

A. Project Title: Rehabilitation and Improvement of Mahayahay-Manalog Farm to Market Road

B. Project Location: St. Bernard and Hinunangan, Southern Leyte

C. Project Type: Road Rehabilitation and Improvement

D. Project Scale/Dimension: 16.580 km.

E. Project Proponent: Provincial Government of Southern Leyte

F. Implementing Unit: Provincial LGU

G. Total Number of Barangays of the two Municipalities: 70 barangays

H. Mode of Implementation: By Contract

I. Direct Road Influence Area:

	Total Land Area (has.)	Total Agricultural Area (has.)	Crops
Mahayahay to Manalog	10,802	4,645	Coconut, rice, abaca, root crops, banana, vegetables

Source: CLUPs of St. Bernard and Hinunangan, NSO

J. Project Beneficiaries within the RIA:

Total Population	10,284
Male Population	5,395
Female Population	4,889
Total Households	2,118

K. Total Project Cost and **Php 188,390,566.25**

Cost Sharing:

WB Loan Proceeds (80%): **Php 150,712,453.00**

WB-GOP (10%): **Php 18,839,056.63**

LGU Equity (10%): **Php 18,839,056.63**

L. Economic Viability Indicators: ENPV: 69,855.49 (000s)

EIRR: 21.8%

BCR: 1.41

M. Conclusion and Recommendations

After computations and analysis were done, the project is found to be feasible from the marketing, technical, operational and economic point of view. Hence, the project is worth pursuing and is highly recommended for approval and inclusion in the Philippine Rural Development Project (PRDP) I-BUILD component.

d. Social Analysis

i. Project beneficiaries

Residents of the 3 barangays of Mahayahay, Tabon-tabon and Mahayag in St. Bernard and the 6 barangays of Manlico, Libas, Sto. Niño II, Patong, Manalog and Badiangan in Hinunangan are the direct beneficiaries of the proposed FMR, while the 6 barangays of Calinao, Upper Bantawon, Lumbog, Tuburan, Ilaya and Nava all of Hinunangan are the indirect beneficiaries. The total population of the 15 barangays, who can benefit with the rehabilitation and improvement of the 16.57882 km. FMR, are 10,284 person of which 5,395 are males and 4, 889 are females. There are about 2,118 households in the subproject area (NSO 2010).

Most of the residents in the RIA are small farmers whose income from the coconut industry is not enough to adequately meet their basic needs. The low income of coconut farmers could be attributed to very low price of copra in the local and world market. In 2012, according to PCA, there are a total of 11,687 coconut farmers in the two municipalities of St. Bernard and Hinunangan where the beneficiary barangays are located.

To ensure social safeguard, several consultative meetings were conducted in October 2014, attended by either heads of the households or their representatives, mostly mothers or women who expressed their difficulties in finding other sources of income or livelihood opportunities because of the present road condition. During the meetings, the attendees were oriented with the program, the description of the proposed project and the possible effects of the project to the properties of the households living along the road. The barangay officials as well as the heads or representatives of the households both men and women expressed their appreciation and support to the proposed project. It has been their dream long time ago that said FMR will already be rehabilitated and improved to ensure safety in their travel, improve their access to basic services and more importantly to spur economic activity in the area. They are willing to quit claims or donate the affected area as a result of the rehabilitation and improvement of the existing FMR.

(See Annex B for the minutes, resolutions and attendance and Annex C pictures of the consultation meetings).

ii. Indigenous Cultural Community/Indigenous People (ICC/IP)

There is no Indigenous Cultural Community/Indigenous People and ancestral domain in the proposed subproject area for this is an existing farm to market road subject for rehabilitation and improvement. While there are Mamanua tribe, who migrated from Mindanao and currently existing and co-mingling with the community, they are not directly impacted and/or benefit from the subproject as they are residing in Brgy. Malinao, St. Bernard, which is far from and on the opposite direction of proposed FMR subproject. (See Annex D for the MLGUs Certification).

iii. Site and Right-of-Way acquisition

The occupants of the parcels of registered land along the proposed subproject area are either Original or Transfer Certificate of Title as proof of ownership or just exercising the rights over the parcel they are tilling and/or residing. The area is generally classified as agricultural and residential.

