Environmental Assessment and Review Framework (EARF)

DRAFT

January 2019

Myanmar: Resilient Communities Development Project

Prepared by the Ministry of Agriculture, Livestock and Irrigation for the Asian Development Bank.

CURRENCY EQUIVALENTS

(As of 31 January 2019)

Currency unit	–	Myanmar Kyat (MK)
MK1.00	=	$0.000656
$1.00	=	MK1,520.00

ABBREVIATIONS

ADB	-	Asian Development Bank
CBD	-	Community Based Development
CF	-	Community Facilitator
CSO	-	Civil Society Organization
DRD	-	Department of Rural Development
EA	-	Executing Agency
EARF	-	Environment Assessment and Review Framework
ECD	-	Environmental Conservation Department
ECOP	-	Environmental Codes of Practice
EMP	-	Environmental Management Plan
ERLIP	-	Enhancing Rural Livelihood and Incomes Project
LF	-	Livelihood Facilitator
MOALI	-	Ministry of Agriculture, Livestock, and Irrigation
NCDD	-	National Community Driven Development Project
NGO	-	Non-Government Organization
PIU	-	Project Implementing Unit
PMU	-	Project Management Unit
RCDP	-	Resilient Communities Development Project
SPS	-	Safeguards Policy Statement
SSP	-	Support Service Provider
TF	-	Technical Facilitator

WEIGHTS AND MEASURES

ha	-	hectare
m	-	meter
km	-	kilometre
l/s	-	Liters per second
masl	-	Meters above sea level
mm	-	millimetre
^{o}C	-	Degree Centigrade
dBA	-	Decibel
mg/l	-	Milligram per liter

NOTE

In this report, "$" refers to United States dollars.

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I. INTRODUCTION

A. Project Description

1. The Resilient Communities Development Project (RCDP) would be a seven-year investment project that aims to improve the living conditions and resilience of selected communities in Myanmar. The project will be aligned with the following impacts under the Rural Development Strategic Framework (RDSF) of 2014 of the Government: (i) incomes of rural households improved; and (ii) resilience of communities to climate and disaster risks strengthened. It is consistent with the central impact under the Myanmar National Framework for Community Disaster Resilience: strengthened climate and disaster resilience of communities through rural livelihoods and village infrastructure.

2. It will have three outputs: (i) climate and disaster resilient community infrastructure developed; (ii) resilient livelihood activities for women, youth and poor are developed; and (iii) institutional and organizational capacity of communities and government strengthened.

3. The project will also incorporate disaster contingency features that would allow the potential use of the fund transfer mechanism built by the project through the Department of Rural Development (DRD) to channel or frontload funds in the aftermath of a disaster for recovery and reconstruction.

4. The project will adopt a proven Community-Based Development (CBD) approach to deliver community infrastructure and livelihood subprojects to 17 poor, vulnerable townships covering 791village tracts and 2,943 villages with a population of about 1.8 million people. The project will apply lessons from the ongoing ERLIP[1] in Myanmar, particularly in: (i) allocating sufficient resources and time during project start-up for community engagement, and mobilization; (ii) improving the participation and empowerment of women and the poor through increased facilitation support, particularly at the community (village tract) level; (iii) ensuring community infrastructure subprojects are resiliently designed and of a scale that improves community resilience; and (iv) promoting livelihood resilience by diversifying sources of income, building technical and vocational skills (TVET) and linking communities to markets and service providers.

5. The project will be closely linked to the ADB-financed Support to Myanmar in Strengthening Education and Equipping Youth for Employment (EYE) Project, which will provide TVET training for livelihood grant beneficiaries.[2] Experience with the ERLIP also shows that providing block grant allocations based on population and remoteness profiles, instead of a tiered allocation per village tract, will ensure more efficient and equitable targeting of community and household level poverty. Figure 1 shows the location map of the identified project areas while Table 1 presents the State/Regions, Districts and Townships covered by the Project.

[1] ADB 9174–MYA: Enhancing Rural Livelihood and Incomes Project

[2] ADB 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Loan: Republic of the Union of Myanmar: Equipping Youth for Employment Project. Manila*

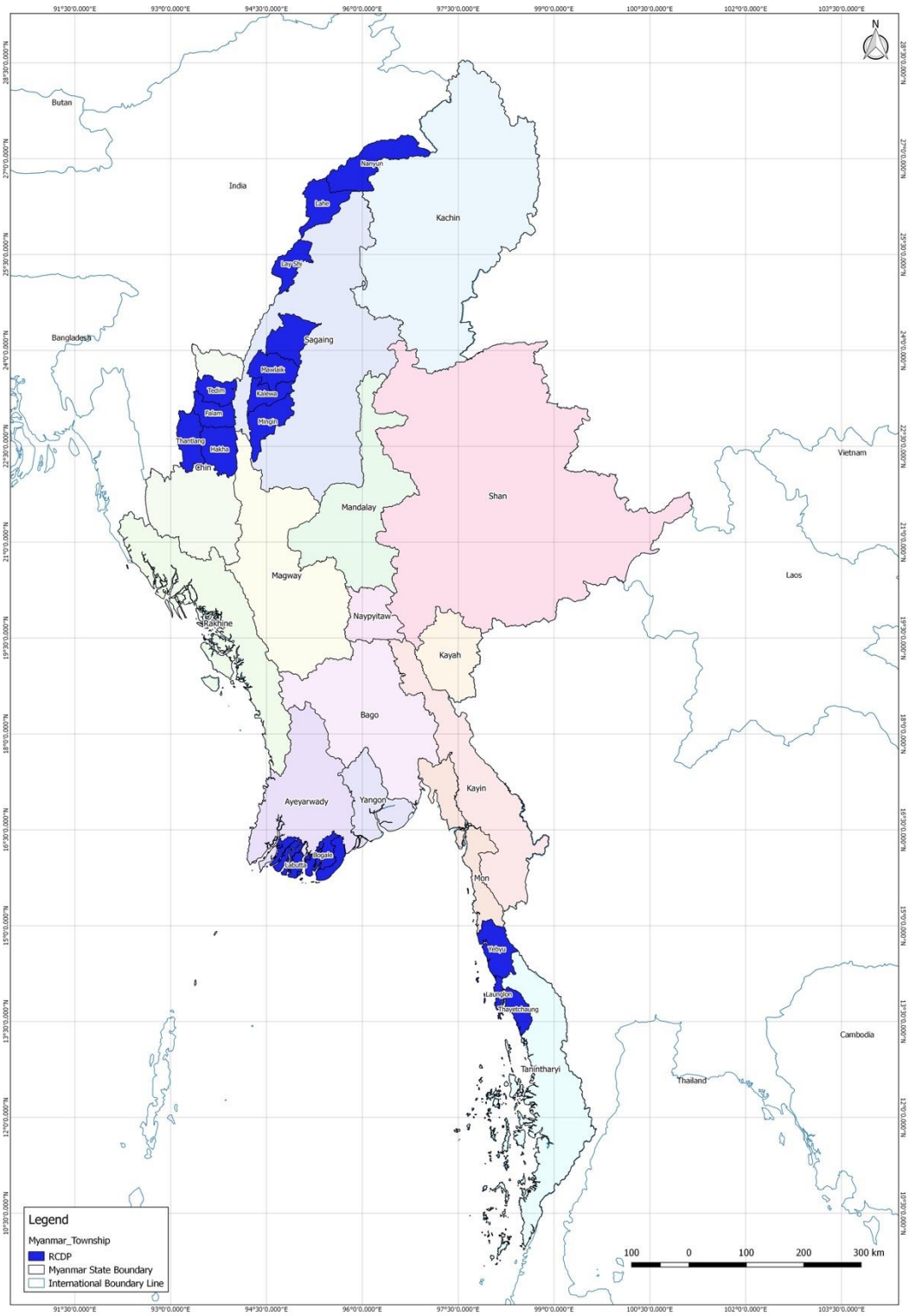

Figure 1. Project Areas. Project areas are shaded in dark blue**.**

Table 1. Identified Project Areas, RCDP 2018

STATE/REGION	DISTRICT	TOWNSHIP
Ayeyarwady	Labutta	Labutta
Ayeyarwady	Pyapom	Pyapon
Ayeyarwady	Pyapon	Bogale
Chin	Falam	Falam
Chin	Hakha	Hkha
Chin	Hakha	Thantlang
Chin	Falam	Tedi
Sagaing	Kale	Mingin
Sagaing	Mawlaik	Mawlaik
Sagaing	Mwalaik	Paungbyin
Sagaing	Kale	Kalewa
Sagaing	Hkamti	Leshi
Sagaing	Hkamti	Lahe
Sagaing	Hkamti	Nanyon
Tanintharyi	Dawei	Launglon
Tanintharyi	Dawei	Thaetchauy
Tanintharyi	Dawei	Yebyu

6. The project builds on the ERLIP and will finance a number of cycles of community planning and basic infrastructure building. Each community infrastructure cycle will last approximately between 6 – 12 months depending on the season, the feasibility and complexity of subprojects, and the preparedness of communities to undertake project activities[3]. For the livelihood intervention, the project will build capacity of communities to engage in livelihood activities and provide a one-off investment to livelihood groups to intensify or diversify means of livelihood and enhance the impact of infrastructure investments. Similar to ERLIP, the project will use established community planning processes of government under the Village Development Plan (VDP) process but will strengthen the social preparation and training component applied by ERLIP, including incorporating disaster and climate risk considerations and market and employment opportunities in project operations.

7. The project will also support the consolidation of VDPs at village tract and ultimately at township levels and the incorporation of VDP information in a web-based, searchable database. DRD views the ERLIP as a pilot for the development and roll-out of a national CBD program. The RCDP will enhance this process by (i) integrating lessons learned from ERLIP and NCDDP into RCDP design; (ii) applying the national VDP process in ERLIP village level planning; (iii) deepening the VDP process with overlays of market and climate and disaster risk information; (iv) making the VDP information more accessible through a searchable web-based VDP database; and (v) enhancing DRD/government's capacity to support a national CBD process.

[3] To ensure that participation and actual construction works are not rushed, a cycle cannot be shorter than 6 months. In inaccessible areas and townships with dispersed population centers, the cycle is expected to last longer because of additional steps to ensure participation.

1. Impact and Outcome

8. The project aims to contribute to government's objective to improve the incomes of rural households and strengthen the resilience of communities to CDR, supporting government's SDG 1, SDG 2 and SDG13 targets. The project outcome will be standard of living and resilience of selected communities improved.

2. Outputs

9. The project will target areas that are vulnerable to climate and disasters and will follow a phased and cluster approach which regroups vulnerable townships in the same area. The project will have three outputs.

10. **Output 1: Climate and disaster resilient community infrastructure developed.** Community investment in climate and disaster-resilient infrastructure will be identified through the DRD VDP process and funded through block grants. To inform the VDP process, cluster/township climate risk and vulnerability assessments and market opportunity analysis will be made available to communities for their local assessment in the process of their prioritization of infrastructure investments that provide the greatest resilience and public and economic good benefits. Village women will be empowered through dedicated meetings and other features to significantly influence community infrastructure investment prioritization.

11. Typical community infrastructure Subprojects will be small bridges, village access roads or farm roads, schools, village water supply, electric grid connection, etc. CDR considerations will be a common criterion in guiding the selection and design of these SPs. While the first infrastructure cycle will cover all target villages, subsequent cycles will be performance-based and open to Village Tracts that have achieved a minimum social and infrastructure quality assessment review (QAR) score. Each infrastructure investment cycle allocation will comprise of either an infrastructure investment of MK 10 million per village or a per capita investment of MK 30,000/person living in the village, whichever is greatest. This output will also include a disaster contingency feature that would use the project fund transfer mechanism to channel or frontload funds for reconstruction of damaged infrastructure in the aftermath of a disaster declared by national or state/regional government.

12. **Output 2: Resilient livelihood activities for poor men and women developed.** Increased and diversified rural household income, based on a sound understanding of changing climate risk and market opportunity, is an important component of increased resilience. As part of the VDP process, communities will, using a community-based wealth/vulnerability ranking methodology[4], identify the lowest four deciles of poor and vulnerable households in their villages. That cohort will be eligible to apply for livelihood SPs, valued at up to MMK300,000 per group member. Targeted poor/vulnerable households will be encouraged and enabled to form groups having a common livelihood interest and submit a livelihood subproject proposal availing the women, youth (15-30 years of age) and disadvantaged people in those households the opportunity to develop profitable and resilient livelihood opportunities. The project will provide need-based training to the livelihood groups in group development and management, business skills including financial literacy, financial and business record keeping and entrepreneurship, and on CDR management (climate smart agriculture, etc.).

[4] Communities rank member households into four wealth/vulnerability categories (A to D) based on their assessment of the household's assets (land, house, productive assets, business assets) and CDR vulnerability.

13. Livelihood SPs could comprise new or improved climate-adapted agriculture, livestock, fisheries activities, value addition to farm and non-farm products, marketing and the acquisition of new skills for village or off-village employment or entrepreneurship. The project will assist interested groups to source vocational training, particularly for women and youth, by linking this project to the ADB EYE Project.[5] To ensure sustainability and scaling-up opportunities, the project will also facilitate, but not fund, group access to registered microfinance services where they are locally available, including seeking innovative agreements with financial services providers concerning their collateral requirements.

