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SOCIAL AND ENVIRONMENTAL SAFEGUARDS FRAMEWORK FOR THE PHILIPPINE RURAL DEVELOPMENT PROGRAM

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1 Introduction

1.1 The Program

The Philippine Rural Development Program (PRDP) is a six-year national government development platform aimed at contributing towards achieving an inclusive, value-chain oriented, and climate resilient agriculture and fisheries sector. Specifically, PRDP aims to provide an operational Agriculture and Fisheries Modernization Plan (AFMP) for an integrated technical support service delivery at the local and national levels, build strategic network of rural logistics infrastructure within priority value chains in targeted program areas, strengthen and develop viable rural enterprises through efficient supply/value chain of key agricultural and fishery products in targeted program areas, implement and model innovations towards more effective and efficient institutional support systems for program implementation, and institutionalize stakeholder engagement.

The thrust of PRDP to develop a market-oriented and climate-resilient agriculture and fishery sector will be articulated through its four (4) components: i) Investments for AFMP Planning at Local and National Levels (I-PLAN), ii) Intensified Building-Up of Infrastructure and Logistics for Development (I-BUILD), iii) Investments for Rural Enterprises and Agri-fishery Productivity (I-REAP) and, iv) Support to Program Implementation (I-SUPPORT). Subprojects implemented under components ii (I-BUILD) and iii (I-REAP) undergo various screenings and reviews such that project implementation accord to the governing principles and guidelines for development projects.

1.2 Social and Environmental Safeguards

The social and environmental safeguards (SES) is one of the support activities of the Mindanao Rural Development Program-APL2 (MRDP2) that will be adopted in PRDP to ensure that subprojects to be implemented are not only technically, economically and financially viable, but are also environmentally and socially sound and sustainable.

The SES operates according to the provisions of the Philippine Environmental Impact Statement Law (Presidential Decree 1586), the Philippine Indigenous Peoples Rights Act (Republic Act 8371), the Right of Way Acquisition Law (Republic Act 8974) and their implementing rules and regulations and the operational policies of the World Bank on Environmental Assessment (Operational Policy/Bank Policy 4.01), Natural Habitats (Operational Policy/Bank Policy 4.04), Pest Management (Operational Policy 4.09), Indigenous Peoples (Operational Policy/Bank Policy 4.10) and Involuntary Resettlement (Operational Policy/Bank Policy 4.12).

Aimed at ensuring that the people and the environment are not adversely affected by the projects, the SES requirements encompass all project components. All proposed subprojects, particularly under I-BUILD and I-REAP components, shall undergo environmental screening conforming to the environmental guidelines. Project implementation will also determine if construction activities cause to displace and affect persons such that appropriate resettlement, compensation and rehabilitation plans in accordance to land acquisition, resettlement and

rehabilitation framework are being formulated for the project affected persons. Moreover, the SES involves project affected rural communities, particularly involving the indigenous peoples and communities, in the planning and design of subprojects that accord with the provisions in the IP policy framework.

2 Environmental Management Framework and Guidelines for PRDP

2.1 Environmental Impact of Subprojects

Of the four PRDP components, I-BUILD and I-REAP are the ones with on-the-ground subprojects most likely to bring about environmental impact. The menu of eligible infrastructure interventions for I-BUILD will be the same as that of MRDP2, but with a wider geographical reach and augmented with fisheries-related support infrastructure and facilities such as fish landings. I-REAP, on the other hand, will fund similar interventions provided under the CFAD and NRM components of MRDP2. These would include under the I-REAP component, community livelihood subprojects involving crop and animal production and establishment and operation of common service facilities in production, postharvest and marketing; and natural resource management interventions such as mangrove rehabilitation, marine sanctuary establishment, artificial reef establishment, stream bank stabilization measures, upland reforestation, and aqua-silviculture. Most activities/sub-projects are small-scale with localized, manageable and temporary environmental impacts and are not covered by the existing Philippine Environmental Impact Statement System (PEISS)[1]. However some while they are non-environmentally-critical may be located in critical areas[2] and hence may be covered by the PEISS.

This Environmental Management Framework and Guidelines (EMFG) will guide the screening, preparation, review and approval of I-BUILD and I-REAP subprojects.

2.2 Environmental Safeguards Systems

The EMFG will provide four layers of environmental safeguards to the Project. These are: (i) the adoption of general policies pertaining to the types and location of developments that can be pursued by the LGUs; (ii) the conformance of individual subprojects to technical guidelines and specifications; (iii) the screening and review under the Philippine EIS system; (iv) the environmental and social assessments (EA/SA) resulting in the environmental and social management/mitigation plan (ESMP) which are undertaken as part of the subproject feasibility studies.

[1] Under DENR Administrative Order 2003-30, these are "Category D" Projects or Projects unlikely to cause adverse environmental impacts (Sec. 4.5, DAO 2003-30). Projects classified under Category D may secure a Certificate of Non-Coverage (CNC). The Environmental Management Bureau (EMB-DENR), however, may require such projects or undertakings to provide additional environmental safeguards as it may deem necessary (Sec. 4.6, DAO 2003-30).

[2] Under DENR Administrative Order 2003-30, these are "Category B" Projects, or Projects that are not categorized as Environmentally Critical Projects (ECPs), but which may cause negative environmental impacts because they are located in Environmentally Critical Areas (ECAs) (Sec. 4.5, DAO 2003-30).

(i) Adoption of Local Environmental Policies

The Project will adopt a set of general policies pertaining to the types and location of infrastructure or development in the project areas. Formulated under MRDP2, these policies will guide LGUs on the proper use of the uplands, lowlands, and coastal areas. Participating LGUs are encouraged to adopt the following land use and protection policies:

(a) Gently to moderately sloping grasslands (5-18% slope) may be put to intensive agricultural production that requires seasonal and periodic cultivation using sloping agricultural land technologies (SALT).

(b) Grassland areas with slope gradients of 18-30% if utilized for agricultural production should be utilized only for establishment of orchards and industrial tree plantation.

(c) Grassland/open lands with slope gradients of 30-50% or more shall only be developed into intensive agro-forestry farm or utilized as community forest.

(d) All stream banks starting from 100 masl up to the highest tributary shall maintain a 50-meter and 20-meter vegetative riparian buffer for riverbanks and creek/streambank protection, respectively.

(e) Areas utilized for aquaculture/fishpond shall maintain a 50-meter mangrove buffer between the fishpond and open sea for coastal protection.

(f) Existing mangrove forests shall no longer be subjected to alternative land use conversion but shall be maintained in support of fishery production and coastal protection programs.

(g) Establishment of pasture areas shall include planting of shade trees on 20-meter wide strips on both sides of creeks/rivers.

(h) Mudflats on coastal areas covered under NRM subprojects shall be planted to mangrove species.

(i) Remaining forests within area of influence of PRDP subprojects shall be protected from agricultural encroachments, illegal logging and forest product harvesting and hunting; if forests are present within the influence area of FMRs, the concerned LGUs must include a forest protection plan/program in conjunction with the subproject proposal.

(ii) Environmental Screening and Review under the Philippine Environmental Impact Statement System (PEISS)

All subprojects are subject to environmental screening under PEISS. Under the PEISS, certain

project types that are considered Environmentally Critical (Table 1) and all projects that are located in Environmentally Critical Areas (Table 2) are required to prepare an Environmental Impact Statement. The DENR Admin Order No 30 Series of 2003 has further defined four categories of projects, based on their type, scale and location. Category-A are those types that are considered Environmentally Critical Projects (ECPs). Category-B are those that are not considered environmentally critical but are nevertheless located in Environmentally Critical Areas (ECAs) and are above certain scale or size thresholds. Category-C are those that are in themselves Environmental Enhancements such as wastewater treatment and solid waste management. Lastly, "Category-D" are those that are neither environmentally critical types nor located in environmentally critical areas or those that are below not environmentally critical but located in environmentally critical areas and are below certain scale or size thresholds. Category-D subprojects are not required to prepare Environmental Impact Statements (EIS). The latest Procedural Manual for DENR DAO 2003-30 specifies the scale or size thresholds below which a non ECP located in ECA would fall under Category D (Table 3).

Table 1. Environmentally Critical Projects (ECPs).

i. Heavy Industries

   a. Non-ferrous metal industries
   b. Iron and steel mills
   c. Petroleum and petro-chemical industries including oil and gas
   d. Smelting plants

ii. Resource Extractive Industries

   a. Major mining and quarrying projects
   b. Forestry projects
      1. Logging
      2. Major wood processing projects
      3. Introduction of fauna (exotic-animals) in public/private forests
      4. Forest occupancy
      5. Extraction of mangrove products
      6. Grazing

   c. Fishery Projects

      1. Dikes for fishpond development projects

iii. Infrastructure Projects

   a. Major dams
   b. Major power plants (fossil-fuelled, nuclear fuelled, hydroelectric or geothermal)
   c. Major reclamation projects
   d. Major roads and bridges.

iv. Golf Course Projects

Reference: Revised Procedural Manual for DAO No. 03-30, citing Proclamation No. 2146 (1981) and Proclamation No. 803 (1996)

Table 2. Environmentally - Critical Areas (ECAs).

i. All areas declared by law as national parks, watershed reserves, wildlife preserves and sanctuaries;

ii. Areas classified as prime agricultural lands;

iii. Areas frequently visited and/or hard-hit by natural calamities (geologic hazards, floods, typhoons, volcanic activity, etc.)

iv. Areas of unique historic, archaeological, or scientific interests;

v. Areas set aside as aesthetic potential tourist spots;

vi. Areas which are traditionally occupied by cultural communities or tribes;

vii. Areas which constitute the habitat for any endangered or threatened species of indigenous Philippine Wildlife (flora and fauna);

viii. Areas with critical slopes (slopes of 40% or greater);

ix. Recharged areas of aquifers;

x. Water bodies characterized by one or any combination of the following conditions:

    a. tapped for domestic purposes;
    b. within the controlled and/or protected areas declared by appropriate authorities;
    c. which support wildlife and fishery activities.

xi. Mangrove areas characterized by one or any combination or the following conditions:

    a. with primary pristine and dense young growth;
    b. adjoining mouth of major river systems;
    c. near or adjacent to traditional productive fry or fishing grounds;

xii. Areas which act as natural buffers against natural erosion, strong winds and storm floods;

xiii. Coral reef characterized by one or any combination of the following conditions:

    a. With 50% and above coralline cover;
    b. Spawning and nursery grounds for fish;
    c. Which act as natural breakwater of coastlines.

It is expected that most of the I-BUILD subprojects will fall within either Category B or D. For Category D subprojects, the proponent LGU may optionally obtain from DENR a Certificate of Non-Coverage (CNC) but PRDP will not require CNCs. Category B subprojects are required under PEISS to undergo Initial Environmental Examination (IEE). The IEE which also contains Environmental and Social Management Plan (ESMP) will serve as the subproject's Environmental Impact Statement (EIS) which will undergo review by DENR resulting in the

issuance of Environmental Compliance Certificate (ECC).

Table 3. Size and Scale Thresholds for Non-Environmentally Critical Projects in Environmentally Critically Areas (ECAs).

Subproject	Project Size Parameters	Category B	Category D
Roads, new construction, widening	Length with no critical slope OR length with critical slope	> 2km but < 20.0 km, or >2km but < 10km	< 2 km
Bridges	Length	> 80m but < 10km	Regardless of length for foot bridges; < 80m for other bridges
Irrigation (Distribution System Only)	Service area	300 hectares but <1,000 hectares	< 300 hectares
Impounding System or Flood Control Project	Reservoir flooded area	< 25 hectares OR impounded water 20 million m^3	
Minor Dams	Reservoir flooded area and Water Storage capacity	< 25 hectares AND < 20 million m^3	
Potable Water Supply (Complete System)	Number of production wells	> 6 wells	
Potable Water Supply (Distribution Only)	Distribution supply level	Level III	Level II and Level I
Sea Port, Causeways, and Harbors	Area to be develop	< 15 hectares reclamation OR < 25 hectares (w/o) reclamation)	< 1.0 hectares (w/o) reclamation
Rice Mill	Milling Rate	> 1 ton/hr	<1 ton/hr
Poultry	Stock Population	>10,000 heads but < 100,000 heads	< 10,000 heads
Pigs/Goat (enclosed)	Stock Population	> 100 heads but < 5,000 heads	< 100 heads
Fishery/Aquaculture Projects (inland-based, e.g. lakes, rivers, etc.)	Total water spread area to be utilized	>1 hectares but < 25 hectares	< 1 hectare
Fishery/Aquaculture Projects in water bodies (coastal areas)	Total water spread area to be utilized	> 1 hectare but < 100 hectares	< 1 hectare

The actual screening of subprojects based on the above criteria shall be done by the proponent LGU with the assistance from higher level LGU and/or the RPCO. In doing so and especially for

subprojects that are not listed above, the proponent LGU will consult the latest version of the Procedural Manual for DAO 30-2003 to be provided by the RPCO which should prevail in case of conflict with the above classification guidelines. While the project is not envisaged to have Category A subproject, in case there is/are subprojects falling under such category, as well as Category B, the proponent LGU shall fill up INFORM 1 and submit the same to the Regional Environmental Management Bureau (EMB) for evaluation. The World Bank will do prior review of subprojects falling under Category A, in case there is any.

(iii) Environmental Guidelines

Each subproject will have to conform to the technical guidelines and specifications prepared for each type of subproject (Annex B). For the most common subprojects namely, Farm-to-Market Road, Potable Water Supply and Communal Irrigation, illustrated technical guidelines for environmentally sound design are also being provided. The guidelines also include requirements of other World Bank Policies that are relevant to the subprojects. These are:

- Pest Management: DA's Integrated Pest Management (KASAKALIKASAN) Program, shall be introduced if not already in the subproject areas and enhanced if already existing. This is particularly required in the services areas of communal irrigation subprojects and in the influence areas of farm-to-market roads. The project will support the adoption of the IPM program under the KASAKALIKASAN program.

  DA's IPM Program underscores the Philippine government's commitment to Agenda 21 of the United Nations Conference on Environment and Development in promoting sustainable agriculture and rural development. The program trains, empowers and develops farmers' skills in making critical and informed decisions towards a more productive, profitable and sustainable crop production system. It employs an experiential learning approach through the Farmer Field Schools (FFSs) to enable farmers to practice IPM.

  The IPM training process effectively involves farmers in the field over the entire season of crop production for them to be more engaged and develop their capabilities to discover and hone their acquired scientific management skills. This participatory, experiential and discovery-based learning approach has been highly successful in sustaining FFS farmers to continue to adopt IPM principles and become partner advocates for a healthy rice, corn and vegetable production. The program has effected a significant shift in agricultural extension exhibiting farming practices with reduced use of insecticides (particularly from toxic to non-toxic), increased insecticide non-users, and reduced frequency of insecticide application. DA has continued to instigate partner LGUs to mobilize local resources and support for IPM which has been instrumental for the program to be sustainable.

  The Program will expand and institute DA's IPM standard approach to crop husbandry and pest management, and adopt the existing guidelines in the formulation of Pest Management Plan. This is to ensure that farmers particularly who operate in the service

areas of irrigation projects and those tilling agri and fishery-based commodities identified along the value chain are knowledgeable on proper land preparation, water and nutrient management and effective insect, pest or weeds control. The Program shall further strengthen the implementation of the existing regulations on the use of agrichemicals and other pesticides, identify banned pesticides and compounds from usage, and formulate mitigating measures to lessen, if not avoid, the hazards to human health and the environment brought by pesticide utilization. It shall collaborate with research institutions and technical experts with whom DA has been partnering for capacity-building activities to ensure full integration of IPM program in the whole production system, including the sustainability of the natural resources and protection of the environment.

- Natural Habitat: The Project will not fund subprojects that are located within or that encroach into any declared or proposed Protected Area of natural habitat. The subproject proponent must show that the farm-to-market roads do not traverse areas of critical natural habitat and that irrigation subprojects do not result in the conversion of areas of natural habitat for use in rice lands or other agricultural uses.

- Forest: The Project will not fund subprojects that encroach into forests. Subprojects must not result in reduced access of traditional forest occupants to the forest.

- Physical Cultural Resources: The Project will not fund subprojects that displace, damage or render, inaccessible or inoperable, sites or structures of cultural or historical significance.

- Safety of Dams: (a) The Project will not fund dams of over 10 meters in height. (b) Dam design should be done and/or approved by a qualified engineer; (c) The EAs (in the FS) of subprojects involving dam should include a risk assessment of dam failure and corresponding mitigating measures in the ESMP. (d) Subprojects involving dam should submit a dam safety plan. Any subproject involving dam will be prior reviewed by the World Bank for safeguards.

Subproject proponents (MLGUs, PLGUs or Producer Groups) are required to consult with these guidelines when conceptualizing and preparing their subprojects. During the safeguards review/appraisal by RPCO, the subproject location, design and other documentary requirements will be checked for conformance to and/or compliance with the relevant guidelines.

(iv) Environmental and Social Management Plan

All I-BUILD and I-REAP subprojects shall undergo rapid Environmental and Social Assessments as part of their feasibility studies. The environmental and social assessments (to be provided as part of the feasibility study reports) should contain sufficient information about the environmental and social conditions of the subproject site and allow the proponent to prepare the Environmental and Social Management or Mitigation Plans (ESMPs). Annex C outlines the minimum information requirements of the Environmental and Social Assessments in the

Subproject Feasibility Study Report. The ESMPs should be submitted as part of the project proposal package along with the Feasibility Study reports and other safeguards documentary requirements. For those subprojects not covered under PEISS, the ESMP shall be a simple standalone matrix containing:

a) the issues or impacts of the subproject;

b) their brief assessments or qualifications of their significance given the site's environmental conditions;

c) the proposed mitigation measures, if there are any that are needed; and,

d) the means of implementation of the measures which could be either of the following:

   1) Engineering design specification – The measure will be incorporated in the engineering design

   2) Program of work – The measure shall be included in the program of work

   3) Contract – The measure shall be part of the construction contract;

   4) O&M – As part of the LGU's operation and maintenance program;

   5) IP Policy Framework; and,

   6) Land Acquisition, Rehabilitation and Resettlement Framework.

ESMP Templates have been developed for a generic subproject and those that were frequently proposed under MRDP2 subprojects such as Farm-to-Market Roads, Communal Irrigation and Potable Water Supply (See Annex D). All IEEs/EIAs and ESMPs shall be disclosed at the PRDP Website at least one week prior to the issuance of Safeguards Clearance by the RPCO/PSO.

For subprojects covered under PEISS, the ESMP (Annex E) will be part of the IEE/EIA and will follow the DENR prescribed format, provided that the same should also address all the safeguards policy requirements in this Framework.

2. 3 Environmental Monitoring

Compliance with the safeguards requirements and ESMP measures by the subproject proponent and any actual environmental and social issues associated with the subproject that may crop up during the course of subproject preparation, construction and operation will be periodically monitored. The subproject proponent is required to submit every six months a Compliance and Impact Monitoring Report to the RPCO using the form provided in Annex F.

2.4 Institutional Arrangements for Safeguards

Municipal Project Management and Implementing Unit (MPMIU) – The MPMIU shall have as its members the Municipal Planning and Development Officer (MPDO), the Municipal Engineer or anyone who is an engineer by profession, and another one who is an environmental practitioner or has an environmental assessment/management background or has undergone basic training in environmental safeguards. The MPMIU shall have the following responsibilities: The MPMIU shall:

- Help communities comply with the safeguards requirements
- Prepare subprojects according to this Framework
- Submit a semi-annual Safeguards Compliance and Impact Monitoring Report to PPMIU

Provincial Project Management and Implementing Unit (PPMIU) – The PPMIU shall likewise have as its members, the Provincial Planning and Development Officer (PPDO), the Provincial Engineer or anyone who is an engineer by profession, and the Provincial Environmental Officer or anyone who is an environmental practitioner or has an environment assessment/management background or has undergone basic training in environmental safeguards. The PPMIU shall:

- Help MLGU comply with the safeguards requirements
- Prepare subprojects according to this Framework
- Forward all semi-annual Safeguards Compliance and Impact Monitoring Reports to RPCO

Regional Project Coordination Office (RPCO) – The RPCO shall have one Social Safeguards Specialist and Environmental Safeguards Specialist and a team of rural infrastructure engineers who shall undergo training in environmental and social safeguards aspects of subproject preparation, review and approval. The RPCO shall:

- Provide assistance to the LGUs/project proponents in the conduct of safeguards activities and the preparation of safeguards documents;
- Provide review and clearance of subprojects on the safeguards aspects (Annex D provides guidance in reviewing the safeguards aspects of subprojects).
- Consolidate all Compliance and Impact Monitoring Reports from LGUs.

Project Support Office (PSO) – The PSO shall appoint one Social Safeguards Adviser and one Environmental Safeguards Adviser who shall work very closely with the Rural Infrastructure Team. The PSO shall:

- Provide training and technical assistance to RPCO safeguards specialists and engineering team as well as selected social and environmental safeguards focal persons of PPMIUs and MPMIUs;

- Review and clear subprojects before submitting them to the World Bank for no objection.

- Consolidate all Compliance and Impact Monitoring Report from RPCOs and submit them to the NPCO.

National Project Coordinating Office (NPCO) – The NPCO shall consolidate all Compliance and Impact Monitoring Reports from various RPCOs as submitted by the PSO and alert Project Management of any systemic compliance issues or any project-wide operational policy issues affecting the Project's ability to comply with environmental and social safeguards requirements.

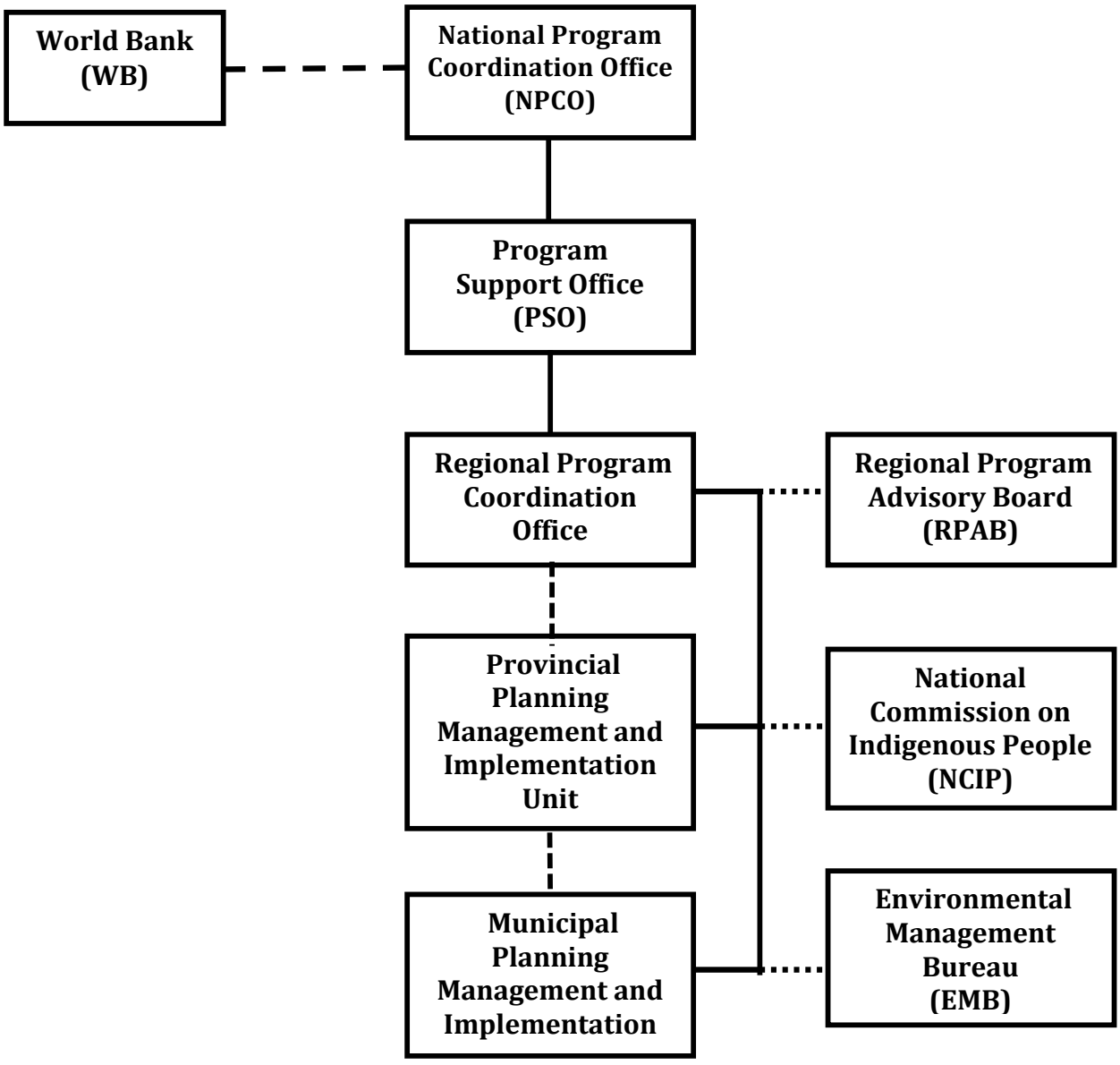


Figure 1. Social and Environmental Safeguards Institutional Arrangement.

Table 4 below outlines the sequence of safeguards-related activities and their lead or responsible units, at various stages in the subproject cycle.

Table 4. Environmental and social safeguards activities and responsible units.

Stage in SP Preparation	Safeguards Activity	Responsible Unit
Subproject Identification/Validation	Conduct Environmental and Social Screening	Subproject proponent with assistance from higher level LGU and RPCO SES
	Conduct IP Community Information Campaign, if required	
Feasibility Study Preparation	Conduct rapid Environmental and Social Assessment (EA and SA)	Subproject proponent with assistance from higher level LGU and RPCO SES
	Conduct IP Community Consultation, if required	
	Prepare Environmental and Social Management/Mitigation Plan (ESMP)	Subproject proponent with assistance from level higher LGU and RPCO SES
	Conduct PAP Survey	Subproject proponent
	Secure IP Endorsement	Subproject proponent
Detailed Engineering and Program of Works Preparation	Incorporation of relevant ESMP measures into the design and program of works	Subproject proponent
	ROW acquisition and documentation	Subproject proponent
	PAP resettlement and/or compensation	Subproject proponent
Review and Approval Procurement (Bidding, Awarding)	Safeguards Review and issuance of clearance	RPCO/PSO, SES and RI Teams
	None	
Construction	Compliance Monitoring	PLGU and RPCO SES units
Turnover	Compliance Evaluation	RPCO/PSO, SES and RI units

2.5 Assessment of PRDP Year 1 Subprojects

The PRDP Year 1 (Annex A)subprojects to be implemented will include those which were proposed in the supposed MRDP2 additional financing and CPRDP. Environmental and social safeguards requirement of Year 1 subprojects will be prepared, reviewed and approved by the DA following the existing MRDP Environmental Framework and Guidelines with respect to their technical feasibility, economic viability and environmental soundness. Subproject's environmental soundness, i.e. well-managed environmental impacts, its design, location and implementation, should be formulated according to the environmental guidelines as set forth in this framework.

At the PLGU level, environmental screening of subprojects should determine the subproject classification according to Presidential AO No. 42 and DAO 2003-30. Once their classification is known, appropriate environmental assessment method and document will be complied for the application of an Environmental Compliance Certificate (ECC), if covered by the PEISS, or a Certificate of Non-Coverage (CNC), if not covered by PEISS, whichever is appropriate. For subprojects classified as Category A and B, the PAO/MAO/PGENRO/MENRO shall fill up INFORM 1 and submit the same to the Regional Environmental Management Bureau (EMB) for ECC issuance.