Mahayahay-Manalog road is an existing farm to market road. Hence, the road right of way was already established during the opening and construction of the road sections before. The owners of the affected lots have been compensated. However, there were structures and crops that encroached in the 1.5 m. shoulder and 1 m. canal on both sides of the road, which has a width of 10 m. (5 m. carriageway, 1.5 m. shoulder and 1 m. canal on both sides).

(See Annex E for the certification signed by the Municipal, Provincial Assessor and PEO).

iv. Damage to standing crops, houses and/or properties

There will be trees and crops, structures such as fences and portion of houses made of light materials and some concrete, portions of sari-sari stores, and electric posts that will be affected because of the encroachment in the 2.5 m. shoulder and canal of the existing road. During the consultative meetings held in October 2014, the owners or occupants agreed to sign quit claims form for those affected crops/trees and houses/properties. They gave their full support to the proposed subproject, as the improvement of the FMR will for “our own benefit and that of the future generations.” The proposed subproject will lower the cost of inputs, increase productivity and increase rural competitiveness. The affected persons have signed the quit claims form after the consultative meetings, including non-compensation of damaged crops, structures, etc. as a result of the subproject implementation. The electric posts will be relocated by SOLECO and the Provincial Government has agreed to pay for the labor cost of relocating the electric posts. (See Annex F for the list of Damage to Crops/Structures and Annex G for the survey forms 1 & 2 and waiver of right/quit claim).

The MLGU together with the BLGUs agreed to replant the same number of trees affected in the same barangays. The two municipalities have annual tree planting activities, including in the identified subproject barangays, to mitigate rain-landslide and rain-induced flooding. (Please refer to table below for the list and number of crops affected by barangay.).

The contractor of the subproject will be responsible in the demolition of the abovementioned structures as provided for in the scope of work. There will be no relocation of affected structures involved.

The Phil. Coconut Authority (PCA) and Community Environment and Natural Resources Office (CENRO) have issued cutting permits for the coconuts and forest trees, respectively. Letter requests for (a) the cutting of

fruit trees have been sent to CENRO and (b) for the relocation of affected electric posts had been sent to SOLECO.
 (See Annex H Letter Request sent to PCA and cutting permit; Annex I for the letter request and cutting permit (forest trees) given by CENRO; Annex J for the letter request for SOLECO).

Table 10: Type and Total Number of Crops Affected per Barangay

Name of Barangay	Type of Crops Affected	
	Coconut Trees	Forest Trees (Acasia & Narra)
St. Bernard		
Tabon-tabon	0	21
Mahayag	6	0
Hinunangan		
Manlico	0	0
Sto. Niño	0	0
Patong	7	0
Manalog	2	0
TOTAL	15	21

v. Physical displacement of persons

There is no displacement of persons/properties or relocation of houses in the road influence area since this is an existing farm to market road.

vi. Economic displacement of persons

Being an existing road, the proposed project will not cause any loss of livelihood or reduce access of families to their traditional livelihood sources. Some coconut trees and other crops will be affected but the economic value of those crops is minimal. It will not result to economic displacement of persons in the RIA. Some sari-sari stores will also be affected but they will not be economically displaced since the stores won't be closed. They will just transfer or moved to a better area.

The implementation of the proposed subproject will increase livelihood opportunities not only for the people in the area but also for the neighboring barangays and municipality.

vii. Grievance Redress Mechanism (GRM)

The implementation of the proposed subproject (Rehabilitation and Improvement of Mahayahay-Manalog FMR under the Philippine Rural Development Project), is the most welcomed and long awaited development in the direct road influence area of the subproject in the municipalities of St. Bernard and Hinunangan. It is supported by all sectors of society, taking into consideration its social and economic impacts.