14. A secondary target of the livelihoods activities will be to support poor households that are above the lowest four deciles of the wealth ranking to adapt to climate and disaster risk. Lifting agriculture productivity and diversifying production is likely to benefit both farming and non-farming households. Larger, thematic-based households groups interested to develop adaptive technologies and market opportunities using their own capital, will be assisted to achieve those outcomes through project-financed technical, market access and organizational support.

15. Once operating sustainably, the project will assist livelihood groups to evaluate the benefit of higher levels of association, up to township or township cluster level, with a view to increasing their market power or adding value to their production at scale.

16. **Output 3: Institutional and organizational capacity of communities and government strengthened.** The project will support DRD to further develop its VDP process with a view of building its capacity to assist villagers to factor in considerations to address present day and future shocks and stresses and participatorily identified market opportunities. VDPs will be aggregated to establish village tract development plans and, following the development of an appropriate framework, to contribute to township development planning processes.

17. This output will support DRD to form a DRD Training Unit and associated training curricula, with capacity to meet both staff orientation needs and the professional development requirements of both staff and interested independent professionals in the fields of, *inter alia*, community-based planning and development, resilience building, group formation and leadership and livelihood development. The Training Unit will pay particular attention to the development of information communication technology (ICT)-linked training products and the use of ICT to support farmer-to-farmer training. Training will concentrate on gender and climate and disaster resilience practices in the context of infrastructure and livelihoods investments.

[5] Equipping Youth for Employment Project.

II. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

18. The environmental assessment of the subprojects under the Sector Project will be undertaken in compliance with the ADB SPS 2009 and the national policies, legislation and requirements for environment, health and safety, as well as with international agreements to which Myanmar is a signatory.

19. The following sections describe and define the national laws and regulations as well as ADB's safeguard policy requirements that the sector project must comply with.

A. Legal and Administrative Framework of Myanmar

20. The legal framework for environmental impact assessment has been recently established through the Environmental Conservation Law (2012); the Environmental Conservation Rules (2014), and the Environmental Impact Assessment Procedure (2015). The environmental impact assessment process is administered by the Environmental Conservation Department (ECD) of the Ministry of Natural Resources and Environmental Conservation (MONREC).

21. The **Environmental Conservation Law** (ECL, 2012) provides the mandate for Environmental Impact Assessment and assigns the duty and power to MONREC to develop and implement "… *a system of environmental impact assessment and social impact assessment as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment*".

22. The **Environmental Conservation Rules** (2013), Chapter XI Environmental Impact Assessment provides for environmental screening and where required – for the proponent to conduct an environmental impact assessment, and to prepare and submit and environmental impact assessment report to MONREC.

23. The **Environmental Impact Assessment Procedure** (2015) provides the procedures for environmental screening and categorization, scoping, preparation of an environmental impact assessment (EIA) or initial environmental examination (IEE), and preparation of an Environmental Compliance Certificate (ECC). The procedures also define the requirements concerning third parties undertaking IEE/EIA, defines public consultation and information disclosure requirements, and clarifies the EIA/IEE submission, review, and clearance and appeal process. The Procedure also delineates responsibilities for inspections, compliance monitoring with Environmental Management Plans (EMPs) and ECCs, and reporting requirements. The EIA Procedure is considered consistent with the principles of ADB's SPS 2009 and compatible with ADB's SPS delivery procedures and are used in parallel to ADB's SPS in this EARF.

24. **Other Relevant Policies and Laws**. In addition to relevant policies, laws, and procedures relating to environmental impact assessment, the Government of Myanmar has enacted a number of key legislative instruments and policies which relate to environmental management, environmental conservation, and protection (see Table 3).

Table 2. Policy, Legal and Institutional Framework

LAWS, REGULATION OR GUIDELINES	RELEVANCE TO ENVIRONMENTAL ASSESSMENT
National Environment Policy of Myanmar (2017)	To provide long-term guidance for government, civil society, the private sector and development partners on achieving environmental protection and sustainable development objectives in Myanmar. It has been prepared to place environmental considerations at the center of efforts to promote economic and social development, reduce poverty, and mitigate and adapt to climate change and natural disasters.
Environmental Conservation Law (2012)	Provides the mandate for Environmental Impact Assessment and assigns the duty and power the Ministry of Environmental Conservation and Forestry to develop and implement "a system of environmental impact assessment and social impact assessment as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment".
Environmental Conservation Rules (2014)	Chapter XI Environmental Impact Assessment provides for environmental screening and where required – for proponent conduct and environmental impact assessment, and to prepare and submit and environmental impact assessment report to the Ministry Rule 52. The Ministry shall determine the categories of plan, business, service or activity which shall carry out environmental impact assessment. Rule 53. The Ministry may, so as to scrutinize whether or not it is necessary to conduct environmental impact assessment, determine the proposed plans, businesses service or activities which do not include in stipulation under rule 52 as the categories which are required to conduct initial environmental examination. Rule 54.The business, department, organization or person who would carry out categories of plan, business service or activity stipulated under rule 52: Conduct environmental impact assessment for his plan, business service or activity; Submit to the Ministry in advance by which organization person or third person, the environmental impact assessment is intended to be carried out; Submit the environmental impact assessment report to the Ministry.
Environmental Impact Assessment Procedure (2015)	Provides procedures for environmental screening, scoping, preparation of an IEE, preparation of EIA, preparation of and Environmental Compliance Certificate (ECC). Delineates responsibilities for monitoring compliance with Environmental Management Plans (EMPs) and ECCs.
Technical Guidelines for Environmental Impact Assessment (2017) - draft	Provides technical guidance for assessing environmental impacts and preparation of the IEE and EIA reports.
National Environmental Quality (Emission) Guidelines (2015)	Provides emission and effluent discharges levels permitted for different sectors and technologies
Forest Policy 1995	Ensures that Myanmar's forest resources and biodiversity are managed sustainably to provide a wide range of social, economic and environmental benefits, and aims to maintain 30% of the country's total land area under Reserved Forest and Public Protected Forest and 5% of total land area as Protected Areas. The 30-year National Forestry Master Plan (2001/02 to 2030/31), prepared in the year 2000, has a goal of expanding PAs to 10% of the country's total land area.
Forest Law (2018)	To implement forest policy; and natural resources and environmental conservation policy

LAWS, REGULATION OR GUIDELINES	RELEVANCE TO ENVIRONMENTAL ASSESSMENT
	To perform forest, natural resources and environment conservation, climate change and disaster risk reduction with international agreements, and To protect forest cover and biodiversity reducing, and protect damage due to forest fire, pest and disease Establish forest and firewood plantation and Sustainably extract and transport forest products
The Protection of Biodiversity and Natural Protected Areas Law (2018)	To implement biodiversity policy and strategy To implement national natural protected area conservation policy To carry out the protection and conservation of wildlife, ecosystems and migratory animals in accordance with International Conventions acceded by the State To control smuggling or trafficking of wild animals and plants, their parts of body, and by products To protect prominent geological site, endangered species of wildlife and their natural habitats; To contribute for the development of research on natural science and awareness raising Establish the zoological and botanical garden to preserve wildlife
The Conservation of Water Resources and Rivers Law 2006 and Amending Law 2017	Protection of water from pollution from banks, including the disposal of soil from gold or resources production, into rivers and creeks or that may flow into rivers and creeks. Prohibits sand extraction, gold mining, and resource extraction in the river creek or waterfront boundary without approval. Ministry of Transport and Communication's approval required for certain works
The Conservation of Water Resources and Rivers Rules 2013 and Amending 2015	Protection of water from pollution from banks, including the disposal of soil from gold or resources production, into rivers and creeks or that may flow into rivers and creeks. Prohibits sand extraction, gold mining, and resource extraction in the river creek or waterfront boundary without approval. Ministry of Transport and Communication's approval required for certain works.
Myanmar Climate Change Policy 2017 (draft)	To provide long-term direction and guidance to: Take and promote climate change action on adaptation and mitigation in Myanmar; Integrate climate change adaptation and mitigation considerations into Myanmar's national priorities and across all levels and sectors in an iterative and progressive manner; and Take decisions to create and maximize opportunities for sustainable, low-carbon, climate-resilient development, ensuring benefits for all.
Myanmar Climate Change Strategy and Action Plan 2016-2030 (draft)	The long-term goal by 2030, Myanmar has achieved climate-resilience and pursued a low-carbon growth pathway to support inclusive and sustainable development.
The Myanmar Mining Rules (2018)	Prescribes requirements for licensing for extraction of the construction materials.
Prevention and Control of Communicable Diseases Law (1995), Amending Law 2011	To prevent and control the communicable disease
The Ethnic Rights Protection Law (2015). Rules under discussion (August 2017)	To obtain equal citizen's rights for all ethnic groups and to preserve and develop their language, literature, arts, culture, custom, national character and historical heritage. Article 5: The matters of projects shall completely be informed, coordinated and performed with the relevant local ethnic groups in the case of development works, major projects, businesses and extraction of natural resources will be implemented within the area of ethnic groups.

LAWS, REGULATION OR GUIDELINES	RELEVANCE TO ENVIRONMENTAL ASSESSMENT
Protection and Preservation of Cultural Heritage Regions Law (1998) and Amending Law 2009	Protection and preservation of physical cultural resources.
Protection and Preservation of Ancient Monuments Law (2015).	Protection and preservation of physical cultural resources.

B. International Environmental Agreements

25. The Union of Myanmar is a party to relevant international environmental conventions, treaties and agreements on the principles and actions necessary for sustainable development and environmental protection (Table 4). It has ratified in 1994 both the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change. These international conventions explicitly reference the application of environmental assessment to address the effects of human activities. The Convention on Biological Diversity, in particular, promotes the use of appropriate procedures requiring environmental impact assessment of proposed projects that are likely to have significant adverse effects on biological diversity. With respect to air quality and climate change, Myanmar is party to the Kyoto Protocol and the Montreal Protocol. More recently, Myanmar ratified the Paris Agreement to combat climate change and adapt to its effects, 2016.

26. With respect to Pollution Control, Myanmar is party to Stockholm Convention, Basel Convention, and MARPOL Convention. In addition to the Convention on Biological Diversity, Myanmar is party to many other international biodiversity agreements including Cartagena Protocol, Nagoya Protocol, CITES, and Ramsar.

Table 3. International Environmental Agreements

THEME	CONVENTION/TREATY/AGREEMENT	STATUS*
Climate	United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification (UNCCD), Paris, 1994	Accession (1997)
Air and Climate Change	United Nations Framework Convention on Climate Change (UNFCCC), New York, 1992	Ratification
	Kyoto Protocol to the Convention on Climate Change, Kyoto, 1997	Accession (2003)
	Vienna Convention for the Protection of the Ozone Layer, Vienna, 1985	Ratification (1993)
	Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, 1987 + amendments	Ratification (1993, 2012 for recent amendments)
	ASEAN Agreement on Transboundary Haze Pollution, Kuala Lumpur, 2002	Ratification (2003)
	Paris Agreement to combat climate change and adapt to its effects, 2016	Ratification (2017)
Pollution Control	Stockholm Convention on Persistent Organic Pollutants (POPs), Stockholm, 2001	Accession (2004)
	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Basel, 1989	Accession (2015)
Pollution Control	International Convention for the Prevention of Pollution from Ships (MARPOL), London, 1973 plus amendments in 1978	Accession 4/8/1988

THEME	CONVENTION/TREATY/AGREEMENT	STATUS*
Biodiversity and Natural Resources	Convention on Biological Diversity (CBD), Rio de Janeiro, 1992	Ratification (1994)
	Cartagena Protocol on Biosafety to the CBD, Cartagena, 2000	Ratification (2008)
	Nagoya Protocol on Access and Benefit Sharing (ABS) to the CBD, Nagoya, 2010	Accession (2014)
	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington, D.C., 1973 + amendments (1979 Bonn, Germany)	Accession (1997)
	Agreement on Establishment of ASEAN Regional Centre for Biodiversity	Ratification (2009)
	ASEAN Agreement on the Conservation of Nature and Nature Resources, Kuala Lumpur, 1985	Signatory (1997)
	Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971 + amendments in 1982 and 1987	Accession (2004)
	MRC Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin – April 1995	Became Dialog Partner with MRC in 1996
	Agreement between International Union for Conservation of Nature (IUCN), and the government of the Republic of the Union of Myanmar to establish an IUCN Office in Myanmar. This laid the foundation for future collaboration on addressing challenges and maximizing opportunities related to biodiversity conservation and sustainable development in the country.	31 March 2016 Host Country Agreement (HCA) signed
	Mangroves for the Future (MFF) – MFF was founded on the vision, "Healthy coastal ecosystems for a more prosperous and secure future for coastal communities." The vision was supported by a mission statement, "To promote healthy coastal ecosystems through a partnership-based, people focused and policy relevant approach that builds and applies knowledge, empowers communities and other stakeholders, enhances governance, secures livelihoods, and increases resilience to natural hazards and climate change." https://www.mangrovesforthefuture.org/what-we-do/focus-areas-and-objectives/	In 2014, Myanmar joined as the 11th member country.
Cultural Heritage	The Convention for the Protection of the World Culture and Natural Heritage, Paris, 1972	Acceptance 1994)
	Declaration on ASEAN Heritage Parks	Signatory (2003)
	Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, 1970	Ratified
	Convention for the Safeguarding of the Intangible Cultural Heritage, 2003	Ratified

C. ADB Safeguard Policy Statement 2009[6]

27. ADB's SPS (2009) sets out the policy objectives, scope and triggers, and principles for Environmental safeguard areas to be followed across all aspects of its operations. ADB adopts a set of specific safeguard requirements that borrowers/clients are required to meet in addressing environmental impacts and risks. Borrowers/clients must comply with these requirements during

[6] ADB. 2009. Safeguard Policy Statement. Manila.

the project preparation and implementation phases. All environmental safeguard principles and requirements of ADB's SPS are reflected in this EARF.