It is anticipated that most Year 1 subprojects will fall under Category D or projects that are not covered by the PEISS. In which case, subproject proponent may secure a CNC.

3 Indigenous Peoples Policy Framework

3.1 Rationale

PRDP will likely cover areas where indigenous cultural communities or indigenous peoples (ICC/IP) are present. There is thus a need for involvement of ICC/IPs in the regional and provincial level planning as well as the preparation and implementation of subprojects and ground activities in their localities. Their active involvement would ensure that their needs, interests and concerns are considered not only in the regional and provincial plans (i.e. AFMP and PCIP) but also in the design and final configuration of specific subprojects under I-BUILD and I-REAP components. In addition, there is a need to avoid, mitigate and/or compensate any adverse effects on their communities caused by activities supported by the project. For these reasons, the project adopts this Indigenous Peoples Policy Framework.

3.2 IP Policy Framework Objective

This Framework complies with the Philippines Indigenous Peoples Rights Act (RA 8371) and the World Bank's Policy on Indigenous Peoples (OP/BP 4.10). Its main objectives are to ensure that the interests, needs and concerns of ICC/IPs are taken into consideration in the formulation of regional and provincial plans and in the design and implementation of specific subprojects near or within their communities and/or territories. More specifically, this Framework will ensure that:

(a) ICC/IPs in the regions and provinces are able to meaningfully participate in the conduct of I-PLAN activities, including the preparation of the Provincial Commodity Investment Plan (PCIP);

(b) The selection, screening and preparation of subprojects under I-BUILD and I-REAP will be undertaken with the involvement and participation of the IP communities in the target areas in partnership with National Commission on Indigenous People (NCIP) and the Local Government Units and that:

(i) Whenever the proposed subproject site is located within or will directly impact on any declared or proposed IP Ancestral Domain, the requirements for government-sponsored development projects under IPRA as stipulated in the Free and Prior Informed Consent (FPIC) Guidelines (i.e. NCIP Admin Order No.1 Series of 2006 or its successor issuances) are complied with; otherwise,

(ii) If the project site is situated outside any declared or proposed Ancestral Domain but nevertheless will directly affect and/or benefit any extant IP community or communities, a "free and prior informed consultation" is undertaken, resulting in "broad community support" for the subproject.

3.3 Indigenous Peoples Defined

The World Bank defines "Indigenous People" as a distinct, vulnerable, social, and cultural group possession the following characteristics in varying degrees:

- Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- An indigenous language, often different from the official language of the country or region.

Republic Act No. 8371, otherwise known as the Indigenous Peoples Rights Act of 1997 (IPRA), defines "Indigenous Peoples" as:

- A group of people or homogenous societies identified by self-ascription and ascription by others, who have continuously lived as organized community on communally bounded and defined territory, and who have, under claims of ownership since time immemorial, occupied, possessed and utilized such territories, sharing common bonds of language, customs, traditions, and other distinctive cultural traits, or who have,

through resistance to political, social, and cultural inroads of colonization, non-indigenous religions and cultures, became historically differentiated from the majority of Filipinos.

- Peoples who are regarded as indigenous on account of their descent from the populations which inhabited the country at the time of conquest or colonization or the establishment of present state boundaries, who retain some or all of their social, economic, cultural, and political institutions, but who may have been displaced from their traditional domains or who may have resettled outside their ancestral domain

3.4 Indigenous Peoples in the Philippines

CORDILLERA & REGION 1	REGION II, CARABALLO MOUNTAIN	REGION III & REST OF LUZON/SIERRA MADRE MOUNTAINS (R-III,R-IV & R-V)	ISLAND GROUPS AND REST OF VISAYAS	CENTRAL MINDANAO (R-XII)	SOUTHERN & EASTERN MINDANAO (R-XI & R-XIII)	NORTHERN & WESTERN MINDANAO (R-IX & R-X)
• Bontoc • Balangao • Isneg • Tinguian • Kankanaey • Kalanguya-Ikalahan • Karao • Iwak • Ibaloi • Ayangan • Ifugao • Tuwali • Kalinga • Bago • Applai • Isnag	• Agta • Kalanguya-Ikalahan • Bugkalot • Isinai • Gaddan • Aggay • Dumagat • Ibanag • Itawis • Ivatan • Iwak • Yogad • Ibatan • Karao • Ilongot • Ayagan • Ichbayat-ivatan • Kalanguya-Ayangan	• Ayta • Abelling • Agta • Dumagat • Remontado • Bugkalot • Agta-Cimaron • Kabihug • Tagangon • Abiyan • Isarog • Itom • Agta-Tabangnon	• Agutaynon • Tagbanua • Cgayanen • Ke'ney (Tao't bato) • Batak • Pala'wan • Moolbog • Iraya Mangyan • Alangan Mangyan, • Buhid • Mangyan • Tadyawan • Bangon • Ratagnon • Ati • Cuyunon • Panay • Panay Bukidnon (Sulod/Tamandok) • Bukidnon-Magahat • Bukidnon-Korolanos • Ata • Eskaya • Calamianen • Tagbanua • Bantoanon • Panay-Bukidnon-Sulod • Iraynon-Bukidnon	• Arumanen • Teduray • Manobo • Manobo-Dulangan • Manobo-Blit • T'boli • B'laan • Lambangian • Tasaday • Kalagan • Tagacaolo • Armanon-Manobo • Ubo-Menuvu • B'laan-Tagakaulo	• Bagobo-Klata • Bagobo-Tagabaw • Obu-Manuvu • Ata-Manobo • Ata-Matigsalu • B'laan • Tagakaulo • Manobo • Dibabawon • Mandaya • Mansaka • Sama • Mangguangan • Kalagan • Agusan Manobo • Higaonon • Mamanwa • Banwaon	• Subanen • Subanen • Kalibugan • Bagobo • Ubo-Manobo • Mamanwa • Higaonon • Talaindig • Matigsalog • Iranon • Sama/Bajao (Lua-an) • Manobo • Bukidnon • Umayamnon • Tiguahanon • Matigsalog-Manobo

Source: NCIP Region 11.

3.5 Social Assessment

The social assessment undertaken at the beginning of Program preparation confirmed that the IPs are among the poorest in the provinces. They lack basic infrastructure and social services. They are also the least benefited by government rural development programs, as evidenced by the small number of projects which reach their communities. Mostly dominant in the rolling and mountainous areas, the IPs verbalize feelings of inferiority as compared to their non-IP neighbors. Most IPs perceive that they have the least access to agricultural services, education, health services and potable water supply, and they are gradually losing control over their ancestral land.

Focus group discussions indicate that there is nothing in their culture or traditions, which may affect their successful participation in any project which will benefit their communities. IP communities value consensus, engage in communal activities, sharing of resources and are generous (which, they say, lowlanders, take advantage of). Contrary to popular beliefs, IPs are currently moving slowly into crop production farming systems.

The above experiences and marginalization of IPs may be also true to the other part of the Philippines such as Visayas and Luzon. However, during the focus group discussion conducted there are other several issues identified (i.e. Dislocation caused by intrusion of different projects into their ancestral land, developmental aggression and conflicts of governance.

Furthermore, focus group discussion in Visayas and Luzon indicates that in terms of socio-political the IPs are politically disadvantaged because they have little or no representation in local government units much more in the national level. There are no unified efforts among IP communities to put forth their grievances and demands. There are instances that the highest law of the land run contrary to the tribal laws. Economically, indigenous cultural communities of Visayas and Luzon are of great disadvantage through the following issues identified: Traditionally, IPs are farmers, hunters and fishers. They have limited or have no access at all to technical researches for new and more efficient farm implements, technologies and machineries as well as improved plant stock/seeds that lead to unproductive and uncompetitive farming operations. Application of unsustainable farming systems/practices that lead to environmental destruction. Slash and burn farming practices that deplete forest cover pushing game animals further in the wild resulting to diminished catch for hunters. For the fisherfolks, non-IP migrant fishers using destructive fishing method such as dynamite & cyanide fishing destroys habitats resulting in depleted fish stocks. Bad and insufficient farm to market roads results to expensive farm-produce of IPs making them economically uncompetitive in the open/free market.

The above social assessment data will be used in the design of specific assistance for the IPs as well to orientate and sensitize LGUs and other institutions working with IPs.

3.6 IP Development and PRDP

PRDP through its various components, and particularly the I-BUILD and I-REAP, will be able to support many of the activities included in their Ancestral Development Sustainable Protection Plan. PRDP shall ensure that Technical Assistance is provided to enable the Indigenous Peoples to participate meaningfully in the planning process under the I-PLAN. This may mean deployment of competent and committed Program partners who can work with indigenous communities to ensure that the prioritized plans and projects of IPs as reflected in their ADSDPPs are supported by LGUs and integrated into barangay, municipal, and provincial investment plans.

3.7 Requirements for Subprojects

All subprojects shall undergo rapid Social and Environmental Assessment as part of their Feasibility Studies. This should result in the preparation of Environmental and Social Management Plans (ESMP) (Please refer to the ESMP templates in Annex E). If the social assessment indicates the presence of Indigenous People Communities in the proposed project site, the Subproject ESMP should appropriately reflect that IP Policy is triggered.

In order to be approved for funding, all I-BUILD and I-REAP subprojects must comply with the following requirements:

(a) <u>Subprojects that overlap or are located inside any declared or proposed IP Ancestral Domain or those that, while not located inside, will directly affect any declared or proposed IP Ancestral Domain</u>

Subprojects under this category will comply with the requirements Indigenous Peoples Rights Act as stipulated in the Free and Prior Informed Consent (FPIC) Guidelines (i.e. NCIP Admin Order No. 1 Series of 2006), particularly Section 6B and Section 27 thereof.

For subprojects that are being solicited by the IP community themselves or those that are already identified in their ADSDPPs, there would be no need to undergo the Free and Prior Informed Consent process. Instead, the NCIP will only need to validate the following:

(i) The ICC/IP, in fact, voluntarily solicited or initiated the plan, program, project or activity to be undertaken;

(ii) The plan, program, project or activity conforms with the community's ADSDPP or in the absence of the ADSDPP, the concerned community considers the same to form part already of the ADSDPP that they will formulate in the future;

(iii) The ICC/IP knows the extent of the plan, program, project or activity and its socio-cultural/ environmental impact to the community;

(iv) The concerned LGU and the ICC/IP community acknowledge their obligations; or

(v) The subproject activity is for the delivery of basic services or for the establishment of social enterprise or enterprise development involving community interest affecting land and resource use that would provide employment or generate income to improve the living condition and economic development of the concerned ICC/IP.

For these subprojects, the following document should be submitted to the RPCO/PSO as part of the subproject proposal package:

- *An NCIP validation report or an NCIP certification affirming that conditions (i) to (v) above have been met.*

For subprojects that were neither solicited by the ICC/IP nor identified in their ADSDPP but the ICC/IP are themselves the primary beneficiaries, the FPIC process will not be required. The concerned LGU only needs to formally coordinate with NCIP (or include the NCIP as co-implementer of the subproject) who will then validate that the subproject is acceptable to the intended ICC/IP beneficiaries, either because the same conform with the community's ADSDPP or shall become part thereof in the future. For these subprojects the following document should be submitted to the RPCO/PSO as part of the subproject proposal package:

- *A certification by NCIP affirming that the subproject is acceptable to the intended ICC/IP beneficiaries, either because the same conform with the community's ADSDPP or shall become part thereof in the future have been met.*

However, if the concerned ICCs/IPs are not the primary beneficiaries of the subproject, compliance with the FPIC process will be required as described in Section 27 of the FPIC Guidelines. For these subprojects, the following documents will be required:

- *Free and Prior Informed Consent*
- *Memorandum of Agreement with the IP community*
- *Certificate of Precondition issued by NCIP*

(b) <u>Subprojects located outside any declared or proposed Ancestral Domain but are situated within or will affect any extant IP community or communities</u>

Subprojects under this category are those subprojects that would affect IP communities that are outside of their ancestral domain but have retained their IPness as defined under OP4.10. Such subprojects are required to undergo a process of "free and prior informed consultation" and to demonstrate that such consultation process has led to "broad IP community support" to the final subproject design/configuration.

Free and Prior Informed Consultation. Free and prior informed consultation is consultation that occurs freely and voluntarily, without any external manipulation, interference, or coercion, for which the parties consulted have prior access to information on the intent and scope of the proposed project in a culturally appropriate manner, form, and language.

Local patterns of social organization, religious beliefs, and resource use should be taken into account in the consultation/participation process as well as in the design of subprojects. Existing tribal councils recognized by the NCIP and the LGU shall be tapped as the liaison between the participating LGU and the IP/ICC community in all activities relating to PRDP. The following should be observed in the conduct of free and prior informed consultation:

(i) Prior to consultation, the LGU must ensure that IP members have access to information about the project in general and the subproject in particular. Information campaign shall be conducted in local language or in language that is widely understood by the IP community. This could be done through the local tribal council and in culturally appropriate and effective manner. Aside from providing information about the objectives and scope of the proposed subproject, the information campaign should inform the IP community of their rights to participate in changing the subproject design if it violates any rights or is contrary to the traditions and cultural practices of their community; their rights to compensation if any of their properties are affected; and, their rights to partake of the benefits resulting from the subproject.

(ii) The IP community should be given adequate lead time between the conduct of information campaign and the actual consultation. The consultation shall be conducted early in the subproject preparation and shall, if necessary or if required by the IPs, allow for an iterative process to arrive at consensus.

(iii) Direct dialogues and focused group discussions, if these are not in conflict with local customs and traditional ways should be the preferred consultation tool. Attendance by IP member to dialogues and meetings should however be strictly voluntary. The concerned RPCO shall ensure that the IPs are not coerced to attend meetings.

The entire consultation process shall be undertaken and documented by the concerned LGUs. The following documents should be submitted by the LGU to the PSO/RPCO as part of the subproject proposal package:

- *Dated information campaign materials in local language or in language widely understood by the community;*
- *Dated attendance sheets of consultation dialogues or Photographs of actual consultation sessions undertaken;*
- *Dated minutes of meetings or matrix of clarifications, issues and concerns raised and how they were explained or addressed by the LGU.*

Broad Community Support **-**The subproject is deemed to have attainted broad-based community support when the great majority of the members of the concerned IP community or communities express support or endorse and have no outstanding concerns about the subproject. The following needs to be submitted as part of the subproject proposal package to demonstrate broad community support:

- *IP community endorsement or resolution of support signed by individual members of the IP community or communities; or,*

- *An endorsement signed by IP community leaders (such as the tribal council chairman or the tribal chieftain) with attestation of broad based member support by the NCIP.*

3.8 Damage to Cultural Properties or Resources

The PRDP must ensure that none of its infrastructure or related projects will damage irreplaceable cultural property of the IP. Setting guidelines for all subprojects shall include strict avoidance of cultural resources particularly structures of cultural and/or historical significance and known archaeological sites. In case where infrastructure subprojects that already received broad IP community support or consent would pass through sites considered as cultural properties of the Indigenous Peoples, PRDP must exert its best effort to relocate, realign or redesign the subprojects, so that these sites can be preserved and remain intact in situ. PRDP will not fund subprojects that would displace, damage, render inaccessible and/or render inoperable any structures that are deemed to have high cultural and historical significance by either the IPs or the mainstream population. In case of chance finds or discovery of archaeological artifacts during construction, all activities in the affected sites must be suspended while PRDP management reports the finds to and coordinates with the National Museum or the proper government authority. This measure for chance finds should be reflected in the Environmental and Social Management Plans (ESMPs) of all subprojects.

3.9 Land Acquisition

If a member of the IP community will have either of his land, crops, homes, structures and/or other properties adversely affected by the proposed subproject, he/she must be informed of the his/her rights for just compensation from the LGU as well as his/her rights to partake of the benefits resulting from the subproject. The compensation for affected land, crops, homes and other assets of individual IP members will follow the Policy Framework on Land Acquisition, Resettlement and Rehabilitation for Project Affected Persons (See Land Acquisition Rehabilitation and Resettlement Policy Framework).

3.10 Institutional Arrangements

Municipal Project Management and Implementing Unit (MPMIU) – The MPMIU shall have as its members the Municipal Planning and Development Officer (MPDO), the Local NCIP, the Municipal Engineer or anyone who is an engineer by profession, and another one who is an environmental practitioner or has an environmental assessment/management background or has undergone basic training in environmental safeguards. The MPMIU shall have the following responsibilities: The MPMIU shall:

- Help communities comply with the safeguards requirements
- Prepare subprojects according to this Framework
- Submit a semi-annual Safeguards Compliance and Impact Monitoring Report to PPMIU

Provincial Project Management and Implementing Unit (PPMIU) – The PPMIU shall likewise

have as its members, the Provincial Planning and Development Officer (PPDO), NCIP Province, the Provincial Engineer or anyone who is an engineer by profession, and the Provincial Environmental Officer or anyone who is an environmental practitioner or has an environment assessment/management background or has undergone basic training in environmental safeguards. The PPMIU shall:

- Help MLGU comply with the safeguards requirements
- Prepare subprojects according to this Framework
- Forward all semi-annual Safeguards Compliance and Impact Monitoring Reports to RPCO

Regional Project Coordination Office (RPCO) – The RPCO shall have one Social Safeguards Specialist and Environmental Safeguards Specialist and a team of rural infrastructure engineers who shall undergo training in environmental and social safeguards aspects of subproject preparation, review and approval. The RPCO shall:

- Provide assistance to the LGUs/project proponents in the conduct of safeguards activities and the preparation of safeguards documents;
- Provide review and clearance of subprojects on the safeguards aspects (Annex D provides guidance in reviewing the safeguards aspects of subprojects).
- Consolidate all Compliance and Impact Monitoring Reports from LGUs.

Project Support Office (PSO) – The PSO shall appoint one Social Safeguards Adviser and one Environmental Safeguards Adviser who shall work very closely with the Rural Infrastructure Team. The PSO shall:

- Provide training and technical assistance to RPCO safeguards specialists and engineering team as well as selected social and environmental safeguards focal persons of PPMIUs and MPMIUs;
- Review and clear subprojects before submitting them to the World Bank for no objection.
- Consolidate all Compliance and Impact Monitoring Report from RPCOs and submit them to the PCO.

National Project Coordinating Office (NPCO) – The NPCO shall consolidate all Compliance and Impact Monitoring Reports from various RPCOs and alert Project Management of any systemic compliance issues or any project-wide operational policy issues affecting the Project's ability to comply with environmental and social safeguards requirements.

The PCO shall seek the involvement of the NCIP as co-implementer of PRDP particularly on subprojects that will be situated within any IP Ancestral Domain claims. The Program

Management shall enter into an agreement with NCIP, spelling out, among others the latter's role in: (a) ensuring that IPs participate in the I-PLAN activities and that their interests and concerns are considered in the preparation of AFMPs and the PCIPs; and, (b) facilitating compliance of subprojects involving IP communities, with the requirements of IPRA as described in this Framework.

3.11 Institutional Capacity

Technical assistance and required funds have already been factored into the project for PSO, RPCO, LGUs, support institutions and community groups.

When necessary or required depending on the IP community capacities and the nature and complexities of intervention, technical assistance will be provided to IP communities in the planning of priorities and in designing and implementing subprojects.

3.12 Supervision, Monitoring and Evaluation

The PPMIU shall provide direct supervision and monitoring of the implementation of and compliance with this Framework. As part of this responsibility the PPMIU shall submit semi-annual reports to the RPCO containing the following minimum information:

- Involvement of IPs in the preparation of PCIP (Number of IPs, segregated by gender involved/consulted in the preparation of PCIP);
- List of Subprojects located within an IP community and status of compliance with the requirements;
- List of Subprojects located within Ancestral Domain and status of compliance with the requirements; and,
- Status of the implementation of the agreed measures on IP issues, including if any, modification of subproject design, site location or alignment, compensation and/or benefits sharing plan.

The report shall, together with the reports on LARRF and EMFG compliance, be incorporated into one Safeguards Compliance Report to be submitted by PPMIU to the RPCO. The RPCO shall review the reports and conduct random spot inspections at PPMIUs and/or subproject sites to validate and further evaluate compliance. It shall also consolidate all PPMIUs reports and its findings and submit the same to the PSO, which shall in turn consolidate all reports from various RPCOs and submit a copy to the World Bank.

3.13 Costs and Financing

The costs of capacity building of PSO, RPCO and LGUs; the validation, processing and review of subprojects compliance to this Framework; and, the monitoring, audit and evaluation of the implementation of agreed measures resulting from the application of this Framework have been included in the costs of various components of PRDP.
However, the cost to be incurred in complying with this Framework shall be borne by the subproject proponent (i.e. the concerned LGU), except for measures that are part of the

subproject design and program of works which should be funded as part of the Subproject financing.

4 Land Acquisition Rehabilitation and Resettlement Framework

4.1 Rationale

The construction of rural infrastructure under I-BUILD and post-harvest and other facilities under I-REAP are unlikely to cause massive dislocation of homes or livelihood. However, right of ways for roads and irrigation canals as well as the sites of post-harvest and other facilities will need to be secured which may require a few homes or structures to be relocated to adjacent lots or rehabilitated in case of damage, or in some loss of crops. Loss of lands from roads and canal rights-of- way and sites of facilities may also be significant for some smallholder families while in NRM subprojects, families who are non-members or choose not to join the People's Organization (PO) organized and/or supported by the project could lose access to their traditional fishing grounds, hillside farms and/or forestlands as POs/LGUs impose new policies and rules of access of these resources. To address these issues, the project hereby adopts this Land Acquisition, Rehabilitation and Resettlement Policy Framework (LARRPF) for use in the preparation of I-BUILD and I-REAP subprojects.

4.2 Principles and Objectives

The objectives of this Land Acquisition, Rehabilitation Resettlement Framework is to ensure that all involuntary losses (i.e. whether lands, structures, crops or other properties) of project-affected persons (PAPs) are properly and justly compensated and all those who are displaced (whether physically or economically) are resettled and/or provided with assistance to improve, or at least maintain, their pre-Program living standards and income earning capacity.

This Framework adopts the principles outlined in the World Bank's Involuntary Resettlement Policy (OP/BP 4.12). In particular, the following principles shall apply:

a) Displacement of people whether physical (i.e. relocation of homes to another area far away from the original abode) or economic (i.e. substantive loss of livelihood or of access to traditional sources of livelihood) will be avoided where feasible and acquisition of land and other assets will be minimized as much as possible.

b) Where it is not feasible to avoid displacement , a resettlement plan shall be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the displaced persons to improve their incomes and living standards at least back to pre-displacement levels;

c) Displaced persons will be consulted and will have opportunities to participate in planning and implementing resettlement plans;

d) Any involuntary loss or involuntary incurrence of damage to assets (i.e. lands, homes, structures and crops) whether such loss would constitute displacement or not, shall be justly compensated through mutually agreed compensation scheme. No person (whether beneficiary of the subproject or not) shall be pressured to donate assets for the benefit of the subprojects; and,

e) Persons who lost more than 25% of their productive assets shall be considered economically displaced and in addition to just compensation of the lost asset, shall be provided with livelihood assistance.

4.3 Social Assessments and Social Management Plan

All I-BUILD and I-REAP subprojects shall undergo Social Assessments as part of their feasibility studies. The social assessment should be able to assess the extent of land acquisition and displacements, if any, due to the subproject. Land acquisition and resettlement issues, if any, should be reflected in the subproject's ESMP (Please see ESMP templates in Annex D). For NRM subprojects, the social assessments should determine potential exclusion or involuntary restriction of access of some community members to traditional livelihood sources by through the project.

4.4 Entitlement Policy

Project affected persons (PAPs) will be entitled to the following types of compensation and rehabilitation measures:

a) PAPs involuntarily losing residential land and structures

i. The provision of replacement residential land (house site and garden) of equivalent size, satisfactory to the displaced person; and cash compensation reflecting full replacement cost of the structures, without depreciation;

ii. If the displaced person so wishes and the portion of the land to be lost represents 20% or less of the total area of the residential land area, and the remaining land is still a viable residential lot, cash compensation for the land and structure lost, at full replacement cost (market value), may be provided to the person in lieu of a replacement house and lot in a new site;

iii. If after acquisition, the remaining residential land and/or structure is insufficient for the PAP to reestablish his home , then at the request of the displaced person the entire residential land and structure will be acquired at full replacement cost, 1without depreciation; and,

iv. If the PAP is a tenant who has rented the displaced house for residential purposes, he/she will be provided with a cash grant of three months rental fee at the prevailing market rate in the area, and will be assisted in identifying alternative

accommodation.

b) PAPs involuntarily losing agricultural land and crops

i. The general mechanism for compensation of lost agricultural land will be through provision of “land for land" arrangements of equal productive capacity, satisfactory to the displaced person. However, if the displaced person so wishes and the portion of the land to be lost represents 20% or less of the total area of the landholding, and the remaining land is still a viable economic holding, cash compensation, at full replacement cost (market value), may be provided to the person. If the portion of the land to be lost is more than 20% of the total area of the landholding, and the remaining land is still viable, the displaced person shall be justly compensated of the lost asset and shall be provided with livelihood assistance;

ii. If more than 20% of a villager's agricultural land is acquired and the remaining holding is not viable, then subject to PAPs agreement the Program will acquire the entire landholding and provide compensation of the acquired land at direct land replacement;

iii. PAPs will be compensated for the loss of standing crops and fruit or industrial trees at market price; and

iv. PAPs, whose land is temporarily taken by the works under the Program will be compensated for their loss of income, standing crops and for the cost of soil restoration and damaged infrastructure.

c) PAPs involuntarily losing business

i. The mechanism for compensating loss of business will be; (1) the provision of alternative business site of equal size and accessibility to customers, satisfactory to the displaced person; (2) cash compensation for lost business structure reflecting full replacement cost of the structures, without depreciation; and (3) cash compensation for the loss of income during the transition period.

d) PAPs involuntarily losing means of livelihood or access to livelihood

i. PAPs shall be provided with livelihood assistance and support within the community. They will also be provided compensation at full replacement cost, without depreciation for any other fixed assets affected in part or in toto by the project, such as tombs and water wells. In cases where community infrastructure such as schools, factories, water sources, roads, sewage systems or electrical supply is damaged, the Program will ensure that these would be restored or repaired as the case may be, at no cost to the community.

4.5 People's Participation and Consultation

The project affected and displaced persons will participate throughout the various stages of the planning and implementation of the rehabilitation and resettlement activities. For these purposes and prior to any rehabilitation and resettlement activities, the project affected and displaced persons will be fully informed about the Program and about the provisions of this Policy at meetings held by the respective Program staff at provincial and municipal levels.

Each project affected and displaced household will be fully consulted about acceptable alternatives and options and informed by the relevant Program staff at provincial and municipal levels of their entitlements and rehabilitation options, where applicable.

4.6 Donation

The property owner may willfully make a donation of his/her property or any part of it that is affected by the activities for the rural infrastructure or agricultural projects to the Local Government Unit. The deed of donation should be duly notarized and must be annotated by the Registry of Deeds or by any authorized agency. The Provincial/Municipal LGU will shoulder the cost of resurvey for the donated portion of land. It is assumed that Provincial and/or Municipal Engineering Offices will conduct the survey for the adjustment of the land titles and just real property tax due.

To ensure that the donation is voluntary, the RPCO/PSO should validate with the property owner whether he/she is informed of his/her right to receive just compensation and the right to an appraisal along with the offer of just compensation. The deed of donation shall exhibit voluntary action by the property owner; otherwise this will not be accepted, particularly if it is a result of a pressured negotiation between the property owner and the LGU.

