
PROJECT IMPLEMENTATION MANUAL (PIM) FOR

Modernization of Rani Jamara Kulariya Irrigation Scheme (MoRJKIS) –Phase 2

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JULY 1, 2018

GOVERNMENT OF NEPAL
MINISTRY OF ENERGY, WATER RESOURCES AND IRRIGATION
DEPARTMENT OF IRRIGATION
RANI JAMARA KULARIAY IRRIGATION PROJECT
Tikapur, Kailali

LIST OF ACRONYMS

ACIU	: Agriculture Component Implementation Unit
ADB	: Asian Development Bank
AoI	: Area of Influence
BNP	: Bardia National Park
CAD	: Command Area Development
CAP	: Command Area Protection
CBOs	: Community Based Organizations
CFUGs	: Community Forest Users Groups
DADO	: District Agriculture Development Office
DFO	: District Forest Office
DoI	: Department of Irrigation
EA	: Environmental Assessment
EIA	: Environmental Impact Assessment
EPA	: Environment Protection Act
EPR	: Environment Protection Rules
FFS	:Farmer Field School
FGD	: Focus Group Discussion
FMIS	: Farmers Managed Irrigation System
GRM	: Grievance Redress Mechanism
GoN	: Government of Nepal
IP	: Indigenous People
IPM	:Integrated Pest Management
IPVC	: Indigenous People and Vulnerable Community
VCDP	: Vulnerable Community Development Plan
KII	: Key Informant Interview
LEMC	: Local Environment Monitoring Committee
MoEWI	: Ministry of Energy Water Resources and Irrigation
MOALRC	Ministry of Agricultural Land Reform and Cooperatives
NFIWUAN	: National Federation of Irrigation Water Users Association of Nepal
NGO	: Non-Governmental Organizations
NPC	: National Planning Commission
OP	: Operational Policy (World Bank's)
PLARRIDP	: Policy on Land Acquisition, Resettlement and Rehabilitation for the Infrastructure Project Development
RAP	: Resettlement Action Plan
RJKIP	: Rani Jamara Kulariya Irrigation Project
RJKIS	: Rani Jamara Kulariya Irrigation Scheme
RPF	: Resettlement Policy Framework
SA	: Social Assessment
SIMF	: Social Impact Management Framework
VC	: Vulnerable Communities
VDCs	: Village Development Committees
WB	: World Bank
WUAs	: Water Users Associations
WUGs	: Water Users Groups

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1. Introduction

1.1 Scope of the Project

1. The modernization of Rani Jamara Kulariya Irrigation Scheme Phase-2 aims to ensure adequate and reliable irrigation water and to foster improved farming practices in the command area of Rani Jamara Kulariya Irrigation Scheme. The Phase-2 which is a follow up project of Phase-1 targets to modernize the lower order irrigation system from subbranch to watercourse, strengthening of WUA/WUC and implementation of a comprehensive agricultural improvement program. The modernization of Rani Jamara Kulariya Irrigation Scheme Phase-2 is expected to come effective on July 01, 2018 and to close on December 31, 2023.
2. The beneficiaries are the farmers/water users in the project area. The project covers three municipalities, two at the township levels (Tikapur and Lamki-Chuwa) and one at the village level (Janaki). The project will be implemented by Department of Irrigation (DoI) and Department of Agriculture, Rani Jamara Kulariya Irrigation Project (RJKIP).

1.2 Objective and Structure of Project Implementation Manual (PIM)

3. The objective of the Project Implementation Manual (PIM) is to spell out the procedures and detailed arrangements including roles and responsibilities of the project stakeholders for the implementation of the Modernization of Rani Jamara Kulariya Irrigation Scheme Phase - 2 for the achievement of its objectives. The broader objectives of the manual are:
 - a. To outline the procedure of project component spelled in the PAD in line with the GoN rules, regulation and policy without contradicting IDA regulation and procedures.
 - b. To identify all the proposed activities and develop in depth procedures, implementation schedule, involved agencies with their respective activities.
 - c. To cover all the process from planning, procuring, financing, reimbursement, monitoring and evaluation for all the project components.
4. The PIM has been prepared and will be updated by Project Implementation Unit (PIU), and will be distributed to the Project Steering Committee and to the concerned agencies. The PIM should be known and followed by all staff with Project implementation responsibilities.
5. The PIM is a living document and expected to be revised and updated as necessary to incorporate the evolving needs of the Project and any changes in procedures based on the experiences of Project implementation. A change to the PIM will take effect upon approval from the WB.
6. The PIM has been divided into eight sections and addresses the processes of Project planning, implementation (including financial management and procurement) and monitoring and evaluation. The PIM is organized in the following way:

- Section I: Introduction
- Section II: Project description
- Section III: Institutional Arrangements
- Section IV: Implementation Process and Procedures
- Section V: Safeguard Management Plan and Framework
- Section VI: Procurement arrangement and Procedures
- Section VII: Financial Management and Financial Reporting
- Section VIII: Grievance Redress Mechanism
- Section IX: Monitoring and Evaluation and Project Reporting
- Section X: Governance and Accountability Action Plan

It also includes Annexes, which hold supplementary information.

2. Project Description

2.1 Brief description of the project

7. Rani, Jamara and Kulariya are three separate irrigation systems originally constructed by the local farmers. Rani and Kulariya irrigation systems were developed by the farmers between 1896 and 1915. The Jamara system was developed from 1903 onwards. These three irrigation systems were independent, traditionally operated and managed by the indigenous Tharu community. Later on, towards the end of 1986, all these three systems were integrated to Rani, Jamara, Kulariya Irrigation System (RJKIS). The source of water for these irrigation systems is the Karnali river. Farmers have to spend long time and effort especially in dry season to get water in to their canals and distribute to their farmland for irrigation. This tedious diversion work has to be done by the farmers every year. This situation becomes more severe in case the river swings towards the east as it has happened now for several years.
8. Understanding the gravity of the farmers' problems, the Government of Nepal, Department of Irrigation, took initiative and carried out studies for its solution. The best feasible recommended solution to this problem as revealed by the study was to construct a permanent side Intake structure on the left bank of Karnali river at Chisapani and a main canal followed by a feeder canal to join Rani, Jamara and Kulariya canals. Consequently, DOI set up Rani, Jamara, Kulariya Irrigation Project (RJKIP) Office at Tikapur, in Kailali District in FY 2066/67 to implement the Project activities. The construction of side intake has been accomplished. The construction of main canal is in the verge of completion. Similarly, an agreement was signed between GoN and the World Bank on October 18, 2011 and closed on September 2018 for the development of Phase –I of the Project. The loan agreement for the Modernization of Rani Jamara Kulariya Irrigation Scheme Phase -2 has been signed on May 10, 2018.
9. The Phase-II program primarily includes rehabilitation, extension and construction of new canals and structures below secondary level to provide irrigation in the command area of RJKIS and adopt desired irrigation water management practices for the planned cropping pattern. After implementation of Phase-II activities, the command area is expected to increase from existing 11,000 ha to 14,300 ha. Increased command area with reliable year-round irrigation and better water management supported by agricultural development activities will bring in significant increase in agricultural production. This increased production from the project will certainly be helpful to fulfil food-grain requirement at local, regional and national level and backup food security aspect of the nation. Additionally, increased production will lead to increased income and subsequently uplift the living standard of the farmers.
10. About 42 percent inhabitants of the project area belong to indigenous Tharu community. Implementation of this project will narrow down the regional imbalance and solve serious problem of irrigation faced by the indigenous people. Completion of Main, Feeder, Branch Canals and Phase-II activities will provide a leeway to the farmers for overall development of agriculture.

2.2 Project Development Objectives

11. The Project Development Objectives (PDOs) are to improve irrigation services and to promote improved farming practices for farmers in the irrigated areas of the Rani Jamara Kulariya Irrigation Scheme.

2.3 Project Components

12. The envisaged project components are as follows:

- a. **Component 1, Scheme Modernization (US\$60 million, mainly civil works):** will support the construction and modernization of the lower-order irrigation infrastructure, including the sub-branch canals, tertiary canals, and water courses. The activities will include design and execution of irrigation and drainage subsystems below the Branch Canals and down to the Field Outlet levels, including not only the irrigation subsystems but also related river-training and flood-protection works, collector and tertiary drains, and control structures. The Activities proposed under scheme modernization including the objectives and responsibilities are presented in Annex 2.1. The expected results of this component are
 - (a) Assured and regulated irrigation water delivery and distribution up to the farm level;
 - (b) Improved management of the irrigation systems;
 - (c) Flood and erosion control in the command area;
 - (d) Improved access to the agricultural production areas; and
 - (e) Better management of environment during and post-construction.
- b. **Component 2, Agricultural Production Support and Strengthening Water Users Banks/Groups (WUAs/WUGs) (US\$9 million):** will support: (i) strengthening WUAs/WUGs to assume responsibility for management, operation, and maintenance of the modernized system; and (ii) carrying out a series of agriculture-based activities in the project area to internalize the gains made in phase 1 and to increase and sustain agricultural production through the promotion of water-smart improved farming practices, crop diversification, post-harvest support, farmer training through demonstrations and farmer field schools, and other adaptive processes. Thus the second phase will adopt value-chain-based approach to support agricultural activities.

Subcomponent 2a. The activities will include carrying out a program of activities, including capacity building and training to strengthen WUAs/WUCs to assume responsibility for management, operation, and maintenance (MOM) of the modernized system, including proper and equitable distribution of water, water use, development, and implementation of MOM plans; setting ISFs; proper maintenance of records and accounts; promoting citizen engagement (CE) and gender mainstreaming for participatory irrigation management (that is, the aforementioned GoN's JPM program), a Gender Action Plan (GAP) as part of a Vulnerable Community Development Plan (VCDP), and participatory monitoring, learning, and evaluation. The GAP includes awareness raising, capacity development trainings, farmer field school (FFS), agriculture-based training, small farm machinery support to women members, compensation to female-headed households (FHHs), and so on.

Subcomponent 2b. The subcomponent will carry out a series of agriculture-based activities in the project area, building on the capacity developed by Phase 1, which created the Agriculture Component Implementation Unit (ACIU) (under the Department of Agriculture [DoA]) at Tikapur. Phase 2 will support a value chain approach to internalize the gains made in Phase 1 and to sustain agricultural production through the promotion of climate-smart agriculture and livestock practices, crop diversification, post-harvest support (storage, grading, and marketing), farmer training, production and block demonstrations and FFS, and other adaptive processes. The agricultural activities will be aligned with the ADS by focusing on high-value crops, taking advantage of the irrigation improvements. This subcomponent will thus finance extension and outreach services (including through sub-grants), technology adoption support (mainly through small performance-based subgrants [see annex 1]), soil management practices, plant protection and seed testing mini-lab and equipment, mechanization support (through the provision of matching grants), post-harvest support and marketing (including through sub-grants), promotion of livestock activities for income generation and nutrition needs, support program for landless and marginalized poor people, support for marginal and flood-affected land, training and study visits, and vehicles and logistics. Provision of matching grants will be made through an agreement between the ACIU and the eligible beneficiaries following a fair and transparent process as guided by the Project Implementation Manual (PIM) to be finalized by project effectiveness to ensure compliance with the fiduciary requirements.

Component 3, Project Management (US\$1 million, including goods, technical assistance and capacity building): will support activities to ensure effective project management, including fiduciary and safeguards management and monitoring and evaluation. The activities to be implemented under component 3 are presented in Annex 2.2 along with the objectives, responsibilities and possible outcomes.

2.4 Project Cost and Financing

13. The proposed project is financed by IDA loan in the amount of 66 US\$, millions. Government co-financing of 2.8 US\$, millions. In kind contribution of 3 US\$, millions to be provided by Beneficiaries. The project will have different co-financing arrangements, based on funding flows for each component. Under all components, co-financing of IDA and borrower funds will be “joint financing” with different IDA percentages.

Components by Financiers (US\$, millions)	IDA Loan		Government		Beneficiaries		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
Component 1	51.3	96.9	0.8	1.4	0.9	1.7	52.9	73.7
Component 2	11.3	84.4	0.0	—	2.1	15.6	13.4	18.6
Component 3	3.4	62.1	2.1	37.9	—	—	5.5	7.7
Total project costs	66.0	91.9	2.8	3.9	3.0	4.2	71.8	100.0

3. Institutional Arrangement

14. The government of Nepal (GoN) and the World Bank (WB) are the responsible agencies to administer the management and execution of the overall project. For the Government of Nepal (GoN), Ministry of Finance (MoF) has signed an agreement with the World Bank. The representatives of both are responsible to monitor the proper utilization of the fund and shall regularly check the overall progress and the fund utilization of the project. Similarly, National Planning Commission (NPC) oversees the progress and the targeted objective of the project.
15. The Department of Irrigation is the main implementing agency of the project. The deputy director General, Surface Irrigation Division will be the focus person at department level. It implements project activities through the Project Implementing Office (PIO) set up at Tikapur (Figure 2.1). The agricultural component of the project is implemented through the Department of Agriculture (DOA). To implement agricultural activities of the project, the DOA has set up ACIU at Tikapur.
16. At the Ministry Level, a high level Project Steering Committee (PSC) chaired by the Secretary of the Ministry of Energy, water resources and Irrigation is mandated to coordinate with central level agencies like: National Planning Commission, Ministry of Finance, Ministry of Agriculture, DOA and donor agencies. It also makes policy related decisions and approves annual programs of the project.
17. As a principal stakeholder of the project, The Karnali (Rani, Jamara and Kulariya) Water user Association consisting of the representatives of all three systems involves jointly with the project in the modernization of the scheme. The committee is mandated to coordinates with the PIO for the smooth implementation of the construction activities, water management; settle any disputes/conflicts emerged during construction implementation; O&M of the developed infrastructures including the implementation of agricultural program during and post project implementation.

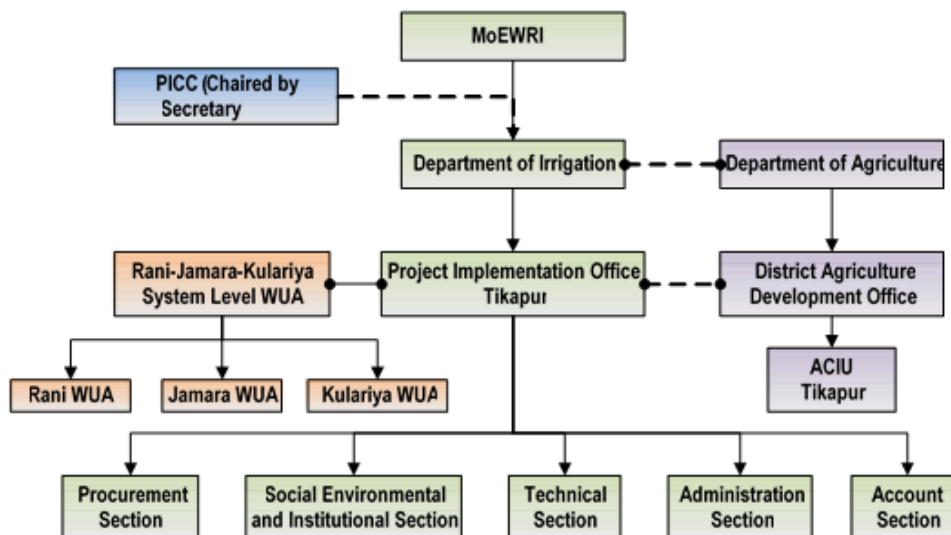


Figure 2.1: Organizational Structure for Implementation of MoRJKIS Phase 2

3.1 Project Steering Committee (PSC)

18. A project Steering Committee (PSC) chaired by the Secretary of MoEWRI will provide the overall policy guidance and necessary instruction. The PSC will comprise of the following members.
- a. Secretary Ministry of Energy, Water Resources and Irrigation – Chairman
 - b. Representative, Ministry of Finance - Member
 - c. Representative Ministry of Forests and Environment - Member
 - d. Senior Representative, Ministry of Agriculture, Land Management and Cooperatives - Member
 - e. Senior Representative, National Planning Commission - Member
 - f. DG, Department of Irrigation - Member
 - g. DG, Department of Agriculture - Member
 - h. DG, Department of National Parks and Wildlife conservation - Member
 - i. Chief, Law section of MoEWRI - Member
 - j. Regional Director, FWRID - Member
 - k. Project Director, RJKIP - Member Secretary
 - l. Chairman, WUA Main Committee - Observer
19. The PSC will meet at least twice every year to review progress and provide oversight and policy guidance. Additional observer members may occasionally be invited by the PSC to participate in its deliberations, as needed. Changes to the committee membership will have to be officially approved by ministerial order and no objection by the World Bank. At least seven out of the eleven members of PSC need to be present to make the required quorum. The agenda of the meeting will be provided by the Project Director. The PSC will form sub-committees to oversee specific tasks of the project as per the requirement.
20. At least one (1) week prior to the Project Steering Committee meetings, the PIU will send a draft agenda to the members of the Project Steering Committee, who are invited to make comments and suggestions within one week. The PIU will then prepare the final agenda and send it to all participants of the Project Steering Committee.