D. Applicable Standards

28. Article 56 of the EIA Procedure (2015) of Myanmar specifies that all projects are obliged to use, comply with and refer to applicable national guidelines or standards or international standards adopted by MONREC. This is consistent with ADB's SPS 2009. The Myanmar National Environmental Quality (Emission) Guidelines (2015) were adopted in this EARF. In cases where these Guidelines are not applicable, the International Finance Corporation (IFC) Environment, Health, Safety (EHS) Guidelines will be used.

29. The **National Environmental Quality (Emission) Guidelines (2015)** provide emission and effluent discharge levels permitted for different sectors and technologies. These Guidelines have been primarily excerpted from the IFC EHS Guidelines, which provide technical guidance on good international industry pollution prevention practice for application in developing countries.

30. With regard to air pollution, the Guidelines specify that projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that: (i) emissions do not result in pollutant concentrations that reach or exceed ambient quality guidelines and standards, or in their absence the current World Health Organization (WHO) Air Quality Guidelines; and emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e. not exceeding 25% of the applicable air quality standards to allow additional, future sustainable development in the same airshed.

31. Air quality should not exceed the levels presented in Table 5.

Table 4. Ambient Air Quality Standards

SUBSTANCE	AVERAGING PERIOD	STANDARD µG/M^3	REFERENCE
Sulphur Dioxide	24 hours 10 minutes	20 500	National Environmental Quality (Emission) Guidelines, December 2015
Nitrogen Dioxide	1 year 1 hour	40 200	As above
Particulate Matter PM10	1 year 24 hours	20 50	As above
Particulate Matter PM 2.5	1 year 24 hours	10 25	As above
Ozone	8-hour daily maximum	100	As above

32. With regard to noise, the Guidelines specify that noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception. Noise impacts should not exceed the levels presented in Table 6, or result in a maximum increase in background levels of 3 dBA at the nearest receptor location off-site. The guidelines are equivalent with noise levels recommended by the World Health Organization (WHO) as reflected in the IFC EHS Guidelines.

Table 5. Ambient Noise Standards

RECEPTOR	ONE HOUR LAEQ (DBA)		REFERENCE
	DAYTIME 07:00-22:00	NIGHTTIME 22:00-07:00	
Residential, Institutional, Educational	55	45	National Environmental Quality (Emission) Guidelines, December 2015
Industrial, Commercial	70	70	As above

33. With regard to wastewater discharges, the Guidelines specify that projects with potential to generate process wastewater, sanitary (domestic) sewage, or storm water should incorporate necessary precautions to avoid, minimize, and control adverse impacts to human health, safety or the environment. Effluent discharge requirements are defined in Table 7.

Table 6. Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges

PARAMETER	UNIT	GUIDELINE VALUE	REFERENCE
5-day Biochemical Oxygen Demand	mg/l	50	National Environmental Quality (Emission) Guidelines, December 2015
Ammonia	mg/l	10	As above
Chemical Oxygen Demand	mg/l	250	As above
Oil and Grease	mg/l	10	As above
pH	S.U.[a]	6-9	As above
Total Coliform Bacteria	100 ml	400	As above
Total Phosphorus	mg/l	2	As above
Total Suspended Solids	mg/l	50	As above

[a] *Standard unit*

III. OVERVIEW OF THE SUBPROJECTS AND ANTICIPATED ENVIRONMENTAL IMPACTS

A. Overview of the Subprojects

34. RCDP targets 17 townships in Ayeyarwady Region, Chin State, Sagaing Region and Tanintharyi Region including 2942 villages, 791 VTs and about 1.8 million people in about 360,000 households (HH). The RCDP is a seven-year investment project that aims to improve the living conditions and resilience of selected communities. The project will provide community infrastructure and livelihood grants to poor and vulnerable communities to address their most pressing needs and invest in building the capacities of government agencies and communities in resilient community development and disaster risk management.

35. The project will use a community-based development approach in target villages, providing villagers the opportunity of participating in the full process of problem and needs identification and analysis, followed by a stage of conceptualizing solutions to address the identified needs and implementing the identified solutions.

36. The starting point is the preparation or update of the (DRD) Village Development Plan (VDP),[7] preceded by social mobilization and preparation where villages are supported in identifying their most pressing concerns, using various participatory analysis tools. This VDP process will be informed by detailed assessments of climate and disaster risk and market and employment opportunity at cluster and township level, with resulting information condensed into information packages comprehendible to village communities. Villagers, with trained technical facilitator support, will interpret this information at village level, including through the development of local natural hazard maps. A Village Development Support Committee (VDSC) will be organized and trained in each village to support preparation of the VDP and subproject proposals. Village tracts will receive grants to finance prioritized subprojects selected by the villagers in village meetings.[8]

37. Subprojects to be financed under the project will comprise small-scale social and productive infrastructure works (Table 8) and livelihood improvements (Table 9).

Table 7. Indicative List of Infrastructure Subprojects

SUBPROJECT TYPE	SUBPROJECT DESCRIPTION
Earthen and Gravel Road	Earth Roads. Suitable for village to farmland. 12 ft. carriageway. Constructed of 2 layers of compacted soil. Camber is 5% (1:20). Side slopes are 1:1.5, and drainage is 1' 6" wide at the base. No road shoulders. Gravel Roads (Gin, Laterite), suitable for between villages and village to main road. 12 ft carriageway, constructed on the same sub-base design as the earth road, with no road shoulders, and surfaced with laterite or a suitable gravel mix.
Concrete Road & Wheel Track	Concrete Roads & Concrete footpaths. 6 to 8 ft. Suitable for inside villages, providing access to health services, schools, markets etc.

[7] This VDP is designed to provide a coherent document called a village development plan that captures and expresses: (i) the development vision and aspirations of the village population, the current socio-economic and human development situation, the development potential, and barriers and challenges; and (ii) the development strategy, implementation plan and project activities, budget and financing

[8] For approval of village investment plans, minimum village household and gender participation quotas will be applied.

SUBPROJECT TYPE	SUBPROJECT DESCRIPTION
	Concrete Wheel Track. Used where there are insufficient funds to pave the full width of the surface. Should not be needed in RCDP.
Retaining Wall/ Culvert	Typical structures for small roads. Retaining walls are used to prevent landslides or erosion close to water drainage structures. Culverts are used for road cross drainage, and are typically 2 or 3 feet (60 cm to 1 m) in diameter, or box culverts of equivalent size.
Pedestrian Bridge (Stilt)	Pedestrian bridge: Constructed in the delta region over wide slow flowing tidal drainage or in hilly regions over a deep gully, to provide village access to schools, water supply or roads. Stilt bridges are used to provide clearance for boats.
Wheel Bridge/Slab Bridge	Small bridge structures on village roads to provide all season access to villages. Bridges greater than 33 feet require an EMP in ERLIP.
Jetty	Small structures for docking boats in island villages or along rivers. The design is variable as it must suit local conditions, the tidal range or river flood levels.
Piped Water Supply & Tube Well	Piped water supplies are usually village gravity fed drinking water supplies (GFWS), but may use water from other sources depending on availability. Tube wells are for village drinking water supply. Does not include irrigation water. Service levels follow National Standards for rural drinking water supplies. All GFWS and any Tube Well deeper than 200 ft require an EMP in ERLIP.
Ground Tank	Standard design for a drinking water storage tank, used as a component of different types of water supply projects.
Pond and Dug Well	Pond: Ponds are not the preferred water supply, but in the delta region, they may be the only source of drinking water. Typical projects will be to deepen or protect existing ponds. Dug Wells are used where shallow sand layers provide fresh water but deeper drilled wells are salty or have no water. Dug wells will be needed on island villages or coastal areas with shallow ground water tables.
School Building	A typical school construction may be an extension of an existing building, or a new construction of up to 3 of 4 rooms. Usually kindergarten or primary schools for village level SP.
Multi-Purpose Building	A multi-purpose building is used for village meetings, including RCDP Village Development meetings, agricultural extension, adult education, livelihood activities etc. Does not include buildings which might be used for religious purposes.
Health Clinic	Rural Health Center/Sub-Health Center, meeting the requirements of Ministry of Health and Sports. This is a small 2 room building for health consultations, with water and sanitation facilities.
Village Market	Drainage, sanitation, or shelter for public village markets. Variable, depending on needs. Must be public goods.
Solar PVs	Solar powered electricity is used for village street lighting, or lighting for public buildings. Does not include private connections.
On-Grid Electrification	Low-voltage connection between village and grid. Does not include private connections.

Table 9. Indicative List of Livelihood Subprojects.

Category	Description	Location	Type
Production	Monsoon rice and cow pea	Ayeyarwady Region, Tanintharyi Region, Northern Sagaing Region	Household
	Elephant foot yam	Chin State, Naga SAZ	Household
	Cardamom	Naga SAZ, Chin State	Household
	Chili	Naga SAZ, Chin State	Household
	Fruit tree (avocado) nursery	Chin State	Group
	Cashew nut	Tanintharyi Region	Household
Livestock	Piglet raising	Tanintharyi Region, Ayeyarwady Region, Chin State, Northern Sagaing Region including Naga SAZ	Household
	Wild fish farming	Ayeyarwady Region, Tanintharyi Region	Household
	Terrace fish farming	Naga SAZ, Chin State	Household
Processing	Elephant foot yam drying	Chin State, Naga SAZ	Group
	Coffee parchment processing	Chin State	Group
	Green tea processing	Chin State, Naga SAZ	Group
	Ice production	Ayeyarwady Region, Tanintharyi Region	Group

B. Anticipated Environmental Impacts

38. In general, the benefits of the Project far outweigh the anticipated minor adverse environmental impacts. Most of the environmental impacts are expected to be insignificant – minor and temporary (occurring only during the construction phase) and can be avoided or minimized, through implementation of appropriate mitigating measures. Table 10 presents the matrix of potential environmental impacts that may accrue from Project implementation.

Table 8. Matrix of Potential Impacts and Possible Mitigating Measures

ENVIRONMENTAL IMPACT	MITIGATION MEASURES
Impact on land acquisition and community assets Loss of community assets due to land acquisition and damage to properties.	Design access roads to minimum necessary width and installation of pipelines within the Right-of-Way.
Impact to natural resources and protected areas Impact on natural resources and protected areas from cutting/clearing of trees and other vegetation.	Cutting of trees will be undertaken as per approved design and only upon approval by the Village Tract Development Support Committee (VTDSC) and the Township Project Implementation Committee. Avoid cutting of trees as much as possible and adequately protect native vegetation from damage. Trees that need to be cut in private land will be compensated in cash in accordance with the approved Land Acquisition and Compensation Plan. No activities encroaching on legally protected areas are allowed.
Impact on historical and archaeological sites Damage to relics and artifacts during the conduct of the works.	The community and contractor will ensure that the workforce is briefed on location of historical sites and objects, and that in the event of accidental finds they should immediately cease any works in the area and promptly report the find to their supervisor, which in turn must inform relevant authorities.
Temporary disruption of existing community roads, pathways, and access Particularly at road crossings, construction activities along narrow roads may lead to temporary blockage or closure of roads and hamper movement of vehicles and people in the community. Community access to areas in the vicinity of schools, temples, village offices, market places and meeting halls may be affected during construction works.	Walking access will be maintained to affected properties and access routes will be temporarily lined with timber or similar material**.** Particular attention will be given to ensuring safety along roads and paths used by school children. Install barriers and safety warning signs on road sections and if necessary deploy traffic aides/ flag persons at affected locations. Information boards at blocked roads will provide information about the temporary closure of roads, schedule of works and the traffic-rerouting plan. Require the community or contractor to immediately rehabilitate the excavated areas and any damaged road and path sections.
Air pollution Dust and air emissions from earthworks and movement of vehicles can pose nuisance to nearby communities	Require the community or contractor to cover materials with tarpaulin or other suitable materials while in transit to avoid spillage of materials. Moisten earthen roads during dry and dusty conditions, particularly roads near residences and through the town core area. Impose speed limits on construction vehicles. Conduct regular maintenance on construction equipment and vehicles to control air emissions during vehicle operation.
Noise Operation of construction equipment will cause excessive noise resulting in nuisance to communities.	Prohibit construction activities, particularly operation of noise generating equipment at night. Position any stationary equipment that produce high noise levels such as diesel generators as far as practical from sensitive receptors. Erect temporary barriers around construction sites especially near schools, hospitals, and houses. Install noise suppression devices to noise generating equipment. Require drivers to minimize blowing of horn and to comply with speed limits. Provide information to community on schedule of construction activities through billboard/signs. Respond to community complaints and ensure compliance with the relevant noise standard.
Impact of borrow materials	The community and contractor will be prohibited from quarrying materials directly from Rivers/Waterways.