4.7 Resettlement Plan

While resettlement is not expected to happen under the project similar to MRDP2, in case any resettlement issues crops up during implementation, the resettlement plan will have to be prepared by the subproject following below:

4.7.1 Inventory and Entitlement

An inventory for each road, bridge, irrigation canal, water supply pipe alignment or segment thereof will be prepared by the Municipal Project Development Officer (MPDO) and other municipal agencies concerned with resettlement and assisted by the respective Provincial Program Management and Implementation Unit (PPMIU). This will be approved by the Regional Program Coordination Office (RPCO) and endorsed by the Program Support Office (PSO) of the Department of Agriculture (DA) for any subproject work program, to the World Bank (Manila Office) for its concurrence.

The Inventory shall include the following information for each PAP's household (see Attachment 1, Annex G);

a) Number of persons and names;
b) Amount and area of all the residential plots lost;
c) Amount, category/type and area of agricultural land lost;
d) Quantity and types of crops and trees lost;
e) Quantity and category of any fixed assets lost;
f) Productive assets lost as a percentage of total productive assets; and
g) Temporary damage to productive assets.

The entitlements of assets and land affected are calculated based on the above information (see Attachment 2, Annex G).

4.7.2 Full Resettlement Plan and Survey

In cases where the potential adverse impact of a subproject on displaced persons is major (i.e., 200 people or more are displaced), a full resettlement plan for each road or segment of road or irrigation system or any subproject will be prepared by the MPDO and assisted by the PPMIU in accordance with the provisions of this Resettlement Policy[3]. The full resettlement plan will include among others: (a) a completed inventory; (b) a detailed socioeconomic survey of displaced persons describing their age, sex, ethnicity, education, main occupation, sources of income, and total household income per year (see Attachment 3, Annex G); (c) detailed compensation and entitlement calculations for each affected household, where applicable; (d) location, area and category of the replacement residential and agricultural land to be provided, if that be the case; (e) a time-bound action plan for implementation; (f) a detailed budget and source of funding for the various compensation measures; and (g) arrangements for external monitoring and evaluation. Attachment 4 in Annex G provides an outline of information required by a full resettlement plan; Attachment 5 shows a sample checklist of land acquisition activities under PRDP.

4.8 Institutional Arrangements for Safeguards

a. Institutional Arrangements

Municipal Project Management and Implementing Unit (MPMIU) – The MPMIU shall have as its members the Municipal Planning and Development Officer (MPDO), the Municipal Engineer or anyone who is an engineer by profession, and another one who is a social worker or has a social and environmental assessment/management background or has undergone basic training in social safeguards. The MPMIU shall have the following responsibilities: The MPMIU shall:

- Help communities comply with the safeguards requirements
- Prepare subprojects according to this Framework

[3] Impacts are considered minor if the affected people are not physically displaced and less than 10% of their productive assets are lost. If the reverse were to occur, the impacts will be considered major.

- Submit a semi-annual Safeguards Compliance and Impact Monitoring Report to PPMIU

Provincial Project Management and Implementing Unit (PPMIU) – The PPMIU shall likewise have as its members, the Provincial Planning and Development Officer (PPDO), the Provincial Engineer or anyone who is an engineer by profession, and the Provincial Environmental Officer or anyone who is a social worker or has a social assessment/management background or has undergone basic training social safeguards. The PPMIU shall:

- Help MLGU comply with the safeguards requirements
- Prepare subprojects according to this Framework
- Forward all semi-annual Safeguards Compliance and Impact Monitoring Reports to RPCO

Regional Project Coordination Office (RPCO) – The RPCO shall have one Social Safeguards Specialist and Environmental Safeguards Specialist and a team of rural infrastructure engineers who shall undergo training in environmental and social safeguards aspects of subproject preparation, review and approval. The RPCO shall:

- Provide assistance to the LGUs/project proponents in the conduct of safeguards activities and the preparation of safeguards documents;
- Provide review and clearance of subprojects on the safeguards aspects (Annex D provides guidance in reviewing the safeguards aspects of subprojects).
- Consolidate all Compliance and Impact Monitoring Reports from LGUs.

Project Support Office (PSO) – The PSO shall appoint one Social Safeguards Adviser and one Environmental Safeguards Adviser who shall work very closely with the Rural Infrastructure Team. The PSO shall:

- Provide training and technical assistance to RPCO safeguards specialists and engineering team as well as selected social and environmental safeguards focal persons of PPMIUs and MPMIUs;
- Review and clear subprojects before submitting them to the World Bank for no objection.
- Consolidate all Compliance and Impact Monitoring Report from RPCOs and submit them to the PCO.

National Project Coordinating Office (NPCO) – The PCO shall consolidate all Compliance and Impact Monitoring Reports from various RPCOs and alert Project Management of any systemic compliance issues or any project-wide operational policy issues affecting the Project's ability to comply with environmental and social safeguards requirements.

Table 5 below outlines the sequence of safeguards-related activities and their lead or responsible units, at various stages in the subproject cycle.

Table 5. Environmental and social safeguards activities and responsible units.

Stage in SP Preparation	Safeguards Activity	Responsible Unit
Subproject Identification/Validation	Conduct Environmental and Social Screening	Subproject proponent with assistance from higher level LGU and RPCO SES
	Conduct IP Community Information Campaign, if required	
Feasibility Study Preparation	Conduct Environmental and Social Assessment (EA and SA)	Subproject proponent with assistance from higher level LGU and RPCO SES
	Conduct IP Community Consultation, if required	
	Prepare Environmental and Social Management/Mitigation Plan (ESMP)	Subproject proponent with assistance from level higher LGU and RPCO SES
	Conduct PAP Survey	Subproject proponent
	Secure IP Endorsement	Subproject proponent
Detailed Engineering and Program of Works Preparation	Incorporation of relevant ESMP measures into the design and program of works	Subproject proponent
	ROW acquisition and documentation	Subproject proponent
	PAP resettlement and/or compensation	Subproject proponent
Review and Approval	Safeguards Review and issuance of clearance	RPCO/PSO, SES and RI Teams
Procurement (Bidding, Awarding)	None	
Construction	Compliance Monitoring	PLGU and RPCO SES units
Turnover	Compliance Evaluation	RPCO/PSO, SES and RI units

b. Implementation Schedule

A detailed implementation schedule of the various activities to be undertaken will be included in each inventory and resettlement plan.

Payment of compensation and provision of other entitlements (in cash or in-kind) shall be satisfactorily completed for each subproject prior to the World Bank giving "no objection" for award of contract for civil works.

The same time requirement would apply if displaced persons voluntarily contribute any part of their land and/or assets for the subproject[7]. That is all deeds of donations and other relevant legal documents for each subproject shall be satisfactorily completed prior to the World Bank giving "no objection" for award of contract for civil works.

c. Complaints and Grievances

Complaints and grievances relating to any aspect of the resettlement entitlements and/or activities, including the determined area and price of the lost assets, will be handled as follows:

i. As a first stage, displaced persons will present their complaints and grievances to the Barangay Committee, which will have to provide a written response to the persons, within fifteen (15) calendar days of receiving the complaint. If the displaced person is not satisfied with the decision of the Committee; the person may present the case to the MPDO within fifteen (15) calendar days of receiving the written response from the Barangay Committee. The decision of the MPDO should be rendered within thirty (30) calendar days of receipt of the displaced person's appeal, and can, at the request of the person within fifteen (15) days, be reviewed and rendered a judgment by the PPIU. The decision of the PPIU will be provided to the displaced person in writing within thirty (30) calendar days of the request.

ii. If the displaced person is not satisfied with the decision of the PPMIU, the case may be submitted for consideration by the DA RPCO and the PSO.

Displaced persons will be exempted from all administrative and legal fees.

d. Supervision, Monitoring and Evaluation

Implementation of the inventories and resettlement plans will be regularly supervised and monitored by the respective PPMIU in coordination with the respective MPDO. The findings will be recorded in quarterly reports to be submitted to the DA RPCO and PSO.

Internal monitoring and supervision by PPMIU and MPDO will:

i. Verify that the baseline information of all displaced persons has been carried out and that the valuation of assets lost or damaged, the provision of compensation and other entitlements, and relocation has been carried out in accordance with the provisions of this Resettlement Policy, the respective inventory and resettlement

plan.

ii. Oversee that the inventory and resettlement plan is implemented as designed and approved.

iii. Verify that funds for implementing the inventory and resettlement plan will be provided by the MLGU and/or PLGU to the Barangay Committee in a timely manner and in amounts sufficient for their purposes, and that the Barangay Committee in accordance with the provisions of the respective inventory and resettlement uses of such funds plan.

iv. Record all grievances and their resolution and ensure that complaints are dealt with in timely manner.

An external agency or agencies will be retained by DA PSO, as and when needed, to periodically carry out independent monitoring and evaluation of the implementation of the inventories and resettlement plans. The external agencies can be from academic or research institutions, non-governmental organizations (NGO) or independent consulting firms, all with qualified and experienced staff and terms of reference acceptable to the World Bank.

In addition to verifying the information submitted in the internal supervision and monitoring reports of the PPMIU, the external monitoring agency will visit a sample of 20% of displaced persons households in each Province prior to approval of civil works and/or other occasions as deemed necessary by the PSO. The external monitor will:

a) Determine whether the procedures for displaced persons participation, relocation and delivery of compensation and other entitlements has been done in accordance with this Resettlement Policy and the respective inventories and resettlement plans.

b) Assess if the Resettlement Policy's objective of restoration of living standards and income levels of displaced persons have been met.

c) Gather qualitative indications of the social and economic impact of Program implementation on the displaced persons.

d) Suggest modification in the implementation procedures of the inventories and resettlement plans, as the case may be, to achieve the principles and objectives of this Resettlement Policy.

e. Costs and Budget

Each inventory and resettlement plan will include detailed cost of relocation, compensation and other entitlements, with a breakdown by agricultural land, residential land, business land, houses, business and other assets. The cost estimates will make adequate provision for contingencies.

Sources of funding for the various inventories and resettlement activities will be shouldered by the concern Local Government Units.

ANNEXES

Annex A

Types of Subprojects Likely to be Funded

a. Farm to Market Road
b. Bridges
c. Irrigation
d. Rural Water Supply
e. Fish Port
f. Fish Landing
g. Guard House/ Watch Tower (Fish Sanctuary)
h. Tram Lines
i. Cold Storage
j. Trading Posts
k. Green Houses
l. Solar Dryer
m. Nursery
n. Slope Stabilization
o. Plantation (High Value Crops)
p. Processing Plants
q. Mariculture

I-BUILD Year 1 Subprojects

Year 1 subprojects under PRDP are small in scale and are considered outside the purview of the Philippine EIA. Consistent with this framework and with the Philippine EIA, these subprojects are not required to prepare IEEs and/or EIAs. Nevertheless, these subprojects will adopt the illustrated technical planning guidelines to ensure that engineering and safeguard measures are taken into account in the design of the subprojects.

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
Zam. Sibugay	R.T. Lim	New Antque, Taruc	Rehabilitation of New Atiqueto Taruc FMR	FMR	1.02	km	6,466,957.95
Zam. Sibugay	R.T. Lim	Sto Rosario	Rehab of Sto. Rosario to Sitio Penili	FMR	3.14	km	8,193,562.57
Zam. Sibugay	R.T. Lim	San Antonio	Rehab of Sto. Antonio - Sitio Lugame	FMR	3.50	km	8,973,022.09
Zam. Sibugay	R.T. Lim	Casacon, Tilasan	Rehab of Brgy Casacon - Tilasan FMR	FMR	3.64	km	10,904,480.62
Zam. Sibugay	Alicia	Gulayon	Rehabilitation of Gulayon-Sitio Tantawan FMR	FMR	2.05	km	7,272,551.91
Zam. Sibugay	Alicia	Dawa-Dawa	Rehabilitation of Dawa-Dawa- Tubig Sina FMR	FMR	2.48	km	6,507,215.00
Zam. Sibugay	Tungawan	San Isidro, Limanon, Little Margos	Rehabilitation of San Isidro-Limanon-Little Margos FMR	FMR	8.13	Km	48,520,856.33
Zambo. Sur	Margosatubig	Kailan, Tulapok	Rehab/Impr of Kalian - Tulapok - Sitio Asinan FMR	FMR	5.60	km	26,460,943.52
Zambo. Sur	V. Sagun		Rehab. of Poblacion-Brgy. Limason	FMR	3.14	km	9,462,087.73
Zam. Sibugay	Talusan	Bualan	Construction/Rehab of Bualan (upper-lower) FMR	FMR	1.30	Km	4,669,088.89
Zambo. Sur	Tigbao	Pob Tigbao, Tuburan	Rehab/Impr. Of Tuburan-Tigbao FMR	FMR	6.38	km	49,791,893.65
Zam. Sibugay	Olutanga	Noque, Esperanza	Rehab/Construction of Noque-Esperanza FMR	FMR	3.82	km	25,715,522.65

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
Zambo. Norte	Baliguian	Sitio Lumbani, Diculom	Rehabilitation/Upgrading of Nat'l Highway Junction-Sitio Lumbani Diculom FMR	FMR	3.00	km	24,975,958.88
Zambo. Norte	Baliguian	Diculom, Milidan	Rehabilitation/Improvement of Sitio Lumbani Diculom-Sitio Legaspi Milidan FMR	FMR	3.50	km	18,541,304.09
Zam. Sibugay	Siay	Bagong Silang, Magsaysay	Rehab/Upgrading of Bagong Silang-Magsaysay FMR	FMR	6.960	km	21,655,038.61
Zam. Sibugay	Titay	Kitabog, Camanga	Rehab/Upgrading of Jct. Kitabog-Camanga FMR	FMR	3.0	Km	5,800,000.00
Zam. Sibugay	Buug	Pamintayan, Bawang	Rehabilitation/Upgrading of Pamintayan-Bawang FMR	FMR	3.6	km	28,983,558.22
Bukidnon	Damulog	Pocopoco	Rehab of Junction National Road Sitio Narugaran, Pocopoco to San Isidro Proper FMR with one (1) unit Double Barrel Box Culvert (4mx4mx7m)	FMR	1.7	km	13,353,616.95
Bukidnon	Damulog	Aludas	Rehab of Kinapat Road to Aludas Proper with one (1) unit Single Barrel (2mx2mx7m) and one (1) unit Double Barrel Box Culverts (4mx4mx7m)	FMR	2.04	km	19,280,471.31
Bukidnon	Impasug-ong	Kibenton and La Fortuna	Rehab/Improvement of 5.04 km Kibenton-Intavas FMR (3)	FMR	5.04	km	19,726,524.23
Bukidnon	Kibawe	Balintawak and Marapange	Rehab of Balintawak-Marapange FMR	FMR	3.0	km	12,514,375.28
Bukidnon	Malitbog	San Luis and Omagling	Upgrading of San Luis-Tubod-Omagling FMR	FMR	4.0	km	16,573,150.00
Bukidnon	Malitbog	San Luis and Kiabo	Upgrading of Junction Tomigbong-Larapan FMR	FMR	5.0	km	15,965,500.00
Bukidnon	Sumilao	Puntian	Rehab of Puntian-Sitio Tambolaug FMR	FMR	6.02	km	16,558,557.82
Lanao del Norte	Lala	Simpak and Lower Sta. Cruz	Rehab of Simpak-Sta. Cruz Lower FMR	FMR	2.75	km	5,550,000.00
Lanao del Norte	Lala	Pinuyak and Simpak	Upgrading of Pinuyak-Simpak FMR	FMR	2.37	km	6,525,000.00
Lanao del Norte	Lala	Pinuyak and Maranding	Rehab of Pinuyak-Maranding FMR	FMR	1.73	km	3,225,000.00

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
Lanao del Norte	Salvador	Inasagan	Rehabilitation of Inasagan-Sitio Cadaatan-Camp 3-Mabatao FMR	FMR	8.00	km	21,900,000.00
Lanao del Norte	Tubod	Taguranao, Palao and Dalama	Rehabilitation of Taguranao-Palao-Dalama FMR	FMR	9.41	km	23,655,125.56
Lanao del Norte	Tubod	Camp 5 and Kalilangan	Rehab of Camp 5-Kalilangan FMR	FMR	3.9770	km	9,944,037.53
Misamis Occidental	Aloran	Matipas	Improvement/Rehab of Matipas FMR	FMR	2.0	km	4,728,608.72
Misamis Occidental	Calamba	Dapacan Bajo, Bunawan and DBAN	Rehab/Reopening of Dapacan Bajo-Bunawan-D'BAN with Spillway Bridge	FMR	3.54	km	15,178,098.22
Misamis Occidental	Calamba		Rehab of Siloy Communal Irrigation System	Irrigation	50	ha	2,013,916.15
Misamis Occidental	Calamba		Rehab. Of Siloy-Upper Dioyo FMR	FMR	6.50	km	28,320,865.65
Misamis Occidental	Clarin	Guba, Bernad and Bitoon	Rehab/Concreting of Canibungan Daku-Canibungan Putol FMR	FMR	4.24	km	24,572,424.82
Misamis Occidental	Clarin		Rehab/Concreting of Canibungan Daku-Canibungan Putol FMR	FMR	2.71	km	9,307,305.24
Misamis Occidental	Jimenez	carmen	Improvement/Rehab of 4.54 km Carmen (Sitio Aquino) FMR	FMR	4.54	km	21,670,842.70
Misamis Occidental	Tudela	Casilak San Agustin	Rehab/Improvement of 2.26 km Casilak San Agustin FMR	FMR	2.26	km	6,302,904.36
Misamis Oriental	Claveria	Lanise	Rehab. Of Lanise-Mabini-Sta Cruz FMR	FMR	4.33	km	12,804,882.51
Misamis Oriental	Claveria	Don Gregorio Pelaez	Upgrading of Zone 1 to Sitio Dugo-dugo FMR	FMR	3.00	km	22,154,564.78
Misamis Oriental	Initao	Jampason and Kanitoan	Upgrading of Jampason- Dagongon FMR	FMR	2.96	km	7,488,000.00
Misamis Oriental	Initao	Gimangpang and Aluna	Upgrading of Gimampang-Aluna-Casilihon FMR	FMR	3.02	km	8,927,000.00
Misamis Oriental	Initao	Kamelon,	Upgrading of Sapong-Mamiguis-Bansilang FMR	FMR	5.61	km	12,962,000.00

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
		Calacapan and Sinalac					
Misamis Oriental	Kinoguitan	Panabol	Upgrading of Panabol-Buko FMR	FMR	1.34	km	6,174,327.88
Misamis Oriental	Kinoguitan	Calubo	Upgrading of Calubo-Kitoktok FMR	FMR	1.16	km	9,950,755.95
Misamis Oriental	Kinoguitan	Calubo	Upgrading of Calubo-Poblacion FMR	FMR	1.72	km	7,698,675.63
Misamis Oriental	Kinoguitan	Salicapawan	Upgrading of Salicapawan-Suarez FMR	FMR	2.90	km	19,927,089.47
Misamis Oriental	Libertad	Poblacion	Upgrading of Puga-an-Bitaugon FMR	FMR	1.80	km	5,172,320.29
Misamis Oriental	Magsaysay	Mindulao	Construction of Magsaysay PWS Level II	PWS	1.00	unit	4,982,210.60
Misamis Oriental	Villanueva	Dayawan	Upgrading of Dawayan-Lokong-Crossing Mambuaya FMR	FMR	3.74	km	12,795,290.96
Misamis Oriental	Salay		Upgrading of 3.9 km Mimbule FMR	FMR	3.90	km	14,270,770.02
Davao del Norte	Prov. Of Davao Del Norte (San Isidro)		Rehabilitation of Pob Datu Balong- Prk Mamalian FMR	FMR	3.460	km	14,215,000.00
Davao del Norte	Panabo City		Rehabilitation of Little Panay - Katipunan - Kasilak FMR	FMR	FMR	8.002	27,813,795.16
Davao del Norte	Carmen		Rehabilitation of Purok 20, Ising FMR with Flat Slab Bridge Component	FMR	1.402 12.000	km lm	12,015,818.14
Davao del Norte	Kapalong	Mamacao	Reconstruction of Mamacao Bridge	Bridge	60.00	lm	19,760,000.00
Davao del Norte	New Corella		Rehabilitation of Dacudao-Kapatagan, New Bohol - Mesaoy FMR with Bridge Component	FMR	6.87	km	30,447,300.00
Davao del Norte	Talaingod	Sto. Nino	Rehabilitation of Banoog - Gasa - Menopal FMR	FMR	7.524	km	28,955,100.00
Davao Oriental	Baganga		Const of Mikit RCDG Bridge	Bridge	40.00	lm	14,000,000.00
Davao Oriental	Cateel		Construction of Sta. Felomina PWS	PWS	1.000	unit	5,000,000.00
Davao Oriental	Boston		Rehab and Construction of Bukobuko Sa Anay FMR	FMR	7.86	km	48,250,097.19
Davao del Sur	Kiblawan		Rehabilitation of Maraga-a Gamay to Sitio	FMR	5.190	km	18,138,682.08

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
			Pulatana FMR				
Davao del Sur	Malalag		Rehabilitation of Ibo-Pitu FMR	FMR	4.000	km	18,640,000.00
North Cotabato	Aleosan	Dualing, San Mateo and Sta. Cruz	Rehab of Dualing-San Mateo-Sta. Cruz FMR	FMR	2.76	km	8,915,136.50
North Cotabato	Aleosan	San Mateo & mampurok, Dualing	Rehab of San Mateo-Mampurok, Dualing FMR	FMR	2.62	km	9,615,612.48
North Cotabato	Aleosan	Sitio Baliwasan, Tomado	Rehab of Sitio Balisawan-Tomado FMR	FMR	3.50	km	5,854,545.12
North Cotabato	Aleosan	Dunguan	Rehab of Sitio Sulok, Dungunan FMR	FMR	1.78	km	2,496,188.14
North Cotabato	Kabacan	Nangaan and Simone	Rehabilitation of Nangaan -Simone (Phase II)	FMR	5.27	km	18,158,179.37
North Cotabato	Kidapawan City	Katipunan	Rehab. of Maligaya FMR	FMR	3.42	km	27,656,783.70
North Cotabato	Libungan	Cabpangi	Concreting of Cabpangi - Katitisan FMR	FMR	1.00	km	5,260,674.88
North Cotabato	Libungan	Baguer & Ulamina	Concreting of Baguer-Ulamian FMR	FMR	1.00	km	5,050,427.40
North Cotabato	Libungan	Batiocan & Demapaco	Concreting of Batiocan-Demapaco FMR	FMR	1.00	km	5,002,557.28
North Cotabato	Libungan	Poblacion & Gumaga	Concreting of Gumaga-Matibong FMR	FMR	1.00	km	5,423,927.59
North Cotabato	Libungan	Gumaga	Concreting of Poblacion-Gumaga FMR	FMR	0.60	km	2,722,987.43
North Cotabato	Libungan	Sinawingan & Gumaga	Concreting of Sinawingan-Gumaga FMR	FMR	1.00	km	5,282,526.84
North Cotabato	Midsayap	Upper Bulanan & Malamote	Concreting & Rehab of Upper Bulanan-Malamote	FMR	2.00	km	6,294,706.49

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
North Cotabato	Pikit	Poblacuion and Bualan	Improvement/Rehabilitaion of Pob-Bualan FMR	FMR	8.48	km	27,856,569.98
North Cotabato	Tulunan	New Panay, F. Cajelo, New Kulasi-Kanibong	Rehab of New Panay-F Cajelo-New Culasi-Kanibong	FMR	7.00	km	24,449,096.08
North Cotabato	Tulunan	Paraiso & Daig	Rehab of Paraiso-Daig FMR	FMR	8.60	km	23,819,472.37
North Cotabato	Tulunan	Poblacion, Sibsib & F. Cajelo	Rehab of Pob-Sibsib-F. Cajelo FMR	FMR	5.00	km	14,265,008.52
Sultan Kudarat	Esperanza	Laguiding & Numo	Const of Numo-Dukay PWS Phase II (LII)	PWS	1.00	unit	4,995,125.39
Sultan Kudarat	Esperanza	Laguiding & Dukay	Const of Numo-Dukay PWS Phase III (LII)	PWS	1.00	unit	4,249,501.49
Sultan Kudarat	Isulan	Kudanding	Rehab of Purok 2-San Matin FMR	FMR	1.780	km	5,746,692.07
Sultan Kudarat	Isulan	Tayugo	Rehab of Tayugo-Paladong-Bual FMR	FMR	1.809	km	5,062,129.68
Sultan Kudarat	Isulan	Bual	Rehab of Bual-Talitay FMR	FMR	1.425	km	4,543,066.08
Sultan Kudarat	Isulan	Impao	Rehab of Purok Malipayon-Labintao FMR	FMR		km	4,962,051.58
Sultan Kudarat	Isulan	Dansuli	Rehab of Upper Dansuli-Labintao FMR	FMR	1.145	km	6,299,136.12
Sultan Kudarat	Isulan	Bambad	Rehab of Veterans-Magsaysay-Angeles Mainuswagon FMR	FMR	4.00	km	8,731,641.01
Sultan Kudarat	Kalamansig	Sangay	Rehab of New Maat-Sangay FMR	FMR	6.20	km	7,255,021.25
Sarangani	Kiamba	Kapate	Rehab/Opening of Kapate-Komapil-Kansan FMR	FMR	3.00	km	12,307,404.38
Sarangani	Kiamba	Nalus	Rehabilitation/Opening of Bocay-il FMR	FMR	2.00	km	11,986,222.72
Sarangani	Maasim	Bales	Rehabilitation of Mutag FMR	FMR	4.48	km	16,722,866.18

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
Sarangani	Maitum	Malalag & Mabay	Improvement of Malalag- Mabay Seaside FMR	FMR	2.26	km	14,923,918.40
Sarangani	Maitum	Wali & Pangi	Improvement of Marang FMR	FMR	1.42	km	8,019,863.39
Sarangani	Maitum	Sison & Pangi	Improvement of Saplon FMR	FMR	2.06	km	10,000,130.12
Sarangani	Maitum	Pangi & Kiambing	Improvement of Pangi-Kiambing FMR	FMR	4.26	km	29,070,335.10
South Cotabato	Surallah	Canahay	Rehabilitation of Sitio Nongon Farm to Market Rd.	FMR	2.50	km	7,298,458.06
South Cotabato	Tampakan	Liberty	Improvement of Brgy Liberty Potable Water System	PWS	1.00	unit	4,107,831.83
South Cotabato	Tupi	Kalkam/Cr Rubber/Palian	Rehab of Kalkam-Crossing Rubber-Palian FMR	FMR	5.44	km	13,321,132.86
South Cotabato	Sto Nino	Guinsang-an	Construction of Potable Water system, Level II	PWS	1.00	unit	4,832,222.65
South Cotabato	Sto. Niño	Poblacion, Sajaneba & San Isidro	Rehabilitation of CRBI-Magsaysay FMR	FMR	3.00	km	9,915,007.47
North Cotabato	Matalam	Marva	Concreting og Taguranao-Marva FMR	FMR	5.00	km	30,000,000.00
South Cotabato	Tampakan	Lampitak	Construction of Lampitak PWS	FMR	1.00	unit	4,949,118.14
South Cotabato	Banga	El Nonok	Imp & Constn of Katipunan-Lariosa FMR	FMR	3.70	km	11,307,487.49
South Cotabato	Norala	Poblacion	Rehab of Purok Taurus-Central Balabago FMR	FMR	1.73	km	7,776,040.96
North Cotabato	Pres Roxas	Poblacion & mabuhay	Rehab of Poblacion-Mabuhay FMr	FMR	5.00	km	13,966,766.09
North Cotabato	Pres Roxas	Greenhills	Rehab of Greenhill-Natipakan FMR	FMR	4.83	km	14,739,772.25
Sultan Kudarat	Lambayong	Matiompong	Construction of 300 l.m. PCCP & Rehab of 1.30 km E. Peralta-Asuncion FMR	FMR	1.30	km	3,833,726.83
Sultan Kudarat	Lambayong	Lagao	Construction of 300 l.m. PCCP & Rehab of 1.20 km Lambay Sambilan-Balikakao FMR	FMR	1.20	km	3,956,846.71

