and no further environment assessment is necessary.
- (ii) Authorities should approve IEE of the subproject "Upgrading canals of irrigation scheme of Dong Tron reservoir subproject, Phu Yen Province" so that next steps can be implemented to ensure good progress and project benefits.

7. ANNEXES

- Photos of implementation of public consultation
- Photos of locations of air quality monitoring
- Other photos
- Public consultation and meeting minutes
- Data source

Annex 1: Photos of implementation of public consultation



Photo 1: Public consultation in An Dinh commune



Photo 2: Public consultation in An Nghiep commune



Photo 3: Public consultation in Xuan Son Nam commune



Photo 4: Meeting at Dong Xuan DPC's office

Annex 2: Photos of locations of air quality monitoring



Photo 5: Air quality observation location near canal T8 in residential area of The Hien hamlet - An Nghiep commune



Photo 6: Air quality observation location on road 650 near the proposed canal of the pumping station, in residential area of Trung Luong 1 hamlet - An Nghiep commune



Photo 7: Air and water quality observation location at the intersection of canal T18 and road 650 (Trung Luong 1 hamlet - An Nghiep commune)



Photo 8: Air quality observation location at road 641 near canal T30 (Long Hoa hamlet - An Dinh commune)

Annex 3: Other photos



Photo 9: The Hien weir



Photo 10: A well in The Hien hamlet, An Nghiep commune



Photo 11: The main canal with rubbish



Photo 12: power wire in the proposed canal T30 area

Annex 4: Public consultation and meeting minutes

Meeting minutes at public consultation and lists of attendance in the public consultation meeting at An Dinh commune

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc
An Dinh, ngày 13 tháng 5 năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP CÁC TỈNH MIỀN TRUNG (Loan 2357-VIE)

BIÊN BẢN LÀM VIỆC

Hôm nay, ngày 13 tháng 5 năm 2014, tại UBND xã An Dinh chúng tôi gồm:

I. Đại diện nhóm tư vấn của dự án Phát triển nông thôn tổng hợp miền Trung:

- Ông/Bà Hoàng Hồng Hạnh	Chức vụ	Tư vấn (biên và) và tham gia của cộng đồng
- Ông/Bà Đinh Kiều Đan	Chức vụ	Tư vấn tài chính và
- Ông/Bà Nguyễn Thị Thu Trang	Chức vụ	Tư vấn môi trường

II. Đại diện Ban QLDA tỉnh

- Ông/Bà Dương Anh Kiệt	Chức vụ	Cán bộ
- Ông/Bà	Chức vụ	
- Ông/Bà	Chức vụ	

III. Đại diện địa phương

- Ông/Bà Nguyễn Huy Hoàng	Chức vụ	Chủ tịch UBND xã
- Ông/Bà Phạm Văn Hùng	Chức vụ	Cán bộ địa chủ
- Ông/Bà	Chức vụ	

Nội dung làm việc:

- Tư vấn thiết kế sơ lược về qui mô của tiểu dự án
- Các chuyên gia tư vấn đưa tư vấn quốc tế trình bày
các nội dung về môi trường, tài chính, giới và sự
tram gia của cộng đồng trong phạm vi dự án
- Các bên liên kết đưa ra thảo luận lấy ý kiến
của chủ tịch, chủ quyền và người dân
- Nhất nhất nội dung và ghi biên bản làm việc

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Sau khi đọc lại biên bản, những người có mặt đồng ý về nội dung biên bản, không có ý kiến gì khác.

Đại diện Ban QLDA tỉnh


GIÁM ĐỐC
Ngô Đình Thiện

Đại diện UBND xã


PHÓ CHỦ TỊCH
Nguyễn Huy Hoàng

Đại diện tư vấn

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

Buyl An, ngày *13* tháng *5* năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP

CÁC TỈNH MIỀN TRUNG - KHOẢN VAY BỔ SUNG

BIÊN BẢN HỢP THAM VẤN CỘNG ĐỒNG

Về các chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số

Tên tiểu dự án: *Nâng cấp kênh tưới thuộc hệ thống thủy lợi hồ chứa Đàng Tron*
Xã: *An Định*, huyện: *Tuy An*, tỉnh: *Phu Yên*

I. Thành phần tham dự:

- | | |
|---------------------------------------|--|
| - Ông/Bà: <i>Hoàng Hồng Hạnh</i> | Chức vụ: <i>Từ vấn giới và sự tham gia cộng đồng</i> |
| - Ông/Bà: <i>Đinh Kiên Cường</i> | Chức vụ: <i>Từ vấn tái định cư</i> |
| - Ông/Bà: <i>Nguyễn Thị Thu Trang</i> | Chức vụ: <i>Từ vấn môi trường</i> |
| - Ông/Bà: <i>Trương Anh Kiệt</i> | Chức vụ: <i>Cán bộ Ban QLDA tỉnh</i> |
| - Ông/Bà: <i>Nguyễn Thủy Hoàng</i> | Chức vụ: <i>Phó chủ tịch UBND xã</i> |
| - Ông/Bà: <i>Phạm Văn Hùng</i> | Chức vụ: <i>Cán bộ trực tiếp</i> |
| - Ông/Bà: | Chức vụ: |

- Đại diện những hộ bị ảnh hưởng người, trong đónữ, chiếm....(%) , Dân tộc thiểu số.....người, chiếm....%

II. Nội dung

2.1 Các nội dung phổ biến:

- Cung cấp các thông tin về dự án như địa điểm, quy mô, các thông số kỹ thuật cơ bản
- Chính sách an toàn của dự án bao gồm: Chính sách về giới và sự tham gia của cộng đồng; Kế hoạch hành động giới; Chính sách môi trường, Chính sách Tái định cư và kế hoạch phát triển người dân tộc thiểu số.