ENVIRONMENTAL IMPACT	MITIGATION MEASURES
Quarrying of aggregates on river could cause siltation and affect the ecological condition of the river.	Construction materials will be procured from Government-permitted sources/suppliers only. The contractor shall provide the necessary evidence.
Impact on ecological resources Construction workers may undertake hunting of wildlife and cutting of wood.	The community and contractors will prohibit activities such as cutting wood for cooking, hunting, or wildlife trade.
Water pollution - Sediment runoff Sediment runoff during excavation, earthworks and grading in the rainy season will cause siltation of nearby waterways.	Construct silt traps, deviation channels, mounting barriers or trenches around the stockpiles of materials.
Water Pollution - Worker's camp Domestic wastewater from worker's camp would result to the discharge of sewage into drainage canals. Unsanitary conditions at the worker's camp will occur without the provision of necessary sanitation arrangements.	Provide adequate toilet facilities at the worker's camp. Greywater shall be pre-treated in sedimentation tanks prior to discharge.
Generation of construction wastes – Solid, Inert and Hazardous Wastes Inadequate management of solid wastes, inert construction wastes, and hazardous wastes during construction could result to pollution of land and receiving water bodies.	Provide appropriate segregation bins or areas for construction wastes. Secure and control storage of all hazardous materials including fuels. Reuse recyclable construction wastes such as wood, steel, and scaffoldings or sell to junk shops. Solid waste to be collected and disposed in approved disposal site of the District.
Community health and safety Community may be exposed to dangers of open excavation	Install barricades/barriers and sturdy plate covers in open excavations during non-working time. Facilities properly fenced and secured and watchmen/security personnel to be employed. Install warning signs in the area.
Occupational health and safety Construction activities may pose hazards to workers because of the use of heavy equipment, lifting of heavy loads, and exposure to open excavations and chemicals. Potential conflict with local people will occur if migrant workers will be brought to the site.	Require the contractor to develop and implement a construction health and safety plan in accordance with the World Bank EHS Guidelines (http://www.ifc.org/ehsguidelines) as a minimum standard. The contractor will appoint an environment, health and safety officer to ensure implementation of the plan. The contractor will be required to provide priority hiring of qualified construction workers from the villages and to consult with the local to avoid conflict if migrant workers will be brought to the site.

IV. ENVIRONMENTAL ASSESSMENT PROCEDURES FOR SUBPROJECTS

39. The Environmental Assessment and Review Framework (EARF) prepared for the Project will ensure that subprojects supported by RCDP will not cause adverse impacts on the environment, people, and national physical cultural assets. Environmental and Social screening will be undertaken early in the process of identifying and prioritizing subprojects (i.e. steps 2 and 3 of the project cycle). It is consistent with the ADB Safeguards Policy Statement of 2009[9] and the Myanmar Environmental Impact Assessment Procedure (2015).[10]

40. The process of preparing subproject proposals and implementing subprojects is based on proven approach from ongoing community-based development projects in Myanmar. In preparation of this EARF, the current environmental assessment and social procedures and practices outlined in the Environmental and Social Management Framework of National Community Driven Development Project[11] were examined. In addition, the Enhanced Rural Livelihood and Income Project's Guidance Note on Environmental Safeguards and the Environmental Codes of Practice[12] was reviewed. The EARF for the RCDP is based on and aligned with the environment and social assessment procedures and approaches of these projects.

41. All RCDP subprojects must follow these environmental assessment procedures.

A. Subproject Eligibility Criteria

1. General Criteria

42. The following subprojects will not be eligible for funding under the RCDP:

(i) Subprojects including activities listed on the Prohibited Investment Activities List in Appendix 5 of SPS (see Table 11); and

(ii) Subprojects that have potential to cause significant irreversible, diverse or unprecedented adverse environmental and social impacts and thus classifying as Category A per ADB's SPS 2009, and/or classified as EIA Type Project per Myanmar's Environmental Impact Assessment Procedure (2015).

2. Environmental Criteria

43. The following subprojects will not be eligible for funding under the RCDP:

(i) Subprojects that will be located in or will have foreseeable adverse impacts on any legally national, regional or state a protected area;

(ii) Subprojects that fall in part or in whole within an area supporting high biodiversity value or qualifying as critical habitat;

(iii) Subprojects that utilize water from or discharge to a water body in a

[9] ADB Safeguard Policy Statement (2009) http://www.adb.org/Documents/Policies/Safeguards/default.asp

[10] Environmental Impact Assessment Procedure, Ministry of Natural Resources and Environmental Conservation. Notification No. 616 / 2015 (29 December 2015), The Government of the Republic of the Union of Myanmar.

[11] Environmental and Social Management Framework National Community-Driven Development Project (NCDDP), Department of Rural Development (DRD), Ministry of Agriculture, Livestock, and Irrigation (MOALI). October 2017.

[12] Guidance Note on Environmental Safeguards and the Environmental Codes of Practice. Chapter 3 Operational Manual for Enhanced Rural Livelihood and Income Project, Department of Rural Development (DRD), Ministry of Agriculture, Livestock, and Irrigation (MOALI). June 2018.

legally protected area, an area supporting high biodiversity value or qualifying as critical habitat;

(iv) Subprojects that have potential to directly or indirectly result in removal or permanent damage to physical cultural resources of national or international importance;

(v) Subprojects that have potential to directly or indirectly result in conversion or degradation of natural habitat (e.g., primary forests or wetlands);

(vi) Subprojects that involve disputes of land use or ownership or may result in future land use conflicts;

(vii) Subprojects where the structural failure of infrastructure may threaten the safety of local communities; or

(viii) Subprojects classifying as "IEE or EIA Type Project" per Annex 1 of the Myanmar EIA Procedure (2015).

44. Subprojects that fall in part or in whole within a protected area buffer zone will only be selected if the restoration work is entirely limited to the existing area; or are close to residential or other sensitive human receptors must have minimal adverse impacts.

3. Screening for Eligibility

45. Screening for eligibility against the environmental criteria is to be based on documented information on: (i) major physical cultural resources, (iii) protected areas, (iii) key biodiversity areas, (iv) major water bodies; and (v) land use. If possible, maps of these environmental components should be provided at the townships level.

Table 9. List of Prohibited Investments/Activities ADB's Safeguard Policy Statement (2009), Appendix 5

The following do not qualify for Asian Development Bank (ADB) financing:

- Production or activities involving harmful or exploitative forms of forced labor or child labor;
- Production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phase outs or bans, such as (a) pharmaceuticals, pesticides, and herbicides, (b) ozone-depleting substances, (c) polychlorinated biphenyls and other hazardous chemicals, (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and (e) transboundary trade in waste or waste products;
- Production of or trade in weapons and munitions, including paramilitary materials;
- Production of or trade in alcoholic beverages, excluding beer and wine;
- Production of or trade in tobacco;
- Gambling, casinos, and equivalent enterprises;
- Production of or trade in radioactive materials, including nuclear reactors and components thereof;
- Production of, trade in, or use of unbonded asbestos fibers;
- Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and
- Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

B. Safeguards Screening and Assessment Procedures

46. Table 12 below shows the flow of the safeguards screening and processing in line with the RCDP community project cycle.

Table 12: Environmental Safeguards Procedures

Project Cycle	Safeguards Processing and ECOPs Implementation
Stage 1: Preparation	
At entry into the community, before the First Village Meeting	The PIU, with the Community Facilitators (CF), Technical Facilitators (TF), and Livelihood Facilitators (LF) gather relevant information about environmental conditions in the village, as part of the preparation of the Village Profile and prepare natural hazard maps as part of the climate and disaster risk assessment.
Step 1. Project Orientation and Election of VDSC, Formation of livelihood groups and identification of village volunteers (1st Village Meeting)	CFs explain the RCDP safeguards policies and EARF requirements as part of the Project Orientation.
Step 2. Participatory Social Assessment through VDP-PRA	The PIU, with the CFs, LFs, TFs and volunteers assist villagers in analyzing data from the Village Development Plan – Participatory Rural Appraisal (VDP-PRA), to look at how subproject options can affect, and be affected by local environmental conditions. TFs and CFs introduce the safeguards screening tool, and discuss the following: - The ECOPs, as a mitigation tool to prevent adverse environmental impact. - Voluntary Land and Asset Donation, and; - Physical Cultural Resources Management The PIU, with the CFs, LFs, and TFs assist the VDSC in safeguards screening of subproject concepts, and initial discussion on the inclusion of the relevant codes to be used to strengthen the design of community investments/subprojects.
Step 3. VDP Validation, Subproject concept long-listing, (2nd Village Meeting)	Information from Step 2 is validated at the full village meeting. CFs and TFs provide a briefing to the elected VDSC and sub-committee members on their tasks in ensuring compliance with safeguards policies. Initial list of subproject concepts is screened against the safeguards checklist and any concept that fall in the negative list will be excluded.
Stage 2: Planning	
Step 4. Preparation of subproject concept	Village committees will prepare subproject concept proposals and integrate safeguard measures in the proposals. Inventory of potential affected people and of loss is prepared.

Project Cycle	Safeguards Processing and ECOPs Implementation
Step 5. Village prioritization of subproject concept proposals.	The Village will discuss and prioritize subproject concepts for submission to the VTDSC. The TF and CF assist the VDSC in preparing a draft safeguard screening checklist.
Step 6. Formation of the VTDSC, and Screening of Subprojects (VTDSC meeting)	CFs and TFs explain to the VTDSC the importance of ensuring all subprojects provided with RCDP support comply with the safeguards policies. This should be considered in selecting subprojects. The VTDSC prioritizes the subprojects for submission to the TPIC.
Step 7: Review of sub- project priorities (TPIC meeting)	CFs and TFs explain to the TPIC the safeguards risks, and mitigation measures of proposed subprojects, as needed.
Stage 3: Subproject Preparation	
Step 8: Detailed proposal and design preparation.	The PIU, with the CFs, LFs, and TFs assist the VDSC in preparing detailed designs, taking into account safeguard measures and mitigating measures, as necessary (including the ECOPs to be adopted) that will be integrated into the design of the subproject. TFs and CFs ensure safeguards risk are identified, and appropriate mitigation (including relevant ECOPs) are integrated into the subproject technical design. The PIU, with the CFs, LFs, and TFs assist the VDSC in doing final safeguards screening of the full subproject proposal, and technical designs.
Step 9: Final review and approval of subproject proposals	CFs and TFs assist the VDSC and VTDSC in explaining to the TPIC the mitigation measures (including the relevant ECOPs adopted) integrated into the final subproject proposal and design, to address safeguards risks. CFs and TFs also ensure the ECOPs and/or EMP (Safeguards Form 3) is attached to the subproject proposal. CFs and TFs assist the TPIC in reviewing and assessing the proposals for safeguards issues and concerns, as needed.
Stage 4: Subproject Implementation	
Step 10: Start of sub- project implementation and progress monitoring	CFs and TFs assist the VDSC, and implementation sub- committees, in integrating the schedule of safeguards implementation and monitoring activities, into the sub- project implementation workplan. TFs, assisted by the CFs, ensure that mitigation measures are implemented during the construction. CFs and TFs assist the Monitoring Sub-committee (MSC) in ensuring information on status of implementation of safeguards mitigation activities are captured, and reported in village monitoring meetings and in the regular project monitoring reports.
Stage 5: Subproject closing and re-planning	
Step 11: Quality Assurance Reviews	CFs and TFs assist in, and guide the VDSC members in the conduct of safeguards reviews and reporting results of reviews.

Project Cycle	Safeguards Processing and ECOPs Implementation
Step 12: Community Operation and Maintenance of completed subprojects	As part of subproject's O&M, CFs and TFs provide support to village operation and maintenance committee regarding the implementation of the relevant ECOPs.

C. Environmental Screening Form and The Environmental Codes of Practice

1. Environmental Screening Form

47. Safeguards screening (using Safeguards Form 1: Safeguards Screening, Appendix 1) will be undertaken by the VDSC, CFs and TFs, during Stage 1 of the Project Cycle (i.e., during Steps 2 and 3 in Table 12 above) in the process of identifying and prioritizing subprojects.

48. Based on the results of screening, the subproject will follow Environmental Codes of Practice (see section C2 below); or be required to prepare an Environment Management Plan (see section C3 below).

2. Environmental Code of Practice (ECOPs)

49. The Environmental Codes of Practice or ECOPs[13] are the main environmental management tool to manage, and mitigate, potential adverse environmental impacts for most subprojects. The Project also requires preparation and implementation of Environmental Management Plans (EMPs), as applicable for specific investments (see section C3 below). The ECOPs and EMPs contain the specific, detailed, and practical measures to mitigate the potential impacts of each type of eligible subproject. Additionally, the EMPs include monitoring activities to observe the effectiveness of the applied mitigation measures and ultimately the sustainability of investments. The ECOPs and EMPs cover rehabilitation and minor extension works, as well as new construction. The ECOPs and EMP formats are provided in Appendix 1.