There is no foreseen major complaints from the dissatisfied beneficiaries and persons affected by the project, considering that the proposed project were thoroughly discussed during the consultation meetings conducted in the eleven barangays within the road influence area. All questions were properly answered and settled. However, the Municipal Mayors of Hinunangan and St. Bernard, and the Provincial Governor issued Special Order No. 01 S. 2015 dated May 27, 2015, Special Order No. S. 2014 dated May , 2014 and Exec. Order No. 018 S. 2015 dated May 6, 2015 respectively, creating the Municipal and Provincial Grievance Committees for the Implementation of the proposed subproject. The provincial GRM is composed of the following:

Engr. Jesse R. Quilantang, Prov'l. Administrator - Chairman
Mr. Crispin M. Arong, Jr., Provincial Accountant - Member
Atty. Rafael Cromwell T. Gerong, Prov'l. Legal Officer - Member

The committee will see to it that all complaints which may be received be given immediate action and resolution for a smooth implementation of the subproject. The Grievance Redress Committee will convene at once if any of the project affected persons (PAPs) files a complaint in order to settle any concerns that will arise during project implementation.
(Please see Annexes for the Special Order and Exec. Order)

In addition, once the subproject has been approved and started implementation, GRM information materials will be provided to all beneficiaries. GRM posters will be installed in the municipal and barangay halls, including other strategic places. GRM tarpaulins will also be posted beside the subproject billboards.

e. Environmental Analysis

i. Natural habitat

The proposed subproject is located in the Municipalities of St. Bernard and Hinunangan. It traverses the 9 rural and mountainous barangays of Mahayahay, Mahayag, and Tabon-tabon in St. Bernard and barangays Manlico, Libas, Sto. Niño II, Patong, Manalog and Badiangon in Hinunangan. The land use in these areas is particularly devoted to agriculture with coconut as the dominant crop and rice being the second main crop. Indigenous tree species, coconut trees, fruit trees, banana, and rice lands are observed on both sides of the road. The barangays covered has a natural habitat for forest ecosystem. The road influence area is not a wildlife habitat nor within an officially declared or proposed protected area.

The nine (9) barangays enjoy the presence of some 10 water-ecosystems (rivers and creeks) that provide water for domestic and agricultural uses. It is also the home to endemic freshwater species.

Both St. Bernard and Hinunangan use the ridge to reef planning and management approach to ensure that their natural habitat will not be

overexploited. Reforestation program and Marine Protected Areas are established and implemented for both in the upland and mangrove areas.

ii. Physical Cultural Resources

The construction of the proposed farm to market road does not traverse any cultural property or resources. There are no observed monuments or archaeological sites in the area. However, in the event that there will be archaeological and paleontological chance finds, the following procedures are to be followed:

A) Archaeological Finds

- 1) All construction activity in the vicinity of the find/feature/site will cease immediately.
- 2) Delineate the discovered find/ feature/ site.
- 3) Record the site location with ground references and all remains are to be left in place and free from any alterations.
- 4) Secure the area to prevent further damage or loss of removable objects.
- 5) Immediate notification of the site engineer/officer who in turn will consult and inform the project archaeologists/paleontologists (if available), local or national statutory authorities and (National Museum Service) to take the appropriate course of action.
- 6) The on-site officer will assess record and photograph the find/feature/ site.
- 7) The on-site officer will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.
- 8) Provide sub-site office and finds storage, keeping the recovered artifacts and other archeological objects stored or undisturbed during the process.
- 9) In the case of human skeletal remains discovery, the osteoarchaeologist or other in-charge authority will conduct treatment and examination of remains.
- 10) In the case of animal skeletal, fossils and plants fossils remains discovery, the paleontologist will conduct inspection and examination of remains.
- 11) For conservation issue, a conservator is available to the project, if required.
- 12) Once the authorization has been given by the responsible statutory

authorities, the contractor will be informed when operations can resume.

B) Paleontological Finds

1. Cease all earth moving activities in the site;
2. Contingency of the physical cost to be paid with the paleontologist in handling the finds study and methodology if fossils are unearthed in the course of excavation during road construction will be shouldered by LGU;
3. The field team will be supervised by a paleontologist qualified to deal whether there are high potential significant resources contained in the area;
4. Salvage of unearthed fossil remains and traces (e. g. trails, burrows etc.);
5. A field survey prior to resume earthmoving activity;
6. Identification, cataloging, sorting of artifacts, and provision for repository storage of prepared fossil specimens;
7. A final report of the finds and their significance;
8. Wait for the authorization when works can resume.

iii. Terrain, Soil Types and Rainfall

The areas covered by the project (except Badiangon) are among the barangays going inland which are sloping to mountainous terrain along Mt. Nacolod mountain ranges. All 6 barangays in the indirect RIA in Hinunangan namely: Tuburan, Ilaya, Nava; Calinao, Upper Bantawon and Lumbog are similarly mountainous terrain.