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
Sultan Kudarat	Lambayong	Maligaya	Rehab of 1.80 km L. Aserto-Rodrigo FMR with 300 l.m. concreting	FMR	1.80	km	4,897,581.55
Sultan Kudarat	Lambayong	Tumiao	Rehab of 1.50 km Maskulado Abellera - ARC2 FMR with 300 l.m. concreting	FMR	1.50	km	5,433,901.15
Sultan Kudarat	Lambayong	Tumiao	Rehab of 2.20 km Vecenta Daquiag - Sixto Sabao FMR with 300 l.m. Concreting	FMR	2.20	km	6,371,805.58
Agusan del Sur	Bunawan	Libertad	Const of Single Lane , 120 lm Libertad PSCG Bridge	Bridge	120.00	lm	56,622,686.32
Agusan del Sur	Esperanza		Const. Of Labao to Batac FMR with 15.80 lm Bridge	FMR	3.06	km	14,240,185.52
Agusan del Sur				Bridge	15.80	lm	7,079,353.76
Agusan del Sur	Sta. Josefa		Const of Upper Sayon -Brgy Proper FMR	FMR	3.91	km	12,080,000.00
Agusan del Sur	Talacogon		Const of Batucan-Malihao-Mabini FMR	FMR	1.00	km	4,546,211.56
Agusan del Sur	Trento		Rehab. Of NRJ Poblacion -Sitio Lower Lucad FMR	FMR	2.70	km	7,385,421.94
Agusan del Sur	Trento		Rehab. Of NRJ Poblacion -Sitio Mahayahay FMR	FMR	3.24	km	11,357,880.36
Agusan del Sur	Trento		Rehab of Sitio Gasa -Algon FMR	FMR	2.78	km	6,990,469.65
Agusan del Sur	Rosario	Libuac	Completion of Limbatangan CIS	CIS	335.00	ha	40,000,000.00
Agusan del Sur	Veruela	Sampaguita	Const. of Mahayahay - Agda FMR	FMR	4.03	km	8,309,687.77
Agusan del Sur	Veruela	Sampaguita	Const of Anilao-Mahayahay FMR	FMR	3.00	km	7,809,286.39
Agusan del Sur	Prosperidad	Aurora	Rehab and Const of Aurora-Camakawan-La Fortuna FMR	FMR	4.70	km	16,053,111.67
Agusan del Sur	Prosperidad		Rehab of Sta Irene -Smoke-Boundary Cebulan FMR	FMR	6.64	km	15,689,759.26
Agusan del Norte	Jabonga		Const/Improvement of Cuyago CIS	CIS	15.00	ha	2,000,000.00
Agusan del Norte	Kitcharao	Sangay	Const. of Sangay - Mahayahay FMR	FMR	1.56	km	3,575,952.39
Agusan del Norte	Kitcharao	Songkoy	Const. of Gamoton - Lake Mainit FMR	FMR	1.00	km	3,462,348.90
Agusan del Norte	Kitcharao	Crossing	Construction of Four segments Lapucon FMR	FMR	1.42	km	3,987,540.88
Agusan del Norte	Kitcharao	Poblacion	Buntalid-Siringan Small Water Impounding Irr.Sys		115.00	ha	13,872,266.08
Agusan del Norte	Nasipit		Rehab. Of Culit CIS	CIS		ha	7,197,848.74

Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
					100.00		
Agusan del Norte	Santiago	Lapaz	Const. of Lapaz-E.Morgado FMR	FMR	2.70	km	12,649,669.58
Agusan del Norte	Santiago		Concreting of Lapaz-Mandauy FMR	FMR	1.06	km	7,011,957.07
Surigao del Sur	Barobo	Dughan	Rehab of Dughan-Causwagan-San Roque FMR	FMR	6.00	km	21,407,579.89
Surigao del Sur	Carrascal	Gamuton	Const of Managas Single Lane Bridge	Bridge	36.00	lm	9,127,950.91
Surigao del Sur	Madrid		Const. of San Vicente Single Lane Flat Slab bridge	Bridge	36.00	lm	10,565,209.41
Surigao del Sur	Madrid		Const of San Vicente CIP	CIP	40	ha	10,161,697.83
Surigao del Sur	Marihatag		Const and Rehab of Arorogan to Masekre FMR	FMR	3.60	km	16,995,239.40
Surigao del Sur	Marihatag		Const of 1.5km arorogan-sito hunop FMR	FMR	1.50	km	8,250,000.00
Surigao del Sur	Marihatag		Rehab of 2.1km Mararag-Alegria FMR	FMR	3.40	km	18,500,000.00
Surigao del Sur	Marihatag		Rehab of 5.5km mararag -San Antonio FMR	FMR	5.50	km	19,740,000.00
Surigao del Sur	Tandag	Maitom	Rehab. Of Maitom CIS	CIS	50.00	ha	6,800,000.00
Surigao del Sur	Tago	Capilihan	Const of Capilihan-Pague -pague FMR	FMR	1.41	km	7,800,000.00
Surigao del Norte	Bacuag		Const of Cambuayon-Talimogsayan FMR Phase II	FMR	2.305	km	36,763,731.74
Surigao del Norte	Bacuag		Rehab./Const. of Tegase FMR	FMR	1.90	km	15,706,209.01
Surigao del Norte	Bacuag		Rehab & Construction of Sto. Rosario-Silop FMR Phase 2	FMR	2.1	km	13,336,958.12
Surigao del Norte	Gigaquit		Const of San-Isidro -Balesaya FMR	FMR	1.017	km	4,264,501.97
Surigao del Norte	Gigaquit		Const/Rehab of Mahanub-San Isidro FMR	FMR	1.11	km	4,510,590.08
Surigao del Norte	Placer		Rehab/Const . Of Bad-as Tres de Mayo - Amoslog FMR	FMR	4.25	km	17,248,086.01
Surigao del Norte	Sison		Rehab./Const. of Gacepan - Mayag FMR	FMR	1.8191	km	11,587,824.59
Surigao del Norte	Socorro		Const of Rizal Pre-stressed concrete Girder Bridge and approaches	Bridge	40.00	lm	21,862,617.11
Surigao del Norte	Surigao City	Silop	Rehab of Sitio Proper-Sitio Tunga Tunga FMR	FMR	2.15	km	6,450,000.00
Surigao del Norte	Surigao City		Const of Sitio Kabugwason-Sitio San Roque FMR	FMR	1.2	km	4,200,000.00
Surigao del Norte	Surigao City		Const of Guiso FMR	FMR	1.273	km	4,450,000.00
Surigao del Norte	Malimono		Const of Bunyasan PWS	PWS	1	unit	4,779,766.95
Surigao del Norte	Malimono		Rehab/Const of Brgy Tinago FMR	FMR	1.46	km	10,060,997.28

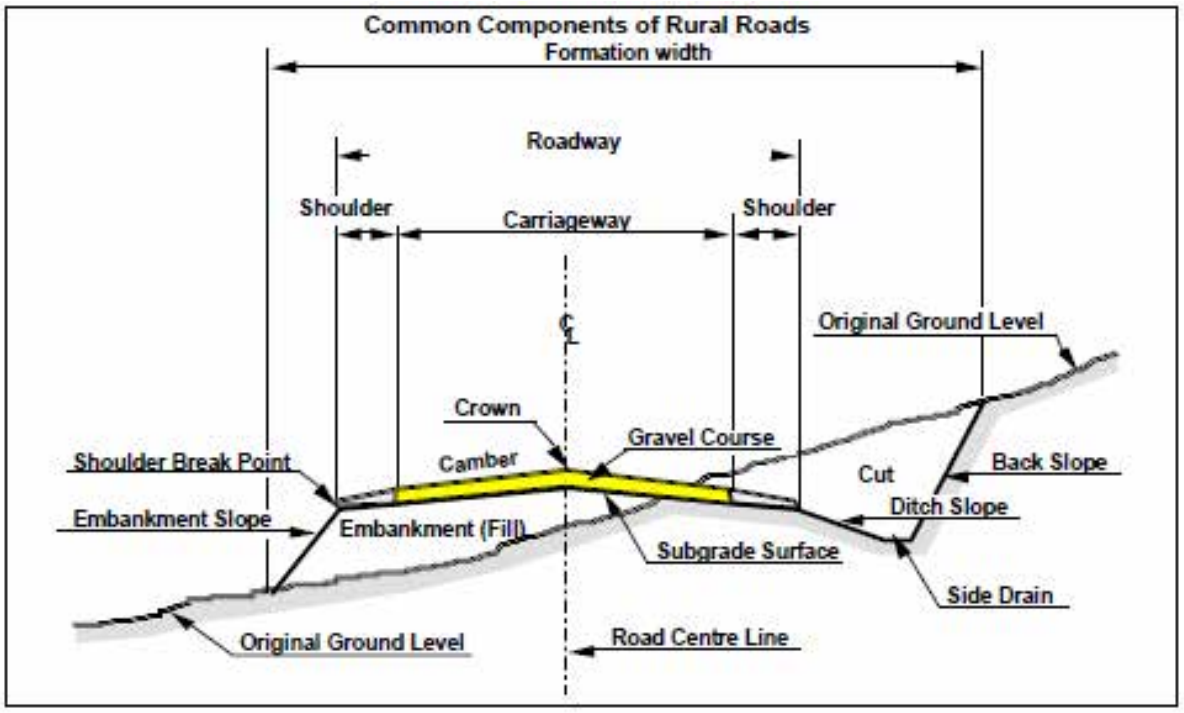
Location			Name of Sub-Project (SP)	SP Category	Physical Target		Total
Province	Municipality	Barangay			Qty	Unit	
Maguindanao		DOS	Rehab/Const of Sapalan FMR	FMR	3.8	km	7,349,188.55
Maguindanao		DOS	Rehab of Kusiong-Tapian FMR	FMR	2.21	km	6,581,544.48
Maguindanao		Gen SKP	Const. of Kaladturan - Midconding FMR	FMR	2.3	km	7,602,413.57
Maguindanao		Mangudadatu	Const of Panapan-Luayan FMR	FMR	1.38	km	14,531,592.75
Maguindanao		Ampatuan	Rehab/Concreting of Matagabong FMR	FMR	2.27	km	9,600,000.00
Maguindanao	1st	Parang	Rehab. Of Magsaysay-NItuan FMR	FMR	1.50	km	6,600,000.00
Lanao Del Sur		Lumbatan	Construction of Dalama FMR	FMR	3	km	9,412,559.83
Lanao Del Sur		Balindong	Construction/Rehabilitation Bubong Cadapaan-Barit FMR	FMR	3.2	km	23,000,000.00
Lanao Del Sur		Lumbaca-Unayan	Const'n of Lumbak Bacayawan-Brgy. Calalaon FMR	FMR	2.16	km	6,600,000.00
Lanao Del Sur		Kapatagan	Const/Concreting of Barao-Bakikis FMR	FMR	10	km	42,000,000.00
Tawi-Tawi		Turtle Island	Taganak Fishport	Other Infra	1	unit	6,580,000.00
Tawi-Tawi		Mapun	Rehab of Sapah-Duhol Batu	FMR	5.00	km	17,000,000.00
Tawi-Tawi		Bongao	Const. of Tubig Basag to Lakit-Lakit Mandulan	FMR	6.10	km	19,500,000.00
Tawi-Tawi	lone	Tandubas	Construction of Tandubas PWS Level II	PWS	1.00	unit	4,600,000.00
Tawi-Tawi		Simunul	Construction of Panglima Mastul-Lakkoan FMR	FMR	5.00	km	15,897,700.00
Tawi-Tawi	lone	Panglima Sugala	Rehabilitation of Masaggaw FMR	FMR	4.50	km	10,500,000.00
Basilan		Sumisip	Constn./Conreting of Sucaten-Tumahubong FMR	FMR	3.35	km	16,750,000.00
Basilan		Lamitan	Rehab/Const. of Colonia, Lamitan-Tablas,Tuburan FMR	FMR	4.96	km	17,360,000.00
Basilan		Lamitan	Rehab.of lamitan CIS	CIS	180.00	has	9,218,547.00

Annex B

Illustrated Technical Planning Guidelines

A. RURAL ROADS

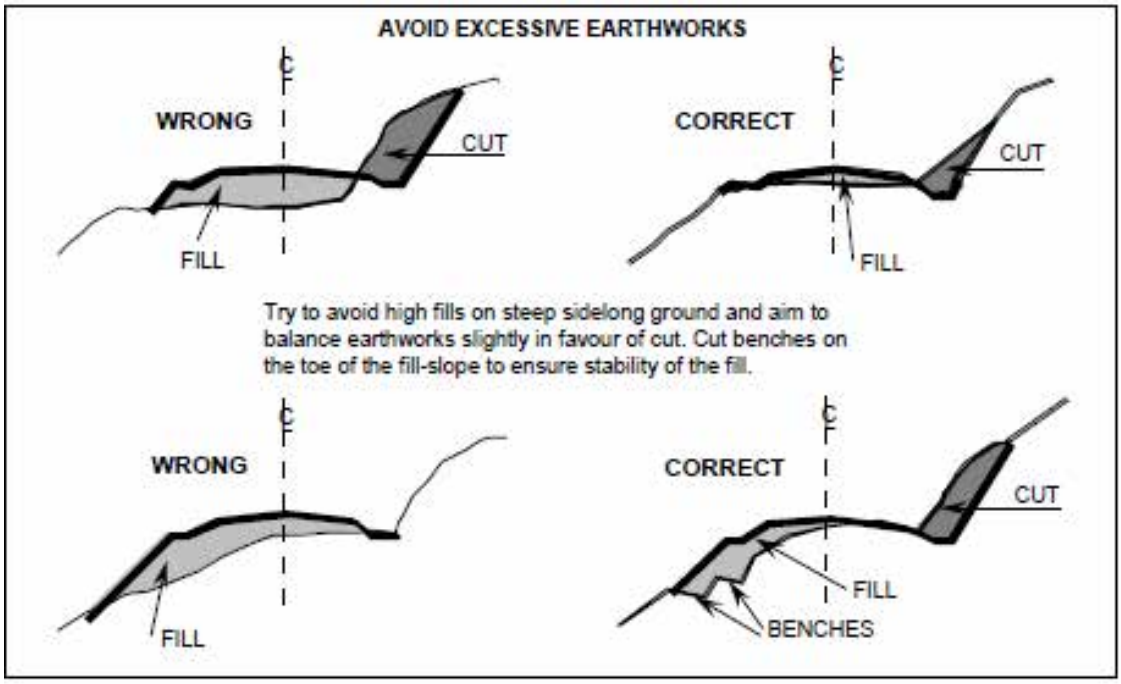
1. *Establish appropriate design standards.* Technical considerations in the design of rural roads shall vary according to the terrain, prevailing weather, vehicle types and most importantly the anticipated volume of traffic that shall utilize the road. Site selection and design criteria shall also include economic justification, reliability (either all-weather or allow reasonable level of delays during rainy season), tolerable roughness and speed, access to higher-level networks, and access to local social and economic services. A typical cross-section of rural roads is shown below. Traffic volume for this type of road should be in the range of 20-200 vehicles per day (vpd). For purposes of economic analysis, 50 vpd is normally used.



Typical dimensions, depending on the agreed design standards appropriate for the locality are as follows:

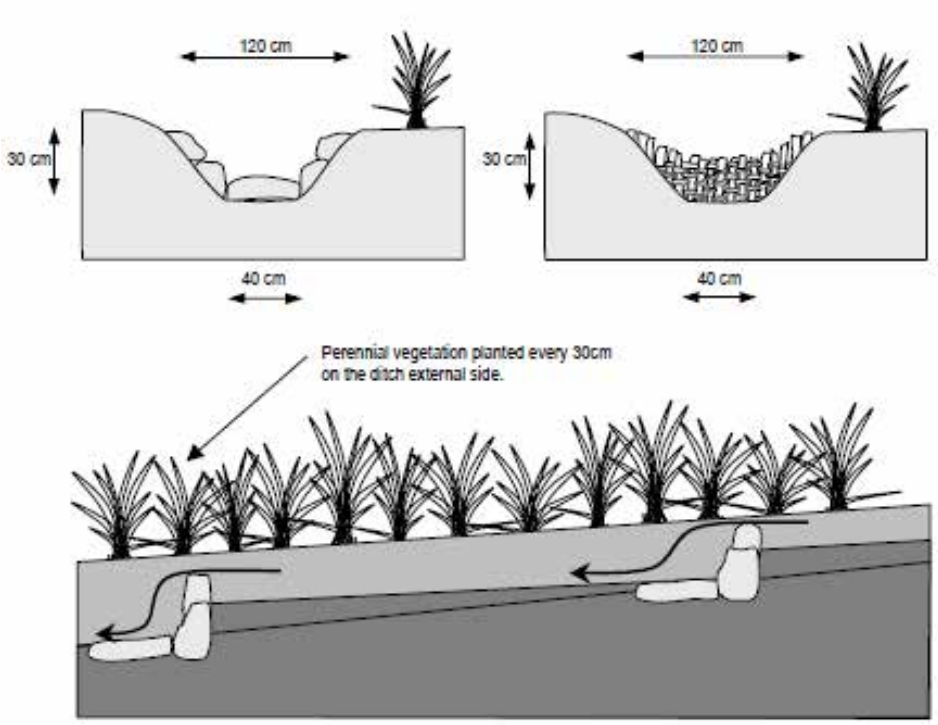
▪ Formation width	8 to 10 meters
▪ Roadway	5 to 6 meters
▪ Carriageway	3 to 4 meters
▪ Shoulder	½ to 1 meter
▪ Base or gravel course (Item 201)	10 to 15 cm
▪ Sub-grade course (Item 200)	10 to 15 cm
▪ Camber	5 to 8%
▪ Embankment elevation	at least ½ meter above flood level
▪ Minimum curve radius	12m (flat and rolling); 8m (mountain)

2. *Minimize earthworks.* If the alignment lies on steep sidelong (steep slope) ground, the centerline has to be carefully located to minimize earthworks. However it should be located in favor of cut material, rather than fill, to reduce the risk of the fill material sliding down the slope.



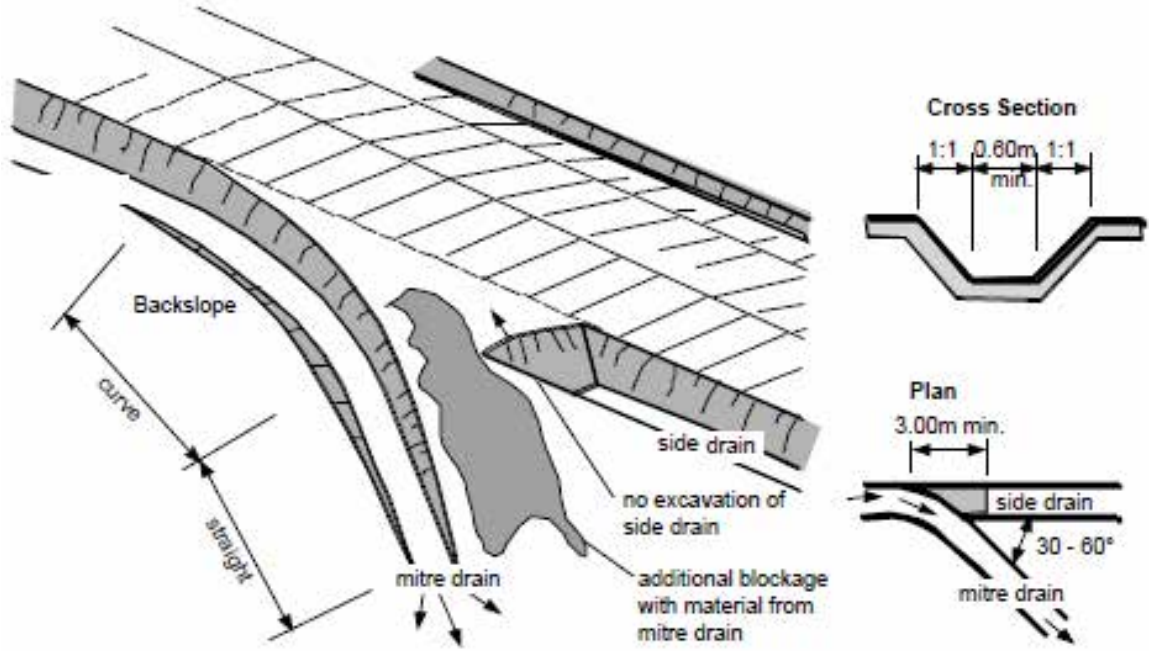
3. *Pay particular attention to drainage.* The removal of surface water is crucial for the success of rural roads, since at this traffic level the weather causes more damage than does the traffic. This means that a good camber of 5 to 8%, adequate side drains, and carefully designed cross drainage structures are required.

Where side ditches are provided, they must be equipped with scour checks if the gradient exceeds 4% and mitre drains (or turnouts) every 20 meters to protect against erosion. A typical scour check is shown in the following figure:

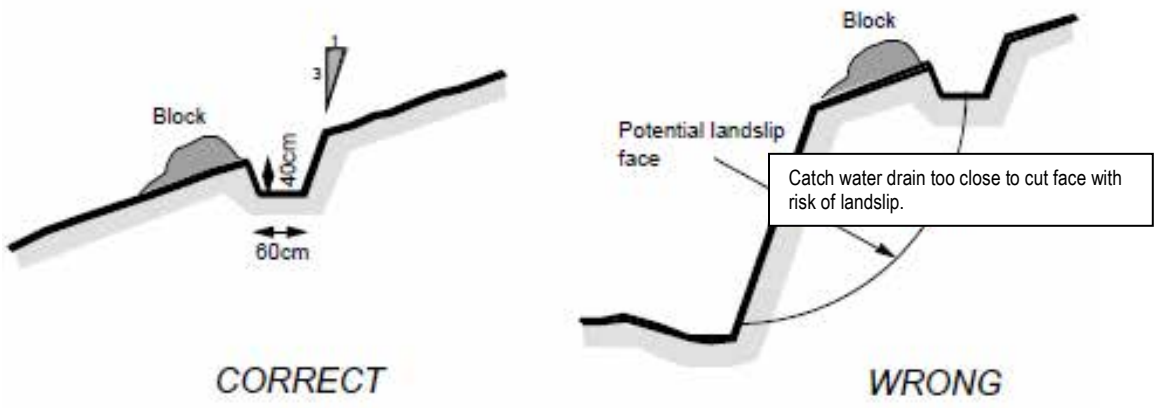


Scour checks are to be installed every 5m (slope > 8%); 8m (8% > > 6%); 15m (< 6%)

Whenever possible mitre drains should be constructed at intervals of 20 meters along the road alignment. Identify mitre drain locations before ditching in order to spare blocks from being excavated. Where the gradient of the mitre drain is more than 4%, scour checks might be required. A typical mitre drain or turnout is shown in the following figure:

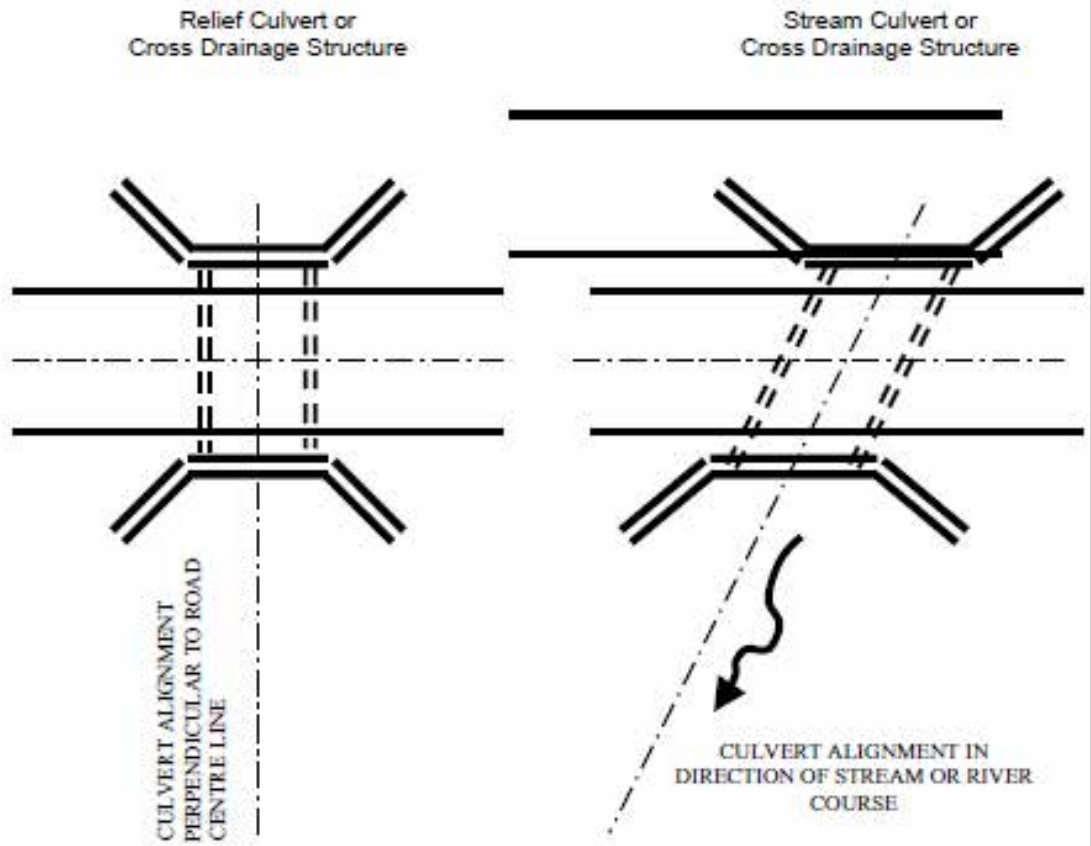


Catch water drains are usually required in hilly or mountainous terrain where there is a lot of surface water. This needs to be collected and safely led away before it reaches the excavated slope on the hillside. Where catch water drains have to be located outside the road right of way, cooperation with the landowners has to be sought. A typical catch water drain is shown below:



Relief culverts or cross drainage structures are placed perpendicular to the (horizontal) road alignment. Stream culverts must be set out in the direction causing the lowest possible disruption to the natural flow of the watercourse.