50. **Applicability:** ECOPs apply to all infrastructure investments and livelihood improvement subprojects (e.g., Table 8 and Table 9). The General Environmental Codes of Practice are provided in Table 13. The ECOPs are applicable to most rehabilitation and construction activities. Standard designs are available for rural roads, rural water supply, rural bridges, rural electrification, jetties, and community buildings. These designs can be modified, or alternative designs prepared, to suit local conditions.

51. The ECOPs also apply to other types of eligible investments. These include small-scale new constructions such as small feeder roads, foot-paths and bridges, small dykes, drinking water systems, rehabilitation of class rooms and health centers, and small-scale rural electrification.

52. If subprojects involving new small-scale construction may have greater potential for environmental impact (e.g., water/air/soil pollution) after safeguards screening by the VDSC, assisted by the PIU with the CFS and TF and confirmed by the TPIC, an Environmental Management Plan (EMP) will be prepared before the subproject works can commence.

[13] The ECOPs were developed under the World Bank-funded National Community-Driven Development Project (NCDDP).

53. **Preparation**: The subproject ECOPs should be designed during subproject proposal preparation, and subproject implementation. Each subproject proposal should adopt (as applicable) a relevant section of the ECOPs. The PIU, with the Technical Facilitator (TF)s, Livelihood Facilitator (LF) and the Community Facilitator (CF), will assist the Village Committees in preparing the ECOPs, as part of preparing the village subproject proposal. The TF and LF, assisted by the CF and Township DRD engineers, is responsible for explaining the use of the ECOPs to the Village Committees, and for ensuring that appropriate ECOPs are integrated into the technical design of the subprojects.

54. Specific ECOPs, and technical guidelines for construction and/or rehabilitation of specific types of subprojects, based on the general ECOPs, are attached (Appendix 1).

1. **Table 13: General Environmental Codes of Practice for RCDP Subprojects**

Safeguards Issue	ECOPs General Environmental Prevention/Mitigation Measures
1. Noise during construction	• Plan activities in consultation with communities so that noisiest activities are undertaken during periods that will result in least disturbance. • Use noise-control methods such as fences, barriers or deflectors (such as muffling devices for combustion engines or planting of fast-growing trees) • Minimize project transportation through community areas • Maintain a buffer zone (such as open spaces, row of trees or vegetated areas) between the project site and residential areas to lessen the impact of noise to the living quarters.
2. Soil erosion	• Schedule construction during dry season • Contour and minimize length and steepness of slopes • Use mulch, grasses or compacted soil to stabilize exposed areas • Cover with topsoil and re-vegetate (plant grass, fast-growing plants/bushes/trees) construction areas quickly once work is completed • Design channels and ditches for post-construction flows and line steep channels/slopes (e.g., with palm frowns, jute mats, etc.).
3. Air quality	• Minimize dust from exposed work sites by applying water on the ground regularly • Do not burn site clearance debris (trees, undergrowth) or construction waste materials • Keep stockpile of aggregate materials covered to avoid suspension or dispersal of fine soil particles during windy days or disturbance from stray animals.

Safeguards Issue	ECOPs General Environmental Prevention/Mitigation Measures
4. Water quality and availability	• Activities should not affect the availability of water for drinking and hygienic purposes • No soiled materials, solid wastes, toxic or hazardous materials should be poured or thrown into water bodies for dilution or disposal • The flow of natural waters should not be obstructed or diverted to another direction, which may lead to drying up of river beds or flooding of settlements • Separate as best as possible concrete works in waterways and keep concrete mixing separate from drainage leading to waterways
5. Solid and hazardous waste	• Collect and transport construction waste to appropriately designated/ controlled dump sites • Maintain waste (including earth dug for foundations) at least 300 meters from rivers, streams, lakes and wetlands • Use secured area for refueling and transfer of other toxic fluids distant from settlement area (and at least 50 meters from drainage structures and 100 meters from important water bodies); ideally on a hard/non-porous surface • Train workers on correct transfer and handling of fuels and other substances and require the use of gloves, boots, aprons, eyewear and other protective equipment for protection in handling highly hazardous materials • Collect and properly dispose of small maintenance materials such as oily rags, oil filters, used oil, etc.
6. Health and safety	• Provide personal protective gear for workers as necessary (gloves, dust masks, hard hats, boots, goggles) • Keep worksite clean and free of debris on daily basis • Keep corrosive fluids and other toxic materials in properly sealed containers for collection and disposal in properly secured areas • Ensure adequate toilet facilities for workers from outside of the community • Rope off construction area and secure materials stockpiles/ storage areas from the public and display warning signs. Do not allow children to play in construction areas. • Fill in all earth borrow-pits once construction is completed to avoid standing water, water-borne diseases and possible drowning • Each construction subproject to have a basic first-aid kit with bandages, antibiotic cream, etc.
7. Other	• No cutting of trees or destruction of vegetation other than on construction site • No hunting, fishing, capture of wildlife or collection of plants • No use of unapproved toxic materials including lead-based paints, un-bonded asbestos, etc. • No disturbance of cultural or historic sites.

3. Environmental Management Plan

55. An Environmental Management Plan or EMP (Safeguards Form 3: Environmental Management Plan Appendix 1) is required for the following types of subprojects:

(i) Any subprojects that trigger the need for an EMP in the safeguards screening form (see Safeguards Form 1, attached);
(ii) Any bridges longer than ten (10) meters;
(iii) Any new construction of a deep well water[14] irrigation, water supply network, small-scale wastewater treatment facility or small-scale solid waste management (including health waste) facility; and
(iv) Any subprojects in buffer zones of protected areas.

56. The Environmental Management Plan is to include the following information:

(i) Potential adverse impacts: identify and summarize potential adverse impacts;
(ii) Mitigation measures: describe each measure with reference to the impact(s) it is intended to deal with. As needed, describe detailed plans, designs, equipment descriptions, and operating procedures;
(iii) Monitoring activities: identify what information (environmental impact indicator) will be collected – how, where, and how often – to identify any adverse impacts during and/or after subproject implementation; determine how effective the mitigation measures are, and if better mitigation or additional investigation of effects may be needed. These activities use simple methods (visual observations and/or tests) that the villagers can undertake themselves;
(iv) Responsibilities: define the people/groups who will carry out the mitigation and monitoring activities, as well as to whom they report;
(v) Implementation schedule: specify the timing, frequency and duration of monitoring activities, and link these to the implementation schedule of the subproject. Also indicate if training is needed to carry out EMP responsibilities, and/or use equipment or supplies; and
(vi) Cost estimate: specify the estimated cost for the mitigation measures and monitoring activities. Funds to implement the EMP may come from the sub- project grant, the community, or both.

57. **Environmental Management Plan Requirements under the EIA Procedure (2015)**. With respect to the Myanmar EIA Procedure (2015), proposed RCDP subprojects will be Non IEE or EIA Type Projects and therefore not required to undertake any environmental assessment. However, the EIA Procedure (2015) provides for MONREC to determine whether an EMP[15] is required for any project.

58. The environmental impacts of RCDP subprojects are expected to be insignificant – minor and temporary (occurring only during the construction phase) and can be avoided or minimized, through implementation of appropriate mitigating measures.

59. However, where environmental impacts are uncertain, an environmental management plan may be required under the Myanmar EIA Procedure (2015). In these cases, subprojects will

[14] Deep wells are located at minimum 200 ft

[15] In practice this is called a “Standalone Environmental Management Plan”. A Standalone Environmental Management Plan is an environmental assessment document which must be prepared, as required by ECD, under the Myanmar EIA Procedure (2015),

be submitted for environmental screening to the ECD; and as necessary, an environmental management plan prepared based on ECD's requirements.

60. Each subproject shall be screened for its categorization using the categorization criteria defined in Annex 1 of the Myanmar EIA Procedure (2015). Any subproject classifying as IEE or EIA Type Project will not be eligible under this project.

V. FEEDBACK HANDLING MECHANISM

62. A grievance redress mechanism (GRM) is meant for people seeking satisfactory resolution of their complaints on the environmental performance of the Project. The mechanism will ensure that (i) the basic rights and interests of every affected person by poor environmental performance of the project are protected; and (ii) their concerns arising from the poor environmental performance of the project during the phases of design, construction and operation activities are effectively and timely addressed.

63. The project GRM is called a Feedback Handling Mechanism (FHM). At project management level, it is lodged with the Monitoring and Evaluation Unit of the DRD-PMU as Feedback Focal Point (FFP). The PIUs also have their own FFP. At community level, FFPs are created at village and village tract.

64. The PMU, PIUs, the village tract forums and the community facilitators will make the public aware of the FHM through public awareness campaigns, training and capacity building. The PMU and PIUs will each nominate and train their environmental safeguard officers and the community facilitators to be a FFP for environment-related issues. Any person who has complaints regarding the environmental performance of the subproject during pre-construction, construction and operation phases shall have access to the FHM described in the subsequent section.

A. Feedback Mechanism

65. Transparency and accountability are core principles of the RCDP. As part of this commitment, the Project has established a feedback handling mechanism (FHM). The goal of the FHM is to strengthen accountability to beneficiaries. By increasing transparency and accountability, the FHM helps reduce external interference, corruption, social exclusion, and mismanagement. It also serves as an important feedback and learning mechanism regarding the strengths and weaknesses of Project procedures, implementation processes, and mechanisms.

66. The FHM provides a channel for identifying and resolving issues affecting the project, including misconduct of staff, misuse of funds, abuse of power, and other improper behavior.

67. The FHM is accessible to all RCDP stakeholders, including ethnic, religious, and other special groups. The mechanism focuses on receiving, recording, and resolving complaints. The FHM is supported by an information campaign and training program. Respected and trusted feedback focal points (one male and one female) are elected in each village, to form the Village Tract Feedback Committee. Dedicated staff are also assigned to handle feedback in each township, and at the union level.

1. Process

68. The feedback and grievance handling process involve five steps: (1) intake, (2) sorting, (3) verification, (4) action, and (5) follow-up.

a. Step 1: Intake

69. Feedback and/or grievance can be filed by anyone, and through different means:

(i) Verbal communication to a village feedback focal point, Community, Technical, or Livelihood Facilitator, and/or township feedback handling officer, DRD township counterpart or any other relevant township officer(s);

(ii) Using a feedback envelope, and the suggestion box placed in each village. The village feedback focal points, and/or a Community Facilitator, open the suggestion box at least every two weeks. Each box is equipped with two locks, with one key held by the CF and the other by the village feedback focal points. Feedback envelopes from the box must be opened in front of at least two people – e.g. one of the village feedback focal points and the Community Facilitator;

(iii) Letters to the Village Tract Feedback Committee, DRD union and township offices, and Project Management Unit – Main Implementation Consultant (PMU-MIC) and Project Implementation Units – Support Service Provider (PIUs - SSP) teams at the township and union level;

(iv) At meetings and monitoring visits;

(v) E-mails to dedicated e-mail addresses of the DRD union office and the Union GMU-MIC; or

(vi) A dedicated phone line for the DRD union and township offices, and the Union GMU-MIC.

70. Feedback can be sent at any time to any level (e.g. feedback can be directed to the village, village tract, township, or union level). If a grievance is related to a village and/or village tract, the complainant is encouraged to report to the township level. If a grievance is related to a township, or the union, it is suggested to report to the union level.

71. At the community level, the feedback focal point is the regular primary contact for anyone who wishes to file a feedback. If an individual prefers, s/he can send feedback to others involved in the project implementation, such as a village volunteer, Community Facilitator, VDSC member, VTDSC member, or township engineer.

72. All involved in project implementation are trained on how to receive and handle feedback, and how to keep them confidential.

73. Township level staff receiving feedback must complete the Feedback Form (Box 1), and submit it without delay to the assigned Township TA's Feedback Handling Focal point, or Township DRD counterpart; and

74. Union level staff receiving feedback must complete the Feedback Form (i.e. FHM Form 1) and submit it without delay to the feedback handling officer of the union-level technical assistance team.

b. Step 2: Sorting

75. The Monitoring and Evaluation (M&E) Key Expert at PMU, assigned to handle feedback, sorts feedback into eight categories and enters these into the MIS:

- Category 1: General inquiries
- Category 2: Feedback regarding violations of policies, guidelines and procedures
- Category 3: Feedback regarding contract violations/breach of contract

- Category 4: Feedback regarding the misuse of project funds
- Category 5: Feedback regarding abuse of power/intervention
- Category 6: Reports of force majeure
- Category 7: Suggestion
- Category 8: Appreciation

76. For feedback received at the union level, the feedback handling specialists of the PMU records enquiries/feedback/reports using these same eight categories.

(i) If the feedback relates to a village or village tract, the feedback handling specialist of the MIC team forwards it to the respective feedback specialist of the SSP team;
(ii) If the feedback relates to a township or union issue, the feedback handling specialist of the MIC team submits it to the DRD union office;
(iii) The DRD union office decides on a course of action within 2 weeks of receiving the information; and
(iv) In resolving the feedback, the DRD union office follows the steps below.

77. Once feedback has been received, the DRD township office head and SSP team (team leader and feedback handling officer) decide how to handle it based on the general procedures and processes in the Operations Manual.