The municipality of St. Bernard has six different types of soil. The locality has 7,514 has. or 67.02% of rough mountainous land mostly found in the rural settlements. San Miguel silt loam covers an area of 1,643 or 14.65% of the total land area while Himay-angan clay loam occupies a total area of 1,735 or 15.48% and the Faraon clay, steep phase, 319 or 2.85% of the total municipal area.

Hinunangan is composed of different soil types namely: Pilar Series, Peñaranda Series (PnQAf1), San Manuel Series, Quingua Series, Guimbalaon Series and Rehabilitation/Reforestation Land Type,

Both St. Bernard and Hinunangan are noted for the type II climate. This climate is characterized by the absence of a dry season and the predominance of a very pronounced maximum rainfall from November to January.

Based on the records of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) Maasin City Weathering Station, rainfall in the province is abundant all year round which ranges from 1,116 to 4,516 millimeters annually in the past 23 years from 1990 to 2013 and well above the national average which varies from 965 to 4,064 millimeters annually. These translate to a mean or average annual rainfall of 372.22 millimeters for the entire province. Rainfall pattern of the province is sporadic over the past 23 years. (No data on the amount of average rainfall per municipality).

iv. Hazard/Risk Assessment

The historic “Guinsaugon Landslide” in St. Bernard in 2006 is not within the road influence area. Minor flooding, erosion and landslide were experienced in the subproject area, more particularly in barangays Mahayahay in St. Bernard; Sto. Niño II, Patong and Manalog in Hinunangan. Based on the Disaster Risk and Vulnerability Assessment (DRVA) Report of the province, most of the barangays in the subproject area are highly susceptible to rain-induced landslide, flood, ground shaking, storm surge and tsunami. This being the case, protection and safeguard structures are incorporated in the engineering design of the FMR subproject, to mitigate and reduce these risks. Moreover, the LGUs as well as the communities have annual tree planting activities to help prevent soil erosion, flash floods and landslides. There is an existing law, Republic Act No. 9772, “**An Act Imposing a logging ban in the Province of Southern Leyte,**” which is strictly implemented in the Province. In April 2008, the **Southern Leyte Environment Code** was enacted, which aims attain sustainable development, ensure that all LGUs protect, restore, and enhance the quality of the environment, and promote the well-being and safety of its constituents. These are mitigating measures to help reduce the risks and hazards brought about by climate change. The two municipalities of St. Bernard and Hinunangan are in the process of finalizing their CLUPs, following the new and enhanced HLURB guidelines, which require that all CLUPs now consider and incorporate factors brought about by climate change. The CLUPs will delineate and identify settlement areas, which are safe and suitable as residential areas.

(See Annex K for the Hazard Susceptibility by Barangay).

In the implementation of the proposed project, a storm water run-off is expected, as a result of a wider span of cleared area for the ROW and the increase of run off coefficient. Flooding on the road surface can be mitigated by the introduction of road cambers leading the run-off immediately outside of the roadway to the intercepting canals and drainage outlets. To minimize the increase of the quantity of flows on the receiving streams and rivers, appropriate flooding measures such as planting of trees and vegetation on riverbanks should be done, and by way of infiltration, the stream flow will be lessened. For slope protection, guard rails will be put up as a mitigation measure for erosion and landslide. There will also be road signs for the dangerous parts of the road.

Upon construction of the bridges, some potential hazards/risks with its corresponding mitigation measures are identified including:

- Constant earthmoving activity during wet season poses heavy earth sludge in roadway construction.
- Washing water from the crusher and batching plant that contains cement and wet sludge may result in siltation in immediate grounds.