3.2 Specific Terms of Reference (ToR) for PSC

- Provide overall guidance and ensure successful implementation of project activities but not have a direct role in implementation;
- Formulate and review policies and guidelines (or ensure that these are complied with the relevant GoN institutions), as required for successful implementation;
- Formally identify and assign required number and type of staff from GoN institutions to work in project activities;
- Oversee implementation of annual work program;
- Ensure proper communication and coordination among the relevant Government agencies (taking part in project implementation directly or indirectly); and
- Review progress reports and project achievements.

3.3 The Project Implementation Unit (PIU)

21. The PIO located in Tikapur will be the main office for the day-to-day management and implementation of the project. A small liaison office will be established in the DoI in Kathmandu to liaise with related agencies and stakeholders on behalf of the PIO. The PIO will be responsible for overall contractual management of civil works coordination with WUAs, agricultural agencies, forestry and environment departments, wildlife conservation, local agencies for roads, and district administration. Agricultural activities will be implemented through the AICU in close consultation with the PIO, WUAs, and other stakeholders in the municipalities. The PIO will be headed by a project director, based in Tikapur, who will be assisted by staff in Social, Environmental, and Institutional; Technical; Procurement; and Financial Management (FM) Units. The Social, Environmental, and Institutional Unit, headed by a sociologist who will be deputed by the DoI, will have direct links with the WUAs to implement the institutional and capacity development program. The project director will be supported by team of engineers (two senior divisional engineers, four engineers, and eight assistant or sub-engineers with various skills, including CAD and procurement. The composition of the PIO team will be reviewed by joint GoN/IDA teams regularly and will be adjusted based on the workload. The PIO will be supported by teams of consultants, for example, for third-party construction supervision, short-term tasks to strengthen the project team. The major management function of PIO will be as follows:
- a. Ensuring overall implementation of the project, including management of the annual work plan and budget;
 - b. Maintaining financial accounts;
 - c. Conducting day-to-day construction supervision and quality control activities;
 - d. Preparing periodic progress reports;
 - e. Monitoring WUA activities;
 - f. Monitoring and evaluating the progress and outcomes of the project;
 - g. Supervising cross-cutting issues including gender, indigenous people, and other social and environmental issues;
 - h. Serve as secretariat for PSC and assist PSC to carry out its responsibilities;
 - i. Coordinate project activities among the implementing agencies;
 - j. Supervise the public awareness/information dissemination related activities; and
 - k. Ensure that complaints are handled in a fair and timely manner
22. Agricultural activities will be implemented by the ACIU in Tikapur, headed by a Class II level Agriculture Component Coordinator/Senior Agriculture Development Officer. The Agriculture Component Coordinator will have FM authority and operate the project account. The ACIU will support the community agriculture service centers to be established under the municipalities. The ACIU will work as a cost center for agricultural activities with the authority to manage budget. The ACIU will consists of crop development officer (1), horticulture development officer (1), plant protection officer (1), and planning and reporting officer (1). In addition to these, the ACIU will have four Junior Technicians (JTs), one Management Support Assistant, and one Account Officer (see figure 2.2). In addition to these, the ACIU will hire a team of experts to support implementation. They include one value chain/marketing specialist, one agriculture extension/communication specialist, procurement specialist, M&E specialist, and three mid-level technicians. The main functions of the ACIU will be as follows:

- Ensure and maintain effective coordination with the PIO and other concerned government agencies, and nongovernment and private organizations, including the Water User Groups engaged in agriculture development in the project area.
- Organize and oversee field-based extension activities such as mobilization of farmer groups and cooperatives, agriculture trainings, setting up demonstrations, establishment and running FFS, cross-learning exposure visits and so on.
- Support in identifying appropriate sites for the establishment of collection centers, seed storage facilities, and cold storages in consultation with respective municipalities, WUAs, and the PIO to ensure that the site selected is appropriate and there are no conflicts.
- Ensure that beneficiary selection for FFS, demonstrations, block production, training and visits are fair and transparent and that any support provided by the project follows norms as stipulated in the PIM.
- Ensure that procurement of goods, services, and trainings are consistent with the World Bank policy and procedures.
- Prepare and submit timely trimester, semiannual, and annual progress reports to the PIO, DoA, and Ministry of Agricultural Development (MoAD).
- Manage day-to-day project activities for smooth functioning of project activities.
- Take part and organize six-monthly implementation support missions.
- Support strengthening of community agriculture service centers of the three municipalities in the RJK command area.

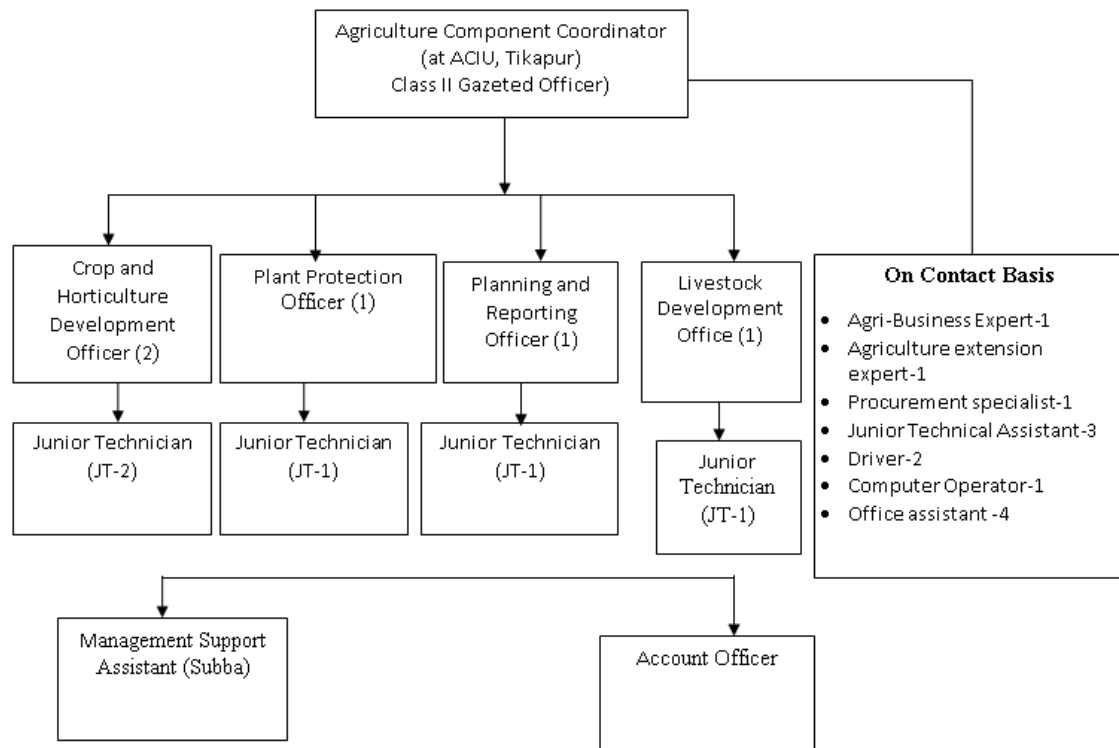


Figure 2.2: Organizational Structure of ACIU

3.4 Water Users Association

23. An elected main committee of Karnali Canal Water Users Association (Rani, Jamara ,Kularia) will coordinate with the PIO in the process of modernization of the RJKIS. A memorandum of understanding (MoU) will be signed between this Association and PIO prior to undertaking scheme implementation activities. The sample MoU for signing is presented in Annex 3.1. Details on the roles and responsibilities of PIO and WUA will be specified by the MoU. The existing organizational structure of WUAs is in Figure 3.1 and responsibilities of the Association will be as specified below.
24. At the apex level a combined main committee consisting of the representatives of Rani, Jamara and Kulariya will be formed and will act on behalf of the RJKIS canals. This Main Level Association will assume overall responsibility for the smooth implementation of the construction activities, water management, settle any dispute among the branch /sub-branch canal level WUAs, O&M of the developed infrastructures and agricultural program implementation during project implementation and post implementation.
25. A second level organization is stipulated at the individual canal level, i.e. Rani, Jamara and Kulariya. Each of the WUA will play important role in its respective system the smooth implementation of the construction activities, water management, O&M and agricultural program implementation.
26. At lower level, all the sub-branches emanating from the individual canals will have separate sub-branch committees. These sub-branch committees are the functional committees that under-take field level activities ranging from labor mobilization from their sub branches to canal operation and maintenance, settle any dispute among the water users and work for the sustainability of the project at grassroots level.

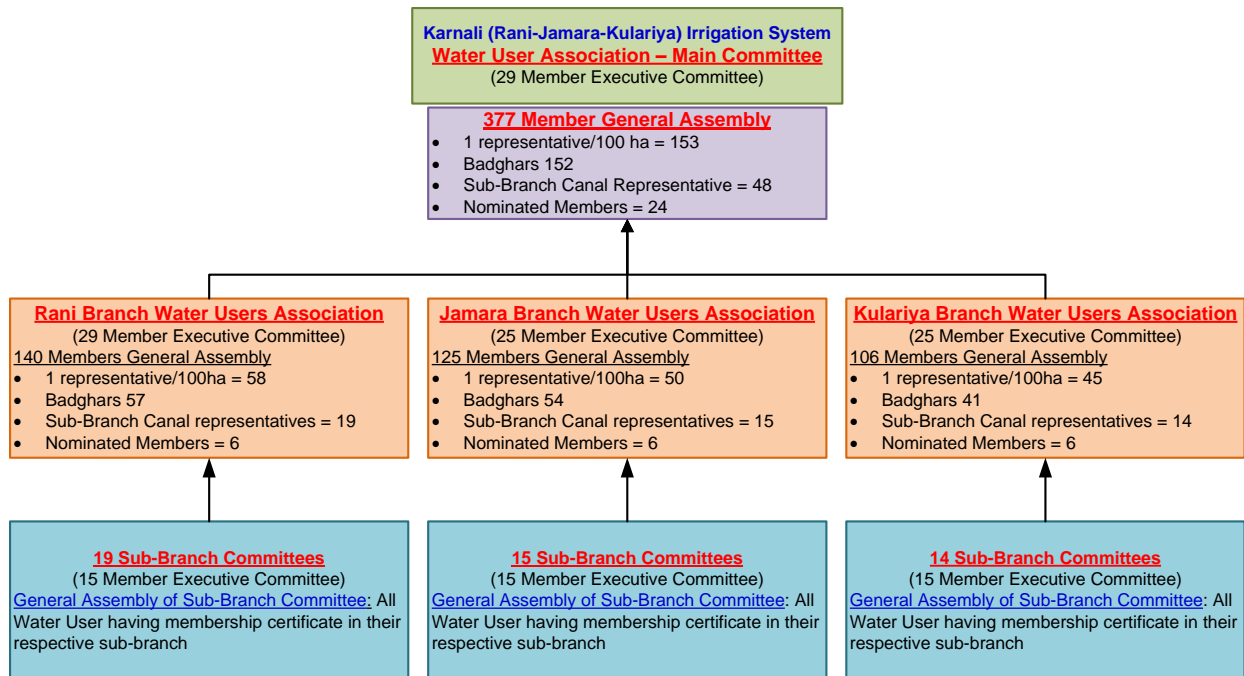


Figure 3.1: Existing organizational structure of WUAs of RJKIS

3.5 Inter-Sectoral Coordination

27. In order to fulfil the modernized irrigated agriculture in the project there will be a close linkage and coordination between the DoI and DoA including other related line agencies as and when required. Bi-annual meetings between the DG of DoI and DG of DoA will be held to review project implementation plan and progress of both agencies and necessary guidance will be provided to the respective parties at project level for further improvement. Close linkage and coordination is also required with the Ministry of Finance, Financial Comptroller General Office and District Treasury Office to assure timely release of budget and speedy procedure on overcoming financial constraints during project implementation. For proper coordination between the stakeholders, timely meetings are to be held to resolve any issues or problems. Other Informal discussions and interactions need to be conducted as and when required.

4. Implementation Process and procedures

4.1 Component 1: Scheme Modernization

28. Modernization of the irrigation scheme is the vital component of the project. Under Phase 1 infrastructure development of higher order canal have been under taken. Phase 2 aims to modernize the lower order irrigation canal upto water course (WC) level. This component will focus on structural and non-structural measures. Irrigation structures will be designed/constructed under the participatory approach considering the water management capacity of WUA's. The construction activities will be carried out under day-to-day and third party construction supervision and quality control.

4.1.1 Component Activities

29. The major activities under component 1 consists of the followings:

- a. Rehabilitation and modernization of 14 subbranch/sub-secondary canals and 54 tertiary canals in Kulariya, 13 subbranch canals and 25 tertiary canals in Jamara, and 15 subbranch canals and 28 tertiary canals in Rani canal. The component will include construction of 64 gated CR/HR in sub-secondary canals where there is drain flow in sub-secondary canals, 43 LCWs from sub-secondary canals to tertiary canals and 391 LCWs from sub-secondary canals to watercourse, 354 division boxes from tertiary to watercourses, and 1,037 field pipe outlets from watercourse to fields in RJK canal systems. In addition, there will be 387 hume pipe culverts, 76 village road bridges, 281 vertical drop structures, 57 aqueducts, and 1 syphon in RJK canal systems.
- b. Command area flood protection works in the form of construction of embankment, revetment, and spurs against flooding and erosion from Mohana and Pathariya Rivers and local streams in the command area for around 40 km.
- c. Improvement, upgrading, and maintenance of rural roads and construction of bridges for better access to the agricultural production areas. The completed access road will provide easy market accessibility adding value to the agricultural products and cost return/benefits to the farmers. Phase 2 includes upgrading of nearly 120 km village road and construction of seven RCC girder bridges including three bridges across Pathariya River.
- d. Improvement of drainage management works
- e. Engineering and other consultancy services for better monitoring of construction works and quality control including design review.
- f. Implementation of an environmental and biodiversity management plan and related activities

4.1.2 Implementation Steps

30. The basic implementation steps for implementation of Component 1 activities are described below;

- Step-1: Detail survey and investigation
- Step-2: Design/drawings and cost estimate preparation
- Step-3: Socio-economic, agricultural and institutional survey
- Step-4: Information Dissemination
- Step-5: Procurement

- Step-6: Design Review
- Step-7: Contract Management
- Step-8: Commissioning and operation of completed works,
- Step -9: Preparation of Management, Operation and Maintenance (MoM) Manual
- Step- 10: Preparation of Implementation Completion Report (ICR)

Step-1: Detail survey and investigation

31. Detail Survey and Investigation for the command area development (CAD) works has been accomplished with the support of the consulting firm during phase 1 implementation. Detail survey of the command Area Protection (CAP) work will be carried out by the PIO. For command area protection works details on flood affected areas shall also be taken in consultation with the concerned stakeholders. During field survey local peoples' participation shall be involved so that there will be no conflict during construction period. The PIO will use the national consultant as required for carrying out detail investigation of the activities as suggested on the EMP and BMP during the project implementation.

Responsibility: The PIO will have the prime responsibility for carrying out detail survey and investigation. The PIO will take assistance of the consultant as required.

Timeline: As indicated in the procurement plan

Step-2: Design/drawings and cost estimate preparation

32. Based on the detailed survey and investigation, PIO with the assistance of domestic consultant will prepare the design/drawings and cost estimates for all the activities under component 1. Engineering principle, code and norms will be duly complied during the design. The design is aimed to be a commonly accepted plan of utilization and conservation of water resources in the concerned area. Cost estimation will done on the basis of approved departmental norms and relevant district norms. Planning, designing, Costing and estimation will give ample room for social aspect of the command area. Approval of the cost estimate will be done by the Director General, Department of Irrigation.