(i) They determine the timeframe within which the case should be resolved, with a timeframe not exceeding 90 days;
(ii) The feedback handling specialist of the SSP team records the timeframe and agreed course of action and enters this data into the MIS;
(iii) Feedback relating to a village issue are handled by the VDSC itself, by the respective VTDSC, or by the village tract level feedback committee;
(iv) Feedback relating to a village tract issue are handled by the township SSP;
(v) The DRD township office head and SSP team (team leader and feedback handling officer) determine who shall handle the feedback; and
(vi) For feedback that are of a serious nature (e.g. all allegations of fraud or corruption, and potentially any feedback in categories 2 through 5), the DRD township office head consults with the Union Feedback Committee for advice on the appropriate action.

78. If the person filing the feedback is known, the feedback focal point communicates the timeframe and course of action to her/him within two weeks of receipt of the feedback.

c. Step 3: Verification

79. The staff handling the feedback gathers facts and clarifies information to generate a clear picture of the circumstances surrounding the feedback.

80. Verification normally includes site visits, a review of documents, a meeting with the complainant (if known and willing to engage), VDSC members, and meetings with those who could resolve the issue (including formal and informal village leaders). Feedback related to the misuse of funds may also require meetings with suppliers and contractors.

81. For serious feedback received at the union level by phone or letter, the Union Feedback Committee decides whether (i) to launch its own investigation; or (ii) instruct the Township

Feedback Committee to conduct initial investigation at the location where the feedback/problem occurred. If the feedback cannot be resolved by the Township Feedback Committee, it will be reported back to the Union Feedback Committee, for further action.

82. Within the allotted period, the results of the verification are presented to the Village Tract Feedback Committee (for village issues), or the DRD township office (for village tract issues), for action.

83. The feedback handler fills in the Feedback Form, and submits it to the feedback handling officer of the SSP team, who enters it into the MIS.

d. Step 4: Action

84. Feedback from the village level should be handled in the village, if possible. For issues which cannot be resolved quickly at the village level, the Village Tract Feedback Committee reviews these feedback and the results of the verification, and determines the action to be taken. Once the needed action(s) are carried out, the feedback handler fills in a feedback report, and submits it to the township level, where it is entered into the MIS.

85. If the actions cannot be carried out, or the feedback cannot be satisfactorily resolved in reasonable period of time (less than two months), the VTDSC refers the case to the township level.

86. The DRD township office head and SSP (lead specialist and feedback handling officer) review the case and determine the action to be taken.

87. Township level M&E, or feedback focal, has to enter the feedback into the MIS within seven days of receipt. Serious feedback must be entered immediately into the MIS.

88. Once action to resolve the feedback has been taken, the feedback handling officer of the SSP records the action taken in the MIS.

89. The DRD township office head consults with the DRD union office in case no action can be agreed or no resolution of the feedback is possible.

90. If the complainant is known, the feedback focal point (or person with whom the feedback was filed) communicates the action to her/him. The feedback focal point must seek feedback from the complainant as to whether s/he deems the action(s) satisfactory. If the action is considered unsatisfactory, the complainant may file a new feedback. A new feedback on an existing case is handled at the next higher level from the initial case.

91. The Village Development Support Committee (VDSC) communicates the action taken as a result of a feedback, to villagers at the next village meeting.

92. The VTDSC also reports on feedback received and grievances resolved during the annual social audit meeting at village tract level.

e. Step 5: Follow-up

93. During the social audit open meetings, villagers discuss the effectiveness of the feedback handling system and gather suggestions on how to improve it.

94. In its regular supervision visits, the DRD union office and MIC assess the functioning of the feedback handling system and undertake spot checks.

95. The DRD union office uses the MIS to provide a monthly snapshot of the feedback handling system (number and category of comments received and grievances/suggestions resolved), including any suggestions received and acted on.

96. The DRD union office uses the MIS to report on feedback in its quarterly implementation progress reports, and its annual reports. Reports include information on grievance resolution and trends (number of grievances received, cause of grievance, number resolved, average time taken to resolve a grievance, percentage of individuals having filed a grievance who are satisfied with the action taken, number of grievances resolved at the lowest applicable level, etc.).

97. The DRD union office and the ADB review feedback monitoring data, as part of regular implementation support missions.

98. A review of the feedback handling system (including the feedback of those who have used it) is undertaken during every second year to assess the efficacy of the mechanism and introduce improvements.

Box 1. FHM Form 1: INQUIRY AND FEEDBACK

Instructions: This form is to be completed by the staff receiving the inquiry or feedback and sent to the Feedback Handling Officer in your township or at the union level. Attach any supporting documents (e.g. letters, reports, etc.) as relevant.

Date Inquiry/Feedback Received:	Name of Facilitator/Staff Completing Form:

Feedback/Inquiry Received (check √):

☐ Union ☐ State/Region ☐ Township ☐ Village Tract ☐ Village

Mode of Filing Inquiry/Feedback (check √):

☐ In person ☐ Telephone ☐ E-mail ☐ Text Message

☐ Website ☐ Feedback/Suggestion box ☐ Community meeting ☐ Feedback Focal Point ☐ Other

Name of person giving inquiry or feedback: *(information is optional and always treated as confidential)*

Address or contact information of person giving inquiry or feedback: *(information is optional and confidential)*

Location where incident or event referred to by the inquiry/feedback occurred

Union Level:	State/Region:	Township:	Village Tract:	Village:

What is the type of inquiry/feedback (check √)?	☐ Other (please describe):
☐ General inquiry about Project Policies and Procedures ☐ Violation of Project Policies, Guidelines, or Procedures ☐ Violation of contract ☐ Misuse of funds. How much? _____ ☐ Improper intervention ☐ Force majeure ☐ Suggestion ☐ Appreciation	

Brief Description of inquiry or feedback: *(Provide as much detail and facts as possible. Use the back if needed.)*

Who should handle and follow up on the inquiry / feedback:

Progress in resolving the grievance (e.g., answered, being resolved, settled)

Other Comments

Note: For MIS, include “Status” field and dates

VI. IMPLEMENTATION ARRANGEMENTS

A. Institutional Responsibilities

99. **Executing Agency (EA).** The Ministry of Agriculture, Livestock and Irrigation (MOALI) will be the EA for the project and will oversee overall project implementation and management activities to ensure smooth and timely implementation and completion of project activities. The EA has overall responsibility for the project and therefore is ultimately responsible for ensuring the implementation of the requisite environmental safeguards requirements as per the Government of Myanmar (GoM) laws and regulations and the ADB SPS (2009. The EA will guide and coordinate closely with other government agencies and the ADB for the timely resolution of any issue and completion of the project within the target dates, expediting the procurement process, and organizing and chairing the PSC meetings. The EA will designate a PMU Director to oversee the day-to-day management of the project and liaise with all relevant government offices. The EA will also designate a Chairman of PSC that will provide overall supervision to project implementation.

100. **Project Steering Committee (PSC).** The PSC will be chaired by the Deputy Minister of Ministry of Agriculture, Livestock and Irrigation and composed of senior officials of the government. The PSC will meet at least biannually to; (i) review and assess project implementation progress; and (ii) provide advice on policy matters related to the project.

101. **Project Management Unit (PMU)**. The PMU will be established at Department of Rural Development (DRD) of the MOALI in Naypyitaw. The PMU will assume day-to-day management of the project and will be responsible for coordinating and implementing project activities, including procurement, recruitment, disbursement, contract administration, monitoring and reporting. The PMU will be headed by a Project Manager supported by a Project Coordinator and will comprise full-time core staff, including environmental management staff. The PMU Director will guide and supervise the work of the PMU. The PMU will include technical and accounting staff, including a finance officer (accountant), procurement officer, block grant manager, infrastructure officer (engineer), and safeguard specialists. For rural infrastructure engineering design and supervision, the township DRD offices will serve as a technical hub to provide engineering services, including construction support to village tracts and supervision of civil works, to specifications. The Main Implementation Consultants (MIC) will assist the PMU.

102. **Implementing Agencies.** The implementing agencies will be the DRD at the township level, with five Project Implementing Units (PIUs) established, one in each of the Project regions/state clusters to coordinate the subproject activities at the village tract level.

103. The PMU and PIUs are responsible for the overall implementation of the subproject safeguard measures. The PIUs will have a designated environmental safeguard officer who conduct environmental supervision monitoring of at least 10% of randomly selected subprojects annually and act as feedback focal point for the FHM. They will be supported by the environmental safeguard specialists of the Main Implementation Consultant and Support Service Providers.

104. **Main Implementation Consultants MIC (including International and National Environmental Safeguard Specialists) provide support to the PMU.** Environmental Safeguard Specialists under the MIC will be responsible for:

(i) prepare the environmental and social procedures (including updated Screening forms, additional ECOPs for livelihood subprojects, and update EMP Forms) for the operational manual based on the documents prepared for ERLIP and NCDD Project;

(ii) provide training to national environmental safeguard specialists and EARF implementation;

(iii) provide training to community level facilitators and village communities on environmental assessment procedures for subprojects; and

(iv) assist the PIUs/PMU with the preparation of environmental and social safeguard monitoring report.

105. **Support Service Providers (SSP) including Safeguard Officer will support the PIUs.** SSP Safeguards Officers will:

(i) train village and village tract forums in environmental safeguard requirements for the Project;

(ii) provide guidance and technical inputs during village planning activities regarding environmental safeguards and ensure sound and critical analysis of gathered data during PSA and formulation of VDP and VTDPs;

(iii) assist the project facilitators in integrating environmental safeguard guidelines, into the subproject design, implementation and monitoring; and

(iv) prepare environmental safeguard monitoring reports at the township level.

106. **Support Service Providers: Community Facilitators (CF), Technical Facilitators (TF), and Livelihood Facilitators (LF).** The Facilitators have the following responsibilities**:**

(i) ensure safeguards risk are identified, and appropriate mitigation (including relevant ECOPs code/s) are integrated into the subproject technical design;

(ii) assist with safeguards screening of the full subproject proposal, and technical designs;

(iii) assist with preparation of Environmental Management Plans in accordance with Notification No. 616/2015 on environmental impact assessment procedure;

(iv) secure approval of EMP and issuance of Environmental Compliance Certificate (ECC) by MOEF for EMP Type Projects;

(v) ensure that the schedule of safeguards implementation and monitoring activities is included into the sub- project implementation workplan.

(vi) ensure that mitigation measures are implemented once the potential adverse impact occurs during the construction; and

(vii) assist Village Level Committees with environmental reporting.

107. **Village Level Committees**. Village level committees, in collaboration with community facilitators and village volunteers, monitor the implementation of the safeguard measures. The village tract forums confirm the proper application of the measures and notify the township development committees that a subproject is ready for implementation. Throughout the implementation of a subproject, the village volunteers monitor any adverse impacts that may arise. Community facilitators regularly visit villages and receive feedback. If villagers have any questions or grievances that cannot be answered at the community level, they are encouraged to seek clarifications and solutions through the GRM.

108. The village level committees will summarize environmental safeguard related activities in their monthly reports to the relevant PIUs for consolidation and submission to the PMU. These reports also include a short report on any environmental management plan that was completed during the reporting period.

B. EARF Enabling Conditions

109. The EARF environmental screening and assessment process relies on accurate environmental baseline data to confirm subproject eligibility. The EARF also relies on ECOPs to ensure the proper environmental management is undertaken to avoid and mitigate potential impacts of subprojects.

110. It was not possible to collect specific environmental baseline data during the preparation of the EARF. In addition, ECOPs for livelihood project must be developed. To ensuring the effective implementation of the EARF to following conditions must be met

1. Environmental Baseline Data Collection

111. Prior to approval of any screening report, ECOP, or EMP, adequate baseline data needs to be collected by the PIU at township level. At a minimum, the data is needed on the location of (i) major physical cultural resources, (iii) protected areas (iii) key biodiversity areas, and (iv) major water bodies; as well existing land use at the township level. It is recommended that a township level environmental baseline data report be prepared.

2. Preparation of Specific Environmental Codes of Practice for Livelihood Subprojects

112. Prior to approval of any livelihood subproject, specific Environmental Codes of Practices must be developed by the PMU for the livelihood subproject type.

C. Environmental Safeguard Monitoring and Reporting

113. A semi-annual safeguards monitoring report by the PMU, submitted to MOALI and then submitted to Environmental Conservation Department of ECD and ADB. ADB will disclose the report on its website. Table 14 below indicates the reporting requirements.

Table 14. Environmental Safeguard Monitoring and Reporting Requirements.

Responsibility	Reporting Requirement	Reporting to
Community Facilitators (CF), Technical Facilitators (TF), and Livelihood Facilitators (LF)	Assist Village Level Committees with environmental reporting in their periodic monitoring reporting	Village Level Committees
Village Level Committees	Incorporation on environmental safeguard monitoring reporting in monitoring reports	DRD PIUs
Township Level SSP Safeguards Specialists	Draft environmental monitoring reports at the township level	DRD PIUs
MIC	Draft semi-annual environmental monitoring reports	DRD PMU

Responsibility	Reporting Requirement	Reporting to
International and National Environmental Safeguard Specialists		
DRD PIUs	Draft semi-annual environmental monitoring reports	DRD PMU
DRD PMU	Final semi-annual environmental monitoring reports	MOALI
MOALI	Submission of Final semi-annual environmental monitoring reports	ECD, ADB

D. Capacity Development

114. A capacity development plan for the RCDP has been prepared. Target environmental safeguard training activities include:

(i) Introduction to Environmental Assessment of Review Framework - Environmental Planning, Assessment, and Monitoring (target participants include PMU, PIUs, SSP, CF, TF, LF, Village Level Committees);
(ii) Environmental Screening, Preparation of ECOPs, and EMPs (target participants include PMU safeguard staff, PIU safeguard staff, SSP safeguard staff, CF, TF, LF, Village Level Committees); and
(iii) Environmental Safeguard Monitoring and Reporting (target participants include PMU safeguard staff, PIU safeguard staff, SSP safeguard staff, CF, TF, LF, Village Level Committees).