(To mitigate these risks, it is essential that temporary earth mounds are constructed, i.e., sedimentation/stilling pond, in the proximity of earthworks area. This should serve as a trap of liquid matters. The runoff/washing water in ultimate turbidity should pass through the said barriers and suspend the particulates before descending down into receiving water bodies.)

- Prolonged turbidities due to excavations for Bridge Structure foundations will have a potential impact to aquatic species.
- Casting in-place of concrete bridge foundation below the riverbed with fresh concrete will kill aquatic plants and animals.
- Narrowing of water channel in constructing bridges and by-pass bridges increases water velocity that can cause changes of river morphology.

(To mitigate said hazards, there is a need to construct temporary diversion channel to prevent water from passing through the excavation. To ensure that no water in contact with liquid cement, total dewatering on the excavated base while pouring the forms of structure should be undertaken and proper spanning of abutments will be provided.)

Aggregates in quarry source are finite resources and must be sustainable. With regards to the potential hazards/risks on quarry source and its availability, a quarry site has already been designated and was certified by the DPWH to be of substantial source and of good quality materials. One possible risk on effects of hauling of quarry materials is the damage to existing roads during its transportation from the source to FMR. To mitigate this, there will be regular maintenance and repair of existing roads.

The potential hazards of Batching Plant set up by contractor within the vicinity of the project site are dust emissions, siltation, water quality degradation and disturbance to wildlife. The identified mitigation measures are that, the proponent shall select the plant site out from high prevailing winds, it thus enables the position of moving components of Plant being off from the effects of winds, or, it could be the area of dust- sensitive receptors/land uses against the leeward direction of the prevailing winds blowing dust from the Plant. Another measure is to provide stilling pond to minimize siltation of close

surroundings and the selection of available wide free space land as the location of the plant site.

v. Integrated Pest Management (IPM)

One of the objectives of the Dept. of Agriculture is to increase farmer's income by increasing farm productivity. However, human health and environmental safety should be taken into consideration to ensure farm sustainability. The IPM aims to address these issues on helping farmer's develop, make critical and informed decision to render crop production more productive, profitable and sustainable.

As part of the advocacy of the Mun. Agriculture Office (MAO) of St. Bernard and Hinunangan, agricultural technicians conducted trainings/seminars to farmers on crop production the IPM way. Emphasis on the use of appropriate varieties, good agricultural practices, organic farming and control of insect/pest diseases using biological and cultural control. The use of chemical pesticides is discouraged to provide safer environment and healthy living to both farmers and consumers.

Regular monitoring of farmer's activities before, during and after the completion of the FMR shall be in coordination with the DA-RFO8, Provincial Agriculturist Office and the MAO of Liloan to make sure that green agricultural practices (GAP) is adopted by the farmers.

vi. Status of Environmental Clearance (CNC/ECC)

The proposed Rehabilitation and Improvement of Mahayahay-Manalog Farm to Market Road falls on Category B as per DAO-03-2030 Procedural Manual. It needs an ECC. An ECC was already issued by DENR-EMB RO8 for this purpose. (See Annex L).

Cutting tree permits were issued for the coconut and exotic/indigenous trees that will be affected. (See Annexes G and H for the letter requests for PCA and CENRO and for the cutting permits). A certification was issued by the Department of Public Works and Highways (DPWH) for the accreditation and source of quarry materials, and certifications from the two (2) barangays and the landowners of the identified dumping sites. (See Annexes M and N for the certifications and Annex O for the Pictures of the Quarry Site)

vii. Social and Environmental Impacts

A road project has both positive and negative impacts on social and environment. Assessment was done to come up with an Environmental and Social Management Mitigation Plan. Several issues were identified such as damage to standing crops and structures, temporary increase in sedimentation during construction, potential contamination of surface and groundwater with oil/grease, landslide/erosion of exposed road sides resulting in sedimentation of waterways, inadequate drainage resulting in flooding or ponding, among others. During construction residents maybe disrupted and

inconvenienced by detours, local road closure, dust, noise, heavy equipment traffic on existing roads and interference with emergency services. However, residents may benefit from construction employment. Despite all of the issues and potential impacts identified (pls. refer to ESMP) road rehabilitation and improvement conveys socio-economic upliftment of the people in the area.