Responsibility: The PIO with the assistance of domestic consultant will prepare the design/drawings and cost estimate of all activities in component-1

Timeline: As indicated in the procurement plan/implementation plan

Step-3: Socio-economic, agricultural and institutional survey

33. During the phase 1 implementation the PIO in collaboration with the Development Impact Evaluation Initiative (DIME) of WB had conducted a baseline study on sample basis to establish a baseline data on access to irrigation, level of agriculture productivity, socio-economic status, willingness to participate in the agriculture extension activities and adaptation of new agriculture methods. A midline survey as the follow up of the baseline survey will be carried out to establish a baseline for phase 2 for economic characteristics of irrigated agriculture, general well-being of targeted population, socio-institutional characteristics of farming community, adaptation of improved agricultural methods and technologies.

Responsibility: The PIO with the assistance of domestic consultant in collaboration with the DIME,
Timeline: As indicated in the procurement plan/implementation plan

Step-4: Information dissemination Workshop

34. The PIO will conduct an information dissemination workshop targeting the WUA and all beneficiaries in the command area. Detail activities of the project including detail design of project (types of structures), principles and procedures for their selection and implementation, O& M arrangement and the findings of Baseline Survey will be presented and feedback from the concerned stakeholders will be considered during the implementation of project activities.

Responsibility: The PIO Engineers and senior sociologist will conduct the information dissemination workshop.

Timeline: As indicated in the procurement plan/implementation plan

Step-5: Procurement

35. To execute the scheme modernization activities procurement of the works as consulting service will be carried out on the basis of approved design and cost estimate. Packing of works will be done as per the approved procurement plan. Bidding documents will be prepared following the World Bank guidelines and Borrower's guidelines as indicated in the PPSD and procurement plan. Additionally, due consideration will be given to the relevant recommendation provided in the safeguard documents during the preparation of the bid documents to ensure that contractor will be legally bounded to implement the necessary safeguard measures. During the preparation of bid document in addition The PIO may take assistance of the individual procurement expert as required. An evaluation committee will be formed for conducting evaluation of the bid documents. After evaluation of tenders, contract negotiation will be made with the winner bidder. Agreement will be signed between the contractor and PIO authorized personnel in witness of the contractor's representative and PIO representatives.

Responsibility: The chief of the procurement section of the PIO with support from the Evaluation Committee

Timeline: As indicated in the procurement plan/implementation plan

Step-6: Design Review

36. The Design Review, Construction Supervision, Quality Control, Contract Management and Safeguard Monitoring consultant will suggest the PIO on the revision of the previous design of the canal system and associated hydraulic structures which has formed the basis of the approved estimate and contract documents. The aim of the review would be to test the adequacy of the designs in terms of hydraulic, and structural requirements. These recommendations, after approval of the Client, should be incorporated in the drawings to be issued to the Contractor as supplementary design drawings for preparing detailed working drawings.

Responsibility: Implementing Consultant/PIO

Timeline: Before the mobilization of construction contracts

Step – 7: Contract Management

37. The PIO will ensure that the contractor/consultant are mobilized in the field as per the time stipulated in the contract agreement. The Supervision consultant shall have overall responsibility to assist smooth execution of the project works for the timely and successful completion of the project. The PIO senior technical staff and the consultants shall be fully aware of prevailing rules and regulations of the government and provisions of international practices that foresee contractor's claims, and therefore suggest the project management to avoid such causes well in advance so that the unreasonable claims may not be established.
38. Technical supervision of construction works under component 1 is the joint responsibility of the PIO and supervision consultant. All the construction has to be in accordance with the contract drawing and technical specification. The contractor will have the sole responsibility for rectification of any deviation observed.
39. Field laboratory shall be established for quality control and quality assurance as per condition of contract. Tests shall be conducted in-situ as well as in the laboratory as per the instruction of engineer. The quality of the structures will be monitored as per the standard specification, practice and norms. A member of the Central WUA Committee will also be involved in the supervision team to ensure the quality.
40. The PIO and Consultant shall have the joint responsibility for verification of payment certificates submitted by the contractor.

Responsibility: Implementing Consultant/PIO

Timeline: As per construction contract periods

Step-8: Commissioning and operation of completed works

41. After physical completion of works according to contract agreement, by the contractor, the contractors and PIO technicians along with consultant and WUA members would conduct a walkthrough of the system during test runs of the system, to identify any defect and operational problems. If defects are observed during commissioning, it will be rectified by the contractor prior to making final payment. PIO would prepare a completion report after rectification. After completion certificate to the Contractor, WUA will be informed officially about the completion of modernization of the project.

Responsibility: Implementing Consultant/PIO/WUAs

Timeline: After completion of construction activities

Step-9: Preparation Management, Operation and Maintenance (MoM) manual

42. Management, Operation and Maintenance (MoM) of the modernized irrigation scheme will be carried out jointly by the Government and Water Users. The MoM of the feeder canal including the hydraulic structures will be done on the basis of joint management. Canal system from branch canals to water course level will be operated managed and maintained by the different tiers of WUA. The estimation of MoM funding requirement for Phase 1 including development of MoM

manual is being prepared by the PIO with the assistance of local consultant. The preparation of MoM manual for phase 2 will be accomplished in the last year of the project phase 2 with the assistance from the consultant. Necessary trainings and capacity building of water users will also be done before the project completion. The MOM funding requirement is expected to reduce from the currently level after the secondary and tertiary canals are modernized and built. However, it is critical for water users to increase their cash contribution.

Responsibility: PIO/Consultant

Timeline: Last year of Project Completion

Step-9: Preparation of Implementation Completion Report (ICR)

43. Implementation Completion Report (ICR) being an integral part of the implementation, the PIO with the assistance of consultant will prepare a Implementation Completion Report (ICR) to satisfy accountability needs and provide lessons from completed operations. The ICR will provide extensive analysis and lesson learned including the stakeholders opinion/feedback. The PIO's senior technical officer and senior sociologist will lead the team for preparation of ICR.

Responsibility: PIO/Consultant

Timeline: Three months after project completion

4.2 Component 2: Component 2, Agricultural Production Support and Strengthening Water Users Banks/Groups (WUAs/WUGs)

44. Component - 2 will support (a) strengthening of WUAs/WUCs to assume responsibility for MOM of the modernized system and (b) carrying out a series of agriculture-based activities in the project area to internalize the achievement made in Phase-I and to increase and sustain agricultural production through the promotion of water-smart improved farming practices, crop diversification, post-harvest support, farmer training through demonstrations and FFS, and other adaptive processes. Thus, Phase-II will adopt a value-chain-based approach to support agricultural activities.

4.2.1 Subcomponent - 2a: Strengthening WUAs/WUCs

45. Under Phase-I higher order canals have been provided with modern control and other infrastructure. Phase-II will provide hydraulic structures to facilitate and control the flow of irrigation water all the way up to the farm level. After modernization of the infrastructure at all levels, different types of management and operation skills will be needed.
46. The main aim of Subcomponent - 2a is to strengthen WUAs over time for them to assume full responsibility for the MOM of all the three irrigation systems up to the farm level. The scheme never had any hydraulic structures before, so MOM will be a new experience for the WUAs. The MOM activities will initially be jointly carried out by staff of the PIO and WUAs until the WUAs have full confidence and capacity to manage, operate, and maintain the Irrigation System without day-to-day support from the DoI/PIO.
47. It is realized that unless the WUAs are capable, the irrigation systems could not be managed properly and sustained. Therefore, capacity building and strengthening of WUA for operation &

maintenance of modernized schemes, water management at canal and farm level, resource mobilization (Cash and Labour) and well established office management system needs to be done. As part of strengthening WUAs the following factors will be assessed and improved in phase-II.

- Organization/Association status,
- Leadership practice and quality,
- Rules and Regulations,
- Office management system,
- Efficiency and Effectiveness , and
- Technical capability (System O&M).

48. WUA is expected to play significant role in the implementation of project cycle, manifesting farmer's needs, involve in participatory design, ensure water user's meaningful participation, and liaise with the project authority. To achieve these expectations, the capacity of WUA committees at different level needs to be strengthened through different intervention strategies. The detail plan of Institutional Development Activities under component - 2.a is given in Annex 4.1.

4.2.1.1 Institutional strengthening activities

49. Institutional strengthening activities are proposed under the following major Activities:

Activity-I: Awareness Rising Program:

50. Awareness among stakeholder on project planning, strategies, activities and outcomes is prerequisite to ensure public participation in project implementation process. To raise awareness various extension materials will be produced and distributed to the concerned stakeholders such as Calendar, Brochure, Pamphlet, Leaflet, News Letter, Resource Book, Audio Visual, etc.

Activity-II: Research and Study:

51. Different types of relevant studies will be conducted in project period to get project insight and formulate appropriate strategies of institutional development of WUAs.

- **Household survey** is one of the basic requirements for further planning. Household Survey once conducted in 2011 AD but updating old household information is felt highly required. Thus a census survey will be done throughout the whole command area of RJKIS to update household information.
- An **O&M survey** will be conducted to prepare a practical Canal Operation and Maintenance Plan for WUA. It includes Canal Maintenance Plan, Canal Operation Plan, Crop Plan, Resource Mobilization Strategies and Complain handling Strategies.
- **Training Need assessment (TNA)** study will be carried out during Phase-II. Based on the outcomes of TNA Training modules and the contents will be developed to operate and maintenance of modernized system. Since several types of training shall be required, throughout phase-II period, the major focus will be kept on Management of Operation and Maintenance (MOM) of canal system. Some of the trainings identified in this regards are given in Annex 4.1.
- Similarly level of satisfaction among beneficiaries towards the irrigation service provider (WUA) will be assessed by conducting **satisfaction survey** at least twice within project period. And WUA effectiveness and efficiency will be studied by conducting WUA performance evaluation studies to

find out their strength and weaknesses.

- Like as **Impact Evaluation Study Survey** will be continued in phase-II which was initiated in phase-I. A middle line Impact Evaluation Study Survey will be conducted during starting and Final Impact Evaluation Study will be conducted at the end of Phase-II.

Activity-III: Training/Workshop/Study Tour:

52. Training is major effective tool to change behaviors of farmers/WUAs providing required skills and knowledge to them. Thus Series of need based trainings/Workshops/Study Tours will be organized in phase-II

- The WUAs, who will be responsible for the operation of the system in the future using their own resources, knowledge, and experience, will have to be fully conversant with the changed operational procedures and delivery systems due to the modernization of the systems that will include a large number of (gated) structures.
- Currently there are one main WUA, 3 Branch WUA and 48 Sub Branch WUA in existence. Similarly many Budghars (Community Leaders) and Chiragis (Messengers) are also directly associated with Water User's Association. There are more than 800 tertiary canals and under sub branches and needs to form WUA for each tertiary in the future.
- Existing capacity of Social, Environmental and Institutional Development Unit (SEIDU) in POI is not enough to conduct series of training within short time frame. To fulfill this deficiency Training of Trainers (ToT) will be organized for selected WUA representatives in order to develop capable resource persons at local level and make them responsible to conduct required training program to the lower order WUAs.
- The WUAs at all level will need to be trained in all aspects of proper and equitable distribution of water, water use, development and implementation of MOM plans, resource generation, proper maintenance of records and accounts, participatory monitoring, learning and evaluation, and optimizing the water management for the benefit of all users.
- Based on the assessment of training needs for modernized scheme, modules and number of training required for the WUA will be identified. Since several types of training shall be required throughout the project period, detail training plan will be prepared in consultation with WUAs and will be executed accordingly. Some of the trainings identified as a part of institutional development activities in this regards (See detail training plan for phase-II in Annex 4.1).
- An effective way of training to WUA representatives is direct observation of practices followed by other WUAs in the country. Thus observation or study tour events will be organized to take them for a visit to observe a successfully managed irrigation system and agriculture stations. The criteria and ways of management of such observation tour are given in Annex 4.2.

Activity-IV: Organization Improvement and WUA Office Support:

53. Various efforts will be done to improve institutional aspect of WUAs and office support program will be continued in phase-II as initiated in phase-I. It will ensure well-functioning of WUAs.
- Although RJKIS is a very old farmer managed irrigation system, formal WUAs were come to existence lately. Constitutions of all WUAs were amended and new WUA election was held in 2016 AD under the provision of amended constitutions in phase-I. Existing constitutions, if felt necessary, again will be amended to make farmer's organization compatible and more inclusive in the context of modernized irrigation system.
 - Crafting of required bylaws, regulations and directives for smooth and better functioning of WUAs will be initiated soon in he beginning of phase-II.
 - Providing required office facilities and materials such as Computer, Printer, Scanner, Photo Copier, and Fax machine, Furniture, Furnishing Items, etc will be continued to run WUA Offices in full capacity.
 - To facilitate the movement of WUA officials and technicians, Jeep, and bicycles (For Badghar, Chiragis, Gate Operators) will be provided based on requirement.
 - The project has been supporting some maintenance equipment, mainly *excavators* to enable WUAs to divert sufficient water from the Karnali River and de-silting canal networks. The PIO has already procured two heavy equipments for this purpose. Ownership of the equipment will gradually be transferred to the WUAs during phase-II when it has been ascertained that WUAs are technically and financially capable of operating and maintaining the equipment provided.

Activity-V: Infrastructure Development/Support:

54. Creating required infrastructures for WUA is another important activity envisaged. Few infrastructures were developed in phase-I and additional more infrastructures will be developed during phase-II to support WUA for the system O&M as well as for the resource generation.
- POI will establish a Cultural, Irrigation and agriculture museum in the proper place of the command area which is a new concept for Nepal. The concept intends to preserve historical traces associated with local culture, irrigated agriculture in one place and this museum will be developed as a centre of attraction for learners, researchers and scholars. Historical organization of Farmers, Operation and Maintenance of the system, way of resource mobilization, farming system etc will be highlighted in the museum.
 - Cooperative activities could be a good alternate of income generation for WUAs which could contribute resources required for O&M cost in the future. Therefore, to facilitate the cooperative development activities in the command area one cooperative building for each WUAs (Rani, Jamara and Kulariya) will be constructed.
 - As demanded by WUAs at least 9 more Canal Operator Buildings will be constructed (3 in each Rani, Jamara and Kulariya). It will help WUAs to operate canal system more effectively and efficiently.
 - Similarly a well-equipped training and learning centre will be established to fulfill the deficiency of such facility in the region. This training centre will be developed as a resource centre of the area in the future.

Activity-VI: Mapping & Safeguard Activities:

55. Various activities mentioned in the safeguard documents will be implemented for the local communities who are directly or indirectly affected by the project. Those activities are also important from the perspective of equality and equity and need to be implemented. Similarly mapping and demarcation will be done where it is applicable.

- Effective management and allocation of water at tertiary level and farm level is very crucial. A well-defined water allocation scheme and revenue generation scheme needs to be prepared by PIO in coordination with WUAs for effective irrigation management. Parcel mapping of each and every tertiary will be prepared to facilitate WUAs for effective water management in canal and farm level.
- Legal entitlement of the irrigation canals (Branch and sub branch level) exist in some places. Though local communities did not identify it as a big concern as traditionally, the ownership of land under irrigation canals belongs to the community rather than to individual. Therefore right of way of canals will be fixed by doing canal demarcation.
- The project will directly contribute to increasing agriculture productivity and production through improved access to year round irrigation that will enable condition for crop diversification and increased cropping intensity throughout the command area. Issues and concerns of vulnerable people/communities will be addressed by implementing income generation activities and capacity building. Their participation will be ensured and an enabling environment will be created to share the project benefits through implementing Vulnerable Community Development Plan (VCDP) (See Annex 4.3: *Vulnerable Community Development Plan*).
- Institutional and structural barriers prevalent in the society exist to exclude women from playing a meaningful and equitable role. To enhance the roles and opportunities of women farmers and households a specific gender focused plan is prepared. The Gender Action Plan (GAP) includes awareness raising, capacity development trainings, FSS, agriculture-based training, small farm machinery support to women members, compensation to FHHs, and so on. It is a stand-alone action plan but comes under the broader VCDP. (See Annex. 4.4: *Gender Action Plan*). Activities mentioned in GAP will be implemented during project period. Besides, the project will ensure that there is at least 33 percent female representation on the committee so that women have an opportunity to voice their concerns and priorities.
- The social impact assessment of pilot schemes did not identify any adverse impacts, since preparation of scheme specific resettlement planning document has not been required. However during implementation if any losses or impacts on private property are noted then the project would have to manage such cases as per provisions of Resettlement Policy Framework (RPF). (See Annex 4.5: *Entitlement Policy Matrix*) The level of impacts will be determined by the type, location, scale, nature, magnitude of potential impacts on beneficiaries and appropriate mitigation plan will be prepared based on the procedure spelled out by RPF.
- Besides, the WUAs will also serve as a platform to engage the local citizens to participate in planning, implementing, and monitoring project activities. In addition to WUAs, the project will secure Citizen Engagement (CE) by working through the farmer groups, women groups, cooperatives, and FSS that will provide them with additional opportunities to address their needs

and priorities.