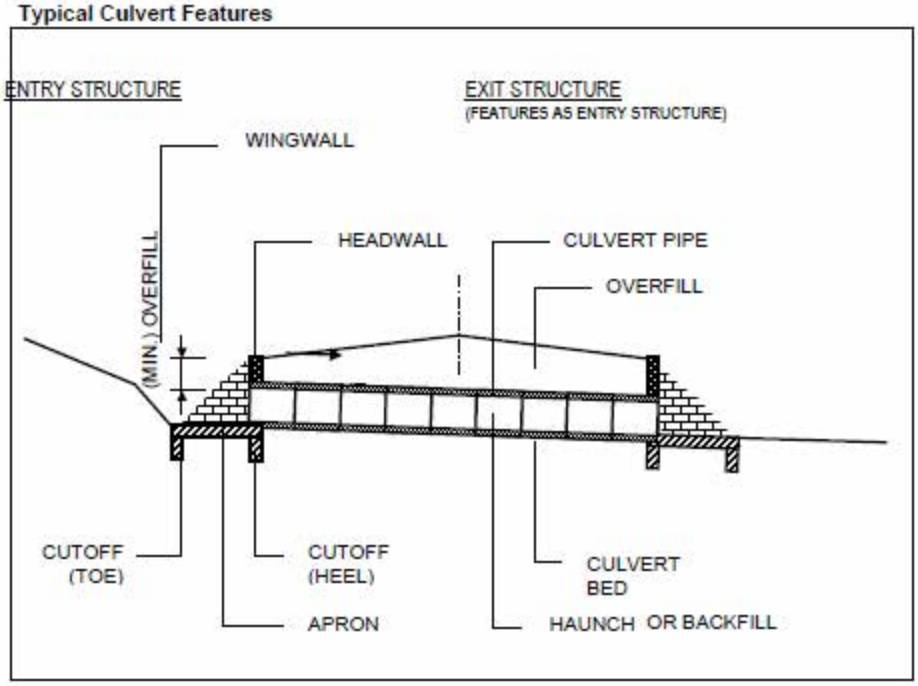
ALIGNMENT OF CULVERTS OR CROSS DRAINAGE STRUCTURES



Important Notes for Working with Standard Relief Culverts Ø 60cm

- Particular attention must be given to location and levels of culverts to prevent erosion, siltation and long outfalls.
- In general culvert outfall drains should not exceed 20m length.
- Some locations require the road alignment to be raised to accommodate the culvert. The maximum ramp gradient should be 5%.
- Culvert rings should be well seated on a shaped bed (check with template and boning rods), or concrete bedded.
- Overfill must be at least 2/3 barrel diameter of well compacted material (0.45 m for 0.60 m Ø culvert) over the top of the culvert.
- Provision of haunching or full concrete surround is required if overfill is less than 2/3 barrel diameter.
- Provision of cement stabilised bedding, haunching or full concrete surround is required in poor insitu soil.
- Dry stone headwalls may be adequate for intermittent flows.
- Masonry, concrete or brick aprons are always required.
- Masonry/concrete/brick headwalls and outlet apron cutoffs are required for permanent water courses or high flows.
- All aprons should have cutoff walls, toe and heel, on both inlet and outlet sides.

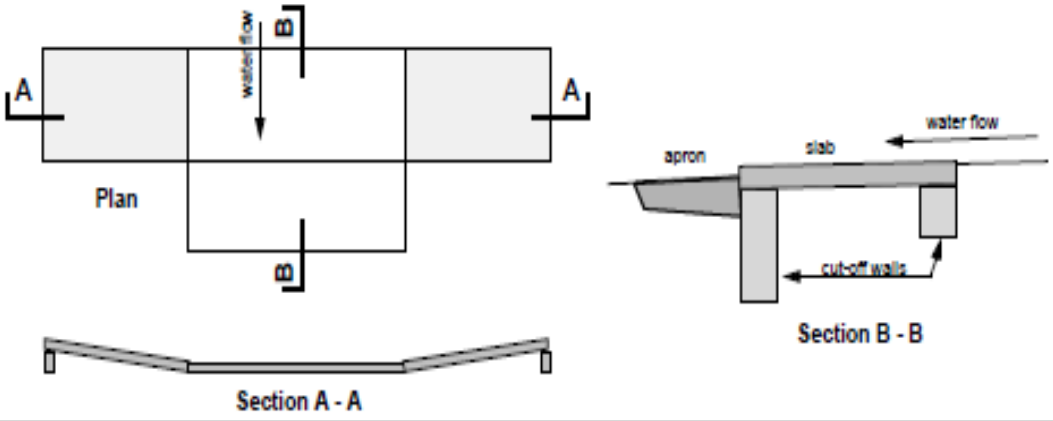
Typical Culvert Features



Drifts or spillways are very common structures especially in areas where rivers are seasonal. In case where a constant flow of water has to be accommodated, vented drifts are built. Short-span bridges can be built as box culverts or stone-arch culverts. Some principal features are provided in the following diagrams:

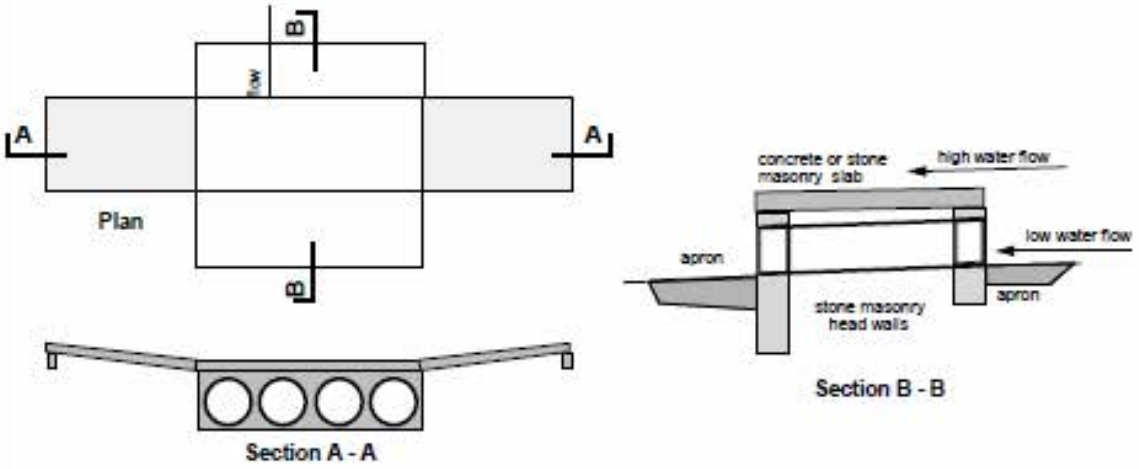
Drift

Drifts are built where there is only little or no water flowing in a river during most of the times. During rainy season when floods are high, the water overtops the drift. Drifts can be built using locally available stones (masonry, gabions) or concrete where no stones are available or the quality must be high.



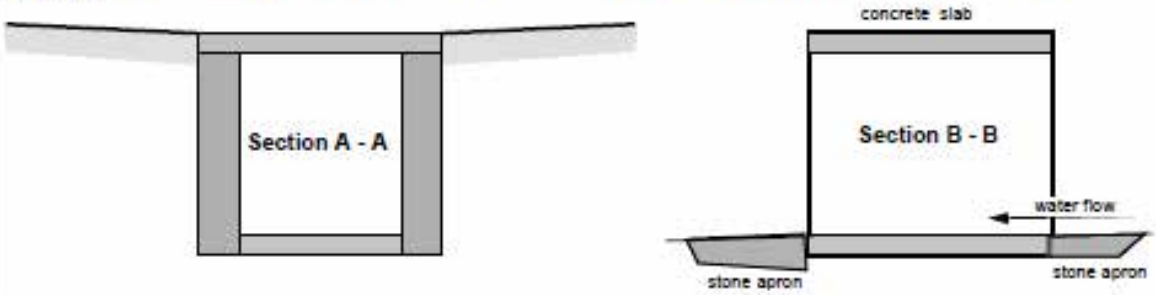
Vented Drift

The culvert pipes accommodate the normal water flow. During high floods the water is allowed to overtop the structure. In most cases the slab is made of concrete or masonry. The head walls are masonry while the culverts can be of concrete or steel (Armco). Also mini arches made of masonry are possible.



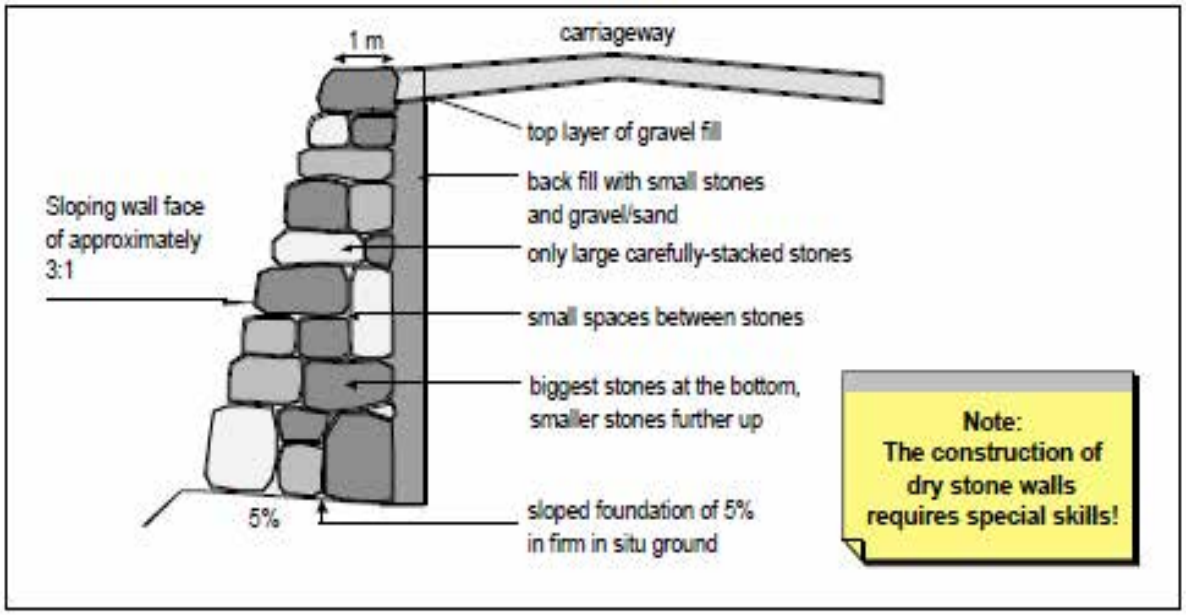
Box Culvert

The walls and the bottom slab of box culverts are usually made of masonry. The deck has to be reinforced concrete.

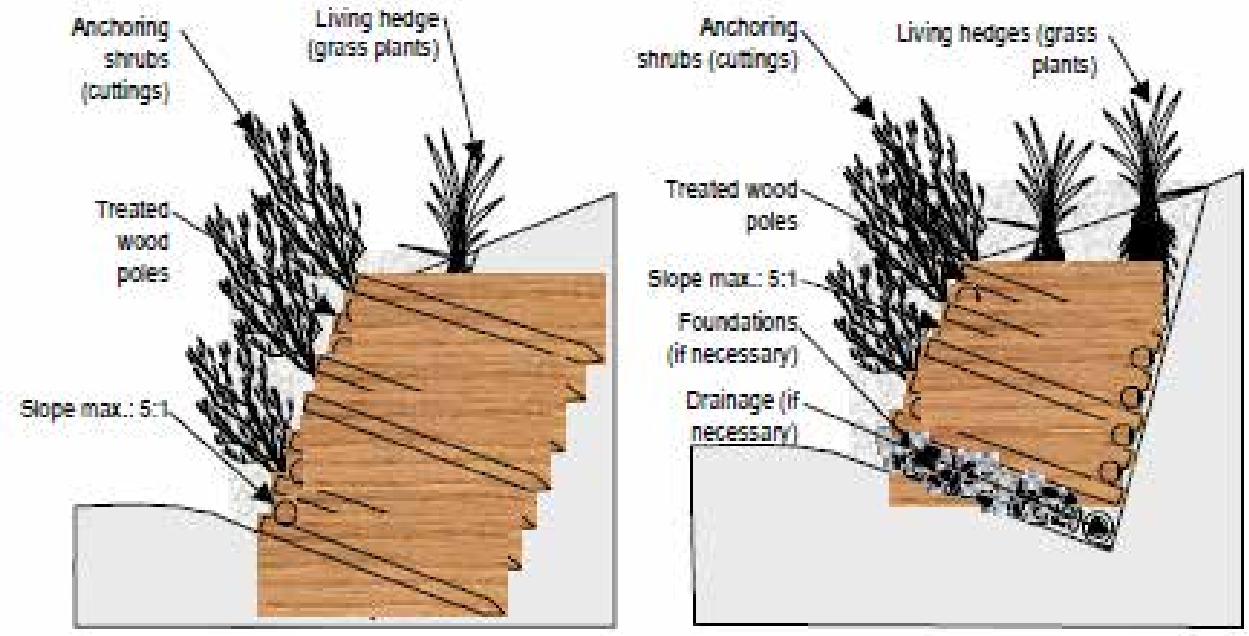


4. Common structures for sloped areas and raised roads. Special attention must be paid to slope stability. Existing alignments are usually fairly stable, and problem areas are obvious. However, new alignments can precipitate slip failure on uphill cut-faces, and create severe erosion problems downstream of drainage outlets. Considerable care must be taken with stabilization measures.

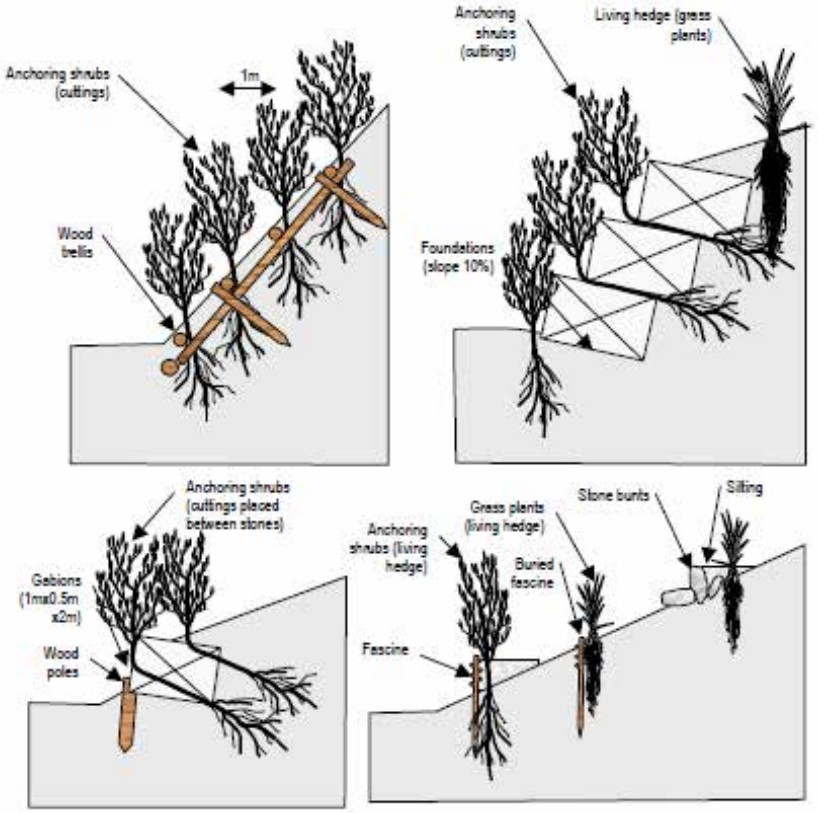
Retaining walls are required on both the valley and mountain side depending on the stability of the material, especially where vegetation cannot stabilize the slopes. Retaining walls should be constructed using **dry masonry for heights up to 4 meters** and **gabion walls for heights above 4 meters or where there is increased earth pressure**. Cement-bound masonry should only be used where absolutely necessary. A typical design of dry masonry wall is shown below:



Bio-engineering approaches, utilizing appropriate plants (e.g. vetiver grass) to solve structural and environmental problems, have proven very cost-effective in many areas. These sustainable methods are both labor-intensive and replicable for rural areas. An example of a bio-engineered retaining wall is shown below:



Another example of a bio-engineered slope protection approach is shown as follows:

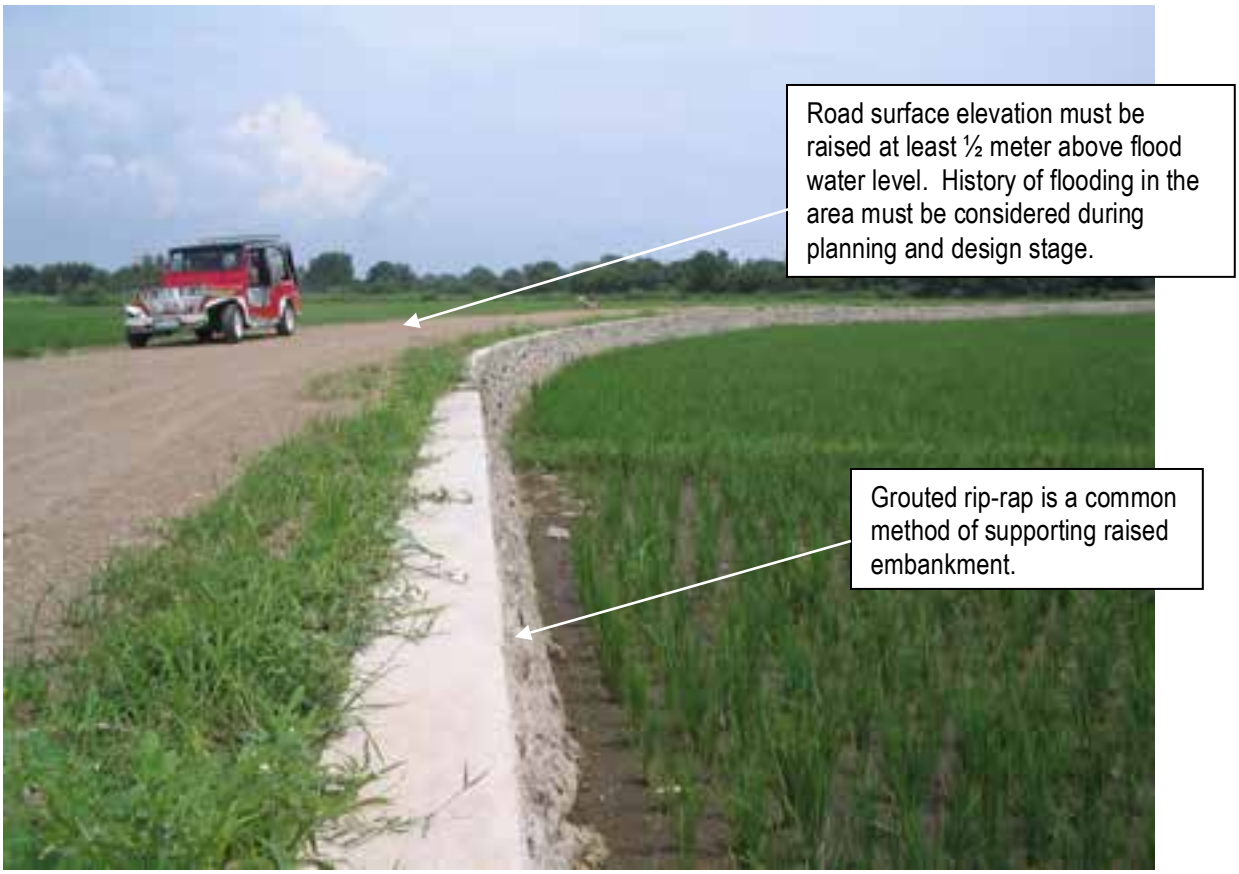


Photos of Common Environmental Issues in Rural Roads

Well constructed, well drained road with unlined earth canal. (ARCDP2)

FMR with concrete/stone masonry lined canal. (ARCDP2)

FMR with side ditches covered with overgrown vegetation. (ARCDP2)



FMR with raised embankment supported by concrete stone masonry or grouted rip-rap retaining walls. (ARCDP2)

FMR above is provided with paved carriageway along steep gradient. (CMARPRP)

Road surface is not according to specifications. (ARCDP2)

FMR above is provided with appropriate road sign. (ARCDP2)

Poorly designed drainage structure. (MRDP1)

FMR damaged due to scouring.

Above is an example of an overflow spillway bridge.

FMR provided with barrier to control vehicle passage on the road.

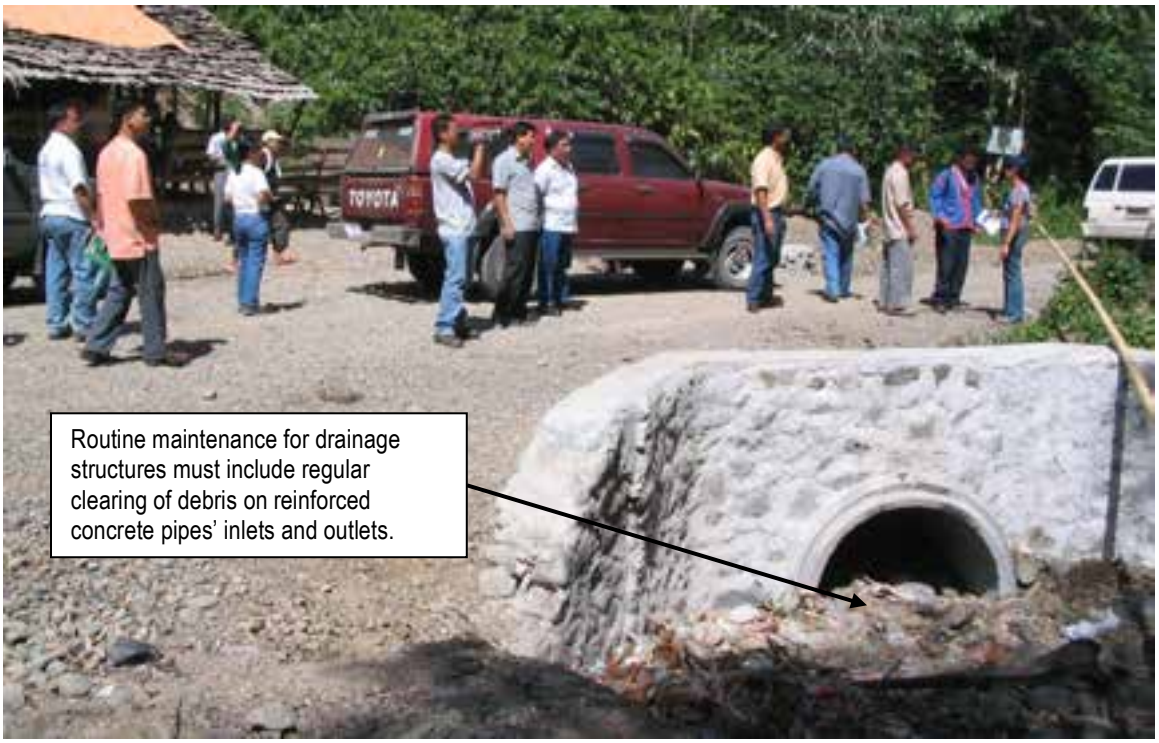
Well designed box culvert.

Damage on the road carriageway due to poor drainage. (ARCDP2)

Steep side slopes on the right should be protected from possible landslide. (ARCDP2)

Shown above is a member of the local O&M group doing his share in cleaning the road's side canal. (ARCDP2)

In some cases a concrete tire path may be a more practical alternative design for rural roads. (ASFP)



Cross drainage structure half filled with debris. (MRDP1)

REFERENCES AND FURTHER READING:

Jerry Lebo and Dieter Schelling, *Design and Appraisal of Rural Transport Infrastructure: Ensuring Access for Rural Communities*; World Bank Technical Paper No. 496; available from http://www.worldbank.org/html/fpd/transport/publicat/twu-45.pdf

Keller, G., and James Sherar (2003). *Low-Volume Roads Engineering: Best Management Practices and Field Guide*. Washington, DC: USAID, USDA, and Virginia Polytechnic Institute and State University; available from http://ntl.bts.gov/lib/24000/24600/24650/Index_BMP_Field_Guide.htm

Republic of Zambia, Ministry of Works and Supply, Roads Department Training School, *Contractor's Handbook for Labour-Based Road Works*, 2004.

USAID (August 2006), *EGSSAA, Part II Chapter 14 Rural Roads*; available from http://www.usaid.gov/our_work/environment/compliance/ane/ane_guidelines/roads_ane.pdf

World Bank (1997). *Roads and the Environment: A Handbook.* World Bank Technical Report TWU 13, and update WB Technical Paper No. 376. World Bank, Washington, D.C. (Part II details specific environmental, social, and other impacts); available from http://www.worldbank.org/transport/publicat/reh/toc.htm

World Bank (March 2003), *Technical Note on Rural Transport in Multi-Sectoral and Community Driven Projects*, available from http://www.worldbank.org/html/fpd/transport/rural_tr/ms&cd_note/final_CDD%20and%20RT%20Note.pdf

World Bank (June 2004), Africa Region, *Environmental and Social Management Framework for World Bank Projects with Multiple Small-Scale Subprojects, A Toolkit*.

World Bank, EASES, *Compendium of Environmental Screening and Guidelines for Road Projects*

World Bank (June 2004), *Safeguards Thematic Review of Decentralized Projects in the Philippines*, ESD Safeguard Dissemination Note No. 1.

B. WATER SUPPLY

Regulatory requirements:

These guidelines are applicable for new construction or rehabilitation/improvement of Water Supply Systems (WSS) for the following project limits which are not required to secure an Environmental Compliance Certificate (ECC), pursuant to DAO 03-30:

- Level I - Point sources, e.g. rain collector, wells and springs, where a piped distribution system is not justified.
- Level II - Communal faucet systems; generally for rural areas where houses are clustered densely enough to justify a piped distribution system with a faucet provided for a number of households.

No person shall divert or appropriate water from any public water source such as rivers, creeks, brooks, springs, lakes, lagoons, swamps, marshes, subterranean, or groundwater and sea water, without first securing a Water Permit from the National Water Resources Board. Application forms and instruction for water permit applications are available at: http://www.nwrb.gov.ph/Uploads/wpafinaleditedsept6.pdf

Water Permit Applications must be filed with the Office of the DPWH District Engineer, the NIA Provincial Irrigation Engineer, NPC Regional Manager or the LWUA Water District General Manager whichever is designated as agent by the Board in the province where the point of diversion is situated.

The following are some basic technical guidelines in planning and implementing rural water supply systems.

1. Decide on the level of service to be provided – how, where, and in what quantities water will be delivered to users. System design options are:

    a. Single Point systems (Level 1), which usually consist of dug wells or small-diameter drilled wells from which water is drawn using a hand-pump.
    b. Standpipes or Communal Faucets (Level II): piped distribution systems which feed a limited number of public or communal taps, each of which serves all households, and other users, in the vicinity.
    c. Household Connection (Level III): piped systems which deliver water to taps in individual household compounds or homes.

Definition and Features of Water Supply Systems

Particulars	Level I	Level II
1. Definition	Point source facility. Generally suitable for areas where houses are sparsely distributed.	Communal faucet system. More appropriate in areas where houses are clustered.
2. Water source	Drilled/driven shallow well. Drilled/driven deep well. Dug well. Spring, Rain collector.	Drilled shallow/deep well. Spring. Infiltration gallery.

3. Water treatment	Generally none. Disinfection of wells is conducted periodically by local health authorities.	Generally none.
4. Distribution	None	Piped systems provided with reservoir(s).
5. Delivery of water	At point (within 250-meter radius)	Communal faucet (within 25-meter radius)
6. Service level	15 Hh/point source; 1 Hh/private well.	4 to 6 Hh/communal faucet
7. Consumption	At least 20 lcpd	At least 60 lcpd

2. Explore three (3) potential categories of sources of water:

    a. Groundwater – occurs under most of the world's land surface, but there are great variations in the depths at which it is found, its mineral quality, the quantities present and the rates of infiltration (thus yield potential) and the nature of the ground above it (thus accessibility). In hilly areas it emerges from the ground in places as natural springs, otherwise wells have to be constructed and pumps or other lift mechanisms installed.