115. In addition, preparation of environmental and social procedures (including updated Screening forms, additional ECOPs for livelihood subprojects, and updating the EMP Form) is required. This is to be undertaken by the International Environmental Safeguard Specialist.

E. Staffing

116. International Environmental Safeguard Specialist (IESS) for (8) person months on an intermittent basis will be need to:

(i) Update the Environmental Assessment and Review Framework (EARF) as required;
(ii) Based on the documents prepared for ERLIP and NCDD Project, prepare the environmental and social procedures (including updating Screening forms, preparing additional ECOPs for livelihood subprojects, and updating EMP Forms) for the operational manual based on the documents prepared for ERLIP and NCDD Project;
(iii) Develop a template for environmental safeguard monitoring reports for semi-annual reporting to MONREC and ADB;
(iv) Provide training and mentoring to national environmental safeguard specialists on EARF implementation;
(v) Provide training to community level facilitators and village communities on environmental assessment procedures for subprojects;

(vi) Provide training to all (PMU, PIUs, National Environmental Consultants, Facilitators, Village Committees) on preparation of environmental and social safeguard monitoring report;
(vii) Assist PMU to prepare environmental safeguard monitoring reports; and
(viii) Provide quality assurance and control for ECOPs, EMPs, and environmental safeguard monitoring reports.

117. National Environmental Safeguard Specialists will be also need to be engaged (for 43 months) on an intermittent basis for the duration of the Project to provide support in the training on environmental assessment procedures for subprojects, support the monitoring and supervision, and support the environmental and social safeguard reporting. The National Environmental Safeguard Specialists will:

(i) Prepare Myanmar language versions the environmental and social procedures (including Screening forms, ECOPs for livelihood subprojects, and EMP Forms);
(ii) Prepare Myanmar version of the template for environmental safeguard monitoring reports for semi-annual reporting to the Environmental Conservation Department (ECD) of Ministry of Natural Resources and Environmental Conservation;
(iii) Assist PMU and PIUs with the implementation of the EARF;
(iv) Act as a liaison with the Environmental Conservation Department (ECD) at the national and state/regional levels;
(v) With the International Environmental Safeguard Specialist (IESS), provide training to community level facilitators and village communities on environmental assessment procedures for subprojects;
(vi) Assist community level facilitators and village communities to prepare ECOPs and EMPs;
(vii) With the IESS, provide training to all (PMU, PIUs, National Environmental Consultants, Facilitators, Village Committees) on preparation of environmental and social safeguard monitoring reports;
(viii) Facilitate environmental safeguard reporting from the village committee level thru to the PMU level; and
(ix) Assist PMU and PIUs to prepare environmental safeguard monitoring reports.

118. Table 15 shows the indicative environmental safeguard staffing for the RCDP.

Table 15. Indicative Environmental Safeguard Staffing Needs

Staff	Position	Level of Effort
DRD PMU	Environmental Safeguard Officers	187.2 person-months
DRD PIUs	Township Engineers and Safeguard Officers	176.2 person- months
Main Implementation Consultant	International Environmental Safeguard Specialist	8 person-months
	National Environmental Safeguard Specialists	43 person-months
Township Level Support Service Providers	National Infrastructure Engineer and Safeguard Specialists (assumes 20% time is spent on safeguard matters)	109.2 person-months

	Community Facilitators, Technical Facilitators, and Livelihood Facilitators	Safeguard responsibilities are part of their main role as Facilitators

F. Estimated Cost

119. Table 16 presents the cost estimate for environmental safeguard personnel.

Table 10. Cost Estimate for the Environmental Safeguards Staffing requirements.

Item	Unit	Amount	Cost ($)	Total Cost ($)
1. Main Implementation Consultant - PMU				
1.1 Remuneration				
International Environmental Safeguards Specialist	Months	8	129,000	
National Environmental Safeguard Specialist	Months	43	113,000	
1.2 International Air Travel	Trips	6	21,000	
International Consultant Per Diem	Months	8	25,800	
1.3 National Consultant Ground Transportation	Trips	43	2,150	
National Consultant Per Diem	Months	43	11,180	
Subtotal			302,130	**302,130**
2. Support Service Providers				
Safeguard Specialists				
Ayeyarwady	Months	28.4	38,200	
Chin	Months	25.2	34,000	
NSAZ	Months	19.2	26,000	
Sagaing	Months	25.2	34,400	
Tanintharyi	Months	11.2	17,800	
Subtotal		109.2	150,400	**150,400**
Total Costs				**452,530**

Safeguard Form 1: SAFEGUARDS SCREENING

The completed form (one is required for each subproject) is to be attached to the sub- project proposal.

A. Basic Data

Region / State:				
Township:				
Village Tract:				
Village:				
Subproject Name:				
Subproject ID:				
Subproject description:				
Type (check one):	☐ Rehab	☐ Extension	☐ New	☐ Other
Scope (check one):	☐ Building	☐ Road/Bridge/ Jetty	☐ Water supply	☐ Irrigation
	☐ Sanitation	☐ Rural Electrification	☐ Livelihoods (specify)	☐ Other (specify)
Cost estimate (MMK):				
Location (with GPS longitudes and latitudes, if available):				
Beneficiaries:				
Number of villages served:				
Linked to sector plan? (Check one):	☐ Yes	☐ No		
Any other similar subproject or assistance in the same village? (Check one):	☐ Yes	☐ No		
Supporting Documentation	☐ Township Environmental Baseline Data Report			
	☐ Other (Specify)			

B. Environmental Screening Questions:

E1. Natural environment
Briefly describe the vegetation/trees in/adjacent to the subproject area:
Estimate and indicate where vegetation/trees might need to be cleared
Environmental Sensitive Areas Are there any environmentally sensitive areas or threatened species (specify below) that could be adversely affected by the subproject? Check all applicable areas below. If checked, provide a brief description
□ Natural Forests
□ National Parks
□ Rivers
□ Wetlands (swamps, polder areas, seasonally inundated areas):
□ Habitats of endangered species for which protection is required under Myanmar laws and/or international agreements
□ Others (describe):
IF ANY OF THE AREAS ABOVE ARE MARKED, the VSP has an impact on the natural environment. Please check the appropriate box below
□ Has an impact □ No impact

E2. River ecology
Is there a possibility that, due to installation of structures, such as weirs and other irrigation structures, the river ecology will be adversely affected? (check one)
□ **Yes** □ **No**
IF THE ANSWER TO THE ABOVE QUESTION IS "YES", mark VSP as having an impact on river ecology. Please check the corresponding box below. Attention should be paid to water quality and quantity, the nature, productivity and use of aquatic habitats, and variations of these over time, in the decision to proceed with the project and in the design of mitigation measures.
☐ **Has an impact** ☐ **No impact**

E3. Protected areas
Does the subproject area (or components of the subproject) occur within/adjacent to any protected areas designated by government (national park, national reserve, world heritage site, etc.)? (check one)
□**Yes** □**No**
If the subproject is outside of, but close to, any protected area, is it likely to adversely affect the ecology within the protected area areas (e.g., interference with the migration routes of mammals or birds)
□ **Yes** □ **No**
IF THE ANSWER TO THE ABOVE QUESTION IS "YES", mark VSP as having an impact on the protected areas:
☐ **Has an impact** ☐ **No impact**

E4. Geology and soils
Based upon visual inspection or available literature, are there areas of possible geologic or soil instability (erosion prone, landslide prone, subsidence-prone)?
□**Yes** □**No**
Based upon visual inspection or available literature, are there areas that have risks of large scale increase in soil leaching and/or erosion?
□**Yes** □**No**

IF THE ANSWER TO THE ABOVE QUESTION IS “YES”, mark VSP as having an impact on geology and soils:
☐ **Has an impact** ☐ **No impact**

E5. Pollution
Will the subproject lead to ground, water, or air pollution? ☐Yes ☐No
Will lead batteries be used? ☐Yes ☐No
IF THE ANSWER TO THE ABOVE QUESTION IS “YES”, mark VSP as having an impact on air pollution:
☐ **Has an impact** ☐ **No impact**

E6. Invasive plant species along feeder road routes
Is the subproject likely to result in the spread of invasive plant species (along feeder road routes)? ☐Yes ☐No
E7. Endangered species along feeder road routes
Is the subproject likely to result in an increased threat to endangered animal species (along feeder road routes)? ☐**Yes** ☐**No**
IF THE ANSWER TO THE ABOVE QUESTIONS (E6 and E7) IS “YES”, mark VSP as having an impact on invasive plant species
☐ **Has an impact** ☐ **No impact**

E8. Historical, archaeological, or cultural heritage site
Based on available sources, consultation with local authorities, local knowledge and/or observations, could the subproject alter any historical, archaeological, or cultural heritage site (pagodas, memorials, and graves) or require excavation near same? ☐**Yes** ☐**No**
IF THE ANSWER TO THE ABOVE QUESTION IS “YES”, mark VSP as having an impact on historical, archaeological, or cultural heritage site:
☐ **Has an impact** ☐ **No impact**

E9. Loss of crops, fruit trees and household infrastructure
Will the subproject result in the permanent or temporary loss of crops, fruit trees and household infra-structure (such as granaries, outside toilets, and kitchens, etc.?
□**Yes** □**No**
IF THE ANSWER TO THE ABOVE QUESTION IS "YES", mark VSP as having an impact on crops, fruit trees and household infrastructure:
☐ **Has an impact** ☐ **No impact**

E10. Adverse impacts on natural habitats
Will the subproject have adverse impacts on Natural Habitats that will not have acceptable mitigation measures according to OP 4.04 Natural Habitats? □□Yes □□No
IF THE ANSWER TO THE ABOVE QUESTION IS "YES", mark VSP as having an impact on natural habitats:
☐ **Has an impact** ☐ **No impact**

E11. Solid or liquid waste
Will the subproject generate solid or liquid wastes? □ **Yes** □**No**
If "Yes", does the subproject include a plan for their adequate collection and disposal?
□**Yes** □**No**
IF THE ANSWER TO THE ABOVE QUESTION IS "YES", mark VSP as generating solid or liquid waste:
☐ **Has an impact** ☐ **No impact**

ATTENTION! If the answer to any of the above questions is 'yes', prepare an Environmental Management Plan that has suitable mitigation measures.

C. Social Screening

S1. Resettlement and/or land acquisition
Will land that is privately used for farming, residence, grazing or other purposes be permanently acquired or temporarily occupied by subproject implementation?
☐**Yes** ☐**No**
IF THE ANSWER TO THE ABOVE QUESTION IS "YES", proceed to the guidance on land acquisition (voluntary donation or resettlement plan, as appropriate).

S2. Accessing subproject benefits			
Will the following groups in the village have access to and benefit from the subproject? If the answer is 'yes', specify how the group will benefit. If the answer is 'no', explain why they will not benefit.			
Group	**Yes**	**No**	**Remarks**
Women			
Youth Groups			
Minority Groups			
Religious Minorities			
Others (specify):			
Others (specify):			
Others (specify):			
Will villagers be employed for the implementation of works? ☐**Yes** ☐**No**			
If the answer is 'yes', please refer to Chapter 1, Block Grants to determine the daily wage.			

D. Screening in accordance with Notification No. 616/2015 on environmental impact assessment procedure

D1. Categorization per Annex 1 of the Notification No. 616/2015 on environmental impact assessment procedure
Does the subproject classify as EIA or IEE Type Project as per Annex 1 of the Notification No. 616/2015 on environmental impact assessment procedure? □ **Yes** □ **No**
If "Yes", the subproject is not eligible under this project!
If "No", is the subproject likely to require an EMP under section 24 of the Notification No. 616/2015 on environmental impact assessment procedure? □ **Yes** □ **No**
IF THE ANSWER TO THE ABOVE QUESTION IS "YES", the subproject EMP must be submitted for review and approval by the Ministry of Natural Resources and Environmental Conservation
□ **EMP and Environmental Approval required** □ **EMP and Environmental Approval not required**

D. Screening Results:

The Subproject is to prepare: (please check one)

□ **Environmental Codes of Practice**

□ **Environmental Management Plan**

The Subproject is to secure the following from Environmental Conservation Department:

□ **Approval of Environmental Management Plan**

E. Certification:

Name:	Position:
	Head, Village Development Support Committee
Signature:	Date:

Safeguard Form 2: Specific Environmental Codes of Practice and Technical Guidelines for Construction and/or Rehabilitation of Specific Types of Subprojects

1. Buildings

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
In general	▪ Provide adequate drainage in the building's immediate surroundings to avoid standing water, insect related diseases (malaria, etc.) and unsanitary conditions ▪ Include sanitary facilities such as toilets and basins for hand-washing ▪ Avoid use of asbestos cement tiles as roofing ▪ Tiled floors are preferred for easier cleaning and more hygienic
Schools, community recreation centers, child care centers, and multi-purpose buildings	▪ Maximize natural light and ventilation systems to minimize needs for artificial light and air conditioning; use large windows for bright and well-ventilated rooms.
Health Centers	▪ Maximize natural light and ventilation systems to minimize needs for artificial light and air conditioning; use large windows for bright and well-ventilated rooms. ▪ Provide adequate area for treatment, waiting area and patient's rooms, all of which should be well ventilated. ▪ Include facilities for proper disposal of health and biological wastes (syringes, blood, etc.).
Markets	▪ Tiled/paved floor is preferred for easy cleaning and maintenance. Slope floor for drainage. ▪ Provide garbage/waste disposal that can be emptied regularly. ▪ Separate the stalls/shops in the market for dry and wet produce/products. ▪ Ensure the stalls/shops have covers/roof to avoid standing waters during rainy seasons.