Activity-VII: Follow up and Evaluation of WUA Capacity

56. Execution of trainings and capability development program is a continuous process to be followed. Therefore, the WUA working process, strength and weaknesses shall be assessed and what changes have come on their performance level, working procedure and capacity shall be evaluated. If further capability development is required, Institutional Development Plan (IDP) will be reviewed, updated and be executed accordingly as a follow up program.

Activity-VIII: Strengthening SEIDU/PIO for WUA support:

57. Existing Social Environmental and Institutional Development Unit (SEIDU) at PIO responsible for all social and environmental safeguard oversight, management, coordination and WUA strengthening activities will be capacitated. Moreover, the unit will be equipped with qualified social and environmental safeguard personnel for the effective implementation of sub component 2.a.

58. The above actions will be implemented through following processes and mechanism:

1: Project Implementation Office (PIO)

59. The Project Implementation Office (PIO) is already set up in Tikapur, Kailali and functioning well with required staffs. The composition of the PIO team will be reviewed by joint GoN/IDA teams on a regular basis and will be adjusted based on the workload in phase-II. The PIO have five sections namely i) Procurement Section ii) Social, Environmental and Institutional Development Section iii] Technical (Engineering Section) iv) Administrative Section and v) Account /Finance Section. The PIO has also set up a Liaison Office in Kathmandu based at DoI for coordination and communication with central departments, Concern ministries and the WB. The PIO including Liaison Office will be facilitated with necessary facilities.

60. The DOI is responsible for deputation/recruitment of required manpower as per government rule. DoI will define ToR of the Project Director (PD) while the Project Director will define the ToR of other staffs based on the task assigned to PIO.

2: Project Steering Committee

61. A Project Steering Committee, chaired by the Secretary of the Ministry of Energy, Water Resources and Irrigation is formed to provide overall policy guidance and to ensure necessary coordination between and among concerned agencies to support the project activities. An Eleven Member Project Steering Committee (PSC) is already in place during phase-I under the chairmanship of the Secretary of MoEWRI as mentioned earlier. The Project Director (PD) is a member secretary of the Committee.

3: Implementation and Coordination Committee (ICC)

62. To implement and monitor the modernization and institutional development works, a Implementation and Coordination Committee with following members will be formed as in phase-II as in phase-I.

Project Director	Chair Person
Representative of DCC	Member
Representative Tikapur Municipality	Member
Representative Lamki Chuha Municipality	Member
Representative Janaki Rural Municipality	Member
Coordinator, PIU (Agriculture)	Member
WUA's Representative (Rani WUA)	Member
WUA's Representative (Jamara WUA)	Member
WUA's Representative (Kulariya WUA)	Member
Senior Divisional Engineer	Member Secretary

4: Local Environmental Monitoring Committee (LEMC)

63. A Local Environmental Monitoring Committee (LEMC) as in phase-I will regularly monitor and supervise ongoing processes and compliance of the environmental safeguard activities. Local Government representative will lead the LEMC and representative from ACIU, Forest Office, Main WUA, CFUG, Bardia Wild Life Conservation, Dolphin Conservation Centre, CBO, NGO, FNCCI, etc. LEMC will monitor the project activities in quarterly basis.

5: Coordination with Local Government

64. Since the local elected government is already in place with overall responsibility of local development and providing basic services to the local people, the PIO needs to develop institutional linkage with local government specially for following issues:

- Monitoring of project activities mainly environmental related through LEMC
- Urbanization in the command area
- Management of feral cattle (Bangai)
- Solid Waste management in the urban area and the pollution in the irrigation canal
- Extraction of River bed materials from Karnali and Pathraiya river as well as from the command area

6: Engagement of M&E Consultant

65. The PIO and its project implementation consultants will be responsible for overall project M&E. An independent party will be engaged in regular independent monitoring of the project's environmental compliance and performance, as done under Phase-I. The M&E for most indicators, including on safeguards compliance, will be conducted on a semiannual basis and the results will be presented as part of the project's semiannual progress report. The World Bank team will assist the PIO in drafting the TOR of the PIO's M&E consultants, and the PIO will use simple MIS and GRM databases, to track progress in project implementation and in Citizen Engagement (CE), respectively.

Step-7: Establishment of Management Information System (MIS)

66. A computer-based management information system will be established for the smooth flow of information and progress among the various stakeholder from field level to central level (i.e. from

WUA system level to ministry and NPC level). The project has its own website www.rkip.gov.np and linked to DOI website: www.doi.gov.np.

4.2.2 Subcomponent – 2b: Agricultural Production Support

Objectives of Sub-component 2b

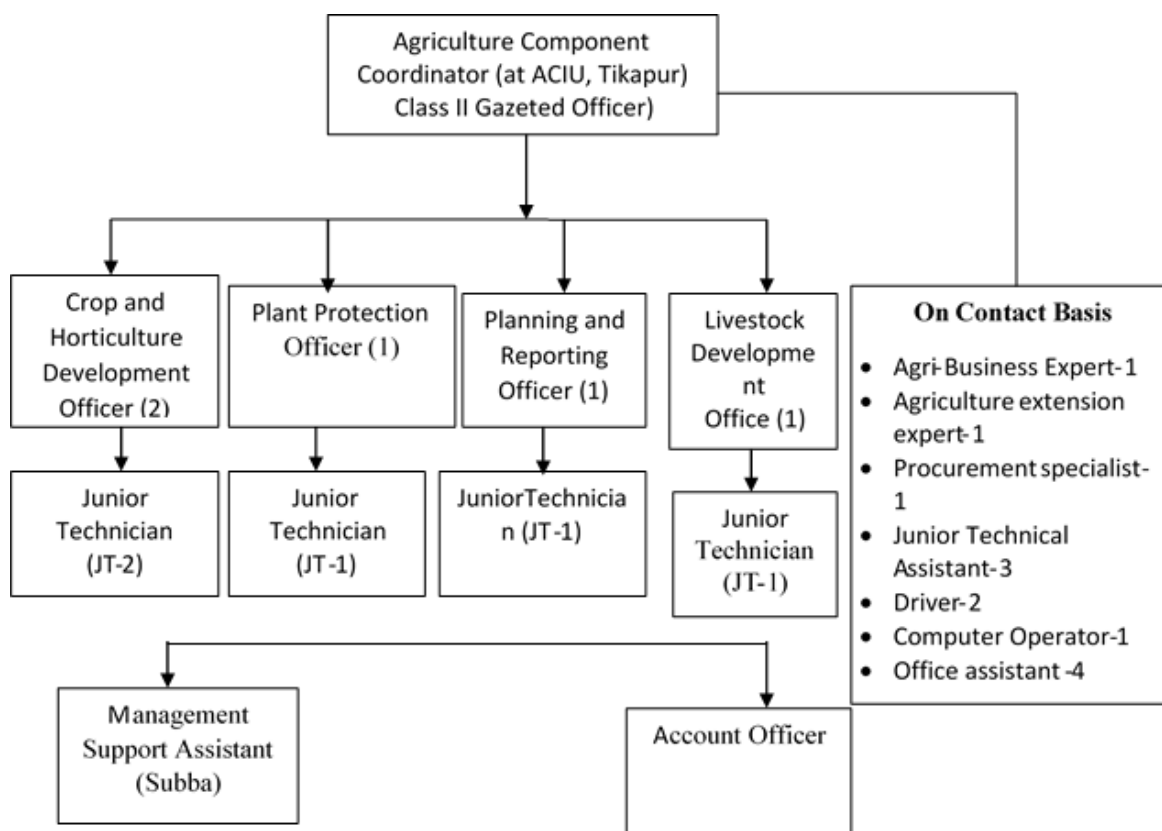
67. The main objective of agriculture component will be to increase production and productivity of key crops¹ through the provision of demand based extension services, promotion of mechanization, climate smart agricultural practices and post-production support including access to market, financial services and quality inputs.
68. With the availability of year-round irrigation water, the farmers in the project area will be able to take three crops a year. To support this, the project will make available tested and proven short-duration varieties to allow triple cropping. Effort will be placed to diversify cropping pattern to include cash crops such as lentil, potato, and vegetables in the system.
69. Modern technologies and best practices will be promoted through production demonstrations; farmer field schools (FFS), on-site practical training courses, and cross-learning visits to best practice sites. Production demonstrations will also include the rehabilitation of marginal lands where the landless and/or land-constrained households would be provided with opportunity to take up income generating activities such as high value vegetables, fruit growing, and planting of fodder trees. Land for these activities would be identified and secured in collaboration with the local government.

Provision of Human Resources

70. Agricultural activities will be implemented through the Agriculture Component Implementation Unit (ACIU) at Tikapur, headed by a Class II level Agriculture Component Coordinator/Senior Agriculture Extension Officer, who will have Financial Management authority and operate the project account.
71. The staffing at ACIU will consist of one crop development officer, one horticulture development officer, one plant protection officer, one planning and reporting officer and one livestock development. In addition to these, the ACIU will have 5 Junior Technicians (JTs), one management support assistant, and one account officer (see in the staffing structure of the component).
72. In addition to these, the ACIU will hire a team of project-employed experts to support implementation. They include one agri-business specialist, one agriculture extension specialist, one procurement specialist, and three mid-level technicians.
73. For smooth and effective implementation, the GoN will, to the extent possible, retain the core professionals at the ACIU until the completion of the project. Transparency in the selection of staff for national or international study tours and learning visits will be adhered to as guided in the Project Implementation Manual (PIM). The recipient of international training courses of at least three-month duration will be expected to remain in their jobs for a minimum period as specified by Clause 40 (c) of the Civil Service Act 2049 1993.

¹For example, rice, wheat, maize, paddy, potato, lentil, and mustard.

Organizational Structure



The main functions of the ACIU will be as follows

- Timely preparation of annual workplan and budget. The process adopted would be participatory and consultative to include the WUAs, local government and relevant local institutions.
- Ensure that planned activities are implemented on timely manner and safeguard measures are strictly adhered to.
- Prepare the terms of references for project employed experts and ensure that the required staff are hired on time, based on agreed selection criteria and a fair selection process and monitor their performance and outputs.
- Oversee, support and supervise extension activities such as the mobilization of farmer groups and cooperatives, agriculture trainings, setting up demonstrations, establishment and running FFS, cross-learning exposure visits and so on.
- Support in identifying appropriate sites for the establishment of collection centers, seed storage and cold storages in consultation with respective municipalities, WUAs, and the PIO to ensure that the sites selected are appropriate and there are no conflicts.
- Ensure that beneficiary selection for FFS, demonstrations, block production, training and visits are carried out through a fair and transparent process.

- Ensure that procurement of goods, services, and trainings are consistent with the World Bank policy and procedures.
- Prepare and submit timely trimester, semiannual and annual progress reports to the PIO, DOA, and Ministry of Agricultural, Land Management and cooperatives (MoALMC).
- Manage day-to-day project activities for smooth functioning of project activities.
- Take part and organize six-monthly implementation support reviews.
- Support the strengthening of community agriculture service centers of the three municipalities in the RJK command area.
- Work closely with the PIO and other concerned government agencies, NGOs/INGOs and private organizations, including the Water User Groups engaged in agriculture development in the project area.

4.2.2.1 Implementation Approach

Agriculture sub-component will adopt the following approaches while implementing approved programs and activities:

A. Participatory Extension Approach

74. Focus will be given to ensure active participation of beneficiary farmers in the planning, implementing and monitoring of project activities. Executive members of Water Users' Associations (WUAs), leaders of cooperatives and farmer groups will be involved actively while implementing planned activities. Joint monitoring of the field activities will also be organized at least twice a year. Such provisions are expected to develop strong ownership feeling among the WUAs and beneficiary farmers.

B. Collective Learning Platform

75. Collective learning platform will be made available to the farmers to establish better learning environment and adoption of acquired skills and practices. FFS and field based training learning cum demonstrations will serve as a collective learning platform, where farmers will have the opportunity to learn/discuss new practices, knowledge and skills related to topics of their interest and concern. The collective learning platforms will not only promote in adopting the new practices but also promote farmer-to-farmer learning and dissemination of new ideas and skills.

C. Climate Smart Agriculture

76. The project will borrow best practices in climate-smart agriculture and test/promote them in the project command area. The main purpose of CSA is to help farmers to tackle three main challenges: sustainably increasing agricultural productivity, adapting and building resilience to climate change, and reducing greenhouse gas emissions. Emphasis will be given to design and implement a program that minimizes the effects of climate change in food production system. The project will benefit from the Nepal Agriculture Research Council to secure and test drought and disease resistance cultivars and agronomic practices. In this context, the project will make use of recommendations made in the climate smart agriculture profile launched in 2017². To identify best CSA practices, the project will support applied research and development activities through the provision of Competitive Research Grant (see Section B4 for details).

D. Value Chain Approach

² CIAT, World Bank, CCAFS and LI-BIRD 2017. Climate Smart Agriculture in Nepal. CSA Country Profiles for Asia Series. International Center for Tropical Agriculture (CIAT), The World Bank, CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS); Local Initiatives for Biodiversity Research and Development (LI-BIRD). Washington DC. 26p.

77. Value chain approach will be adopted to develop and foster vibrant linkages between the key value chain actors. The project will help farmers to ensure that they have access to financial services; input suppliers, technology, market and information services. Where possible, the project will assist the farmers to benefit from value addition opportunities through the establishment of processing and grading facilities, storage facilities so that farmers can add value on their products and secure premium price and store and sell their produce when the price is favorable. Project can provide machinery support for the production of banana chips, tomato ketch up, cucumber pickles etc. These processing units could either lead by groups/cooperatives or by private agri-firms.

4.2.2.2 Programs and implementation modalities

78. Summary of major programs, implementation process, eligible clients and responsibility are presented in Annex 4.6.

A. Capacity Development Program

A1. Farmer Field School (FFS)

79. Utilizing the experience from the first phase, the project will conduct FFS in vegetables and major cereals to minimize indiscriminate use of toxic pesticides and promote collaborative learning initiatives. FFS sessions will contribute to increasing farmer knowledge and skills in crop management and husbandry. A sixteen-week long and/or crop cycle based FFS trainings will be launched in the production pockets of vegetables and cereal crops. Altogether 100 FFS will be established in targeting different crops and seasons. The key feature of FFS will be that the curriculum will be prepared in consultation with farmers based on their needs and priorities.

80. FFS being a learning event, the project will provide inputs, such as seeds, government recommended pesticides, fertilizers, micro-nutrients, nets, sprayers for free of cost to selected FFS groups. The groups, in return, shall provide land, manure and other locally available materials and human resources required to establish FFS. The project plans to establish 100 FFS over the period of five years. ACIU will engage the WUA in the selection of FFS site so as to ensure transparency in the selection process.

Implementation Process

81. Interested and eligible farmer groups shall submit a formal request at ACIU for establishment of FFS. Based on submitted application/demand, concerned technicians will survey the proposed sites. Once the site is approved and group is selected, the SMS and FFS facilitator will work with the group to develop learning curriculum, schedule and program. To make learning effective, the size of FFS group will be kept at 20 to 25 members. In any FFS group there will be at least 50% women participation and duration of FFS training shall be of 16 week duration and/or whole crop cycle period. Only the FFS trained facilitators will conduct the training per agreed curricula and schedule. Farmer field days and special topics will be an integral part of the FFS.

B. Extension and Outreach

B1. Block and Production Demonstration

82. The availability of year-round irrigation water will provide farmers an opportunity to increase intensity through crop diversification and cultivating the lands in the dry season which was not possible in the past due to shortage of water. To help farmers achieve this, the project will make available short-duration varieties to allow triple cropping, provide improved varieties for higher productivity and link farmers to input suppliers to obtain seeds and fertilizers. Effort will be placed

to include cash crops such as lentil, potato, and vegetables in the cropping pattern to make the best use of irrigation water.

83. Block demonstration will be one of prioritized programs in phase II. Typically, block production will cover an area of 1 ha at a plot and several such plots will be grouped together to make blocks. The collaborators of block production program could be farmer groups or individual farmers. Block production program could include a range of crops from grain production, cash crops (oil seeds, vegetables) fruits, flowers, fish and mushroom depending on farmer interest, market and suitability of the area. It is expected that the project will support block production programs over the lifetime of the second phase.