Factor to consider for sitting wells

Location:

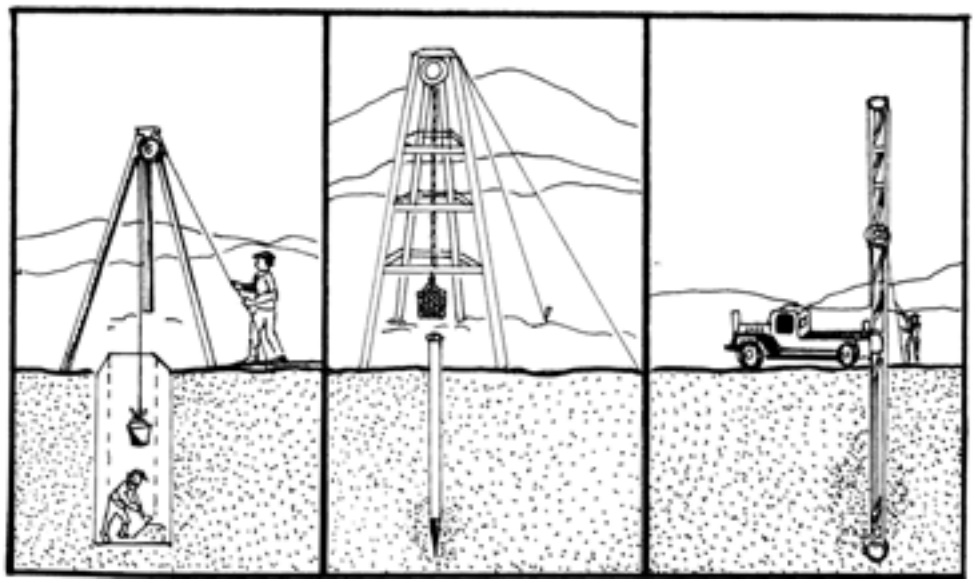
- Locate the well at the highest point on the property.
- Avoid positioning down slope from potential sources of contamination including surface water flows and flooding conditions
- Locate the well in a site easily accessible for maintenance.
- Define a sanitary protective area around the well head that is kept in its natural state.

Potential Contaminants:

- Yield and quality of water supply will depend on soil type (which determines filtering capability and transmissivity)
- Course gravel, limestone, and disintegrated rock can allow contaminants to travel quickly with little opportunity for natural purification.
- Distance to nearest point of potential contamination is site and aquifer specific. The following MINIMUM distances from potential sources of contamination are best practice are best practice for sites with sand-like filtering capabilities:
- 150ft (47.7m) from preparation area or storage area of spray materials, commercial fertilizer, or chemical that may cause contamination of the soil or groundwater.
- 100 ft. (30.5m) from below – grade manure storage area.
- 75ft (22.9m) from cesspools, leaching pits, and dry wells.
- 50 ft (15.2m) from a buried sewer, septic tanks, subsurface disposal filed, grave animal or poultry yard or building, privy, or other contaminants that may drain into soil.
- The distance between a septic tank each filed and a down-gradient well should be greater than 100ft (30.5m) if the soil is coarser than fine sand and the groundwater flow rate is greater than 0.03 ft/day (0.01m/day).

Source: Driscoll, Groundwater and Wells, Second Edition.

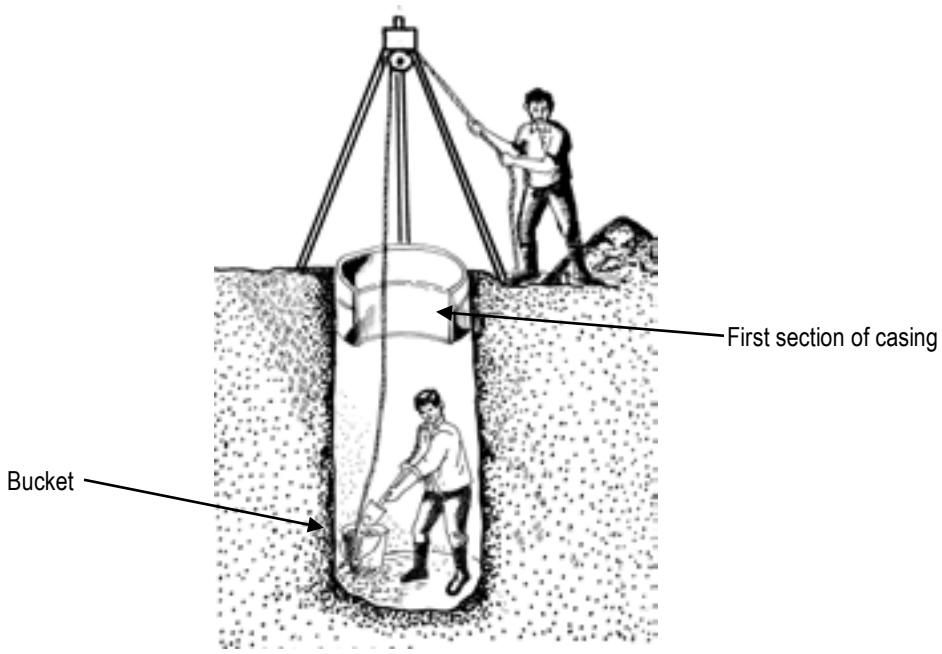
The following are methods of developing sources of ground water:



DUG DRIVEN DRILLED

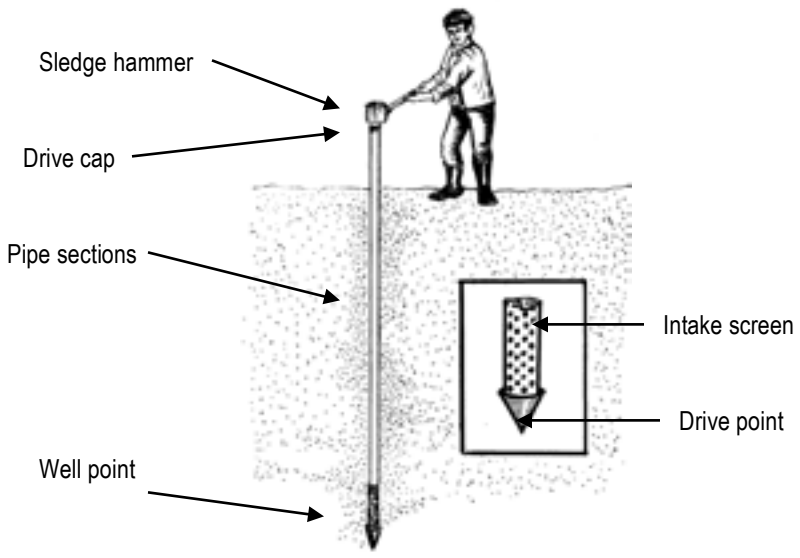
Hand-dug Well

Historically, dug wells were excavated by hand shovel to below the water-table until incoming water exceeded the digger's bailing rate. The well was lined with stones, brick, tile, or other material to prevent collapse, and was covered with a cap of wood, stone, or concrete. Modern large-diameter dug wells are dug or bored by power equipment and typically are lined with concrete tile. Because of the type of construction large-diameter bored wells can go deeper beneath the water-table than can hand-dug wells.



Driven Well

Driven-point (sand point) wells are constructed by driving assembled lengths of pipe into the ground with percussion equipment or by hand. These pipes are normally 2 inches or less in diameter and less than 50 feet deep. These can only be installed in areas having relatively loose soils, such as sand or gravel. Usually a screened well point is attached to the bottom of the casing before driving. Driven wells are relatively simple and economical to construct. This type of well poses a moderate to high risk and is easily contaminated from nearby surface sources.



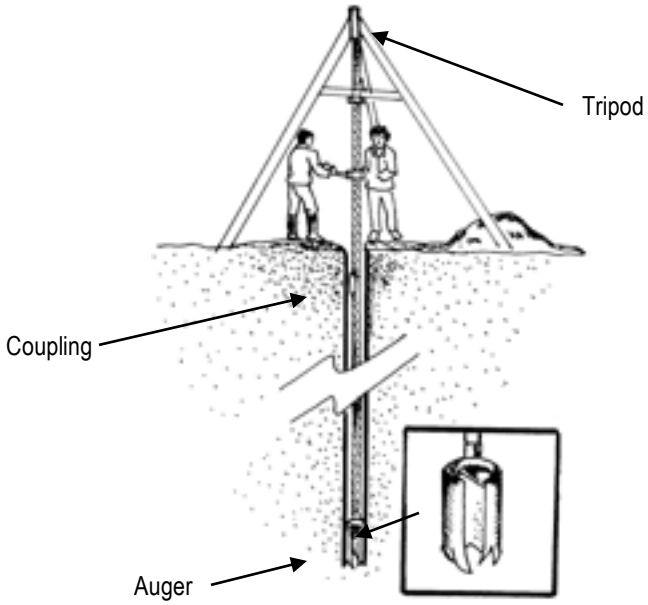
Jetted Well

This method of well drilling involves the use of a high velocity stream or jet of fluid to cut a hole in the ground and transport the loosened material up and out of the hole. The equipment used may be the same equipment that is used for rotary drilling minus the bit. Protective casing should be installed to at least 25 feet and the well should be grouted to a minimum depth of 10 feet to protect the well against contamination from the surface.

Jetted wells can only be installed in unconsolidated formations and are best suited for bore holes 4 inches in diameter.

Bored Well

An earth auger rotated, by hand or power, bores the hole and carries the earth to the surface. Casing is usually steel, concrete or plastic pipe. Bore hole diameter ranges from 50 to 200 mm. Bored wells can be up to 15 meters deep.



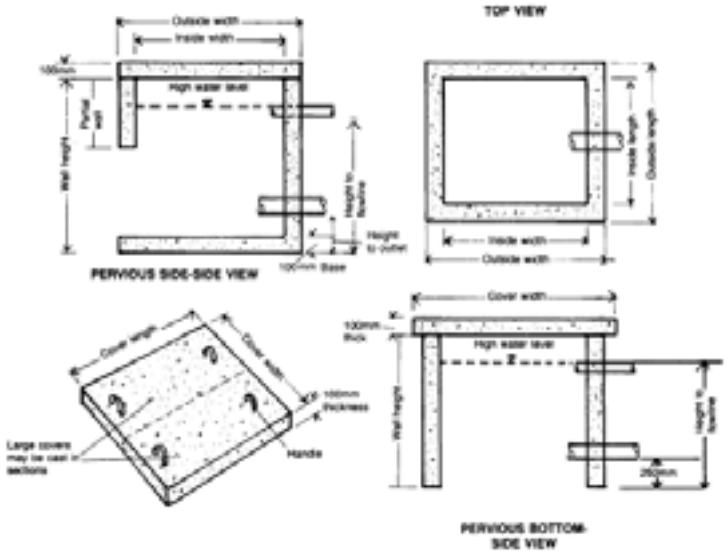
Drilled or Cable Tool Well

Most modern wells are drilled, which requires a fairly complicated and expensive drill rig. Drill rigs are often mounted on big trucks. They use rotary drill bits that chew away at the rock, percussion bits that smash the rock, or, if the ground is soft, large auger bits. Drilled wells can be drilled more than 1,000 feet deep. Often a pump is placed at the bottom to push water up to the surface.

Comparison of Types of Wells

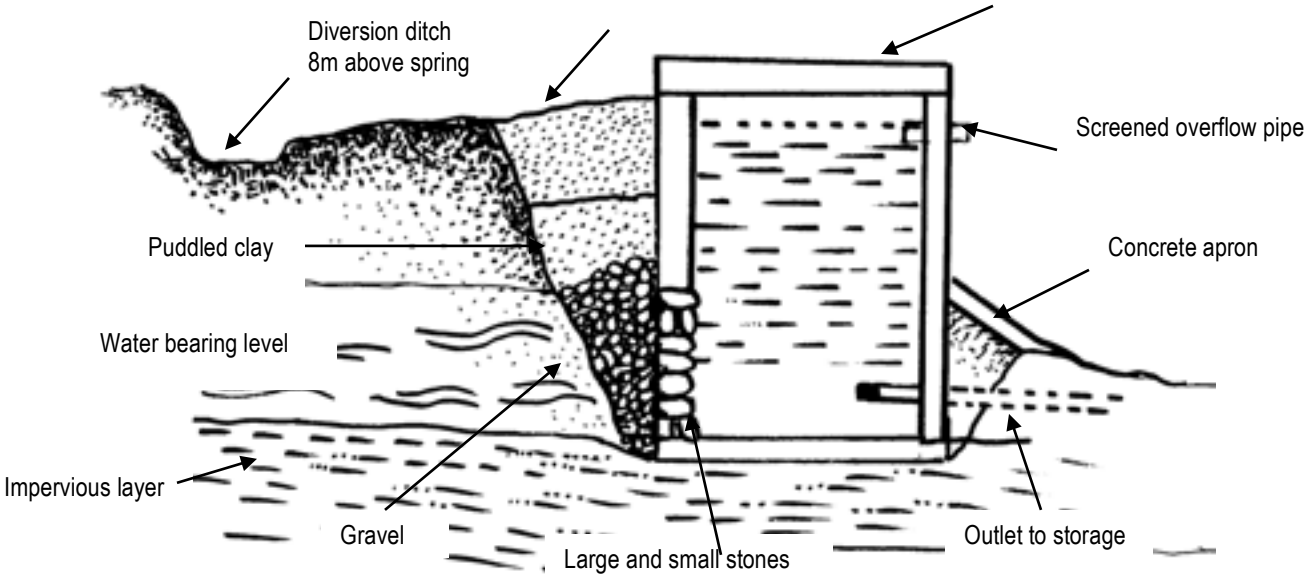
FACTOR	WELL TYPE				
	Hand-dug	Driven	Jetted	Bored	Cable Tool
Method of sinking shaft	Soil excavated by pick and shovel and lifted out by rope and bucket.	Well point and steel pipe driven into ground.	Jet of water and rotating action of bit force pipe into ground.	Auger is rotated and fills with soil, lifted out of hole and emptied.	Bit rotated and dropped to pulverize soil and rock; debris is mixed with water and lifted out with a bailing bucket or pump.
Average diameter	1.0 – 1.3 m	30 – 50 mm	40 mm	50 – 200 mm	50 – 100 mm
Maximum practical depth	10 m	8 m	60 m	15 m	75 m
Principal tools and equipment	Pick, shovel, rope and bucket, steel form for concrete, hoist for lowering casing	Sledge, drive pipe, or drive weight, raised platform	Boring pipe, raised platform or tripod, pump and hoses, jetting bits	Augers, drill line, raised platform	Motorized vehicle, tripod, pulleys, ropes, heavy drill bits, suction pump, bailer
Casing materials	Cement, sand, gravel, and water (for concrete)	Steel pipe	Steel pipe	Steel or concrete pipe	Steel pipe
Intake	Porous concrete sections, or gravel-lined bottom	Specially-made well point	Well screen	Well screen or perforated pipe	Well screen
Skill of workers	Minimal	Minimal	Moderate	Moderate	Experienced
Outside water needed for construction	No	No	Yes	No	Yes

Constructing Structures for Spring Development:

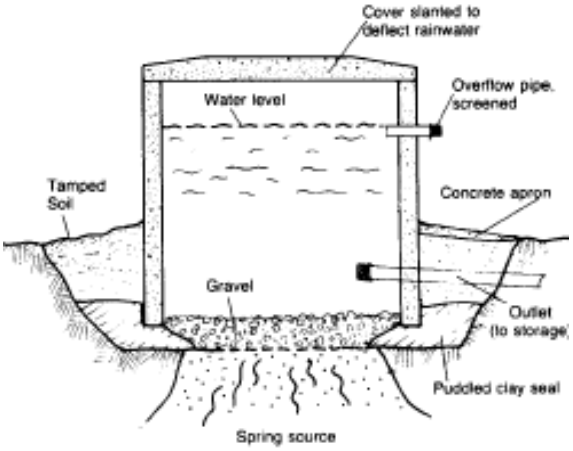


Typical Spring Box Design

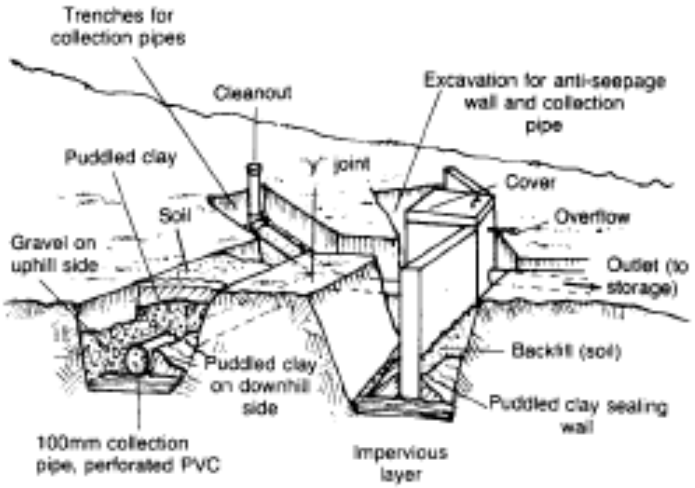
Spring Box with Open Side



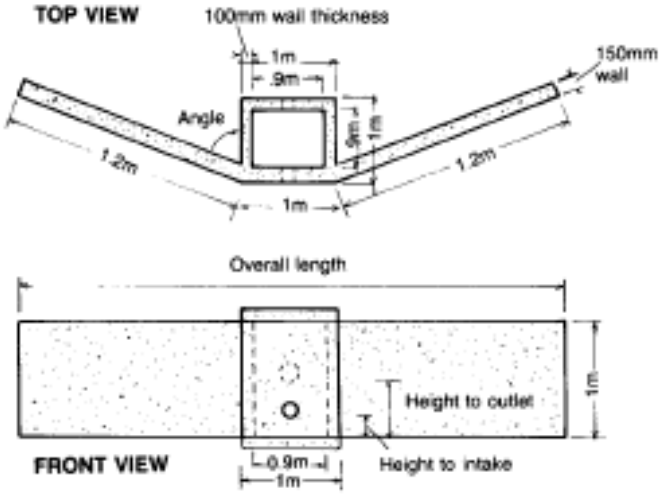
Spring Box with Open Bottom



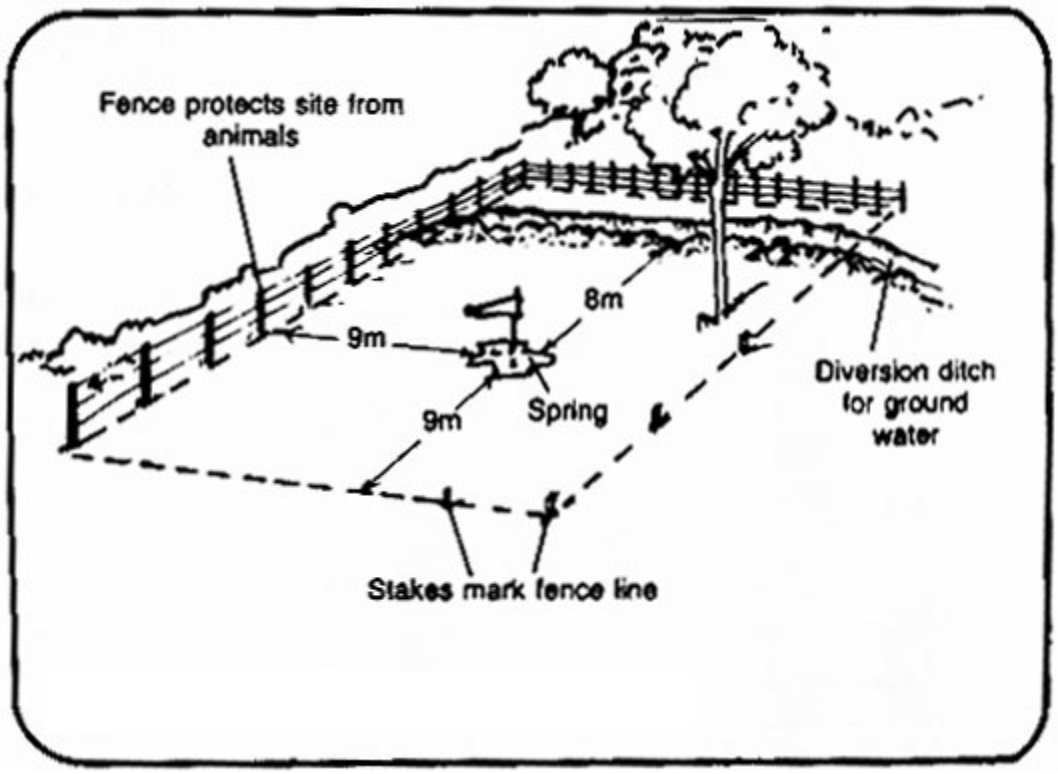
Seep Collection System



Anti-seepage wall and collection box



Preparation of spring box site to protect it from animals

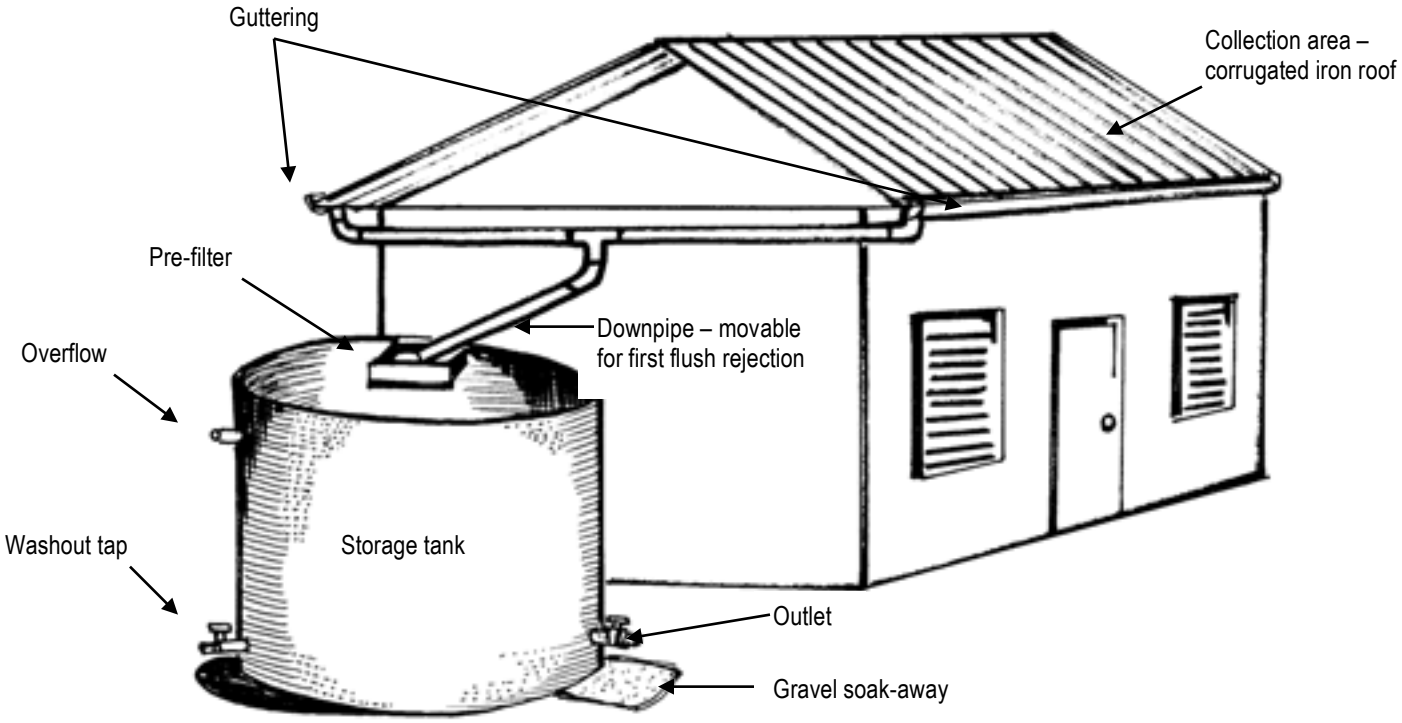


The following are actual sample sites of spring water sources:

Watershed protection should be incorporated in the planning for O&M of developed spring water sources. (SZOPAD Social Fund)

Rate of discharge and quality of spring water must be assessed during planning and design. (SZOPAD Social Fund)

b. Rainwater collection – from roofs or larger catchment areas, can be utilized as a source of drinking water, particularly where there are no other safe water sources available (for example in areas where groundwater is polluted or too deep to economically tap).



Typical domestic rainwater harvesting system, showing the main components of the system.

Types of cisterns or rainwater collecting tanks

CISTERN TYPES

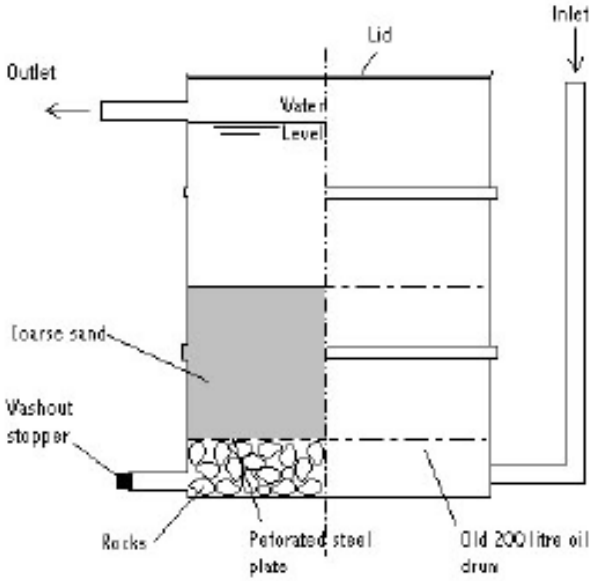
MATERIAL	FEATURE	CAUTION
PLASTIC		
Garbage Cans (20-50 gallon)	Commercially available, inexpensive	Use only new cans
Fiberglass	Commercially available	Degradable, requires interior coating
Polyethylene/Polypropylene	Commercially available	Degradable, require exterior coating
	Alterable and moveable	
METALS		
Steel Drums (55 gallon)	Commercially available	Verify prior use for toxics, corrodes and rust, small capacity
	Alterable and moveable	
Galvanized Steel Tanks	Commercially available	Possible corrosion and rust
	Alterable and moveable	
CONCRETE AND MASORY		
Ferro cement	Durable, immoveable	Potential to crack and fall
Stone, Concrete Block	Durable, immoveable	Difficult to maintain
Monolithic/Poured in Place	Durable, immoveable	Potential to crack

Common rainwater treatment techniques

TREATMENT TECHNIQUES		
METHOD	**LOCATION**	**RESULT**
SCREENING		
Strainers and Leaf Screens	Gutters and Leaders	Prevent leaves and other debris from entering tank
SETTLING		
Sedimentation	Within tank	Settles particulate matter
FILTERING		
In-Line/Multi Cartridge	After Pump	Sleves sediments
Activated Charcoal	At Tap	Removes chlorine
Reverse Osmosis	At Tap	Remove Contaminants
Mixed Media	Separate Tank	Traps particulate matter
Slow Sand	Separate Tank	Traps particulate matter
DISINFECTING		
Boiling/Distilling	Before use	Kills microorganism

Chemical Treatment		
(Chlorine or Iodine)	Within Tank or At Pump	Kills Microorganisms
	(Liquid, tablet or granule	
Ultraviolet Light	Ultraviolet Light systems	Kills microorganism
	Should be located after the	
	Activated carbon filter before trap	
Ozonation	Before Tap	Kills microorganisms

*should only be use after chlorine or iodine has been used as a disinfectant. Ultra violent light and ozone system should be located after the activated carbon filter but before the tap.



Above is a simple upflow sand filter for post treatment of stored water.

c. Surface Water – in streams, lakes and ponds is readily available in many populated areas, but it is almost always polluted, often grossly so. It should only be used after some form of filtration if there are no other safe sources of water available.