2.2 Tham vấn cộng đồng:

- Tham vấn các vấn đề giám sát và tham gia của cộng đồng trong các giai đoạn chuẩn bị, thực hiện, vận hành tiểu dự án, các vấn đề về giới và lồng ghép giới, nhóm dễ tổn thương, hộ bị ảnh hưởng nặng...
- Tham vấn các vấn đề về môi trường, tác động môi trường tiềm năng của dự án bao gồm tác động lên môi trường tự nhiên và xã hội của khu vực dự án và những biện pháp giảm thiểu các tác động tiêu cực;

- Tham vấn các vấn đề về tái định cư, các tác động dự kiến, quyền lợi của người bị ảnh hưởng, các biện pháp giảm thiểu tối đa nhằm có ít tác động nhất đến người bị ảnh hưởng.
- Tham vấn nhu cầu đào tạo của các hộ bị ảnh hưởng.

III. Ý kiến thảo luận

III.1. Các vấn đề về giới, tham gia cộng đồng

- thôn này đã có ban giám sát cộng đồng tại xã, từng đầu là Phó chủ tịch mặt trận TQ xã, các thành viên đại diện các thôn. Một năm 2 lần được tập huấn tại tỉnh. Tổng số thành viên là 9 người, trong đó có 1 thành viên là nữ giới. Các cuộc họp tại cộng đồng, tỷ lệ nữ giới tham gia nhiều hơn (khoảng 70%).

III.2. Các vấn đề về môi trường

- Dự giờ làm việc thể công, các thể công chủ yếu liên quan đến giải phốt pho, chất cày cỏ.
- Khi thi công, tác động chủ yếu là mất an toàn giao thông, bụi, ồn, vận chuyển vật liệu, ảnh hưởng đến đất đai, sản xuất, an ninh trật tự xã hội.
- Khi vận hành liên quan chủ yếu đến môi trường nước, các chất trên bờ và trên bờ an toàn hạt nảy lên.
- Các tác động môi trường chủ yếu là bụi và có thể giảm thiểu được bằng các biện pháp kỹ thuật, đặt biển báo, cây chắn bụi.

III.3. Các vấn đề về tái định cư và dân tộc thiểu số

- Ảnh hưởng về đất đai, giải phóng một băng trong dự án không nhiều.
- Người dân hoàn toàn ủng hộ việc thực hiện dự án vì những lợi ích của dự án, nếu trong vài đợt giải phóng một băng sẽ hỗ trợ, ủng hộ dự án.
- Dự án đảm bảo thực hiện quá trình giải phóng một băng theo đúng quy định của pháp luật.

IV. Kết luận

Nhìn chung, dự án chỉ quyền và người dân địa phương đồng tình ủng hộ việc thực hiện dự án trên địa bàn.

Đề nghị: quá trình khai thác phải có sự hỗ trợ chặt chẽ với chính quyền địa phương.

Cuộc họp các bên thống nhất và kết thúc vào lúc ngày 13 tháng 05 năm 2014

Đại diện cộng đồng

Đại diện UBND xã



PHÓ CHỦ TỊCH

Nguyễn Duy Hoàng

Đại diện tư vấn

Đại diện Ban QLDA tỉnh



GIÁM ĐỐC

Ngô Đình Thiện

Ngô Đình Thiện

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

.....An Bình....., ngày 13 tháng 05 năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP CÁC TỈNH MIỀN TRUNG –
 KHOẢN VAY BỔ SUNG

DANH SÁCH ĐẠI BIỂU THAM DỰ CUỘC HỌP

(Tham vấn cộng đồng về chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số)

Tên tiểu dự án: Nâng cấp kênh tưới thuộc hệ thống thủy lợi hồ chứa Dãy Trâu
 Xã: An Bình..... huyện: Tuy An..... tỉnh: Phước Yên.....

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
01	Nguyễn Thị Hồng	Nữ		<u>[Signature]</u>	
02	Nguyễn Thị Kim Tâm	"		<u>[Signature]</u>	
03	Phạm Thị Hoa	"		<u>[Signature]</u>	
04	Đặng Thị Minh Châu	"		<u>[Signature]</u>	
05	Ngô Thị Bình	"		<u>[Signature]</u>	
06	Nguyễn Thị Huyền Nhi	"		<u>[Signature]</u>	
07	Trần Thị Kiều	"		<u>[Signature]</u>	
08	Lê Thị Yên Nhi	"		<u>[Signature]</u>	

Initial Environmental Examination (IEE)

Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
 Integrated Rural Development in Central Provinces Project

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
01	Đỗ Ngọc Chung	Nam			
02	Võ Hữu Cảnh	"			
03	Dương Nhật Tường	"			
04	Phạm Xuân Long	"			
05	Nguyễn Sơn	"			
06	Nguyễn Văn Tuấn	"			
07	Nguyễn Huy Hoàng	"			
08	Phan Lộc	"			
09	Lương Minh Hằng	"			
10	Nguyễn Văn Hòa	"			
11	Phạm Nhật Thảo	"			
12	Lưu Mạnh Hùng	"			
13	Phan Ngọc Nhật	"			
14	Phạm Văn Hùng	"			
15	Nguyễn Ngọc Lanh				
16	Trần Văn Huy				
17	Nguyễn Thành Kiên				
18	Lê Chí				
19	Nguyễn Văn Ninh				
20	Nguyễn Văn Minh				
21	Tô Đình Văn Hùng				
22	Nguyễn Phú				
23	Lê Văn Kiên				
24	Nguyễn Xuân				
25	Võ Văn Kỳ				