2. Rural Roads, Bridges, and Jetties

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
Roads connecting villages, between villages and township	**General Considerations:** ▪ Control placement of all construction waste (including earth cuts) to approved disposal sites (at >300 m from rivers, streams, lakes, or wetlands). Dispose in authorized areas all of garbage, metals, and excess materials (fuels, oil, and grease) generated during construction. Never dispose spent oils on the ground and in water courses as it can contaminate soil and groundwater. ▪ Erosion control measures should be applied before the rainy season begins, preferably immediately following construction. Maintain, and reapply the measures until vegetation is successfully established. ▪ Sediment control structures should be applied where needed to slow or redirect runoff and trap sediment until vegetation is established. ▪ Spray water on dirt roads, cuts, fill materials and stockpiled soil to reduce wind-induced erosion, as needed. ▪ Avoid road construction through primary forests as it gives access to illegal logging. ▪ Avoid road construction in unstable soils, steep slopes and nearby river banks. Additional measures (see the section below) need to be applied should there be no alternatives for road alignments. **Protect slopes from erosion and landslides by the following measures:** ▪ Plant locally available, fast-growing grass on slopes prone to erosion. These grasses help stabilize the slope and protect soil from erosion by rain and runoff. Locally available species possessing the properties of good growth, dense ground cover and deep root shall be used for stabilization. ▪ Provide interceptor ditch, particularly effective in the areas of high intensity rainfall and where slopes are exposed. This type of ditch intercepts and carries surface run-off away from erodible areas and slopes before reaching the steeper slopes, thus reducing the potential surface erosion. ▪ For steep slopes, a stepped embankment (terracing) is needed for greater stability. ▪ Place a retaining wall at the lower part of the unstable slope. The wall needs to have weeping holes for drainage of the road sub-base, thus reducing pressure on the wall. ▪ Rocks (riprap) can be used in addition to protect the slope. ▪ Prevent uncontrolled water discharge from the road surface by sufficiently large drainage ditches and to drain water away from the down slope.
Small bridges (less than 5 meters) and jetties	**Erosion Protection:** a. The main method of slope and erosion protection is the construction of gabions (gravity walls that support embankments or slopes which have a potential to slip) and ordinary stone pitching:

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
	▪ The slope of gabions should be in the ratio of at least 1 vertical: 2 horizontals. Flatter slopes may be adopted depending on the site terrain. ▪ The filling of the gabions should be from strong and competent rock which is laid very closely packed to maximize the weight. ▪ Bracing wire should be used to prevent the gabion bulging out. The bracing wire should be placed at each third of the gabion height. ▪ The gabions should be firmly anchored into the ground by founding the gabions below the expected scour depth level. ▪ In cases where stone pitching is not provided, the top layer should be covered by soil to encourage the growth of grass and the stabilization of the slopes. b. Stone pitching may be provided as the only erosion protection measure in those cases where the erosion potential is deemed minimal. Stone pitching is not very resistant to strong water current and is mainly used as the top finish on gabion walls. **<u>Water Quality and Fauna:</u>** ▪ Restrict duration and timing of in-stream activities to lower flow periods (dry season) and avoid periods critical to biological cycles of valued flora and fauna (e.g., spawning) ▪ Water flow diversion is not advisable; if it is impossible to avoid, impacts should be assessed and mitigation proposed. ▪ Establish clear separation of concrete mixing and works from drainage areas and waterways
Culverts	▪ Remove all formwork from inside the culvert (after concrete has reached full strength). Formwork that is not removed will rot eventually, drop down and obstruct the free flow of water. ▪ Place large stones at the outlet of the culvert to prevent erosion. ▪ Keep the culvert inlets free from sand and gravel – the water must flow through the culvert. ▪ Build a sand trap upstream of the culvert to prevent accumulation at culvert inlets (sand traps will have to be cleaned periodically). ▪ Ensure that the water of the adjacent road sections can flow freely into the roadside ditch.

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3. Rural water supply

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
Wells (deep/shallow)	▪ Should be equipped with slab around the well for easier drainage, a crossbeam and a pulley to support the use of only one rope and bucket for collecting water. One rope and bucket is more hygienic for the well and water. ▪ Steel rungs (placed inside wall of a deep well) are essential for maintenance of a well or in case of an emergency. ▪ A groundwater well usually has a wide-open water area. It is necessary to provide a cover/roof/wire mesh on top to protect this area from falling leaves or debris. ▪ Wells should always be located upstream of the septic tank soak-away. Build the soak-away as far away as possible from the well (minimum 15 m/50 feet) as it can influence the quality of the drinking water when it is too close (health risk). ▪ Before using a new water source, take samples for testing; minimum key parameters for water testing: total coliform, pH, Arsenic, Nitrate, color, turbidity, and temperature. Water quality should also be monitored in the case of all wells rehabilitations as part of the project.
Spring	▪ Every spring capture should be equipped with a filter and a sand trap. Add a wall between the inflow and the outlet pipe to create chamber for settling out sand; build the wall with a notch (lowered section) for controlled flow. Sand must be cleaned out periodically (O&M). ▪ Collection basin for spring capture needs to have a perforated PVC pipe (holes diameter 2mm) to be used as a screen for the water intake. Alternatively, a short pipe with wire mesh (screen) around the open end should be provided. Collection basin needs to have a fence to protect the spring from public access and risk of contamination; and a roof/cover over the spring to prevent leaves or other debris from entering the basin.
Rainwater harvesting	▪ Rainwater storage reservoir should be intact, connected to roof gutter system, with all faucets and piping intact. ▪ If distribution pipes are attached into the storage reservoir, install the distribution pipes 10cm above the storage/tank bottom for better use of the storage capacity. ▪ Cover must be fitted tightly onto the top of the storage reservoir to avoid overheating and growth of algae (from direct sunlight), and to prevent insects, solid debris and leaves from entering the storage tank. ▪ A ventilation pipe with fly screen should be placed in the cover to help aerate the tank/reservoir which is necessary for good water quality. ▪ Roof gutters need to be cleared regularly, as bird and animal feces and leaf litter on roofs or guttering can pose a health risk if they are washed into the reservoir tank. ▪ Reservoir tanks need an overflow so that in time of heavy rain, the excess water can drain away. The overflow should be designed to prevent backflow and stop vermin/rodents/insects entering the system. A good design will allow the main storage tank to overflow at least twice a year to remove build-up of floating sediment on the top of the stored water and maintain good water quality.

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
Installation/ Rehabilitation of pipelines from natural springs	**Preventing Contamination at Water Sources:** ▪ Build a structure with roof over the water source to prevent leaves or other debris from entering the basin. ▪ A fence is needed to protect the water sources (springs particularly) from public access and risk of contamination. ▪ The sand/gravel filter traps sediment before the spring flow enters the collection chamber and must be changed during periodical maintenance. **Pipe Laying:** ▪ PVC water transmission and distribution piping need to be buried underground (coverage 50cm minimum) to prevent pipe against external damage (e.g. passing vehicles, solar UV radiation, etc.). Exposing PVC pipe to UV radiation causes the plasticizer in the PVC pipe to evaporate causing loss of integrity and brittleness. ▪ Pipe shall be laid in a straight line, over a constantly falling slope. ▪ When conditions do not allow piping to be buried (i.e. pipe is used above ground), then metal pipe must be used, and supported/braced as excessive movement may lead to leaks and breaks. ▪ Outlet pipes and fittings from water storage/basin shall not be PVC pipe due to exposure to solar UV/sunlight. Metal piping and fittings are preferred.

4. Rural Electrification

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
a. Solar panel and charge station b. Pico hydro (<20 kw) c. Solar street lighting d. Diesel generator (<15 kilovolt-amps)	▪ Provide a shed for genset (distributed electrical generator system) or pumps that are accessible for easy maintenance. Regular maintenance is important to avoid spillage/contamination (diesel/petrol/oil). ▪ At genset installation, make sure that exhaust pipe ends at the wall side of shed, as the fumes in the shed are unhealthy for the operators. ▪ Tidy wiring for easy maintenance and reduces the risk of accidents. ▪ Electrical cabling connections for street lighting need to be protected against rain to prevent short circuits. ▪ A solid pole foundation (min 80 x 80 x 100 cm) is essential for safe lighting and power distribution.
Biogas charge station	▪ Adequate level of maintenance is needed to prevent pipes getting blocked and leaking. ▪ No open flames should ever be used near a digester, and adequate ventilation is needed. ▪ When handling waste material, exercise appropriate precautions by using personal protective equipment to avoid contact with manure. Washing after working around the digester is recommended. It is recommended to wash hands before eating and drinking and before touching the eyes or other mucous membranes. ▪ Keeping the digester facility clean will reduce disease hazards as well as the spread of odors and fly and mosquito populations in the digester facility.
Biomass generator (<15 kilovolt-amps)	▪ Biomass fuel storage should be located close to the boiler. Extended conveyance and elevation changes lead to increased technical complexity (with health and safety implications) and higher capital investment and maintenance costs. ▪ Ash content from combustion of biomass generator needs to be buried or used as fertilizer. ▪ A storage facility for agricultural wastes must be located at least 15 m from any watercourse and 30 m from any source of water for domestic purposes. If this recommended setback distance is not feasible, additional steps should be taken to ensure impacts from the storage waste pile are mitigated. ▪ Storage sites should be located at a level area and well drained. Low lying, poorly drained areas should be avoided to ensure there is no standing water. ▪ Surface run-off from the surrounding area should be directed away from the storage waste pile.

5. Small-Scale Irrigation

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
Small-Scale Irrigation	▪ Masonry walls (along the road) or stone riprap should be built to prevent erosion on a sloped bank. ▪ May use bamboo as bank protection along the rice fields as the loads are low. ▪ A bar screen (vertical bars; about 20mm diameter with an approximate 10 cm clear distance for easy maintenance) is essential in front of any inlet structure (upstream) to prevent large objects and debris blocking the irrigation canal. The angle between the bottom of the canal and the screen shall be between 45 to 80 degrees.

6. Sanitation Facilities

SUBPROJECT TYPE	ENVIRONMENTAL PREVENTION/MITIGATION MEASURES
Public latrines/toilets	▪ All toilets must have a septic tank to provide primary treatment of fecal waste. ▪ PVC pipe used to connect pour-flush toilet to a septic tank must be buried underground or covered over (with cement) for protection and to prevent exposure to sunlight. ▪ Metal pipe is a preferred choice to be used as the gas vent pipe on septic tanks. Never use PVC pipe as it is unable to withstand long-term exposure to sunlight. ▪ Septic tanks must have a vent pipe to prevent the build- up of gas inside the chamber and shall have a 'manhole' that provides access inside the tank if needed. ▪ A toilet should be at least 20 meters from water sources (well, spring, river).
Small-scale waste treatment facilities	**Septic Tanks:** ▪ Septic tanks must have a vent pipe to prevent the build- up of gas inside the chamber and shall have a 'manhole' that provides access inside the tank if needed. ▪ Ensure that the septic tanks have two chambers: first chamber is for settling of sludge, and the second chamber is for aerobic treatment. These chambers will generally treat wastewater better. Partially treated septic tank effluent can pollute groundwater and surface water. ▪ Do not discharge septic tank effluent to an open drain or other surface water. The effluents need to be treated before final disposal. This may be achieved through: (i) an underground leach field, (ii) a vegetated leach field, or ▪ (iii) a pit for soaking away. ▪ Septic tanks must be inspected periodically and the accumulated sludge must be emptied (by pumped out) every few years for the tank to continue to function properly. **Solid Waste Disposal (Wastes from Rural Market):** ▪ Solid waste depots/disposal need to be located on hard- standing areas that prevent waste entering surface or groundwater. ▪ Waste depots/storage/disposal should be contained, sealed and/or roofed/covered to prevent storm water contamination. Wastes need to be emptied regularly.

Safeguard Form 3: ENVIRONMENTAL MANAGEMENT PLAN

The completed form will be attached to the subproject proposal. The EMP will be approved by the DRD township engineer.

Region / State:	
Township:	
Village tract:	
Village:	
Subproject Name:	
Technical Facilitator:	

Potential adverse impact(s)	Mitigation measure(s)	Monitoring indicators	Responsibilities	Implementation schedule	Cost estimates

Estimate Cost:

Person Responsible for EMP Implementation:

Approval Authority:

Name: Position: Head, Village Development Support Committee