3. Typical structures commonly used in rural water supply systems.

Standpipe or communal faucet

Single point system (deep well) with Laundry Tub and Shed

Communal faucet with laundry tub

Elevated Concrete Water Tank/Reservoir

Concrete Water Tank/Reservoir on Ground

Ferro-cement water tank for rainwater collection.

Plastic tank for rainwater collection.


Plastic tanks (fiberglass, polyethylene, or polypropylene) are readily available and movable.


Stainless tank as rainwater collector; provides water for latrine.
Provide gutter for the full length of the roof for wider catchment area.

4. Consider the following potential environmental impacts of water supply projects and their causes.

Problems	Possible Impacts	Possible Causes
1. Depletion of fresh water resources (surface and groundwater)	Destruction of the natural resources Destruction of Aquatic Life Loss of economic productivity Loss of recreation areas Land subsidence Increase cost of water supplies in the future on in down-gradient locations	Overestimation of water supplies Underestimation of water demand Over-pumping of water resources Lack of information on resource yields Waste and leakage of potable water Poor water pricing policies and practices, leading to excessive use, waste and leakage
2. Chemical degradation of the quality of potable water sources (surface and groundwater)	Concentration of pollution in surface water source Salt water intrusion Poorer quality water, with associated health problems Increased water treatment cost in the future on in down-gradient locations	Depletion of surface and groundwater resources (See above) Reduced stream flows Run off/drainage from improper solid and liquid waste or excreta disposal
3. Creation of Stagnant (Standing) water	Increase in vector-borne diseases	Drainage systems lacking or poorly design Leakage from pipes/wastage from taps Lack of user/operator concern for stagnant water
4. Degradation of terrestrial, aquatic, and coastal habitats	Alteration of ecosystem structure & function and loss of biodiversity Loss of economic productivity Loss of natural beauty Loss of recreational values Soil erosion/sedimentation	Improper sitting of facilitites (within wetlands or other sensitive habitats, etc.) Poor construction practice Leakage/wastage from pipes and taps Increased population density/agricultural activity because of new water systems
5. Supply of Contaminated water	Arsenic Poisoning Mercury Poisoning Water-related infectious diseases	Failure to test water quality before developing the water resources Lack of ongoing water quality monitoring Inadequate protection of wells and water supply points Biological nitrite/nitrate and / or pesticide contamination

Source: Adaptable from Alan Wyatt, William Hograwe and Eugene Brantlly (1992). Environmental Guidelines for PVOs and NGOs: Potable Water and Sanitation Projects. Water and Sanitation for health Project, USAID.

5. Adhere to the following minimum quality standards in water for human health:

Selected Water Quality Standard for Human Helath

- Arsenic ,0.01 mg/l
- Total Coliforms = not detectable in any 100ml sample
- Lead ,0.01 mg/L
- Copper <2mg/L
- Nitrate (as NO) ,50mg/L
- Nitrite (as NO) ,<0.2 mg/L for long-term exposure
- Fluoride 1.5 mg/l

Reference: WHO, Guidelines for Drinking-water Quality (3rd Edition), 2004

Sanitation and Hydrology

Preventing microbial contamination of groundwater sources depends on several factors:

- Type of latrine – the rate of flow of pathogens-containing liquid from latrine pits to the soil beneath is proportional to the quality of liquid in the pit (static head). Dry latrines present the smallest risk of ground water contaminations.
- Water table – a latrine pit must be above the water table during all seasons. 1.5m below the surface is the minimum depth necessary to ensure the pit content remain dry. The greater the distance between the base of the pit and the water table, the more time is required for pathogens to seep from the pit into the groundwater, thus allowing more pathogens to die-off naturally.
- Soil type – Clay, Silt and fine sand soil types all have grain size small enough to act as natural filters for microbial contaminants (,0.2mm). certain clay soil can laso absorb viruses.
- Distance to nearest water sources - the risk of contamination of a surface or ground water source by a latrine depends on the distance to the source, the direction and velocity of the flow of water in the soil (hydraulic gradient), and the soil/rock permeability. 30m is considered the minimum separation for most soil types.

Balancing these factors to determined the best combination of sitting and sanitation technology should involve input from engineers and/or hydrologist. For more information, see S. Sugden, WELL factsheet: The Microbial Contamination of Water Supplies, 2004.
http://www.lboro.ac.uk/well/resources/fact-sheets/fact-sheet-htm/Contamination.htm

REFERENCES AND FURTHER READING:

Brian Skinner, Bob Reed and Rod Shaw, *Ferrocement Water Tanks*, WEDC Loughborough University Leicestershire, available from http://www.paceproject.net/UserFiles/File/Water/Ferrocement.pdf

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Netherlands Water Partnership (2006), *Smart Water Solutions: Examples of innovative, low-cost technologies for wells, pumps, storage, irrigation and water treatment;* available from http://www.edc-cu.org/pdf/Smart_Water_Solutions_ENG_V3.pdf

USAID (1982), *Water for the World Technical Notes* available from http://www.lifewater.org/resources/tech_library.html

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World Bank (November 2004), *Rural Water Supply and Sanitation Toolkit for Multisector Projects*, available from http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2005/07/29/000012009_20050729090303/Rendered/PDF/331630rev0PAPER0ENGLISH0rwss1pub.pdf

D. COMMUNAL IRRIGATION

The following are the basic environmental safeguard requirements for irrigation subprojects:

Regulatory requirements

- For a communal irrigation system subproject (new or rehabilitation/improvement) with a service area of less than 300 hectares, the proponent, in this case the local government unit needs only to prepare and submit an Environmental Management Plan.
- For an irrigation subproject with a service area of between 300 and 700 hectares, an Initial Environmental Examination (IEE) Checklist should be submitted prior to securing an Environmental Compliance Certificate (ECC) from the DENR.
- For a subproject with service area greater than 700 hectares, an IEE Report is needed
- A subproject with a service of area greater than 1,000 hectares should submit a municipal watershed management plan in addition to an Environmental Impact Statement (EIS) to be submitted to the DENR-EMB.

Site selection, Planning and Design

- Base the irrigation system design and capacity on adequate historical and updated information to correctly estimate the water requirement and the range of discharge or flow of the surface water source in varying seasons

Upstream of a dam under construction for a CIP in Albay. (ARCDP2)

- Integrate in the determination of water flows to be diverted the downstream river water requirements

- Conduct water sampling and testing to assess water quality to determine if water is suited for irrigation and to establish baseline so that any future degradation and environmental/public health threats can be detected

- Provide slope protection through bank compaction, rip-rapping on critical sections, or vegetative stabilization

Construction

- Designate a Spoils Storage Area, with topsoil set aside for later use and allow maximum re-use of spoils
- Provision of adequate drainage system and proper grading of canals so that IS structure will not be prone to flooding & consequent erosion

Concrete canal is best against erosion and seepage.

Operation and Maintenance

- Practice water-saving irrigation techniques, such as Controlled Irrigation, which has been shown to reduce water used in rice production by 16-35% without decreasing grain yield.
- Continuous flooding, in contrast to Controlled Irrigation, not only wastes scarce water resources but also triggers too much leaching, soil nutrient imbalance (zinc deficiency), and lodging problems owing to weak base and anchorage of the plant. It also results in lesser

and untimely water in the fields near the tail-end, high water-use in gravity irrigation systems, and too much water cost in pump irrigation systems.

- Promote controlled application of agrochemicals based on the Integrated Pest Management (IPM) Plan
- Training of the farmers on the proper selection, dosage and timing of agro-chem applications to ensure maximum absorption by the plant and soil
- Periodic analysis of the irrigation water near the downstream part of the service area prior to exit to natural waterways
- Regular removal of debris and other waste that may obstruct water flow

Photo courtesy of PhilRice

Use just enough irrigation water during land preparation to facilitate soil puddling, organic matter decomposition, and land leveling.

Photo courtesy of PhilRice

Promote the use of farm waste such as rice straw converted into compost as soil conditioner in irrigated farm lands to save on fertilizer expenses.

Photo courtesy of PhilRice

Photo courtesy of PhilRice

IFAD Photo by Louis Dematteis

IFAD Photo by Louis Dematteis

CIS dam and diversion works

Farmer adjusting the water flow of an irrigation canal.

For subproject involving the construction, rehabilitation or improvement of irrigation system; a municipal watershed management plan shall be mandatory when the total area served by irrigation systems in the municipality exceeds 1000 hectares. Irrigation systems implemented by National Irrigation Administration (NIA), Asian Development Bank (ADB) and other entities are to be included in the computation of total area.

Small water impounding project

A portion of the submerged area of a small water impounding project rehabilitated in Aumbay, Samal Island. (CMARPRP)

Protection of watershed of this SWIP is essential for its long-term sustainability.

This is a portion of the 57-hectare service area of the small water impounding project cited in the previous photo. (CMARPRP)

REFERENCES

PhilRice (2007), *Controlled Irrigation: Saving water while having good yield*, Rice Technology Bulletin 2007 No.59, PhilRice, Munoz, Nueva Ecija, Philippines; additional resources available from
http://www.philrice.gov.ph/

USAID (August 2006), *Environmental Guidelines, Part II: Guidance for Particular Sectors, Chapter 1 Agriculture: Soil and Water Resources including Irrigation;* available from
http://www.encapafrica.org/EGSSAA/agriculture.pdf

Annex C

Guidance for the preparation of the Environmental and Social Assessment Portions in the Subproject Feasibility Study Reports and the Environmental and Social Management/Mitigation Plan

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I. Preparation of Social and Environmental Assessments sections of the Subproject Feasibility Study

The following should be considered in the conduct of the Social and Environmental Assessments Sections of the Subproject Feasibility Study.

A. Social Safeguard Aspects

The Social Assessment section of the FS should provide the following information:

1. ***Subproject Beneficiaries*** – Who are the beneficiaries of the subproject? What is their socioeconomic status? Have they been consulted? Describe the consultation process (indicate date, location and attendees of meetings). Have they accepted the proposed project? What are their concerns and inputs? Describe the minutes of the meetings if any? Are the women represented in these consultations (describe attendance of women)? What are their concerns/inputs (describe any particular inputs from women, if any)?

2. ***Indigenous Cultural Community/Indigenous Peoples (ICC/IP)*** – Is the project located inside an ancestral domain? If the project is not situated inside any ancestral domain, is it going to affect any extant IP/ICC community or are there beneficiaries who are members of the IP/ICC community? What particular IP/ICC community is involved? What is their socioeconomic status as compared to the mainstream group? Did the IP/ICC community solicit the subproject themselves? If they did not solicit the project, have they been consulted and have they given their endorsement of the project? Describe the consultation process thus far conducted. Indicate date, location and attendees of meetings. Describe the minutes of the meetings if any. What are their concerns and inputs?

   Note that: If the Project is inside any ancestral domain, or if there are any intact ICC/IP community to be affected by the project, either of the following should be secured:

   i. *Certificate from the local tribal chieftain, or from the local tribal council or from NCIP that the project is part of the ICC-IP's development plan or is part of their Ancestral Domain Sustainable Development and Protection Plan (ADSDPP);*
   ii. *Certificate from the local tribal chieftain that the project is solicited by the ICC-IP themselves; or,*
   iii. *An endorsement (e.g. in a form of a Resolution) from ICC/IP community together with evidence of consultations conducted (e.g. minutes of meetings and list of attendees, issues and concerns raised and how they were addressed).*

3. ***Site and Right-of-Way acquisition*** – What is the ownership status of the proposed site or right-of-way? Describe the site requirement in terms of area (sq. m), land tenure, and existing land use. Describe the right-of-way requirements in terms of width, the types, ownership of lands and existing land use of the lands to be traversed by the subprojects.

   Note that: If any lands or ROW need to be acquired by the LGU or the beneficiary community, the following are the documentary should be secured:

   i. *If the land is public land, a Special Land Use Permit (SLUP) or lease from DENR*
   ii. *If the land is owned by LGU, evidence of LGU ownership such as Title*
   iii. *If the land is to be purchased by the LGU from private owner(s), evidence of purchase by the LGU such as Deeds of Sale or TCTs*
   iv. *If land is donated by private owners, Deed of Donation and annotation of the property at the Registry of Deeds*

   If the subproject is inside Ancestral Domain or if not inside, it adversely affects an extant IP/ICC community who are not themselves beneficiaries of the subprojects, then an FPIC/CP should be secured under the auspices of the NCIP.

4. ***Damage to standing crops, houses and/or properties*** – Will the construction of the project result to any crop and/or properties? Describe and try to quantify the potential damage.

   Note that (potential) damage to crops and/or properties/assets should be inventoried and suitable compensation schemes should be worked out through consultation with the owners of the crops and properties (e.g. through a MOA or the Entitlement Survey Form). Compensation of damages following the agreed schemes should be based on actual damage or loss.

5. ***Physical displacement of persons*** – Will the proposed subproject result in the relocation of houses? How many houses will be relocated? Describe the conditions of the affected houses and properties. What are the socioeconomic conditions of the affected households?

6. ***Economic displacement of persons*** –Will the proposed subproject result in the loss of livelihood or reduced access of families to their traditional livelihood sources? Note that loss of livelihood may result from: loss of a significant portion of the household's farmland, loss of business such as due to loss of vending stalls, etc. Describe the nature of loss if any.

   Note that if there is physical or economic displacement of persons, a ***Resettlement Plan*** *shall be prepared*

B. Environmental Safeguard Aspects

The Environmental Assessment Section of the FS should provide adequate information on the following:

1. *Natural habitat* –Describe the project site (i.e., the lands to be traversed by the proposed road, the actual site of the PWS or structure, etc.) in terms of land use, vegetation, wildlife, presence of water ecosystems, endangered and other important species. How are they going to be impacted by the project? Is the project site within an officially declared or proposed protected area of natural habitat?
Note that: PRDP loan should not be used to fund subprojects involving civil works that encroach into Protected Areas of natural habitat such as areas declared as Natural Parks under NIPAS, expect for NRM subprojects that are allowed as per provisions of the NIPAS law of Buffer Zone, or Multiple Use Zone, and the law creating the Natural Park.

2. *Physical Cultural Resources* – Are there any structure, monuments or Physical Cultural Resources (as defined below) on site that will be affected by the subproject? Describe the cultural and historical significance of the structure/s, if any. Describe the impact of the project to the structure/s. Is the project site part of an important natural feature or landscape? How will the project change or impact the landscape? Is the project area a potential archaeological site? If there are no such structures or monuments or Physical Cultural Resources to be affected, the assessment should clearly say so.
Note that: The World Bank Policy on Physical Cultural Resources requires that physical cultural resources likely to be affected by the project should be identified and the project's potential impacts on these resources be assessed as an integral part of the EA. Cultural resources are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.
When the project is likely to have adverse impacts on physical cultural resources, appropriate measures for avoiding or mitigating these impacts shall be identified in the EA. These measures may range from full site protection to selective mitigation, including salvage and documentation, in cases where a portion or all of the physical cultural resources may be lost.
If the area is a potential archaeological site, the mitigation plan should include provisions for managing chance finds. For example: in case of archaeological finds during construction, civil works must be immediately suspended and the National Museum contacted.

3. Terrain, Soil Types and Rainfall – What is the topography of the proposed subproject site? What is the type of soil? Describe the soil in terms of looseness and erosion potential. What is the amount of rainfall in the area?
Note for FMR: if all these factors are present (i.e. the terrain is hilly, the soil is generally loose, and rainfall in the area is generally heavy) such that the potential for sedimentation and erosion is high, corresponding fortifications/items in the design may be warranted (i.e., extra slope protection works, concrete pavement, and canal lining, etc.) as opposed to the standard subproject design.

4. Drainage Situations and Flooding Potential – Describe the drainage situation of the project site. How is it going to be impacted by the proposed subprojects?

5. Impacts during Construction – Describe the civil works and construction activities to be done, including temporary facilities for the construction materials and construction employees. Construction activities may result also in destruction of sensitive vegetation and may temporarily disturb wildlife. The health of safety of workers and the public may also be at stake due to a specific activity or physical hazard present at the site. Describe and assess if any of these impacts are significant given the present environmental conditions of the sites and identify the necessary mitigation measures which the contractors should observe during construction. The following should be considered:

(a) Temporary erosion and sediment control – Erosion and sediment control in construction areas will prevent sediment discharge to nearby streams and lakes. Areas cleared of vegetation for construction and roadway development should be minimized and slopes should be stabilized. Overland drainage should be controlled to prevent channeling and sediment transport by diverting flows from areas where soils are exposed, and/or by providing filter barriers or settling basins to remove sediment before the runoff is discharged to surface waters.

(b) *Construction noise mitigation* – Are there houses and establishments nearby the construction site? Would construction involve activities generate loud noise such as breaking of concrete pavements, hammering, etc? Identify specific measures to be observed by the contractor in the EMP such as avoiding such activities during quiet periods of the day.

(c) *Proper handling of construction wastes* – Temporary waste disposal facilities must be provided to minimize the amount site litter, and assurances should be made by the LGU that these wastes will be collected and properly disposed of in accordance with government regulations.

(d) *Safety* – Safety of workers and the public must be given priority. Standard construction safety protocols must be observed.

II. Preparation of the Environmental and Social Management/Mitigation Plan (ESMP) based on the Assessments

1. The ESMP should include both environmental and social management measures and it should be based on the results of the Social and Environmental Assessments in the FS as well as technical information about the proposed subproject (i.e. the type, scale and extent of the subproject, the planned alignment of roads, the structures to be built, etc. or initial/draft engineering design if already available). This means that the impacts and the measures identified in the EMP should be consistent with the findings of the Social and Environmental Assessments and with the subproject type, scale and design.

2. To facilitate the preparation of the EMPs, templates have been prepared for the most common subprojects namely, Farm to Market Roads, Communal Irrigation and Potable Water Supply.

3. Note that measures identified in the ESMP should be reflected in the relevant subproject documents (i.e. the Contract, the DED and/or the POW). Measures that are part of the social safeguard aspect (e.g. acquisition of right-of-way, crop/property damage compensation, IP endorsements, etc.) should be reflected in the corresponding social safeguards documents (e.g. deed of donations, survey of entitlements, survey of project affected persons, resettlement

plan, IP Plan, etc.) Measures that are the responsibility of the contractor should be included as part of the Contract. These include mandatory repair/restoration of any damage to existing road or other public structure due to heavy equipment traffic, or due to other construction activities during construction, properly handing of construction waste, provision of toilet facilities and safety measures during construction. Measures that have something to do with the subproject's design should be reflected in the DED, while those that have something to do additional work should be reflected in the Program of Work. Measures that are applied as part of the maintenance and operation of the subproject should be indicated as such in the EMP. These include measures that require introduction of new technologies in the influence areas by the DA. Otherwise, those ESMP measures that cannot be funded within the present subproject budget should automatically be part of the commitment of the LGU/community as part of future subproject enhancement.

Annex D

Guidance for Reviewing the Safeguards Aspect of PRDP Subprojects

1. In reviewing the subprojects, the reviewer should look at the entire subproject proposal package. The reviewer should use the form/template below. The reviewer should review the FS, the draft contract, the DED and POW along with all the safeguards documents, and determine if they are consistent and adequate. The reviewer should check the submitted documents and information against the IP Policy Framework, the LARRPF and the Environmental Management Framework. However, the reviewer may focus on the following critical issues:

For any Subproject:

1) Project site does not encroach into protected areas or displace cultural heritage properties;
2) Presence of IP communities and if there are, whether the subprojects has complied with the requirements of the IP Policy Framework;
3) ROW acquisition – What is the status of ROW acquisition. Are the ROW documents presented sufficient to cover the land/row requirements of the subproject?
4) Displaced houses/structures and/or land, crop/property damage and how they were or planned to be compensated; If there are displaced homes or economically displaced households, whether a resettlement plan have been prepared following the LARRPF.
5) Consistency of the subprojects location, design and implementation plan with the Technical Environmental Guidelines (Annex B)

For FMR, all of (1) – (5) above plus the following:

- Adequacy of slope stabilization measures
- Adequacy of drainage and/or potential flooding issues and how they were addressed
- Potential road safety issues and how they were addressed and planned to be addressed

For Communal Irrigation Subprojects, all of (1) to (5) above plus the following:

- Presence of schistosomiasis, malaria or mosquito breeding grounds and control measures applied or planned to be applied;
- Any dam should not be more than 10 meters in height and they should be designed by qualified engineers. The reviewer shall also check whether the Environmental and Social Assessment in the FS included any risk assessment of possible dam/embankment breaches or failure and whether a dam safety plan has been submitted.

For Potable Water Supply Subprojects, all of (1)-(5) above plus the following:

- Presence of septic tanks or garbage disposal site within 50 meter radius
- Whether the source of water passed a potability test

For NRM Subprojects, all of (1) to (5) above plus:

- Potential elite capture of the subproject. The reviewer shall look into the beneficiary organization whether they are really the ones traditionally occupying the areas where interventions/investment will be implemented.
- Potential exclusion of other members of the community to the beneficiary/partner organization's membership or to the subproject benefits due to socio-economic class, ethnicity and gender affiliations
- Potential restriction of access to some members of the community to their traditional sources of livelihood such as fishing grounds, forest and kaingin farms.

Annex E

ANNEX E - 1.

Mindanao Rural Development Project – Adaptable Loan Program II
Environmental and Social Management Plan Template for Rural/Farm-to-Market Roads

[Note: This template is designed to rapidly identify and assess the environmental issues and associated mitigation/management measures in Rural and Farm-to-Market Roads funded under MRDP2. This template consolidates all safeguards aspect of Communal Irrigation Subproject as found in various project documents. This document replaces the EMP checklist in Annex 38 of the RI Manual]

Name of Road: _____
Location: _____
Implementing LGU: _____
Estimated number of beneficiaries: _____
New or Rehab: _____
Estimated Total Cost: _____

A. Site and Design Consideration

[*Do not proceed with the Subproject preparation including this ESMP unless all items below are confirmed true.*]

1. The Road does not encroach into or traverse any declared protected area of natural habitat (*c.f. Loan Agreement: MRDP2 will not fund subprojects located inside a declared Protected Area*);
2. The subproject will not displace, disfigure or render inoperable/inaccessible any monument or physical structure of known cultural and historical significance.

B. Environmental Issues and Mitigation Measures [*The following are issues frequently associated with Farm to Market Roads. Issues include alleged/perceived impacts, potential impacts, health and safety and environmental risks. Entries in the "Assessment" column should describe or provide qualifications regarding the significance of the issues. Issues that are deemed critical or significant should have a corresponding entry in the "Mitigation" column. Entries in the "Instrument" column should indicate how and where in the measures will be implemented in the Subproject. Please feel free to add, delete or modify any of the items in the template. In preparing the EMP below refer to the Environmental and Social Assessment Section of the FS for specific safeguards issues and assessments*]

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
1. Temporary increase in sedimentation during construction	[ ] Topography of the road alignment necessitate massive earthmoving and cutting of clayey or loose topsoil [ ] Cut materials will consist mainly of hard rocks and are unlikely to generate significant sediments	[ ] Earthmoving/ cutting of slopes to be done during dry months [ ] Proper disposal and compaction of spoils [ ] No measures required	DED/POW; Contract
2. Potential contamination of surface and groundwater with oil/grease	[ ] Waste oil and grease from equipment could contaminate surface water [ ] There will be no or insignificant amount of waste oil/grease	[ ] Proper handling and disposal of waste oil and grease	Contract
3. Potential contamination with human waste	[ ] Construction workers would be temporarily housed in a base camp [ ] Workers would be mostly locals and are expected to go home to their respective houses after works	[ ] Set up adequate latrine/toilet facility at the base camp	Contract
4. Potential disruption of traffic flow	[ ] The access road and/or segments to be rehabilitated need is vital to daily activities of the residents and farmers and need to be kept open to traffic during construction [ ] The construction will not affect daily movement of residents and farmers	[ ] Keep the road open to traffic flow and minimize disruptions along the access road and/or construction area; Provide adequate warning signs and traffic personnel when necessary; [ ] Undertake regular maintenance measures on the passable portions of the roads [ ] No measures needed	Contract
5. Potential dust/mud	Roads could become	[ ] Undertake sprinkling	Contract

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
nuisance during construction	powdery during dry days and muddy during rainy days of the construction period [ ] Access road and/or the construction/ rehabilitation works passes through a populated area [ ] Access road and/or construction/ rehabilitation does not pass through any populated area	of road (including access roads) during dry days, and filling up of potholes during rainy days, especially in residential areas [ ]Set up speed limits for vehicles, especially within residential areas [ ] No measures needed	
6. Landslide/ erosion of exposed road sides resulting in sedimentation of waterways	[ ] The road will traverse a mountainous area necessitating deep cuts on mountainsides, particularly between station ____ and ____, etc (check DED for deep cuts)… [ ] The exposed slopes will likely consist of highly erodible loose materials [ ] The cut slopes will be hard materials that would resist erosion [ ] The road passes through a relatively benign terrain, cuts will be minimal [ ] The rehabilitation work does not involve additional road cuts	[ ] Include slope protection works at the following stations: _____ _____ ..etc.. (Specify the type/s of slope protection to be applied at each section- Consult with the Municipal Engineer: [ ] Bioengineering with geomat and cover crop [ ] Fast growing shrub species [ ] Riprap [ ] Gabions [ ] Terracing [ ] Concrete protection wall [ ] Others _____)	DED/POW Or (if budget does not permit) LGU Commitment Letter
7. Inadequate drainage resulting in flooding or ponding	[ ] The road will block runoff, resulting in flooding on one side of the road during rainy	[ ] Installation of cross drain between station ____ and _____.	DED

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
	days. [ ] Drainage issues unlikely		
8. Potential increase use of pesticides due to intensification of cash crop production in the area	[ ] There is an ongoing IPM program of DA in the service area [ ] Farmers in the service area have not been trained on IPM	[ ] DA to continue to support IPM program [ ] LGU to Coordinate with DA on IPM training	Capacity Building Plan O&M Plan; Capacity Building Plan
9. Potential acceleration of denudation of the upland/hilly areas due to intensification of crop production	[ ] The proposed road will connect to the market an upland/hilly area where farmers are currently practicing erosive farming techniques. The road could help accelerate the denudation of the upland/hillsides rendering them unproductive in a few years. [ ] The road connects only lowland farms to the market	[ ] DA to coordinate with LGU for the introduction of sustainable upland farming systems in the area [ ] No measure required	O&M Plan; Capacity Building Plan
10. Potential increased in encroachments of human activities into the nearby public forest	[ ] The proposed road will improve human access to the nearby public forest, resulting in increase slash and burn cultivation, illegal logging and poaching. [ ] The proposed road does not improve access to a public forest	[ ] Coordinate with DENR for the enactment of ordinance deputizing the local community to enforce forestry laws [ ] No measure required	O&M Plan; Capacity Building Plan
10. Local employment	[ ] Construction will provide local employment opportunities	[ ] Hiring priority shall be given to qualified local residents; Implement RI Manual on local hiring	Contract
	[ ] Construction does not provide any local	[ ] No measures required	

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
	employment opportunities		
<others issues>.			

Prepared by: _____

Adopted by MPMIU:

_____
MPMIU Head

Noted by the local community:

_____
Barangay Captain

Endorsed By :

_____
Municipal Mayor

ANNEX E - 2.

Mindanao Rural Development Project – Adaptable Loan Program II
Environmental and Social Management Plan Template for Potable Water Supply Subprojects
[Note: This template is designed to rapidly identify and assess the environmental issues and associated mitigation/management measures in Potable Water Sub-projects funded under MRDP-APL2. This template consolidates all safeguards aspect of Potable Water Supply Sub-projects as found in various project documents. This document replaces the EMP checklist in Annex 39 of the RI Manual.]