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
26	Ngô Tấn				
27	Phan Khánh				
28	Nguyễn Ngọc Ngọc				
29	Nguyễn Ngọc Phương				
30	Nguyễn Ngọc Cường				
31	Nguyễn Ngọc Anh				
32	Phạm Văn Quý				
33	Nguyễn Văn Thọ				

Đại diện cộng đồng

Phạm Văn Thuận

Đại diện UBND xã

PHÓ CHỦ TỊCH

 Nguyễn Huy Hoàng

Đại diện Ban QLDA tỉnh

GIÁM ĐỐC

 Ngô Đình Thiện

Đại diện tư vấn

Meeting minutes at public consultation and lists of attendance in the public consultation meeting at An Nghiep commune

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc
An Nghiep, ngày 13 tháng 05 năm 2014
DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP CÁC TỈNH MIỀN TRUNG (Loan 2357-VIE)

BIÊN BẢN LÀM VIỆC

Hôm nay, ngày 13 tháng 05 năm 2014, tại xã An Nghiep chúng tôi gồm:

I. Đại diện nhóm tư vấn của dự án Phát triển nông thôn tổng hợp miền Trung:

- Ông/Bà Đỗ Thị Nhàn Chức vụ Chuyên gia Môi trường
- Ông/Bà Lê Thị Hồng Nhung Chức vụ Chuyên gia GIDA
- Ông/Bà Đoàn Văn Dũng Chức vụ Chuyên gia Tài chính

II. Đại diện Ban QLDA tỉnh

- Ông/Bà Nguyễn Đoàn Dương Chức vụ PGĐ Ban QLDA tỉnh
- Ông/Bà Đường Anh Kiệt Chức vụ Điều phối viên
- Ông/Bà Chức vụ

III. Đại diện địa phương

- Ông/Bà Vũ Ngọc Quang Chức vụ ICT UBND xã
- Ông/Bà Nguyễn Huệ Hà Mai Chức vụ CT Hội Phụ nữ
- Ông/Bà Trần Thành Vũ Chức vụ CT Hội Nông dân

Nội dung làm việc:

- Phụ căn thiết kế giới thiệu về các hạng mục công trình của DATP.
- Các chuyên gia tư vấn đã căn quốc tế tốt lấy các nội dung sẽ đưa vào an toàn của dự án IP bao gồm: môi trường, tài chính, giới và sự tham gia của cộng đồng.
- Các bên trao đổi thảo luận, ghi nhận ý kiến và thống nhất ghi biên bản: cấp quyền và người dân đồng ý ủng hộ dự án, sẽ nghị thực hiện theo dự án các quy định quy chuẩn các quy định dự án.

Initial Environmental Examination (IEE)

Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
Integrated Rural Development in Central Provinces Project

Sau khi đọc lại biên bản, những người có mặt đồng ý về nội dung biên bản, không có ý kiến gì khác.

Đại diện Ban QLDA tỉnh


GIÁM ĐỐC
Ngô Đình Thiện

Đại diện UBND xã


Châu Ngọc Quan

Đại diện tư vấn

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

An Nghiệp, ngày 13 tháng 05 năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP

CÁC TỈNH MIỀN TRUNG - KHOẢN VAY BỔ SUNG

BIÊN BẢN HỢP THAM VẤN CỘNG ĐỒNG

Về các chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số

Tên tiểu dự án: Nâng cấp kênh tưới hồ chứa nước Đông Tron
Xã An Nghiệp, huyện Tuy An, tỉnh Phú Yên

I. Thành phần tham dự:

- | | |
|-----------------------------|---------------------------------|
| - Ông/Bà Nguyễn Đoàn Đình | Chức vụ: Trưởng Ban QLDA tỉnh |
| - Ông/Bà Dương Anh Kiệt | Chức vụ: Điều phối viên |
| - Ông/Bà Lê Thị Hồng Phương | Chức vụ: Chuyên gia Giới |
| - Ông/Bà Đỗ Thị Nhàn | Chức vụ: Chuyên gia Môi trường |
| - Ông/Bà Đoàn Văn Anh | Chức vụ: Chuyên gia Tái định cư |
| - Ông/Bà Võ Ngọc Quang | Chức vụ: PC UBND xã |
| - Ông/Bà Nguyễn Nữ Lê Mai | Chức vụ: Ủy Hội Phụ nữ |

- Đại diện những hộ bị ảnh hưởng người, trong đónữ, chiếm.....(%) , Dân tộc thiểu số.....người, chiếm...%

II. Nội dung

2.1 Các nội dung phổ biến:

- Cung cấp các thông tin về dự án như địa điểm, quy mô, các thông số kỹ thuật cơ bản
- Chính sách an toàn của dự án bao gồm: Chính sách về giới và sự tham gia của cộng đồng; Kế hoạch hành động giới; Chính sách môi trường, Chính sách Tái định cư và kế hoạch phát triển người dân tộc thiểu số.

2.2 Tham vấn cộng đồng:

- Tham vấn các vấn đề giám sát và tham gia của cộng đồng trong các giai đoạn chuẩn bị, thực hiện, vận hành tiểu dự án, các vấn đề về giới và lồng ghép giới, nhóm dễ tổn thương, hộ bị ảnh hưởng nặng...
- Tham vấn các vấn đề về môi trường, tác động môi trường tiềm năng của dự án bao gồm tác động lên môi trường tự nhiên và xã hội của khu vực dự án và những biện pháp giảm thiểu các tác động tiêu cực;

- Tham vấn các vấn đề về tái định cư, các tác động dự kiến, quyền lợi của người bị ảnh hưởng, các biện pháp giảm thiểu tối đa nhằm có ít tác động nhất đến người bị ảnh hưởng.
- Tham vấn nhu cầu đào tạo của các hộ bị ảnh hưởng.