Selection of Farmers for Block Production

84. Recipient of farmers for block production should: (i) submit application at the AICU; (ii) make land available, (iii) provide labor, (iv) be willing to share information and technology with fellow farmers, and (v) has insured his/her crop. The process will entail (i) review of applications submitted by a task force formed by the AICU; (ii) field visit to observe the field, (iii) interview of the farmer/farmer group, and (iv) announcement of results. The beneficiary of block production must be a resident within the command area of the RJK project. The Preference will be given to the commercial farmers and farmer groups, with demonstration commitment to establish commercial blocks. Demonstration of commitment could include the scale and extent financial and material contribution, preparation of action plan, inclusion of women, past engagement in production programs etc. Women farmers will be given priority for block demonstrations.

Project Support

85. A one-time limited support will be made available to the collaborative farmers in the form inputs such as seed/seedlings/samplings, fertilizers, micro-nutrients and pesticides. Basically, project support will be 100% on technical and outreach services, 50% on seed/seedlings/samplings and 75% on other production inputs. Details support to be provided and application form has been stipulated in the Annex 4.7.
86. However, project support will be milestone based. This means the project will release its support based on achievement of milestone to be stipulated in the agreement. The support could be in the form of cash or kind or both based on the nature of the activity. For example, in case of fish farming, mushroom cultivation and beekeeping, support will be in cash. Payment will be provided in the bank account of the recipient farmers. In rest of cases, seed, fertilizer and pesticides will be provided to the demonstrators.

Implementation Process

87. A notice will be published inviting applications from interested farmers, groups, cooperatives and WUAs belonging to the project command area. In case of individual farmers, application shall include citizenship certificate, land ownership certificate and commodity specific production plan. But in case of private firm/group/cooperative, the applications shall accompany block production action plan, firm registration certificate, Vat/pan certificate, tax clearance certificate, land ownership certificate etc.

Responsibility of ACIU

88. ACIU will be responsible for publishing a notice for application, providing formats for the application, evaluating the application and making agreement for proposed production demonstration of specific crop (s). All concerned farmers/groups/ cooperatives/ firms/ WUAs will

responsible to follow the process fixed for block demonstration programs. Block demonstration programs will be launched throughout the project period and will be aligned with cropping seasons.

B2. Seed Production Program

89. Seed program will be continued based on foundation laid by the project in the first phase. The main aim of the seed production program is to improve Seed Replacement Rate (SRR) in the project command area through the provision of certified or truthful seeds. As practiced in the first phase, seed production program will be carried out through registered seed producer cooperatives and farmers groups.
90. The project will continue to engage the seven cooperatives that were developed in Phase-I for seed production. In order to ensure adequate coverage, the project will identify, select and train three additional cooperatives for seed production. Altogether, there will be 10 cooperatives that will be engaged in seed production, processing and supply. The project will help these cooperatives to develop business plan to run their business on sustainable basis.
91. Seed production programs of paddy, maize, mustard, lentil and vegetables will be continued in the second phase and at least 4000 hectares of land will be covered in five years.
92. The project will test public-private-partnership approach in seed production by inviting the private seed companies to (a) directly provide the certified seeds in the project area and/or (b) produce certified seeds in partnership with the local cooperatives.

Project Support

93. Production inputs such as seed, fertilizer, micro-nutrients, pesticides etc. will be provided to the seed producing cooperatives on cost-sharing basis. Besides production inputs, other production materials that can support for harvesting, processing and marketing of seed will also be provided for promoting seed business of cooperatives. Support of the project will be based on progress observed in the field.
94. Several trainings will be provided to the cooperatives to strengthen their business capacity. Details of supports and cost sharing provisions have been stated in Annex 4.8. Project support will also include development of business plan for the seed producer groups and cooperatives.

Implementation Process

95. Applications for seed production support will be invited from the cooperatives. Their application should include annual seed production and future plan(s).
96. The project will ensure that the applicants meet the selection criteria established by the project to be eligible for project support. The project will involve the PIO, representatives of Cooperatives and Municipalities in the selection of the cooperatives.
97. Based on the review of the action plan and expected outputs of the cooperative, the project will make an agreement and enter into an agreement
98. Seed production programs will be monitored regularly and further support will be made available to the cooperatives.

Responsibility of ACIU and Cooperatives

99. Provisioning of foundation seed will be the main responsibility of the project. Project will have working collaboration with NARC and other research institutes for foundation seed of paddy, wheat,

mustard and lentil etc. All cooperatives will be guided to develop networking among the producers, processors and traders have been involved in the seed business.

100. The seed producing cooperatives shall follow the norms, regulations and process fixed by Seed Quality Control Centre (SQCC) under the Ministry of Agricultural, Land Management and Cooperatives while production, processing and marketing of seed.

B3. Marginalized, poor, and landless specific demonstration and Support

101. Project will have focused programs for the marginalized, poor and landless people. The main thrust of this program is to increase the income and enhance livelihood of these communities. Poor farmers are those who have less than 0.16 hectare (less than 5 kattha) of land. Farmers belonging to the lower caste and freed bonded labors (muktakamaiyas) will be categorized as marginalized farmers. Those farmers without legal land titles are considered as land landless farmers, however, may be involved in farming either in contract out land or crop sharing basis.
102. Project support to these communities will mainly be on small scale vegetable production (both seasonal and off-season), fish farming, mushroom cultivation and livestock farming. To ensure that the project support is effective and sustainable, the project will assess the needs and capacity of these targeted people and provide them with appropriate training to undertake the livelihood initiatives. Details of support have been stated in the Annex 4.9.

Project Support

103. Project support will mostly be on technical support and production inputs to promote the commercial cultivation of specific commodity. Technical support will be provided throughout the production period where as support on seeds, fertilizers, micronutrients, and pesticides will be given during crop growing season. Project can also provide support for the construction of small sized plastic tunnels for offseason cultivation vegetables.
104. In case of fish and mushroom cultivation, project support will be in cash based on progress made in the field. In order to improve technical knowledge and skills of the farmers, commodity specific technical trainings will be provided so that they can successfully cultivate the desired commodity.

Implementation Process

105. In the beginning, project will invite application from the interested farmers. Project doesn't require detail proposal but need a simple action plan, means of accessing land for cultivation and expected outputs and income. After verifying the application and field, an agreement will be made for the production of specific commodity.

B4. Competitive Research and Grant Support

106. Project support will also include the provision of sub-grants in two sub-categories: (a) competitive learning and adaptive research grant (soft activities). The competitive research grants will finance simple action/adaptive research that will lead to the identification of new innovations that are climate smart and efficient within the lifetime of the project.
107. The recipients of such grants could come from Research based organizations such as Nepal Agriculture Research Council (NARC), International Rice Research Institute (IRRI), Agriculture universities and agriculture colleges to be selected based on research proposals submitted to solve existing problems, to meet technological demand of farmers, and to introduce new technologies in project command area.

108. Depending on the nature and duration, the grants could range from US\$5,000 to US\$25,000. For the competitive research grants the interested institutions will need to submit a proposal that clearly outlines the objective, relevancy to contribute to project development objective and timeline, cost and deliverables.

Project support

109. Project will provide support to registered and recognized institutions, which have been mandated to carry out research in the agriculture development. Grants shall not be used for the construction of buildings, purchasing vehicles. Part of the money may be used for purchase of research equipment which may be clearly reflected in the proposal and cost. The grant recipients can hire researchers, field level technicians and data analyst who can support for demonstration and research activities.

Implementation Process

110. The selection process will involve in a) inviting proposals (b) submission of clear proposals, (c) screening of proposals through the selection committee, (d) field verification and/or reference checking as appropriate of the short-listed proposals, (e) final selection and notification, (f) signing of an agreement, and (g) notification to those that are not selected with justification.

Responsibility of ACIU and Research Organization

111. The responsibility of project is to support grant recipient organizations for selecting appropriate sites and farmers for establishing research and demonstration plots, and help disseminate the tested technologies in the project command area. ACIU will ensure that the proposed research will contribute to achieving the PDO. Preference will be given to research that will identify or promote CSA.

112. Role of grant recipients shall be to conduct research, test technologies and establish demonstration with active participation of farmers as guided by the project to meet technology demand of the project. The verified technologies and proposed practices will need to fit with local socio-economic and agro-ecological context and need to have a better performance than the existing ones.

113. Competitive Research and Grant Support will be continued from the 1st to 5th year of the project. Nonetheless, concentration of programs will be higher in first three years of the project.

C. Technology adoption support

C1. Construction of poly houses, agri-net house and green houses

114. The construction of poly houses, agri-net houses and green houses will be promoted to enhance commercial cultivation of vegetables, production of healthy seedlings and samplings in the project command areas. The controlled structures like these will not only minimize the effects of bad weather but also improve the quality of agriculture products. In order to intensify vegetable production, the project will provide grant for the construction of 60 agri-net houses, 500 poly houses, three low-tech green houses. The numbers of these structures may change according to change in demand of the targeted farmers.

Project Support

115. Support on poly houses, agri-net houses and green houses will be provided to individual farmers and private agriculture firms for commercial cultivation of high value crops such as vegetables, fruits and flowers.

116. Technical support will be provided for the construction, maintenance and cultivation of high value crops inside the structures. Grant support will be 75% on the cost incurred for construction (see Annex 4.10 for details of project support). But design of structures must be as approved by the project. The interested farmers can apply for any one type of structures as stated above.

Implementation Process

- A notice will be published for the application. The application shall encompass production plan, expected output and tentative annual income from the proposed structures.
- The applicants shall submit private firm registration certificate, vat/pan certificate, tax clearance certificate, land ownership certificate etc. Nonetheless, in case of individual farmer, application shall include citizenship certificate, land ownership certificate and action plan of the proposed structures.
- The submitted application and proposed sites will be evaluated and verified by the project team,
- Finally, an agreement will be made with the successful farmers.

117. The project team will regularly monitor the construction works, and payment will be made available in line with progress observed in the field.

D. Soil Management and Plant Protection

118. Soil testing measures the nutrients content in the soil, and recommend for the application of deficit fertilizers in their fields. Therefore, project will focus on soil testing and management practices to maintain soil fertility and improve soil productivity.

119. Soil testing campaigns will be organized at different locations of project based on soil conditions and demand of the farmers. Project will have programs for the management of farm yard manure (FYM), preparation of compost manure, demonstration of green manure and earthworm based organic manure production programs.

120. Besides this, plant protection related programs will be organized on the request of farmers to prevent and control of incidence of disease and pests in the crop production sites. Programs like plant clinic, survey surveillance and disease and insect management and control campaigns will be organized as and when required. A small plant protection lab will be established at ACIU, Tikapur, Kailali in order to facilitate the identification of causal agents of diseases and insects and to take required action to control them.

Project Support

121. Soil testing and management and disease prevention and control programs will be made available free of cost. The project will not charge any fee for these services.

Implementation Process

122. In line with annual programs, the project technical team will select sites, fix the dates consulting with farmers, and will provide notice to the farmers through mass communication media, and finally conduct aforesaid program with active participation of farmers.

E. Agricultural Mechanization

123. Mechanization is a critical for enhancing efficiency in agricultural crop, reduce cost of production, address the problem of labor shortage and make farming easier. The project has already tested the effectiveness of small sized machines and equipment such as power tillers and its accessories, processing machines, seed treatment machines, paddy harvesters, laser land levelers in the first phase. In the second phase, the project will focus more on the medium and large-scale

machineries. In doing so the project will learn from the ongoing initiatives in the country in the use of large machineries such as paddy translators, paddy and wheat harvester, small and medium sized combined harvester, processing machines, seed treatment, hoeing machines.

Project Support

124. The project will provide agri-machines and equipment to the farmers, farmer groups, agriculture cooperatives, private farms and water user's associations on 50% cost sharing basis. Individual farmers can get smaller sized machines while groups, cooperatives and WUAs can have medium size machines. But they shall use these machines for production, processing and marketing of agriculture commodities. A detail of machines and project support has stated in Annex 4.11.

Implementation Process

- Applications will be invited from the concerned farmers, groups, cooperatives, WUAs and agriculture firms. For large-scale machines and equipment, the applicant shall have at least 6 hectares of land under commercial cultivation,
- For the medium and small sized machines, farmers/ cooperatives/ groups/WUAs/ firms shall have at least 4 hectares of land under commercial cultivation,
- The applicant is required to have organization registration certificate, Vat/Pan No and tax clearance certificates, land ownership certificate and action plan (how they are going to use the proposed machines). But in the case of individual farmers, they need to have citizenship and land ownership certificates in the application.
- Submitted applications will be evaluated, and project will make agreement with the selected applicants.

F. Post-harvest and Marketing Support

125. Post-harvest losses are estimated to be between 10 percent and 30 percent in Nepal.³ Generally, losses occur at harvesting, milling, transportation, and storage. To address this problem, the project will provide improved technologies on harvesting, cleaning, grading, packaging, storing, and transporting the agriculture products to minimize post-harvest losses.

126. Experience has shown that farmers can get a better price for their produce when they are organized and adopt collective marketing strategies. When organized as a group, farmers will be in a better position to negotiate a better price for their produce.

127. Project will support farmers to get real-time information on market and commodity prices and will support construction of three additional collection centers, two seed storage houses, one ripening chambers, two cold storage facilities, improvement of agriculture market centers, and potentially a quality control laboratory. The land for construction of the collection centers will be made available by the local municipalities in an area that is centrally located with an easy access. The construction of cold storages will be preceded by a detailed study on the capacity, design, and location where the facility is to be built.

Project Support

128. The project will provide support to cooperatives and groups for the construction of collection centers and seed storage buildings. The collection centers will be built in and/or around vegetables production blocks and pockets.

³Neupane, F.P. 1995. Review of Agricultural Entomology Country Profile. Agricultural Entomology in Nepal. CAB International; Ganesh, K. C. 1992. On Farm Level Harvest and Post-Harvest Food Loss Prevention Systems in Nepal. Ministry of Agriculture, Postharvest Loss Reduction Division, Lalitpur, Nepal.

129. In case of seed storage houses, seed producing cooperatives shall be eligible for the support, and will take lead in the construction and management of seed storage houses. These houses will be built up nearby seed production plots.
130. In addition to that project will support for the construction of two cold storage houses in the project command area. However, construction will only be started after a detailed study of actual need, appropriate size and design, cost effective and ownership of the cold store has been prepared. Multipurpose cooperatives, agri-private firms, agri-based companies and other private companies alone or in with partnership can get support for the construction of cold store. Sustainable operation of cold storage is vital after construction. Therefore ACIU will adopt a strict selection criteria, to be approved by World Bank, for the selection of appropriate organization for the establishment of cold storage facilities.
131. Project will also provide support for the construction of banana ripening chamber to improve quality and to ease the marketing of banana. Banana producers' cooperatives will take lead for construction operation of the chamber. The banana cooperative can partner with other multipurpose cooperatives, agro- companies, agro-firms and other agro-based industries for the construction as well as operation of the chamber. In case banana producer cooperatives cannot take the lead then alternative options will be explored. A detail of support and application form has stated in Annex 4.12.

Implementation Process

- In case of construction of seed storage houses and collection centers, cooperatives, working in the respective fields, will take the lead and apply for the construction tasks. The cooperatives will submit application on project request. The applications shall require cooperative registration certificates, Vat/Pan certificate, tax clearance certificate, audit report, annual action plan and expected outputs. Based on the application, project will make an agreement with cooperatives. Payment will be made on installment basis evaluating progress made in the field.
- However, in the case of banana ripening chamber and cold storage, a notice will be published in local newspaper for the application. The interested organizations, as aforesaid, can apply for the same.
- The application form for these two structures shall require detail structures and designs, storing capacity, cost details, amount of grant requested from project, contractor and construction period, operation modality and its viability, partners and their share percentage, guarantee of share cost etc.
- In addition to these documents, the application shall accompany firm registration certificate, Vat/Pan certificate, tax clearance certificate, etc.
- The project team will evaluate the submitted documents as well as visit the fields to verify sites for structures.
- Finally, project will make agreements with the successful applicant.
- The agreement will clearly delineate the size, capacity, and duration of construction, model of operation and payment.
- The project will regularly monitor construction works, and payment will be made available on basis of progress made in the field.

Responsibility and timing

132. Project will provide technical support, evaluate and monitor the construction works whereas the responsibility of grant recipients shall be to follow up all required process and agreed modalities for construction tasks and use of post- harvest structures appropriately as agreed upon.