Backgrounder – One of the lessons learned in the implementation rural potable water supply programs by the national government agencies is that a large number of the potable water wells previously constructed by government agencies in the villages have been abandoned or are non-operational, due to, among others, water quality problems, such as coliform contamination, salt water intrusion, high iron and manganese content, are often encountered especially in shallow wells resulting in the abandonment of these wells (*c.f. RI Annex, Section I. Subsection C. item 2.*)

Name of PWS Subproject: _____
Location: _____
Level I or Level II _____
New or Rehab _____
Implementing LGU: _____
Number of Households: _____
Estimated total Subproject Cost: _____

A. Site and Design Consideration
[*Do not proceed with the Subproject preparation including this ESMP unless all items below are confirmed true.*]

1. The PWS involves either: (a) provision of Level I water system; (b) construction of Level II water system; or (c) rehabilitation of existing Level II water system (*c.f. RI Manual, page 24*).
2. The water source is not inside a declared protected area of natural habitat (*c.f. Loan Agreement: MRDP2 will not fund subprojects located inside a declared Protected Area*);
3. The water source is at least 25 meters away from any septic tank or any raw wastewater discharges (*c.f. Code of Sanitation of the Philippines*);
4. Either of the following is true:
    - There is no prior evidence/s (anecdotal or otherwise) indicating non-potability of the water (such as high coliform, salinity, elevated iron or manganese, etc.) at the proposed water source; or,
    - Or, if there is/are such evidence/s, appropriate preliminary potability test/s conducted on the water has/have disproved it/them; or,
    - Or, if there is evidence that has not been disproved by potability test, said water quality problem can be adequately addressed by the appropriate and acceptable

design/technology which will be part of the proposed potable water supply system; and,

5. The subproject will not displace, disfigure or render inoperable/inaccessible any monument or physical structure of known cultural and historical significance.

C. Environmental and Social Management Plan (ESMP)

(*The following are issues frequently associated with water supply system. Issues include alleged/perceived impacts, potential impacts, health and safety and environmental risks. Entries in the "Assessment" column should describe or provide qualifications regarding the significance of the issues. Issues that are deemed critical or significant should have a corresponding entry in the "Mitigation" column. Entries in the "Instrument" column should indicate how and where in the measures will be implemented in the Subproject. Please feel free to add, delete or modify any of the items in the template. In preparing the EMP below refer to the Environmental and Social Assessment Section of the FS for specific safeguards issues and assessments.)*

Issue	**Assessment**	**Mitigation/Management Measure**	**Instrument (Where this will be addressed)[1]**
1. Excessive water abstraction possibly resulting in:	Water abstraction is ____lps while capacity is ____lps. This constitutes: [ ] a small percentage of the capacity of the water source. [ ] a significant percentage of the capacity of the water source but there are no existing competing water uses or no critical aquatic ecosystems to be affected downstream.	[ ] Redesign the PWS based on feasible rate of water abstraction given information on the sustainable capacity of the source or find another source; [ ] Secure NWRB clearance/water permit;	[ ] DED/POW [ ] Preparation (must submit NWRB clearance as part of the procurement docs.)
[ ] Disruption or deprivation of existing water uses; or,	[ ] Abstraction rate is a significant percentage of water source capacity and could reduce availability of water for existing uses such as _____(describe	[ ] Reduce/limit water abstraction rate to ____ lps; [ ] Include existing uses/users in the proposed water system; [ ] Redesign PWS or find	[ ] O&M Plan [ ] Capacity Building of BAWASA

[1] (DED/POW, RAP, IP Plan, O&M Plan, Capacity Building Plan)

Issue	Assessment	Mitigation/Management Measure	Instrument (Where this will be addressed)[1]
	existing uses likely to be affected);	other source;	
[ ] ecological damage;	[ ] a significant percentage and could cause a nearby aquatic or wetland ecosystem to dry up and the ecosystem is critical for the survival of any important species; [ ] affected aquatic or wetland ecosystem is not critical.	[ ] Limit rate of extraction such that aquatic ecosystem is maintained, esp. during dry season; [ ] No measure required	[ ] O&M Plan [ ]Capacity Building of BAWASA
[ ] saltwater intrusion into groundwater ;	[ ] rate of groundwater extraction could cause/worsen existing saltwater intrusion in the aquifer; [ ] groundwater source is far from the coast or saltwater intrusion is unlikely in the area;	[ ] Reduce or limit water extraction rate during dry season [ ] No measure required	[ ] O&M and [ ]Capacity Building of BAWASA
2. Water at source allegedly not potable or water unsuitable for drinking	[ ] Historical/anecdotal/ ocular evidence of bad water quality [ ] Source is within highly mineralized area such as mining site and geothermal area, and/or potentially contaminated sites such as areas within or near former or existing chemical factories, recycling plants. [ ] Presence of abandoned wells due to alleged heavy metal	[ ] Conduct standard potability (coliform) test plus additional tests for suspect contaminants: [ ] Arsenic [ ] Mercury [ ] Lead [ ] Iron [ ] Magnesium [ ] Cadmium [ ] Others _____ before finalizing DED/POW; [ ] Otherwise look for another source	[ ] Certificate of Potability and favorable test results submitted as part of the procurement package (For Drinking Water Standards refer to DOH Admin Order No.2007-0012). Otherwise, adequate treatment system should be incorporated in the project design and reflected in the POW/DED.

Issue	Assessment	Mitigation/Management Measure	Instrument (Where this will be addressed)[1]
	concentration (mercury, arsenic, etc.), taste, color, etc.		
	[ ] There is no evidence of poor water quality and site inspections indicate good water quality from the proposed source.	[ ] Conduct standard potability (coliform) test before operation of PWS;	[ ] If test indicate presence of coliform, LGU to install adequate treatment before operation of PWS;
	[ ] Expansion of existing water source used for drinking;	[ ] No measure required	
3. Ownership issue of site of water source	[ ] Land is privately own [ ] Water source structure/s will displace some standing crops	[ ] Negotiate with landowner for the acquisition of sites for the water source structures through negotiation (e.g. by purchase, or by donation, quit claim.)	Submit to PSO deed of sale or deed of donation as part of procurement package for "no objection"
	[ ] Site is public land	[ ] Secure Special Land Use Permit from DENR [ ] Acquire ROW through other means _____ (specify)	
4. Potential ROW conflicts for the distribution pipes and communal faucet sites	[ ] Lands to be traversed by the pipelines are privately owned [ ] Potential damage to/displacement of properties/structures along the pipeline routes	[ ] Secure Quit Claims from owners of lands along the pipeline routes and communal faucet sites [ ] Prepare compensation plans, through consultations/negotiations with owners of affected properties	Submit to PSO social safeguards documents as part of procurement package for the "no objection"; Implement the compensation plans at least a month prior to start of construction works
5. Potential violation of Indigenous Peoples rights	[ ] Some structures/ activities of the subproject are located inside any or some IP ancestral domains, or	[ ] Secure FPIC [ ] Relocate PWS structures/activities outside IP lands or to	[ ] FPIC/CP to be submitted as part of the procurement package requirements

Issue	Assessment	Mitigation/Management Measure	Instrument (Where this will be addressed)[1]
	will affect any or some extant IP communities who are not themselves beneficiaries of PWS. Identify the affected IPs: _____.	areas where they will not affect IP communities	[ ] DED
	[ ] The IPs are themselves beneficiaries of the PWS. Identify the IPs: _____	[ ] Ensure IPs were consulted and have given consent for the PWS, by providing documentary evidence of consultations conducted and securing Certificate of Consent from the local tribal council	Submit minutes of meetings / consultations and Certificate of Consent to PSO as part of the procurement package
	[ ] The subproject (water source and pipeline) is outside the any IP ancestral domain and will not affect any extant IP community.	[ ] No measure required	
6. Potential sedimentation of creeks/water channels from the construction excavations / spoils	[ ] Construction will include clearing and leveling/ excavation of sloping lands involving significant amount of excavated spoils	[ ] Include slope protection/stabilization works on exposed loose soils and cuts. Describe the slope protection to be employed: _____ _____ [ ] Include restoration works such as spreading out piles of spoils and boulders, re-vegetation and/or landscaping of exposed areas at construction site.	DED/POW
	[ ] Construction works entail very minimal or no excavation	[ ] No measure required	

Issue	Assessment	Mitigation/Management Measure	Instrument (Where this will be addressed)[1]
7. Potential damage to physical cultural property	[ ] Presence of physical cultural property (e.g. monuments, structures, archeological sites, etc.) along the pipeline routes and near communal faucets.	[ ] Relocate water box/faucet area and/or reroute pipeline if possible; If not, [ ] Observe reporting and conservation protocols based on prior coordination with the National Historical Institute and National Museum.	[ ] DED [ ] Reporting protocol included in the Contract
8. Potential drainage issues at communal faucets resulting in the formation of permanent pools of water and muddy soil near the faucets	[ ] Some communal faucets or water collection points are located in: [ ] clayey soils or soils that can easily become muddy [ ] low-lying areas that could easily become waterlogged	[ ] All communal faucet outfalls/water collection points are provided with concrete platforms and drainage canals	[ ] POW/DED
	[ ] All communal faucets or water collection points are located in sandy, well drained areas	[ ] No measure required	
9. Human activities in the PWS source site	[ ] There is a possibility of increase in human activities near and within the PWS water source due to improved access and site development	[ ] Strictly implement Sanitation Code of the Philippines such as prohibition of washing/bathing activities within 25 meters from the source	O&M Plan; BAWASA Capacity Building Plan
	[ ] The PWS source is located far away from human settlements and activities	No measure required	
10. Potential lack of good housekeeping of the water source	[ ] There are existing bathing and washing activities near or at the	[ ] Regular cleaning of the water source (tank/box and vicinities), and the	O&M Plan; BAWAS Capacity Building Plan

Issue	Assessment	Mitigation/Management Measure	Instrument (Where this will be addressed)[1]
and the communal faucets/collection point sites	water source site (for spring-based PWS) or at the well sites (for artesian wells) [ ] Communal faucets/box sites (for Level II PWS) could become cluttered and strewn with garbage and discarded bottles, packages	communal faucet/box sites and vicinities;	
11. Potential changes in water quality due to new pollution sources	[ ] Water could become contaminated with new pollution sources from human activities	[ ] Regular sampling and potability tests conducted as required under DOH Admin Order No. 2007-0012	O&M Plan; BAWAS Capacity Building Plan

Prepared by:

_____

Adopted by the MRDP2 Municipal Project Implementing Unit:

_____

Head of the MPMIU

ANNEX E-3

Mindanao Rural Development Project – Adaptable Loan Program II
Environmental and Social Management Plan Template for Irrigation Subprojects

[Note: This template is designed to rapidly identify and assess the environmental issues and associated mitigation/management measures in Irrigation Sub-projects funded under MRDP2. This template consolidates all safeguards aspect of Communal Irrigation Subproject as found in various project documents. This document replaces the EMP checklist in Annex 38 of the RI Manual]

Name of Irrigation System: _____
Location: _____
Implementing LGU: _____
Number of hectares of service area: _____
Type: _____ SWIP _____Run-of-River _____Pump
New or Rehab: _____
Estimated Total Cost: _____

A. Site and Design Consideration

[*Do not proceed with the Subproject preparation including this ESMP unless all items below are confirmed true.*]

1. None of the subproject structures is located inside a declared protected area of natural habitat (*c.f. Loan Agreement: MRDP2 will not fund subprojects located inside a declared Protected Area*);
2. In case of run-of-the river system, there are no ongoing sand/gravel quarrying within 500 meters upstream and 1 km downstream of the diversion points. Otherwise, the LGU has signified that all quarrying activities within the said stretch shall be stopped once the construction has started and that no quarrying permits shall be issued in the future.
3. The subproject will not displace, disfigure or render inoperable/inaccessible any monument or physical structure of known cultural and historical significance.
4. For new construction: the source or water shall meet the quality standard for irrigation, i.e., minimum silt content and absence of water-borne diseases (schistosomiasis, malaria, etc.); damage/disturbance to ecologically significant flora and fauna shall be minimal; and intake point or diversion shall be outside protected areas or critical watersheds;

B. Environmental Issues and Mitigation Measures [*The following are issues frequently associated with Communal Irrigation Systems. Issues include alleged/perceived impacts, potential impacts, health and safety and environmental risks. Entries in the "Assessment" column should describe or provide qualifications regarding the significance of the issues. Issues that are deemed critical or significant should have a corresponding entry in the "Mitigation" column. Entries in the "Instrument" column should indicate how and where in the measures will be implemented in the Subproject. Please feel free to add, delete or modify any of the items in*

the template. In preparing the EMP below refer to the Environmental and Social Assessment Section of the FS for specific safeguards issues and assessments.]

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
*1.Schistosomiasis	[ ] The vector snail (Oncomelania sp.) is not present in the area but there is a risk that the species may be introduced in the area.	IMO* and IA to coordinate with the DOH and the LGU in instituting a system of screening planting materials, soils from endemic areas.	O&M Plan
	[ ] The vector snail is endemic but there is no reported case of infection in the area	Screening of animals and people from infected areas Improved sanitation	O&M Plan
	[ ] The disease is already prevalent in the area. The DOH regularly conduct health surveillance and treatment	IMO/IA to support existing DOH program and improves sanitation Information and Education Provision of footbridges	O&M Plan
	[ ] Schistosomiasis not an issue. The potential for introduction of the disease in the area is very low		
*2. Potential increase use of pesticides	[ ] There is an ongoing IPM program of DA in the service area	IMO/IA to continue to support the program	Capacity Building Plan O&M Plan
	[ ] Farmers in the service area have not been trained on IPM	Coordinate with DA on IPM training	Capacity Building Plan O&M Plan
*3. Safety of irrigation canals and intake areas	[ ] There were cases of accidental drowning in the area	[ ]Enclose hazardous areas with fence or barriers [ ]Install warning signs	POW
	[ ] There has been no reported case of drowning but there are dangerous areas in the irrigation system	[ ]Enclose hazardous areas with fence or barriers [ ]Install warning signs	POW
*4. Domestic solid waste	[ ] Lack of garbage disposal system results	[ ]Coordinate with LGUs in the enforcement of solid	O&M Plan

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
	in the accumulation of garbage in the irrigation canals	waste laws [ ]Conduct regular walk through along the canal system	
	[ ] There is a garbage disposal system but is not implemented	[ ]Coordinate with LGUs in the enforcement of solid waste laws [ ]Conduct regular walk through along the canals	O&M Plan
	[ ] There is no garbage problem in the irrigation system		
*5.Domestic sewer and septage	[ ] Several households and commercial establishments dispose of their liquid wastes including septage into the irrigation canals	Coordinate with LGU in the enforcement of sanitation laws Monitoring of canals	O&M Plan
	[ ] There are no households or commercial establishments along the irrigation canals		
6. Local employment	[ ] PIDP interventions provide local employment opportunities	Hiring priority shall be given to qualified local residents	Contract
	[ ] PIDP interventions do not provide any employment opportunities		
*7. Temporary increase in sedimentation during construction	[ ] Civil work activities could increase sedimentation and turbidity of water downstream of site	Control flow of sediments from civil works area by drainage canals and silt traps	DED/POW; Contract
	[ ] Silts/sediments, materials removed from the canals could be washed back into the	Provide a spoil disposal area	DED/POW; Contract

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
	canals by runoff		
	[ ] There will be no de-silting or civil works		
8. Potential contamination of surface and groundwater with oil/grease	[ ] Waste oil and grease could contaminate surface water	Proper handling and disposal of waste oil and grease	Contract
	[ ] There will be no or insignificant amount of waste oil/grease		
9. Potential contamination with human waste	[ ] Significant number of construction workers	Set up adequate latrine/toilet facility at construction sites	Contract
	[ ] There will be no construction workers involved		
10. Potential generation of dust during construction	[ ] Roads could become powdery during dry days of the construction period	[ ]Sprinkling of roads during dry days [ ]Set up speed limits for vehicles	Contract
11. Possible congestion or blocking of traffic	[ ] De-silting activities may block off service roads used by local residents	Provide adequate space to allow passage of vehicles and animal drawn carts	Contract
	[ ] Deliveries/hauling of materials will increase vehicular traffic	Schedule deliveries during off-peak hours	Contract
	[ ] No impact on traffic		
12. Temporary disruption in water supply	[ ] Water supply will be temporarily suspended during repair works	Consultation with the IAs/affected farmers on the proper timing of rehabilitation activities	Procurement Plan; POW schedule; Contract
	[ ] There will be no interruptions in irrigation water supply		
13. Canal scouring/on-site erosion	[ ] Canals are unlined and banks are easily scoured/eroded by	Cement-lining of canals and/or provision of retaining walls	DED/POW

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
	strong currents		
	[ ] Use of canals for carabaos to wallow contributes to the erosion of canal banks	Provide a designated wallowing area for carabaos	O&M
	[ ] There are no observed scouring of canals or the canals are cement-lined		
14. Systemic sedimentation	[ ] High sedimentation rate of irrigation canals due to heavily silted water source	[ ]Conduct major de-silting of the canal as part of the POW [ ] Provision of settling basin/s [ ] Regular de-silting of the canals and settling basins to be done as part of the O&M	DED/POW; O&M
	[ ] Very low or no sedimentation		
15.Frequent flooding	[ ] Heavily silted canals easily overflows during heavy rains	-Regular de-silting and removal of debris to be done as part of the O&M	DED/POW; O&M
	[ ] Waters from creeks and channels discharging into the canals cause flooding downstream even when the intake is closed	[ ]Provision of adequate drainage canals and/or waste bays [ ]Regular maintenance of drainage canals and/or waste bays	DED/POW; O&M
	[ ] Low frequency or no flooding reported		
17.Contamination of surface water with agrochemicals	[ ] Excessive use of inorganic fertilizer and pesticides caused contamination of surface and ground waters	- Promotion of the use of IPM and organic fertilizers among irrigators association members	Capacity Building Plan
16.Environmental management capacity	[ ] The IMO and the IA have low environmental management capability	- Conduct a series of trainings on environmental management	Capacity Building Plan
	[ ] The IMP and IA have		

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
	adequate environmental management capability		
17. Flooding inundation of upstream of river due to dam construction	[ ] Rise in water level likely to drown lands or properties upstream	[] Construct dikes to protect properties [] Compensate owners of flooded lands [] Change dam location	[] DED/POW [] RAP
	[ ] Rise in water level could erode portions of the banks upstream	-Provide protection walls on susceptible portions of riverbanks	[]DED/POW
….	[ ] No flooding or flooding or rise in water level not significant		
18. River bank scouring/erosion due to altered direction of river flow	[ ] Dam or other intake structure change the direction of river flow causing downstream erosion of river banks and land	[ ] Provide river bank protection downstream	[ ] DED and POW
	[ ] Dam or intake structures do not alter direction of water flow or cause erosion downstream		
19. Potential changes in downstream ecology due reduction in river water flow	[ ] The river does dry up during dry season or there is no history/ record of drying up but irrigation system design may cause downstream to dry up; [ ] Presence of ecologically important species downstream	[ ] Redesign irrigation system such that drying up of downstream is prevented [ ] Strictly implement water use policy designed to avoid serious ecological damage [ ] Monitor ecological changes downstream	[ ]DED/POW [ ] O&M Plan
	[ ] Irrigation system draws more than 30% of river water and there is possibility of significant ecological changes	[ ] Monitor ecological changes downstream	[ ] O&M Plan

Issue (Potential Impact)	Assessment (Sample assessments)	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
	downstream		
	[ ] Irrigation system uses less than 30% of river water	[ ] None	
20. Potential deterioration of soil quality (i.e. increased acidity) of rice fields due to permanent flooding with irrigation water	[ ] Irrigated lands may be permanently flooded with irrigation water, causing increased in pH, anaerobic decomposition/methane production, etc.	[ ] Provide adequate irrigation water control (or turnouts) at the farm; provide adequate drainage and conduct occasional draining of farms	[ ] O&M Plan [ ] IA capacity building plan

*IMO is NIA's Irrigation Management Office in charge of the CIS

Prepared by: _____

Adopted by MPMIU:

_____
MPMIU Head

Noted by the Irrigators Association:

_____
Irrigators Association President

Annex F

Republic of the Philippines
Department of Agriculture
Mindanao Rural Development Project – Adaptable Loan Program II
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN COMPLIANCE MONITORING

Component: _____ **Project No. _____**
Name of Sub Projects: _____ **Region: _____**
Location of Sub Projects : _____
Status of Sub Projects: _____

ISSUES (POTENTIAL IMPACT)	MITIGATION MEASURES	STATUS OF MITIGATING MEASURES IMPLEMENTATION		MEANS OF VERIFICATIONS/REMARKS
		Completed	On-Going	

Annex G – Form 1

Survey No. _____

Date of Survey _____

Republic of the Philippines
Department of Agriculture
Mindanao Rural Development Program

ENTITLEMENT SURVEY OF DISPLACED PERSONS

Component:		**Proj. No.:**		**Barangay:**	
Municipality:		**Province:**		**Region:**	
Name of Head of HH			**Number of Persons in HH**		
Total Landholding	**SQ. MTS**	**Lot No.**		**Pls. No.**	

PROPERTIES TO BE AFFECTED BY THE PROJECT	**QUANTITY**	**REMARKS**	**ENTITLEMENTS**
A. LAND			
1. Residential	Sq. Mts.		
2. Commercial	Sq. Mts.		
3. Agricultural	Sq. Mts.		
B. CROPS (Specify)			
1.	Sq. Mts.		
2.	Sq. Mts.		
C. TREES (Specify Age)			
1.	Nos.		
2.	Nos.		
3	Nos.		
D. STRUCTURES (Specify)			
1. Permanent	Sq. Mts.		
2. Temporary	Sq. Mts.		
3. Tombs	Nos.		
4. Wells	Nos.		
E. ECONOMIC LOSSES (Explain Briefly)			
1. Business Lost			
2. Income Loss			
3. Temporary Losses			
F. OTHERS (Explain Briefly)			
1.			
2.			
G. SKETCH			

Survey Conducted by:

_____	_____	_____
Brgy. Representative	Municipal Representative	MRDP Representative

CONFORME: _____
Name and Signature of HH

Note: *Attach **DONATION PAPER** or Affidavit of "**Quit Claim**" in case the affected person shall not claim for any entitlement.*

Annex G – Form 2

Republic of the Philippines

Department of Agriculture

Mindanao Rural Development Program

INVENTORY & ENTITLEMENT OF PROJECT AFFECTED PERSONS

Component:														**Project Number:**							
Barangay:					**Municipality:**						**Province:**					**Region:**						
			Land and Crop Losses						**Structures Losses**					**Other Losses**							
Survey No.	Name of Head of Household	No. of Persons in HH	Total Landholding of Hhold in Sq. M.	Land to be Acquired by Type in Sq. M.	Land Type	Loss as % of Total	Paddy area in Sq. Meters	Fruit trees Lost Type and Number	No. & Type of lost structures	Structures Permanent in Sq. M.	Structures Temp.in Sq. M.	Area of Residential Land Lost In Sq. M.	Residence (rented)	Temporary losses (Specify)	Wells No.	Tombs Number	Business lost	Income Lost	Other (Specify)	Total Entitlements in Pesos
TOTAL																				

*** Refer to Form No.1 (on file) as source of above data**

Annex G – Form 3

Republic of the Philippines
Department of Agriculture
Mindanao Rural Development Program
SOCIO-ECONOMIC DATA SHEET OF DISPLACED PERSONS

Component:									**Proj. No.**
Barangay:			**Municipality:**				**Province:**		**Region:**
Survey No.	**ID No. of Hh**	**Name of Household Member**	**Sex**	**Age**	**Ethnicity**	**Education**	**Occupation and sources of Income**	**Employment**	**Estimated Total Income per Year**

Survey Conducted by :

_____	_____	_____
Barangay Representative	**Municipal Representative**	**MRDP Representative**

Annex G – Form 4

Full Resettlement Plan - Outline Example

1. Sub-project description (e.g., municipal road link, communal irrigation system, water supply system, etc.)

2. Avoidance or minimization of displacement and other adverse social impacts (steps taken to minimize land acquisition by modifying designs and other approaches)

3. Amount of land acquisition and number of displaced persons and vulnerable groups

4. Full inventory (see form in Attachment 1)

5. Socio-economic survey (sample respondents) of the project area and the proposed resettlement site (see form in Attachment 3)

6. Consultation and participation plan

7. Entitlement and compensation package (see form in Attachment 2)

8. Rehabilitation and income restoration measures

9. Institutional arrangements, required capacity and implementation skills

10. Implementation plan and schedule (e.g., what steps are taken to prepare for resettlement and/or paying compensation; when will it take place; how will it be coordinated with civil works of sub-project; etc)

11. Training program (if appropriate, as part of rehabilitation measures for affected people)

12. Monitoring (internal and external) and reporting (refer to guidelines in Land Acquisition and Involuntary Resettlement Policy Framework)

13. Grievance procedures specific to sub-project and location (see guidelines in Land Acquisition and Involuntary Resettlement Policy Framework)

14. Information dissemination plan and transparency measures

15. Budgeting and funding source

Annex G – Form 5

Sample Check List for Land Acquisition Activities for PRDP

Activity		Responsible
Annual Planning by Province/Municipality for Infrastructure:		
1	Prepare list of proposed roads for rehabilitation	MPDO
2	Submit list to Municipal Multi-Sectoral Committee (MSC)	MPDO
3	Prioritize proposed roads for sub-project	MSC
4	Submit list to PPMIU	MPDO
Inventory/Survey For Each Subproject with Land Acquisition:		
1	Give public notice of intention to acquire land, and grievance period	MPDO
2	Send written notification to displaced persons	MPDO
3	Hold public meeting with Barangay Officials and displaced persons	MPDO
4	Conduct on-site verification of assets to be acquired with each head of household	MPDO/BDC
5	Complete Inventory and Entitlement Forms of projected affected families	MPDO/BDC
6	Consult with displaced persons regarding compensation	MPDO/BDC
7	Sign Compensation Protocol by authorities and head of household	MPDO/BDC
8	Submit of Inventory & Entitlement Forms to PPMIU	MPDO
9	Submit Inventory & Entitlement Forms to PCO and World Bank for approval	PPMIU
	Under PRDP, submission of required documents will follow a two-step process similar to and integrated with the procurement process (refer to Operation Manual): Step 1 - Submit all completed inventories and entitlement forms as well as documentation on consultation for No Objection #1 Step 2 Submit all duly completed deeds of donation and proof of satisfactory completion of resettlement activities (signed Compensation Protocol) for No Objection #2	
10	Review and determine if full RAP is needed (if impacts are significant where people are physically displaced and more than 10% of their productive assets are lost, then a full RAP is required)	RPCO
11	If full RAP not required, implement compensation activities	MPDO/BDC
Full Resettlement Action Plan (RAP):		
12	Undertake socio-economic survey and complete form	MPDO/BDC
13	Prepare full RAP (full RAP includes Inventory, Entitlement, Socio-Economic Survey, Relocation and Compensation Plans, Schedules and Budget)	MPDO/BDC
14	Submit full RAP to RPCO for review	PPDO
15	Submit full RAP and RPCO comments to DA PSO and World Bank for review and approval	RPCO
16	Wait for No Objection from DA and WB for full RAP (same as Step 1 in # 9 above)	DA, World Bank
17	Implement full RAP after approval from DA and WB (same as Step 2 in # 9 above)	MPDO
Award of Contract for Civil Works		
	The Bank will provide “no objection” to award of contract only after all activities for land acquisition, compensation and resettlement have been satisfactorily completed.	
Monitoring		
1	On-going Internal monitoring and reporting	RPCO/PPMIU
2	Hire Independent Monitoring Agency	PSO
3	Start external monitoring	External Monitor
4	Submit external monitoring report to World Bank (annually)	PSO