III. Ý kiến thảo luận

III.1. Các vấn đề về giới, tham gia cộng đồng

- Tại xã có thiết lập ban giám sát cộng đồng gồm đại diện UBND xã và đại diện các thôn (do người dân bầu).
- Bà con biết rất tham gia xây dựng ý kiến cho mà hơn dự thiết kế, đặt ra các vấn đề như vì thế các công việc như, loại công, công tác kiểm tra...
- Bà con đã nắm rõ các quy định của dự án và mong muốn tay chân tập theo theo tham gia vào các khâu của dự án.
- Nữ giới tham gia ít và các tập tập đoàn, hình hợp nên cần có chi tiêu và thời gian nghỉ ngơi và giảm bớt tham gia.

III.2. Các vấn đề về môi trường

- Tác động môi trường khi thực hiện dự án là ảnh hưởng về môi trường sinh thái.
- Người dân sẽ tạo thuận lợi việc cho thu hoạch được thuận lợi và nhanh chóng.
- Nhà nước phải chú ý thu công nhân, vận chuyển vật liệu đất gây bụi bặm.
- Đảng bộ tận tuỵ dự án và tập hợp đất đai có chủ quyền địa phương.

III.3. Các vấn đề về tái định cư và dân tộc thiểu số

- Các cải lương do góp công và dự án là nhỏ, người dân nhất tại họ đều làm hết sức cho dự án.
- Bà con đã nghỉ làm từ rất sớm, chỉ đi ra thuê làm đúng theo quy định.
- Ông làm việc dự án thì có người dân tộc thiểu số bị ảnh hưởng.

IV. Kết luận

Nhìn chung, dự án mang lại nhiều lợi ích thiết thực cho người dân địa phương.
Bà con đã rất ủng hộ dự án và mong muốn dự án sớm triển khai thực hiện.

Cuộc họp các bên thống nhất và kết thúc vào lúc ngày 13 tháng 05 năm 2014

Đại diện cộng đồng

Đại diện UBND xã

Chau Ngọc Loan

Đại diện Ban QLDA tỉnh

Đại diện tư vấn

GIÁM ĐỐC

Ngô Đình Thiện

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

At. Ng. Hiệp, ngày 13 tháng 05 năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP CÁC TỈNH MIỀN TRUNG –
 KHOẢN VAY BỔ SUNG

DANH SÁCH ĐẠI BIỂU THAM DỰ CUỘC HỌP

(Tham vấn cộng đồng về chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số)

Tên tiểu dự án: Nâng cấp kênh tưới hệ tưới nước Đông Tron
 Xã: An Nghiệp, huyện Tuy An, tỉnh Phú Yên.

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
1)	Nguyễn Thị Mai	Nữ	Khu phố Yên	<i>[Signature]</i>	
2	Biên Thị Lệ	Nữ	Thôn Thới Thuận	<i>[Signature]</i>	
3	Phạm Thị Thu Hương	Nữ	Thôn Thới Thuận	<i>[Signature]</i>	
4)	Võ Thị Bích Trâm	Nữ	Thôn Thới Thuận	<i>[Signature]</i>	
5	Nguyễn Văn Kim Thủy	Nữ	Thôn Bình Phương	<i>[Signature]</i>	
06	Lê Thị Loan	Nữ	Thôn DP	<i>[Signature]</i>	
07	Lê Thị Kim Tân	Nữ	Thôn Thới Thuận	<i>[Signature]</i>	
08	Ngô Văn Tuấn	Nam	H	<i>[Signature]</i>	
09	Trần Văn Cảnh	Nam	Cộng đồng nông dân	<i>[Signature]</i>	
10	Hương Thị Nhung	Nữ	Thôn Trung Lương	<i>[Signature]</i>	
11	Trần Thị Nhung	Nữ		<i>[Signature]</i>	
12	Ngô Thị Hà	Nữ		<i>[Signature]</i>	

Initial Environmental Examination (IEE)

Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
 Integrated Rural Development in Central Provinces Project

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
01	Châu Ngọc Sơn	Nam	PCI. UBND Xi		
02	Phan Tấn Hưng	Nam	Thôn Thủ Thiển	Hưng	
03	Phan Tấn Thọ	Nam	Thôn Định Phong	Thọ	
04	Tô Văn Cường	Nam	Thôn Định Phong	Mạnh	
05	Trần Văn Khoa	Nam	HÀNG NAM	Khô	
06	Nguyễn Văn Tấn	Nam	Thôn Thủ Thiển	Tấn	
07	Nguyễn Văn Minh	Nam	"		
08	Mai Văn Hùng	Nam	"	Hùng	
09	Trần Văn An	Nam	"		
10	Trần Văn Nam	Nam	"	A Nam	
11	Võ Ngọc Đăng	Nam	"		
12	Bùi Xuân Cảnh	Nam	"	Cảnh	
13	Trần Minh Hưng	Nam	Thôn Thuận 3	Phung	
14	Nguyễn Văn Hùng	Nam	"	Hùng	
15	Nguyễn Văn Tiến	Nam	Thôn Thủ Thiển	Tiến	
16	Bùi Văn Dũng	Nam	Thôn Thủ Thiển	Dũng	
17	Đàm Văn Tuấn	Nam	Thôn Trung Lương 2	Đàm	
18	Nguyễn Văn Tuấn	Nam	Thôn Trung Lương 2	Tấn	
19	Nguyễn Văn Tuấn	"	Thôn Trung Lương 2	Tấn	
20	Nguyễn Văn Tuấn	"	Thôn Trung Lương 2	Tấn	
21	Vũ Ngọc Duy	Nam	Thôn Thủ Thiển	Duy	
22	Trần Văn Cảnh	"	Định Phong	Cảnh	
23	Bùi Văn Hùng	Nam	Định Phong	Hùng	
24	Đào Văn Luận	"	"	Luận	
25	Mai Văn Hùng	"	Thôn Thủ Thiển 2	Hùng	