133. The seed storage houses and banana ripening chamber will be started in the first year while vegetable collection centers and cold store will be initiated from the second year of the project.

G. Livestock Production Support

134. In addition to agricultural activities, the project will also support for livestock development activities. Major activities of livestock support program will include construction and repair of livestock shed, grass and fodder production programs, disease control, and vaccination against major diseases. The project will make deliberate attempt to include the poor and land constrained households who will be identified in consultation with the WUAs and local municipalities.

Project support

135. Individual farmers and private firms will be eligible for project support. The small and medium scale farmers will be prioritized for this program to increase their income. Nevertheless, this program will not support for large scale commercial production of livestock sectors.
136. Grant support will be concentrated on shed, feed, trainings and marketing aspects of livestock and their products. Mostly, the grant support will range from 50 to 100 percent. Detail of support categories and cost sharing of project has been mentioned in Annex 4.13.

Implementation Process

137. In case of shed construction, project will invite an application from the interested farmers and private firms. Project will evaluate the application and verify the sites, and finally, will make an agreement and provide negotiated supports.
138. But other livestock support activities, like grass and fodder production, breed improvement and health management will be conducted as demand of farmers. Project will plan and conduct campaigns and provide required services to the farmers.

H. Hiring of Consultants and Mid-level Technicians

139. ACIU will hire a team of experts to fulfill the need of required skills and expertise for effective implementation project activities. They include one agri-business expert, one agriculture extension specialist, procurement specialist and three mid-level technicians. Detail TOR of these experts and technicians are mentioned below:

4.3 Component 3: Project Management

140. Project Management is vital for the overall design, procurement, implementation and Monitoring activities. Component 1 (Scheme Modernization) and Component 2a (Strengthening Water Users Associations/Committees (WUAs/WUCs)) will be implemented by DoI, while Component 2b (Agricultural Production Support) will be implemented by DoA through ACIU. Overall, financial reporting, budget allocation, and fiduciary transactions will be the responsibility of the DoI through the PIO and the DoA through the ACIU at Tikapur that is responsible for the FM of its own activities under Subcomponent 2b.
141. Activities that ensures effective project management, including fiduciary and safeguard management and M& E will be implemented under component 3. Among others, the project management activities are basically related to operation of the PIO and a small liaison office in Kathmandu for coordination with relevant agencies; design and establishment of project specific Management Information System (MIS), institutional development support, procurement of goods and services.

4.3.1 Project Management Activities

142. The details of the project management activities and their implementation procedures are described below:

Activity 1: Operation of PIO and Liaison office

143. The operation of the Project Implementation Office (PIO) at Tikapur will be supported by Project Management component. Project Director will lead the PIO staff including the team of engineers, sociologist, finance officer and other administrative support staff. The structure of the PIO will be reviewed by the GoN/IDA and updated annually based on the project activities to be implemented. The PIO will have following five sections under direct supervision of the Project Manager (Refer Figure 3.1):
1. Procurement Section- Lead by Senior Divisional Engineer having sound knowledge on IDA/GoN procurement guidelines
 2. Technical Section- Lead by Senior Divisional Engineer have adequate knowledge on planning, design and quality control
 3. Social Environmental and Institutional Section- Lead by Senior Sociologist acquainted with social and institutional issues of the project
 4. Account Section- Lead by Under Secretary (Finance) accustomed with World Bank's Fiduciary management
 5. Administrative Section: Lead by Administrative officer
144. The PIO office will be facilitated with necessary laboratory and surveying equipment's, furniture and other necessary office goods. The Project will continue to operate a small liaison office in Kathmandu for coordination with the DoI, DoA, MoF, and other relevant agencies;
145. The PIO will be responsible for overall contractual management of the civil works, coordination with WUAs, agricultural agencies, forestry and environment departments,

wildlife conservation, local agencies for the roads, and district administration. It's main management tasks will be:

- a. Overall implementation of the project, including management of the annual work plan and budget;
- b. Maintaining financial accounts;
- c. Day-to-day construction supervision and quality control activities;
- d. Preparing periodic progress reports;
- e. Monitoring WUA activities;
- f. Monitoring and evaluating the progress and outcomes of the project; and
- g. Supervising cross-cutting issues including gender, indigenous people, and other social and environmental issues

Activity 2: Formation of Project Steering Committee (PSC)

146. As in MoRJKIS Phase 1, a Project Steering Committee, chaired by the Secretary of the Ministry of Energy, Water Resources and Irrigation is to be formed to provide overall policy, guidance, and to ensure necessary coordination between the related agencies to support the project activities. The structure of the Committee and roles and responsibilities are discussed in section 3.1 and 3.2. The PIO will request Ministry of Energy, Water Resources and Irrigation for the formation of the PSC.

Activity 3: Formation of Scheme Construction & Coordination Committee (SCCC)

147. To implement and monitor the rehabilitation and institutional development works, a Scheme Construction & Coordination Committee with following members will be formed. More than 50% members of this committee will be from WUA

Activity 4: Formation of Local Environmental Monitoring Committee (LEMC)

148. Local Environmental Monitoring Committee (LEMC), consisting of the different stakeholders will be made for the regular monitoring and supervision of the process and compliance monitoring of the environmental activities.

Activity 5: Procurement of Goods, Works and Services for hard Ware and Software

149. The PIO will ensure that procurement of goods and services will be made in timely manner for the smooth implementation of the project as per the procurement plan

Activity 6: Establishment and operation of MIS

150. The PIO will establish a Management Information System (MIS) for smooth flow of information and progress among the various stakeholder from field level to central level. The project either will have its own website or use the Departmental Portal. A domestic consulting firm will be deputed for the establishment of the MIS. PIO staff and Implementation consultant will be trained for the handling of the MIS. In addition to other information the MIS will have details of each contract including the work plan and field progress which will assist in progress monitoring. Additional grievance redress mechanism (GRM) databases will also be uploaded in the MIS.

5. Safeguard Management Plan and Framework

5.1 Environmental Management Plan

151. The proposed project is the modernization of an existing facilities, therefore the potential environmental impacts of the proposed project are expected to be minimal and site specific, compared to the development of entirely new project involving major civil works. However, the RJKIP is taking this opportunity to integrate the environmental aspects of development works in such a way that the anticipated benefits shall be obtained and augmented without causing serious implication during the execution of the Project.
152. The Project has conducted detailed Environmental Assessment during the project preparation phase. Environmental impacts, both direct and indirect, in terms of magnitude, extent and duration that are expected to occur during construction and operation in the project's area of influence were identified. In addition, alternative analyses from the environmental point of view including "No Project Alternative" (or with and without project comparison) were carried out and critical environmental problems that require further studies and/or monitoring were identified and recommended. Mitigation measures for the adverse impacts (measures to avoid, reduce, mitigate, manage and/or compensate the adverse impacts) and enhancement measures for the beneficial impacts (potential opportunities and design measures to maximize complementary economic, financial, environmental and social benefits of the Project) are established and recommended. Based on identified impacts and mitigation measures, an Environmental Management and Monitoring Plan, including site-specific Environmental Management Action Plan(s) (EMAPs) for contractor bid documents has been prepared.
153. Beneficial environmental impacts due to project implementation are presented in Annex 5.1. Major adverse impact identified by the EA includes impact due to pollution, drainage disturbance and change in surface flow regime, increased urbanization, quarrying of construction materials, siltation etc. The details on the potential impacts and their likely mitigation measures during construction and implementation stages are presented in Annex 5.2 and Annex 5.3 respectively. As per the recommendation of EA following activities need to be carried out by the PIO for the effective implementation of mitigation measures.

5.2 Biodiversity Management Plan

154. The livelihoods and economic wellbeing of millions of rural people who directly depend on natural resources for meeting their daily subsistence needs and cash income is closely linked with the biodiversity. The project setting plays an important role in biodiversity conservation. The Project area is bounded in East, West and South by the Karnali, Pathariay and Mohan River respectively while Northern side of the project area has a major forest. Furthermore, Conservation area (Bardiya National Park) lies in the opposite bank of the Karnali River. The MoRJKIS Phase 2 does not have direct impacts to these biodiversity of the area. However, there will be induced impacts will affect to an extent. Therefore, conserving biodiversity is an essential part of safeguarding the biological life support systems on the Earth. The fundamental goal of Biodiversity Conservation and Management plan (BMP) is to check the anthropogenic pressures on the natural resources. It needs a sustainable use and management of resources and habitats and community participation in the conservation. The BMP for the RJKIP area has been formulated considering the wildlife (fauna and flora) profile of the region, customs and cultures

of the indigenous Tharu community in particular and the beneficiaries of command area at large.

155. The PIO has conducted a biodiversity assessment of the Influence area during the project preparation. The beneficial impact of biodiversity conservation is presented in Annex 5.4. The PIO will have the responsibility for the implementation and monitoring the BMP. The potential impact and proposed mitigation measures during the construction and implementation stage as identified in the BA report are presented in Annex 5.5 and 5.6. The EMoP is presented in Annex 5.7.

5.2.1 Implementation Activities

156. As per the recommendation of EA and BA following activities need to be carried out by the PIO for the effective implementation of mitigation measures.

Activity 1: Design and Implementation of Environmental and Biodiversity Management Action Plan

157. Prior to the implementation of Construction works following action plan has to be prepared.
- Health and Safety Plan
 - Labor and Working Conditions
 - Debris and Spoil Management Plan
 - Traffic Management Plan
 - Terrestrial Ecological, Biodiversity Management Plan
 - Resource efficiency and pollution prevention plan
 - Grievance management Plan
158. The respective contractor will be responsible for preparation of the action plan and the PIO in coordination with the implementation consultant will have the responsibility for the approval of the plan submitted by the contractor. Contractor will have the sole responsibility for the implementation of the plan. Monitoring will be the responsibility of the implementation consultant and PIO.

Activity 2: Strengthening of RJKIP Environmental Unit

159. The PIO will be responsible for overall project coordination and management of ESM implementation and budget arrangement. The PIO will strengthen the existing Environment Unit in the PIO. Senior Sociologist will lead the team of engineers to design the plans and programs and monitoring of the implementation activities. Technical backstopping to the RJKIPEU will be provided by implementation consultant and external specialist (Individual Consultant). The RJKIPEU will liaise with all relevant local GOs, NGOs and CBOs. The Fishdiagram below explains the coordination modality of RJKIPEU.

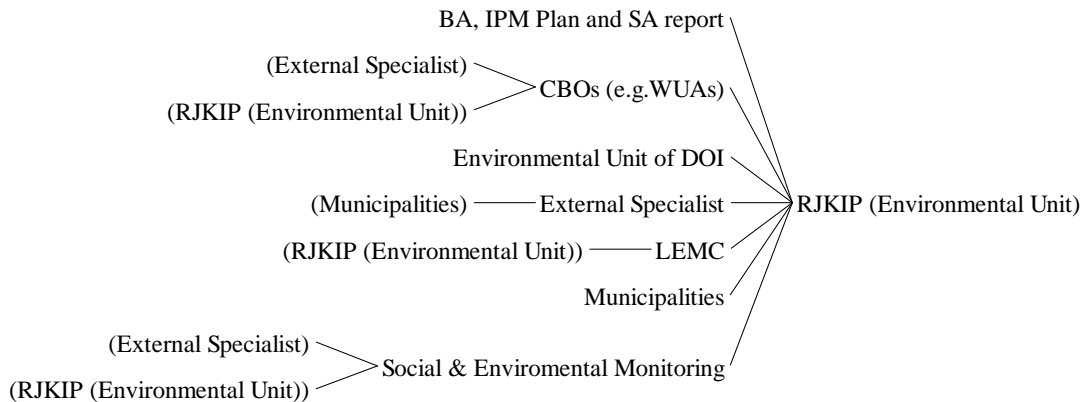


Figure 5.1: Fish diagram showing key relationships within RJKIP Environmental Unit

Activity 3: Formation of Local Environmental Monitoring Committee (LEMC)

160. From the past experiences it has been proven that timely engagement of local people through a local organization can bridge Project and People to implement environmental and social plans and. RJKIP will be the primary agency to plan, implement and monitor the project related both environmental and social action plans. The existing LEMC needs to be reformed for its effectiveness. Reshuffling current LEMC under the leadership of local government representative would make the system more functional and robust. The other members of the LEMC shall be representatives from DADO, DFO, main WUA, RJKIP, CSOs, NGOs and Federation of Nepalese Chambers of Commerce and Industries (FNCCI). The monitoring by the LEMC to be regularized with at-least 4 times a year. The LEMC comprising of following members will be reestablished within one month of effectiveness.

1. Chairman of District Coordination committee- Chairman
2. Mayor of Tikapur, Janaki and Lamki Chuha Municipality-Member
3. Chief District Officer-Member
4. District Forest Officer- Member
5. Agriculture Extension and Soil Conservation Officer- -Member
6. Warden of Bardiya National Park-Member
7. Coordinator, Terai Arc Landscape Programme (TAL)-Member
8. Local NGOs working on Conservation and Environment-Member
9. WUA Chairman—Member
10. Representative, FECOFUN-Member
11. Community Forest User Groups in the project area-Member
12. E&S Safeguard Section Chief of RJKIP- Member Secretary

161. The committee shall have the right to invite, as per need, any other experts for a particular type of monitoring. The main responsibility of the LEMC will be to conduct both process and compliance monitoring in a regular basis of once in 3 months and at the time of need. The LEMC will study the report availed by the Environmental Specialist and go to the field with the checklists prepared by the ES for verification. The individual members will be responsible to monitor the activities of their jurisdiction only. They will carry out observation, consultation and simple measurement, as per need. They will produce a report at the end of the

visit and submit to the project and the project should send such report to the higher authorities and a copy to the WB office. It shall be the duty of the RJKIP to abide by the suggestions and recommendations mentioned in the reports submitted by the monitoring committee. The committee will refer to the DoI and MoI of any non-compliance of such suggestions. Project will be responsible to cover the cost of committees visit (including fees and per diem), observation, transportation, and communication, stationary and other miscellaneous items.

Activity 4: Implementation of Mitigation Measures

162. The proposed mitigation measures for Environment and Biodiversity conservation of the Influence area (AoI) are presented in Annexes. The PIO will adopt following procedures for the successful implementation of the identified mitigation measures.

A. Implementation through contract conditions

163. The PIO will ensure that the mitigation measures identified in the safeguard management plans as to be implemented by the contract will be included in the contract documents. It will be the responsibility of the PIO and implementation consultant that the mitigation measures are implemented as designed/estimated.

B. Implementation through awareness Program

164. Awareness program on environmental and biodiversity conservation issues is sought to be an important aspect for safeguard implementation. The PIO in coordination with the implementation consultant and other individual consultant will undertake the awareness program for construction workers, Water Users and other stakeholders. Awareness programs to be implemented includes following:

- a. Community health and safety risk
- b. Zoning awareness through municipality, WUA and other CBOs
- c. Campaign on likely salinity problems
- d. Impact on wildlife including species of conservation significance
- e. Campaigns against poaching and illegal logging
- f. Inundation
- g. Dolphin conservation
- h. Income generation from feral cattle
- i. Habitat conservation for aquatic life
- j. Forest conservation

165. The consultant shall assist the client in planning and implementing environmental and social awareness raising activities.

C. Implementation through monitoring

166. Numerous mitigation measures proposed in the EMP and BMP can be achieved only through strict supervision and monitoring. Mechanism of routine supervision and monitoring will be established in the PIO. The Project senior official and Environmental expert from the implementation consultant shall have the joint responsibility of monitoring of the activities of the contractors labors such as illegal fishing, poaching, logging, felling down of trees, extraction of river bed materials etc. The Implementation consultant will develop a field monitoring checklist and based on the monitoring result the PIO will engage the implementation consultant for the

preparation of annual safeguard compliance report. Frequent orientation to the contractor for the implementation for safeguards measures will also be part of monitoring activities.

D. Reinforcement and penalty to the contractor

167. Based on the monitoring report/safeguard compliance report the PIO will take the reinforcement action and issue penalty to the contractor in recommendation of the implementation consultant. The PIO will inform the Bank and DoI of the action undertaken. PIO will ensure that the penalty will be decided on the basis of contract clauses.