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
24	Ngô Hoàng Gia	Nam		<i>[Signature]</i>	
25	Phạm Văn Ba	V	Ấp phồng	<i>[Signature]</i>	
26	Trần Văn Liêm	"	Đình phồng	<i>[Signature]</i>	
27	Trần Minh Sơn	"	Đình phồng	<i>[Signature]</i>	
28	Phạm Thanh Long	"	Trung Lương	<i>[Signature]</i>	
29	Phan Bích Tân	"	Khố Lư	<i>[Signature]</i>	
30	Bùi Thanh Ngọc	11	Trung Lương	<i>[Signature]</i>	

Đại diện cộng đồng



Châu Ngọc Lân

Đại diện Ban QLDA tỉnh



Ngô Đình Thiện

Đại diện tư vấn

Meeting minutes at public consultation and lists of attendance in the public consultation meeting at Xuan Son Nam commune

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc
Xuan Son Nam..., ngày 14 tháng 5 năm 2014
DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP CÁC TỈNH MIỀN TRUNG (Loan 2357-VIE)
BIÊN BẢN LÀM VIỆC

Hôm nay, ngày 14 tháng 5 năm 2014, tại UBND xã Xuan Son Nam chúng tôi gồm:

I. Đại diện nhóm tư vấn của dự án Phát triển nông thôn tổng hợp miền Trung:

- Ông/Bà Hoàng Hồng Lan	Chức vụ	Tư vấn Giải và phát triển cộng đồng
- Ông/Bà Đinh Kiên Lan	Chức vụ	Tư vấn Tài chính
- Ông/Bà Nguyễn Thị Thu Trang	Chức vụ	Tư vấn Môi trường

II. Đại diện Ban QLDA tỉnh

- Ông/Bà Đường Anh Kiệt	Chức vụ	Cán bộ Ban QLDA tỉnh
- Ông/Bà	Chức vụ
- Ông/Bà	Chức vụ

III. Đại diện địa phương

- Ông/Bà Võ Hồng Quang	Chức vụ	Bí thư Đảng ủy xã kiêm Chủ tịch UBND xã
- Ông/Bà Nguyễn Văn Thái	Chức vụ	Cán bộ địa phương
- Ông/Bà Lê Thị Phi Tươi	Chức vụ	Chủ tịch Hội Phụ nữ xã

Nội dung làm việc:

- Tư vấn thiết kế giải pháp về hệ thống cấp kênh tưới thuộc hệ thống thủy lợi hồ chứa nước Đông Tron và những đoạn kênh bị quá tải trên xã Xuân Sơn Nam

- Đại diện lãnh đạo địa phương hoặc toàn ủy hộ chủ trương thực hiện dự án

- Tư vấn quá trình tham gia cộng đồng, từ việc tài chính, tư vấn môi trường, giải pháp về chính sách của ADB về chính sách an toàn, sau đó trao đổi, thu thập các thông tin liên quan

Sau khi đọc lại biên bản, những người có mặt đồng ý về nội dung biên bản, không có ý kiến gì khác.

Đại diện Ban QLDA tỉnh

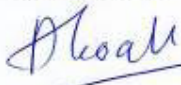

Trần Anh Kiên

Đại diện UBND xã


CHỦ TỊCH

Võ Đông Quang

Đại diện tư vấn


Trần Kiên Kiên

Annex 5: Environmental monitoring forms

Environmental Compliance Monitoring Form for Construction Package

Part A: General Project Information

Subproject Name: _____

SIR Code: _____ Subproject Package #: _____ Activity Sector: _____

Province: _____ Districts: _____

Design and Supervision Consultant Firm: _____

Construction Company Name: _____ Contract Date: _____

Contract Amount: _____ Contract Duration (days) _____

Person Responsible: _____ Phone _____

PPMU EMO: _____ Phone _____

Part B: Monitoring checklist

Performance Indicator 1. Design and Preparations

The PPMU to complete 1-4 in conjunction with the subproject design consultant at the time the project is tendered.

Date of Monitoring: _____

	Yes	No	Remarks
1. Have all UXO been cleared prior to commencement of construction?			
2. Does the subproject design meet applicable engineering safety and public health standards?			
3. Have the resettlement provisions been disclosed to the affected communities and compensation made to affected persons or households?			
4. For the applicable subproject type:			
a. Roads, embankments, irrigation works and coastal protection: does the design provide cross drainage to prevent flooding?			
b. Markets: does the design provide washing facilities and toilets in the market area?			

The construction Supervision consultant (CSC) to complete 5-10 with the PPMU and construction contractor at the

time of start-up. Date of Monitoring: _____

5. Has the contractor prepared a Site EMP?			
6. Has the contractor posted a public notice regarding the nature, extent and cost of the project?			
7. Are locations for mixing plants sufficiently distant from houses, schools and hospitals?			
8. Are agreements in place with owners for temporary use of land for worker camps and construction yards?			
9. Have spoil disposal sites been selected in consultation with local authorities?			
10. Are official permits on record for quarry sites and borrow pits?			
Score (1-10; 10 total)			(%)

Performance Indicator 2. Worker Provisions

The CSC to complete 11-16 in conjunction with the PPMU and construction contractor following commencement of construction. Date of Monitoring: _____

	Yes	No	Remarks
11. Were local authorities consulted in the planning for the location of construction worker housing?			
12. Are supervisors or other site personnel trained in basic first aid emergency response measures?			
13. Are first aid kits readily available to workers at the job site along with instructions for use?			
14. Has the contractor or Inspector from the Department of Health undertaken an awareness program for communicable diseases/HIV-AIDS?			
15. Has the contractor provided safety equipment (hard hats, ear plugs, dust masks, safety boots and glasses) to workers and training in use?			
16. Are construction camps equipped with adequate water supply, sanitary toilets, washing facilities and facilities for waste collection and storage?			
Score (11-16; 6 total)			(%)

Performance Indicator 3. Biodiversity

The CSC should complete 17-21 in conjunction with the PPMU and construction contractor following commencement of construction. Date of Monitoring: _____

	Yes	No	Remarks
17. Does the project avoid encroaching on natural forests or wetlands?			
18. Does the project avoid adverse effects on flow of natural streams and water quality?			
19. Are worker camps located outside of forested areas and has the contractor restricted access of workers to forests, fishing and hunting?			
20. Does the contractor obtain fill materials only from pre-existing quarries, or from borrow pits within the strict limits of the construction zone?			
21. For irrigation sector projects, are effects on agricultural biodiversity limited through use of integrated pest management?			
Score (17-21; 5 total)			(%)

Performance Indicator 4. Community Based Monitoring

The CSC to complete 22 and 23 in conjunction with the PPMU and construction contractor following commencement of construction. Date of Monitoring: _____

	Yes	No	Remarks
22. Has the contractor posted a public notice regarding complaints from the community?			
23. Has there been a public consultation regarding construction, environmental impact, and the community complaints system?			
Score (22-23; 2 total)			(%)

Outcome of Public Consultation:

Date: _____ Location: _____

Topics covered in presentation: _____

Comments from Attendees:

Performance Indicator 5. Community Values and Safety

Items 24 – 35 should be inspected quarterly. Date of Monitoring: _____

	Yes	No	Remarks
24. Is temporary access provided to adjacent properties as needed?			
25. Is permanent access to adjacent properties reinstated on completion of a segment of work?			
26. Are construction hours adjusted around houses, hospitals and schools to minimize disturbance?			
27. Does the contractor limit the scope of construction in progress to minimize community impacts?			
28. Are physical impacts on public infrastructure and service disruption minimized?			
29. Are materials transported on approved haul routes?			
30. Are construction equipments maintained in good condition?			
31. Do vehicles operate within legal speed limits?			
32. Are material loads traveling on public routes covered?			
33. Is dust suppressed by watering exposed surfaces?			
34. Has the contractor installed signs and lighting in vicinity of works on public roads?			
35. Is access to the construction site restricted to the public?			
Score (24-35; 12 total)			(%)

Performance Indicator 6. Hydrology/Water Pollution

Items 36 – 43 should be inspected quarterly. Date of Monitoring: _____

	Yes	No	Remarks
36. Are construction camps maintained in a clean and hygienic condition?			
37. Are oil, fuel and chemicals stored in enclosed areas (dyked or covered)?			
38. Is discharge of wastewater into water bodies used for water supply avoided?			
39. Is clearing activity suspended during rains?			
40. Does the contractor prevent discharge of concrete trucks to waterways?			
41. Have existing drainage patterns been maintained during construction?			
42. Are areas of standing water in the construction area drained and backfilled?			
43. Are sediment controls installed upslope of waterways?			
Score (36-43; 8 total)			(%)

Performance Indicator 7. Project Completion

Items 44 – 50 should be inspected prior to finalizing the construction works.
 Date of Monitoring: _____

	Yes	No	Remarks
44. Have drainage fixtures, curbs, road shoulders and ditch slopes been finished out to prevent hazard to the public during use?			
45. Are ground surfaces in the project area graded to prevent water from collecting?			
46. Have all construction debris, tree cuttings, excess dirt, rubble and scrap been removed from the construction zone?			
47. Have all pits been filled in and graded to drain, underground tanks (including septic tanks) removed and holes backfilled?			
48. Are all waste products removed from the construction site, equipment yards and worker camps, including oil waste, scrap materials and equipment, building materials and domestic waste?			
49. Have all points of access (drives, walks) and utilities (water supply, power, communications) to public and private property been restored to original condition?			
50. Have all complaints by the local community and individuals been resolved by the Contractor?			
Score (44-50; 7 total)			(%)

Performance Tracking

Performance Tracking consists of three sections:

- a. Performance Follow-up, where performance shortfalls noted in prior monitoring are listed and checked against current monitoring results.
- b. Community Complaints, where issues raised by the affected community are registered, tracked and outcomes recorded.
- c. Performance Indicator Results, where environmental performance against indicators are recorded.

Section 1: Performance Follow-up

Column 1	Column 2	Column 3	Column 4	Column 5
Performance variable (#) / Date Observed	Reason for negative rating	Was agency responsible notified? / Date	Was problem corrected before next monitoring?	Was performance indicator adjusted?

Section 2: Community Complaints

Column 1	Column 2	Column 3	Column 4	Column 5
Person Registering Complaint / Date	Summary of Complaint	Was agency responsible notified? / Date	Was problem corrected before next monitoring?	Was Person satisfied with Action?