E. Conducting detailed assessment of identified Environmental and biodiversity issues

168. As per the recommendation of the safeguard documents the PIO will conduct detailed assessment studies of the issues that were not fully assessed during the project preparation phase. The PIO will undertake these assessment studies in collaboration with the implementation consultant. The PIO will procure the service of domestic consultant for the studies. Followings are the issues that need further assessment before implementation:
- a. Re-assessment of risk of flooding in the command area and develop drainage management
 - b. Watershed Management of Dhobini Stream that joins Kulariay System
 - c. Habitat conservation for Dolphin in Pathariya river

F. Coordination with the local government and other stakeholder

169. Environment and Biodiversity conservation in the command area can't be achieved by the project alone. There is a need a strong coordination and coordination with the local stakeholders, local government and other government Department. The PIO will have the responsibility for initiation of the collaboration and coordination for implementation of all safeguard related activities. The Implementation consultant and the senior sociologist will assist the Project Manager in establishing the cordial environment with all the concerned agencies.

5.3 Social Impact Management Framework

170. This SIMF is prepared to guide the detailed social planning process during implementation when the engineering designs are completed. It proposes policy guidelines, planning approaches and requirements, mitigation strategies and interventions under the project. It covers four social policy frameworks:

- Land acquisition and resettlement policy:
- Vulnerable Community Development policy
- Gender and Social Inclusion (GSI) policy
- Information, Communication, Community Consultation and Participation (ICCCP) Strategy

5.3.1 Implementation Activities

171. The project will perform several activities to avoid any negative impacts on social norms, values and coherence while following the social policy framework. The major four activities under this

component are explained as follows.

Activity. 1: Preparation and Execution of Resettlement Action Plan (RAP)

172. The major activities under Phase-II will focus mainly on infrastructure development in command area to modernize existing irrigation system. Since the major civil works limited to lower order canal system which currently functioning, significant land acquisition is unlikely. Impact assessment of pilot area revealed that land acquisition and associated impact are unlikely. However minor changes in existing alignment to increase canal efficiency and cost reduction may require additional land that may require relocation and livelihood of the community could be affected.
173. The Resettlement Policy Framework is a guiding document to address the potential resettlement and land acquisition issues in the schemes under Phase-II. If such impacts would be emerge the policy and principle of RPF will be implied accordingly. (See Annex 4.5 Policy entitlement matrix). In this case following steps will be followed:

a. Social Impact Assessment: Once the possibility of land acquisition has been confirmed, a fresh SIA incorporating socioeconomic surveys of Affected People (AP) should be undertaken and integrated into the detailed design of project components. The SIA combined with Socio-economic survey based on 15-20% sample households of project area, will gather relevant information about PAPs (Project Affected Persons), including: (i) demographic characteristics (ii) an inventory affected assets, facilities and resources, (iii) landownership, usage and productivity (iv) socio-economic status of PAPs and assessment of their risks including income (v) social and gender issues including prevalence of indigenous people (vi) stakeholders and their activities (vii) people's interest and expectations including their attitude towards the project, and (viii) impact minimization/ mitigation measures based on community consultations. The SIA will help in determining the magnitude of displacement, prospective losses, better targeting of vulnerable groups, ascertaining resettlement magnitude and costs, and preparing and implementing resettlement and other plans as required. The SIA will identify measures to avoid/minimize/mitigate involuntary resettlement risks. Vulnerability assessment of PAPs will be part of SIA and a list of vulnerable PAPs prepared and finalized in consultation with local community. The SIA will also assess options for any relocation, opportunities for income restoration/economic rehabilitation, and any need of special assistance for vulnerable groups. It will also solicit PAPs willingness to donate their land. Based on this information, the eligibility criteria and entitlement for compensation/assistance will be established and appropriate resettlement plans (RAP) will be prepared.

b. Census Survey: Once a broader picture of the project affected area and peoples emerges from social impact assessment, the proponent will need to undertake census survey of the affected people. At this stage, final designs of the project physical components and interventions are expected to be ready to provide project impacts more precisely. The census will enumerate of all PAPs based on site investigation sufficient to identify titled, localizable and non-titled APs. The census will also serve as a cut-off date for the entitlement purpose. The information will be gathered in participation of community, local NGOs/CBOs, and PAPs.

c. Resettlement Action Plan (RAP): The Resettlement Action Plan (RAP), RAP, is a major planning document which is based on their information gathered from census survey of affected people and inventory of lost assets. The content of full RAP should include a statement of involuntary resettlement objective and strategy, with (i) organization responsibilities, (ii) community participation and disclosure arrangements; (iii) finding of the socio-economic survey ; (iv) legal framework, including eligibility criteria and entitlement matrix; (v) mechanisms for resolution of conflicts and appeals procedures; (vi) compensation and resettlement measures; (vii) inventory, valuation of, and compensation for, lost assets; (viii) land ownership, tenure, acquisition, and transfer; (ix) access to training, employment, and credit; (x) shelter, infrastructure and social services; (xi) environmental protection and management; (xii) monitoring and evaluation; (xiii) a detailed cost estimate with budget provisions; and (xiv) an implementation schedule, showing how activities will be scheduled with time-bound actions in coordination with the civil works. The RAP will establish an eligibility cut-off date.

Activity. 2: Execution of vulnerable community development plan

174. Generally, it is believed that appropriate income generation activities, infrastructure development and capacity building programs improve the livelihoods of the poor and socially excluded groups. The RJKIP specific VCDP is expected to contribute to all 3 aspects of social development: income generation, infrastructure development and capacity building. To this end the project will directly contribute to increasing agricultural productivity and production through improved access to year round irrigation that will create/enable condition for crop diversification and increased cropping intensity. The action plan is largely deals with addressing the issues of small and marginalized farmer to ensure their participation and create enabling environment to share the benefits. In order to address the concerns of vulnerable groups in the project command area, enhance project benefits to these communities, and mitigate the adverse impacts, following activities are proposed (for detail activities refer Annex 4.3).

- **Improve access to information:** Orientation to project implementation staffs, rising awareness among target groups through using wider means of communication, free and prior consultation with key stakeholders will be done.
- **Create enabling environment for the participation in project activities:** PIO will follows the strategy to make WUAs more inclusive, prepare inclusive criteria of selection of training participants, provide priority to landless beneficiaries to construction site employment, priority is given to the affected people friendly canal design, create a subcommittee under branch level WUAs to look after needs and concern of land less and ultra poor beneficiary households, facilitate intra social group interaction to discourage discrimination, encourage Tharu based traditional way of irrigation governance, etc.
- **Agricultural support program for affected people:** Activities like ensuring participation of target group in commercial farming, link target groups to agricultural mechanization program, link target group with post harvest support program, river bed and flood plain public land farming program for land less and ultra poor, link target group with livestock support program will be followed.
- **Implement capacity building program:** Leadership development training to the target group, Income generation training to the poor and land less people, Training on finance

literacy, Training on marketing will be conducted in phase-II.

- **Follows integrated approach to work with various service providers:** Facilitation of improved access to rural credit/inputs through linking groups to cooperatives, agro-vet service providers, etc will be done.

Activity 3: Execution of Gender and Social Inclusion Strategies and Activities

175. Women are prime users of irrigation systems. On the other hand, they are hardly involved in the planning and design of the infrastructures, operation and maintenance of irrigation system in comparison of men. Lack of access of land ownership, traditional division of labor system, considers irrigation as male dominated activity are few barriers which leads poor women's participation.
176. Key strategy to enhance the roles and opportunities of women farmers and households is reflected in specific gender-Action Plan (GAP) in safeguard document. Under the scope of this project women will have improved access to irrigation, a proportionate role in its management and access to participation in all activities including the training. The role of women in WUAs as well as other agriculture associations will be enhanced to maximize their benefits from irrigation. Improved access to farming technology will also be linked with agriculture component of the project. In this regard, following strategies are proposed (for detail related activities refer Annex 4.4):
 - Sensitize local farmers, WUA/WUG and project functionaries on the involvement of women in the institutional decision-making process.
 - Prepare socio-economic data disaggregated by gender, caste, ethnicity and class.
 - Implement awareness raising program on various aspects of project implementation including gender issues in irrigation.
 - Use massively available means of communication delivering project activities to the beneficiaries.
 - Train and mobilize girl/women from from vulnerable communities to disseminate information to targeted groups
 - Provide maximum membership to landholder women including from vulnerable groups. Make a provision to Provide co-membership to women in household, especially where men are absent.
 - Encourage WUAs to maximize (More than 33%) women's representation in all WUA structures including in the key post.
 - Amend WUA constitution to make more space for female representation in WUA structure.
 - Design and implement specific capacity building training programs for women groups/Female headed households.
 - Create conducive environment for women's participation following core labor standards.
 - Training in leadership development
 - Enhance women's access to credit
 - Ensure need based agricultural extension and support services to women users as well as women-headed households

- Ensure employment to women in project construction activities
- Ensure women's access to project benefits by incorporating program activities that are sensitive to gender concerns and needs

Activity 4: Execution of Information Disclosure, Consultation, and Citizen Engagement Strategy and Activities

177. The RAPs should identify primary and secondary stakeholders and include specific measures for consultation, participation and information disclosure in full compliance with the WB's Policies on Involuntary Resettlement and Public Communication. The primary stakeholders include PAPs, beneficiaries and stakeholders directly involved in the project. The secondary stakeholders include other individuals or groups with interest in the project such as local NGOs and municipalities. The information on all safeguard policy and plan will have to be made available through public consultation meetings, direct discussion with APs, brochures, leaflets, or booklets in local languages and FM radio programs. In addition, the PIO should disclose relevant information in a timely manner, in places, and in a form and language, that the APs have access to.
178. As part of disclosure, summary copies of the translated Nepali versions of safeguard documents will be placed publicly accessible places. At the center, these documents should be posted in the website of the Project and DoI whereas in district and subproject level, hard copies of these documents should be placed in difference offices viz municipality, rural municipality, PIO, ACIU, WUA offices etc. A detail on information dissemination, education, communication and citizen engagement strategy is included in Annex 5.8. Disclosure will be taken place in following three phase of project implementation.

a. Pre-construction Phase

179. A consultation and disclosure program on environmental and social safeguarding was already taken place between and among stakeholders during field studies. As a series of free, prior and informed public consultation meetings with indigenous and other vulnerable communities were conducted at different locations at the project. The participants of the consultation voiced several concerns during the meeting. They openly expressed that the project should not be implemented undermining IP's and other vulnerable community's rights (land, river and natural resources). Key concerns, expectation and suggestion expressed by the IPs and other vulnerable communities during consultations are presented in Annex 5.9.
180. Similarly before finalizing the safeguard documents information on project planning, probable issues during project implementation and mitigation measures was disclosed to the concerned stakeholders in the project area and major issues raised during disclosure are listed in Annex 5.10.

b. Construction Phase

181. At this stage, the stakeholders should be informed of the final plan of the project

interventions, process and sequence of implementation activities. Project beneficiaries and stakeholders should also be informed of their role in the project implementation activities and how they could share the anticipated benefits including employment, running tea shops, petty business, and undertaking micro enterprises. Consensus building through intensive consultations and social gathering during this stage can avert the possibilities of conflicts in the future. Different ways in which secondary stakeholders can avert potential disputes and conflicts over the distribution of benefits should be considered through consultations with them.

c. Post construction Phase

182. Adequate communication and participation is particularly critical at this stage because users will be responsible for the operation and maintenance (O&M) of the system. Users, committee members and potential candidates responsible for overseeing operation and maintenance could be taken to exposure trips / visits to best management practices in other irrigation user groups. Skills and knowledge on alternative techniques of water management, crop farming and resource mobilization should also be given through different trainings events.

4.3: Institutional arrangement for Environmental and Social Safe guard Management

183. The project executing and implementing agencies such as Department of Irrigation, Project Steering Committee, Project Implementation Office, LEMC, GRC, WUAs are responsible for updating, executing, monitoring and compliance of the environmental and social mitigation measures. PIU will be responsible for smooth operation of the project related activities. Social Environmental and Institutional Development Unit (SEIDU) at PIO will coordinate and implement the Environmental and Social safe guard Management Plan.

4.4: Independent Party Monitoring

184. The Planning and implementation of social safeguards compliance will be monitored both internally and externally. The purpose of monitoring is to provide feedback to the management to take timely corrections in the implementation procedure and improve the performance both at outcome and impact levels. As per the provision in PAD, GoN will also engage an independent party for regular monitoring of the environmental compliance, management, and performance in the project. An example of the Environmental Monitoring Matrix is given in Annex 5.11.

4.5 Establishment of Complain Redress Mechanism

185. The PIO will establish Grievances Redress Committee (GRC) (As mentioned in Chapter-8) and appoint a Compliance Officer (CO) or allocate one of the staff as CO. The GRC will record the complains, processed hearing, and resolve at different level to assure that the complaints are acknowledged, promptly addressed and replied within stipulated timeframe. The checklist of the activities to be performed under Environmental and Social Management Framework at different stages of the project and responsible authorities is given in Annex 5.12.

6. Procurement arrangement and procurement procedure

6.1 General Conditions of Procurement

186. World Bank Procurement Regulations for Recipients under Investment Project Financing’, dated July 1, 2016 (hereafter referred to as ‘Procurement Regulations’). ‘Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants’, dated July 1, 2016, , shall be the key reference document for all the procurement carried out under the project. In all the procurement the core principles shall be value for money, economy, and integrity, fit for purpose, efficiency, transparency and fairness. Beyond the World Bank Guideline the Government procurement guideline will be followed in a way that is consistent with Bank procurement regulation.
187. The RJKIP will held to high standards of integrity and accountability. Ensuring that the Project is free of corruption and mismanagement of resources, accountable to the Government, the World Bank, the public and other stakeholders its primary objective will be the Fiduciary Management & Governance Framework of the Project.
188. It is emphasized that the procedures used need to fulfill obligations that allow for the Project to be carried out diligently and efficiently, and that the Goods, Non-Consulting Services and Consulting Services procured are satisfactory, compatible with other Projects, delivered and completed on a given timeframe, reasonably priced and have no adverse impact of economic and financial viability of the Project.

6.2 Procurement Method

189. There are several methods of procurement, both for procurement of Works, Goods and Non consulting services and for procurement of Consulting Services. The following figure specifies the methods that MoRJKIS may use for the procurement of Works, Goods, Non-consulting Services and Consulting Services for the individual activities.

Figure 6.1: Procurement Methods to be used under the Project

Methods of Procurement for Works, Goods and Non Consulting Services	Methods of procurement for Consulting Services
Request for Bids (RFB)	Quality Cost Based Selection (QCBS)
Request for Quotations (RFQ)	Fixed Budget Based Selection (FBS)
Direct Selection	Least Cost Based Selection (LCS)
	Quality Based Selection (QBS)
	Direct Selection
	Consultant’s Qualifications Based Selection (CQS)

6.3 Procurement Approach

190. The procurement approach for the procurement of the project activities are as below:
191. The Bank's Standard Procurement Documents shall be used for all contracts subject to international competitive procurement as specified in the approved Procurement Plan tables in STEP.
192. National Procurement Arrangements: In accordance with paragraph 5.3 of the Procurement Regulations, when approaching the national market (as specified in the Procurement Plan tables in STEP), the country's own procurement procedures may be used.
193. When the Borrower uses its own national open competitive procurement arrangements as set forth in Nepal's Public Procurement Act 2007 (1st Amendment) and the Regulations made thereunder, such arrangements shall be subject to paragraph 5.4 of the Bank's Procurement Regulations for IPF Borrowers, July 2016 and the conditions indicated in the PPSD.
194. When other national procurement arrangements other than national open competitive procurement arrangements are applied by the Borrower, such arrangements shall be subject to paragraph 5.5 of the Procurement Regulations.

6.4 Procurement Arrangement

195. This Implementation Manual provides general guidance on the roles and responsibilities for project carrying out procurement under RJKIP, and also provides references to the important documents in which the applicable procurement methods and World Bank's requirements are set out. All procurement of goods, works, and of consultant services under RJKIP shall be carried out in accordance with World Bank's Procurement regulation. In addition, the provisions of the Government of Nepal's Public Procurement Regulation 2007' shall be followed. The Major Procurement to be carried out under Phase 2 is presented in Annex 6.1.

Procurement of Works

196. Command Area Development (CAD) works in the command area of Rani Jamara Kulariya involves rehabilitation of existing canal, construction of canal structures, construction of girder bridges, Agricultural road improvement, river training, bank protection works and watershed management works. Three, complex and high value works contracts, i.e. construction/rehabilitation of canal and associated structures, construction of bridges and agricultural road improvement in the command area of Rani, Jamara and Kulariya will be implemented through "Open and International" market approach. This approach is expected to complete the construction activities on time, which will consequently result in timely achievement of the PDO. Prequalification will be adopted for the International Competitive Procurement.
197. Works with less complexity and low value such as watershed management, drainage and river management will be implemented through Open National market approach. Single stage two envelop procurement will be used.