Section 3: Performance Indicator Results

Project Name: _____ SIR No.: _____ Package #:
 #: _____ Province: _____

Project Start Date: _____

	Startup	Rev.	Q1	Q2	Q3	Q4	Average	Completion	Rev.	Final
Recording Date:										
1. Design and Preparations										
2. Worker Provisions										
3. Biodiversity										
4. Community Based Monitoring										
5. Community Values / Safety										
6. Hydrology/Water Pollution										
7. Project Completion										

Submittal Date: _____ For Calendar Quarter: _____

Inspector: _____

(Signature)

Annex 7: Environmental mitigation measure to include into bid documents

Potential impacts	Proposed Mitigation Measure
Dust, vegetation clearing, noise, water quality or other impacts from development of borrow areas for construction materials	<ul style="list-style-type: none"> ▪ Operation license of the 4 borrow pits and Xuan Quang quarry have been approved by Phu Yen DONRE. The operation licenses and approved environmental certificate need to be checked before starting purchase soil and stone from these borrow pits and quarry. ▪ In the exploitation process of the 4 borrow pits and Xuan Quang quarry, contractors should follow environmental protection issues, including: <ul style="list-style-type: none"> - Working machines must be under periodically quality controlled; - Oil and other chemical pollutants from working machines should be strictly controlled and stored separately, avoiding leakages; - Workers should use protective equipment while working within the Site; - Temporary earth drainage system and ditch should be formed to store waste water safely in rainy season to reduce turbidity before releasing water into cultivated area; - Water should be regularly sprayed within borrow areas to reduce dust generation ▪ Cover trucks that transport materials purchased from Hoc Day, Hoc Rang, Hon Chua and Zone 4 borrow pits, Xuan Quang quarry (along provincial road No.650, provincial road No. 641, An Dinh - An Linh inter-commune road and other communal roads) ▪ Construction vehicles, machines and equipment need to meet standards of exhaust, noise, and vibration as regulated by the Government. The Contractor needs to submit the Engineer documents proving that all construction vehicles, equipment, and machines are checked and meet requirements concerning noise and vibration generation of the current Vietnam standards.
Erosion or sedimentation caused during clearing or earthworks	<ul style="list-style-type: none"> ▪ Install sediment fences and/or sediment traps at intersections of the proposed canals and existing primary East and West canals; ▪ Construct temporary drainage canals to reducing affects on residential areas in An Dinh, An Nghiep and Xuan Son Nam communes; ▪ Avoid excavation activities during the rainy season where possible.
Impacts arising from temporary storage areas including dust, noise and water quality	<ul style="list-style-type: none"> ▪ Material stockpile location need to be at least 300 m away from the sensitive receivers such as Nguyen Viet Xuan junior high and secondary schools, An Nghiep primary school, kindergarten, Phong Nien kindergarten, An Nghiep medical center... ▪ Building up appropriate plan of material management to reduce material stagnated on the site. ▪ Store material at high place with impervious surface and at least 10 m away from the water bodies (water rice field). ▪ Cover material stockpile with canvas when they are not in used; ▪ Material transportation is strictly forbidden in the evening when stores are located next to residential areas;
Pollution of waterways, aquatic environments or underground water from wastes, chemicals, waste water or disturbance of contaminated soils	<ul style="list-style-type: none"> ▪ Store cleaning chemical substances in secure area, with concrete floor and weatherproof roof, at least 10m away from watercourses and floodplains; ▪ Ensure construction equipment and vehicles are maintained in good conditions to avoid leakage; ▪ Use mobile sanitary toilets following regulations of Health Ministry and washing facilities at construction camps (<i>Circular No 27/2011/TT – BYT promulgating on National technical regulation on Hygienic conditions for Latrines/ QCVN 01: 2011/BYT on National technical regulation on Hygienic conditions for Latrines</i>). ▪ Provide rubbish bins at camping sites and construction sites. Transport waste regularly from the sites to Trai Tay disposal site in Trung Luong 2 hamlet, An Nghiep commune, Tuy An district (This will be committed by the contractor and the contractor can hire an environmental company to transport the rubbish). ▪ Management of hazardous materials and waste need to be followed the

Initial Environmental Examination (IEE)

*Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
Integrated Rural Development in Central Provinces Project*

Potential impacts	Proposed Mitigation Measure
	<p>requirements, which stated in Decree 36/2015/TT-BTNMT.</p> <ul style="list-style-type: none"> ▪ The wastewater and solid waste will not be allowed to through on surrounding water bodies (water rice fields, ponds, primary East and West canals of Dong Tron reservoir)
<p>Noise, dust or exhaust from construction equipment and transport activities</p>	<ul style="list-style-type: none"> ▪ Spray water at least one time per day in the dry/hot day in transportation road section goes through the areas in front of 3 schools, 2 kindergartens, Tu An pagoda, An Nghiep medical center and CPC. ▪ Cover all trucks carrying raw materials to and from the construction area and along the transport routes as PR641, PR650, An Dinh – An Linh inter-commune road and other commune's roads. ▪ Mobile concrete batching equipment to be arranged a distance of 500m away from residential areas of An Dinh, An Nghiep, and Xuan Son Nam communes and only allows operating during daytime. ▪ Operation schedule of noise generated equipment/vehicles need to be avoid the rest time of local people, especially in the location close to residential areas in An Dinh, an Nghiep and Xuan Son Nam communes and along the transport route of PR641, PR650, An Dinh – An Linh inter-commune road and other commune's roads. ▪ Provide adequate protective equipment for workers who run noise generated machines ▪ Equipment needs to meet standards of exhaust, noise, and vibration as regulated by the Government and they need to be properly maintained.
<p>Increasing the flooding area and time</p>	<ul style="list-style-type: none"> ▪ Inform construction schedule/ scope in advance to An Dinh, An Nghiep and Xuan Son Nam CPCs. ▪ Discuss with agricultural and irrigation staff of Tuy An and Dong Xuan DPCs to identify suitable construction time. ▪ Complete construction section by section before start a new one to avoid long construction time. <p>Construction equipment shall not be allowed to take place on the irrigation and drainage canals</p>
<p>Affects on traffic or conditions for property access</p>	<ul style="list-style-type: none"> ▪ Inform construction schedule and scope in advance to An Nghiep, An Dinh, Xuan Son Nam CPCs ▪ Avoid material transportation in the rush hours when student go to schools, people go to work and back home (6h30-7h30 am; 11h30-13h30; 16h30-17h30) ▪ Collaborate with traffic police to adjust traffic (if needed) ▪ Install additional - signal lamps and sign panels at some transportation route that closed to residential area. ▪ Limit the speed of means of transport on the route; ▪ In case unavoidable block the access to schools, kindergarten, medical clinic... the contractors should construct a temporary access route. ▪ Reinstate as pre-project condition for any damage caused by construction activities.
<p>Impact on public infrastructure such as communication, electricity wires, inter-commune road, etc.</p>	<ul style="list-style-type: none"> ▪ Consulting the sub-project engineering staff to identify public infrastructure and avoid or minimize physical impacts on their infrastructures; ▪ Work with local authorities to obtain agreement in using any public facilities; ▪ Prohibited overload/ oversize transportation to avoid impacts on low-voltage lines in villages during transport of materials and construction machinery; ▪ Limit the speed and load of material transportation truck in rainy season (September to December) to avoid accidents or damage road; ▪ Contractors must repair local roads, electricity lines and other local infrastructure if they are damaged by the construction activities. ▪ Warning and set rule for workers to follow traffic regulations (limit the velocity of trucks especially when travel in the sensitive areas of schools, kindergartens, medical center, pagoda...); <p>Install warning signs and avoid crashes to electric poles and houses.</p>

Initial Environmental Examination (IEE)

*Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System
Integrated Rural Development in Central Provinces Project*

Potential impacts	Proposed Mitigation Measure
Generation of excess spoil	<ul style="list-style-type: none"> ▪ Utilise excavated spoil for filling purpose, as much as possible, to minimize the volume of excess spoil (estimated volume of filling soil is 69901 m³ and excavated soil is about 30829 m³); ▪ Temporary spoil disposal site shall be located at least 50 m from water bodies, like water rice fields, ponds, the primary East and West canals of Dong Tron reservoir, and shall be protected from erosion by avoiding formation of steep slopes; Unused excavated soil need to be transported to and disposed at Trai Tay dumping site.
Construction workers cause social disruption	<ul style="list-style-type: none"> ▪ Consult with An Dinh, An Nghiep and Xuan Son Nam CPCs to arrange accommodation for workers (to avoid any negative impacts on local people's activities) and register temporary residence card for them; ▪ Recruit local people for simple work such as soil moving, road compaction... ▪ Consider house leasing in locality in comparison with site camps and consultation with competent staff in planning local housing for workers in the local community ▪ Request workers to collect waste as regulation and ensure that their construction camps are maintained in clean and hygienic conditions; Raise workers' awareness of environmental sanitation, infectious diseases as well as prevention of HIV/AIDS and sexually transmitted diseases and dissemination on social evils like drugs, gambling, prostitution, violence, stealing, etc.
Risk to health and safety to local people or construction workers	<ul style="list-style-type: none"> ▪ Inform An Dinh, An Nghiep, Xuan Son Nam CPCs in advance on construction schedule and scope ▪ Consult representatives of Nguyen Viet Xuan junior high and secondary schools, An Nghiep primary school and kindergarten, Phong Nien kindergarten, An Nghiep medical center, Tu An pagoda on construction schedule and scope, working hour... before commencement. ▪ Collaborate with infrastructure staff of the three CPCs to install warning sign boards, road hump (if applicable) near the sensitive areas; ▪ Provide workers with full safety equipment and train them how to use properly. Install mobile toilets at worker camps and provide sufficient domestic water
Causes waste disposal problems from solid waste generated during construction activity or municipal waste generated in construction camps	<ul style="list-style-type: none"> ▪ Provide rubbish bins (02 bins at the main camp; 01 bin for each camp along the canal sides and request workers to collect waste and not to leave litter into any water resources; ▪ Collect used oil and grease in a place with cover roof and impervious ground and at least 10 m far from the water body. ▪ Collect solid waste regularly and transport to Trai Tay disposal site in Trung Luong 2 hamlet, An Nghiep commune, Tuy An district which is located at a distance of 1-2 km from the construction sites. <p>Management of construction waste, domestic waste and hazardous waste as per proposed on waste management items.</p>
Impacts on irrigation activities	<ul style="list-style-type: none"> ▪ The Contractor need coordinate with irrigation authority (Dong Cam Irrigation One Member Limited Company), the 3 commune's irrigation staffs and relevant cultivation households during the construction of the branch canal system of Dong Tron reservoir to reach agreement on water supply time (when construction suspension), construction time (should be implemented at the time when irrigation activities are not done); ▪ Inform An Dinh, An Nghiep, Xuan Son Nam CPCs in advance on construction schedule and scope ▪ Construct package by package and complete one section before move to the next one to avoid long construction time in the whole area along 25 km of the proposed canal; ▪ Restoration of areas cleared for the construction sites right after the construction complete; <p>Phu Yen PPMU and the Contractor need pay attention to mitigation measures to</p>

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Potential impacts	Proposed Mitigation Measure
	reduce damages or to implement compensation for arising impacts due to water supply cut off for construction activities.

Annex 7: Data Source

1. PPMU of Phu Yen province, Subproject Investment Report (SIR) of Upgrading canals of irrigation scheme of Dong Tron reservoir, 2014.
2. PPMU of Phu Yen province, Basic Design Explanation of Upgrading canals of irrigation scheme of Dong Tron reservoir, 2014.
3. An Dinh Commune People's Committee, Annual Report on Social Economy, December 2013.
4. An Nghiep Commune People's Committee, Annual Report on Social Economy, December 2013.
5. Environmental Impact Assessment Report for the Subproject: Upgrading Irrigated Canal of Dong Tron Reservoir's Irrigation System – February 2016