Procurement of Consulting Service

198. Selection of consultant for Design Review, Construction Supervision, Quality Control, Contract Management and Safeguard Monitoring consultant for Implementation of phase-2 will be implemented through “Open and International” market approach. Quality and Cost Based Selection (QCBS) method of procurement will be adopted for evaluation of the consultant including International Team Leader (TL). Procurement of other consulting services like, procurement expert, Monitoring and Evaluation expert etc will be done as per the approved PPSD and procurement plan.

Procurement of Goods

199. Goods procured under the project will include vehicles, office equipment, and heavy equipment’s for operation and maintenance purposes. The procurement will be carried out as indicated in the procurement plan

Procurement of Non Consulting Services

200. Trainings, workshops, visits, in-house studies/surveys etc. are included under non-consulting services. The procurement of these services will be carried out as indicated in the procurement plan.

6.5 PPSD and Procurement Plan

201. The project has prepared the PPSD including the procurement plan for initial 18 months of the Project. Major procurement activities to be funded under the project have been identified and stated in the PPSD. All revisions and updates of the Procurement Plan need to be submitted to the WB for approval. The Procurement Plan is to be updated as needed, after every Project Steering Committee meeting, but at least annually to cover the subsequent 18-month period of the duration of the Project. The Procurement plan for Works Goods and consulting services are presented in Annex 6.2, 6.3 and 6.4 respectively.

6.6 Review of the Procurement Decisions

202. Procurement is fundamentally the responsibility of Plan Bleu. However, supervision by the WB involves three main tasks in relation to Procurement:
- a. Review of the Procurement Plan;
 - b. Prior review of Procurement transactions;
 - c. Post review of contracts, on a sample basis, to be conducted yearly and to review contracts that were not reviewed by the WB prior to be signed; and
 - d. Review of Terms of References (ToR), short-listed bidders, Request for Proposal (RFP) documents, technical evaluation reports and contract awarding drafts.

6.7 Standard Procurement Documents and Forms

203. During the first months of the Project, PIO will create, use and test standard procurement documents and forms, such as the Request for Expression of Interest, different sample contracts, acceptance of deliverables, invitation for the evaluation committee to meet, etc using the World Bank Standard Documents. These documents and forms will be included in this PIM as annexes, once they have been used and tested during the first year of the Project implementation.

7. Financial Management and Financial Procedure

7.1 Financial Management

204. The objective of the Financial Management (FM) system is to support the implementing units in deploying project resources to produce the required outputs and with attention to economy, efficiency and effectiveness. Specifically, the FM systems will be capable of producing timely, understandable, relevant and reliable financial information that will enable the implementing units to plan, coordinate, implement, monitor and appraise the Project's overall progress towards the achievement of its objectives, as well as ensuring that funds provided will be used for the intended purposes efficiently and economically. Financial Management of the MoRJKIS- Phase 2- Project mainly comprises the followings.

7.2 FM and Disbursement: Overview

205. The FM arrangements for MoRJKIS Phase 2 will be similar to Phase 1. The same processes and procedures as applicable in Phase 1 audits will apply for this for planning, budgeting, funds flow, accounting, reporting, internal control/audit, and external project as well. Overall, financial reporting, budget allocation, and fiduciary transactions will be the responsibility of the DoI through the PIO, and DoA through the ACIU at Tikapur, which is responsible for the FM of its own activities under Component 2. The Government's Financial Procedures Regulations will be used as the basis for exercising appropriate controls over project transactions.
206. The annual work program and budget will be based on the work program to be prepared separately by the DoI/PIO and DoA/ACIU for their respective components. The DoI and DoA will submit the annual work program and budget to the National Planning Commission and the MoF for approval through LMBIS. A separate dedicated budget code will be assigned in the Government's Budget (Red Book) for recurrent and capital expenditures of both components. The MoF releases authorization for expenditure to concerned Ministries, which in turn, releases authorization to the implementing agencies through their respective departments based on the Appropriation Act of concerned fiscal year.
207. The implementing agencies (PIO and ACIU) will prepare and maintain books of accounts on a cash basis. The PIO shall be responsible for coordination and submission of periodic consolidated financial reports.
208. The PIO shall prepare and furnish to the IDA not later than 45 days after the end of each Fiscal quarter, interim unaudited financial reports IUFs for the project covering the Fiscal quarter. The annual consolidated project financial statement will be audited by the OAG, Nepal, which is considered acceptable by IDA for this purpose, and submitted to IDA within six months after the end of the fiscal year.
209. The PIO shall be responsible for disbursement of both components. Based on the quality and timeliness of the financial reports of Phase 1, report-based disbursements have been accepted for Phase 2. The disbursements will be in the form of reimbursement supported by IUFs or direct payments with invoices/relevant supporting documents.

210. For operationalization of sub grants under component 2.b, following processes will be followed.

7.3 Selection Process of Farmers for a grant:

211. Grant will be provided by ACIU to conduct research, test technologies and establish demonstration with active participation of farmers as guided by the project to meet technology demand of the project. The verified technologies and proposed practices will need to fit with local socio-economic and agro-ecological context and need to have a better performance than the existing ones. Procedure of grant flow will be as following.

1. Area of activity will be defined for a grant based on the PAD
2. Evaluation criteria will be set
3. Call of proposal (simplified) through public notice (individual farmers or farmers' group or cooperatives or agriculture firms and waster users' associations)
4. Proposals evaluated based on the set criteria
5. Field verification and selection of the farmers

7.4 Payment Procedures of Grant (performance Based):

212. Once the recipient are selected and agreement is completed, payment to the recipient will be made into three installments as following. The proportions of recipient contribution which are clearly spelled in PAD should be followed and timing of contribution will be written in the agreement. Standard agreement format will be developed for implementation of activities. The release of the grant will be based on achievements.

1. Thirty percent of the grant will be provided after the agreement
2. Thirty five percent of the grant will be provided once the farmers performs 50% the agreed program
3. Rest 35 percent of amount of the total grant will be provided after the completion of the activities with final report acceptable to ACIU.

213. According to the RPF, if acquisition of small land plots is needed, the GoN/borrower will fund the related compensations/expenses in the form of parallel financing. The expenditure related to sub grants shall be reported to ACIU/PIO who will then include them in the IUFR to be submitted to IDA.

7.5 Retroactive financing

214. Retroactive financing would be applied for the activities listed in the PAD. The reimbursement of retroactive finance will be as per IDA policy and guidelines.

7.6 Withdrawal and disbursement

215. A report-based disbursements approach will be applied for MoRJKIS- Phase 2. The disbursements will be in the form of reimbursement supported by Interim Unaudited Financial Reports(IUFRs) or direct payments with invoices/relevant supporting documents or Special commitments supported by copy of letter of credit and proforma invoice (if it is cited in the LC).The Disbursement deadline will be four months after the closing date of the project.

216. DOI will assign the Project Director and the Chief Finance Officer of the Project as the signatories to withdraw the eligible expenditures under this Project. MOF will send to the IDA with a information of signatories. Authorized signatories will deliver withdrawal applications (with supporting Documents) electronically to IDA by completing the form 2380 through the Association's web

based portal “ Clients connection”. Such designated officials will register as a user of “ Clients Connection” as the IDA permits the recipient to deliver the applications electronically and provide them the Secure Identification Credentials(SIDCs).

217. Recipient may continue to exercise the option of preparing and delivering application in paper form as per necessary.

7.7 Table of categories

218. There are separate categories in the withdrawal table in the Financing Agreement for the DoI and DoA parts. The small community grants under Component 2 are divided into two subcategories, each financing different sets of activities with different financing percentages, and following joint co-financing arrangements.
219. The categories draft Table is provided below as mention in the PAD.

Withdrawal table categories

Category	Amount of the Financing Allocated	Percentage of Expenditures to be Financed up to (inclusive of Taxes)
(1) Goods, works, non-consulting services, consulting services, Incremental Operating Costs and Training under Parts A, B.1 and C of the Project	56,800,000 in US\$	93%
(2) Competitive Learning and Adaptive Research Grant under Part B.2(a) of the Project	121,400 in US\$	100%
(3) Performance-Based Technology Adoption Grants under Part B.2(b) of the Project to support:		
(a) Technology Adoption and Post-Harvest Marketing	2,522,475 in US\$	75%
(b) Agriculture Mechanization	1,247,400 in US\$	50%

(4) Goods, works, non-consulting services, consulting services, Incremental Operating Costs and Training under Part B.2(c) of the Project	5,308,725 in US\$	100%
TOTAL AMOUNT	66,000,000 in US\$	

7.8 Financial Reports and Audits

7.8.1 Financial reports

220. The PIO will prepare and furnish to the IDA not later than forty five(45) days after the end of each Fiscal Quadrimester, interim unaudited financial reports(IUFR) for the project covering the Fiscal Quadrimester.

7.8.2 Audits

221. The audited financial Statements for each fiscal year shall be furnished to IDA not later than the end of fiscal year.

7.9 Planning and Budgeting

222. The Federal level budgeting procedures for preparation, approval, implementation, and monitoring are elaborated in the Financial Procedures Act 1999 and Financial Procedures Rules (FPR)2064 BS. The preparation of annual work program and budget (AWPB) will be coordinated by the PIO, seeking input from the ACIU for Component 2(B).
223. Following the endorsement of the PSC, the PIO through the DOI will submit annual work program and budget to the National Planning Commission and the Ministry of Finance. Two dedicated budget codes – one for the irrigation components of the project (components 1, 2A, and 3) and the other for the agricultural component (component 2B and 3) of the project will be assigned in the Government’s Budget (Red Book) for recurrent and capital expenditures. The annual work program and budget preparation will be prepared based on the guidelines that is spelled out in the NPC format. MoF releases authorization for expenditure to the Ministry of Irrigation, which in turn releases authorization to DoI. The Director General of DoI will delegate spending authority to the Project Director or Authorization for expenditure will be sent to the project manager through LMBIS/ BMIS.
224. Agriculture Component Implementation Unit (ACIU) will be responsible to prepare the annual work program and budget based on the Ministry directives and guidelines. The ACIU based at Tikapur will provide its budget details to the PIO for activities to be implemented through the project. Budget allocation for ACIU will be reflected in a separate budget code under the MoALC.

7.10 Role of PSC for planning and budgeting

225. The steering committee provide guidelines to meet the objective of project as per government policy and PAD during programming and budgeting.
- Recommendation of annual activities and budget required for implementation

- Observation of audit reports and direction to officials for making accountable
- Setting the action plan to meet the objective of project
- Managing staffs to furnish annual expenditures
- Evaluation of annual achievements and expenditures

7.11 Funds Flow Arrangements

226. GoN releases the budget as per the approved work program to the RJKIP PIO as per its fund release procedures. The budget approved by GON will be indicated in the government's budget (Red Book) under a separate budget head for Ministry of Energy, Water Resources and Irrigation (MoEWI) and Ministry of Agricultural, Land Management and Cooperatives (MOALC) or to the approval of the work program and budget, one-third allocation based on the previous year expenditures or projected expenditures for the first trimester, whichever is greater, will be made to the RJKIP PIO through the concerned District Treasury Controller Office (DTCO). Since the treasury single account (TSA) has been implemented in Nepal all payment transactions upon the approval of the authorized offices in the district will be made through the DTCO. With the TSA system, the cost centers will not handle any cash transaction, but upon the approval of the cost centers, the payments will be made through the DTCO upon their request. Subsequent second and third trimester authorizations are based on performance reflected by the physical progress reports as required by Schedule 2 of the FPR 2007.

7.12 Reimbursement of Expenditures

227. For reimbursement of IDA's share of expenditures to GoN's consolidated fund and for direct payments to beneficiaries. DoI will designate the Project Manager and Chief Finance/Accounts Officer as the authorized signatories who will be authorized to do payments. Supporting documentation submitted for withdrawal of funds from the Credit is comprised of Interim Financial Monitoring Reports(IFMR) on Quarterlybasis. Once the IDA approves the quarterly IFMR GON can withdraw the eligible expenditures under the project. Reporting formats for Implementation Progress Reports will be prepared, discussed and agreed by both parties.
228. Both implementing agencies of the components (RJKIP PIO and ACIU) will maintain books of accounts and prepare accounts on a cash basis. The RJKIP PIO will be responsible for the implementation of activities under Components 1 (Scheme Modernization), 2A (Strengthening Water Users Associations) and 3 (Project Management which include Monitoring & Evaluation) whereas, the ACIU, Tikapur for the activities under Component 2B (Agricultural Production, Productivity Enhancements and Market Support) and 3 (Project Management which include Monitoring & Evaluation). The RJKIP PIO will coordinate activities under all components. Implementation progress will be monitored through the Implementation Progress Report which will be coordinated and prepared by the PIO. Reporting arrangements from the ACIU will also be followed as per approved format provided by NPC. The ACIU will send its Quarterly Progress Reports and statement of expenditures to the PIO which will be consolidated in the report to be prepared by the PIO. The PIO will be adequately strengthened to maintain both technical and accounting information using appropriate software.
229. Grants related expenditures are detailed under Agriculture Component of this PIM. The formula are also incorporated in that section based on the PAD and Financing Agreement.

230. Those grants will be accounted, recorded and reported by the ACIU. Separate subsidiary book of accounts will be maintained by ACIU for such grants. ACIU will regularly report its financial information on monthly basis to PIO along with Quadrimester reports and annual reports. PIO will verify the reports that the expenditures are in line with the credit agreement and the categories. PIO will prepare the Interim Unaudited Financial Reports (IUFs) and Audited Financial Statements and submit them to IDA.

7.13 Contribution of WUA

231. Contributions of WUAs will be accounted / recorded by the concerned Water Users Committees (Rani, Jamara and Kularia) and reported to the Main Committee. Main Committee will report to the PIO on Monthly basis. Contribution could be in any form i.e. labour, cash or kind. All contribution will be valued based on approved district rate or on the basis of prevailing market price. PIO will verify the reports and incorporate these amounts in its financial reports as WUA contributions. The format for record and valuation of contribution is shown in the following table.

Name of System: Rani/Jamara/Kulariya		Month:					
S.No	Name of Activities	Activity on (Name of canal, Location)	Type of Contribution			Valuation of contribution, NRs.	Remarks
			Labour	Cash	Kind		
1							
2							
3							
Submitted By (Branch Committee Chairman)		Forwarded By (Main committee Chairman)	Valuation By Engineer (RJKIP)		Checked By: SDE (RJKIP)	Approved By Project Director (RJKIP)	

232. Accounting information will be regularly updated in the PIO system to timely generate financial reports. As required by the government system, the PIO will maintain Main Loan Ledger, Subsidiary Loan Ledger, Withdrawal Monitoring Register, and other ledgers. GON's internal control system will be applied to monitor the progress of the Project in accordance with sound accounting practices. Activity-based subsidiary record for monitoring the detail accounts/key indicators will also be maintained by the PIO. The accounting systems contain the following features:

(i) application of consistent cash accounting principles for documenting, recording, and reporting its financial transactions; (ii) a well-defined chart of accounts that allows meaningful summarization of financial transactions for financial reporting purposes; (iii) maintenance of withdrawal monitoring register, Main Loan Ledger, Subsidiary Loan Ledger, the record of Statement of Expenditures (SOEs); (iv) the asset register; (v) monthly closing and reconciliation of accounts and statements; and (vi) the production of trimester and annual financial statements.

7.14 Financial Management Staffing

233. As per the implementation arrangements, the RJKIP PIO will be the overall coordination office to coordinate the overall implementation and management of project activities. In terms of financial staff, the PIO will have one dedicated Chief Finance/Accounts Officer and one Accountant. The PIO can use consulting services to support the monitoring and reporting function of the Project. The ACIU will have one Accounts Officer to maintain the records of the project activities. PIO will be staffed with experienced and qualified finance officer having experience in computer operations and having ability to provide leadership to project financial activities.

7.15 Project Implementation Progress Report

234. The interim Financial Reports of the Project Implementation Progress will report total investments inclusive of IDA contribution, government contribution and beneficiaries' contribution to be separated by specific activity so that total investments as envisaged can be tracked and monitored. The PIO will produce the project implementation progress reports, showing the sources and uses of funds, output monitoring report, procurement management report and narrative progress report in format to be agreed upon during negotiations. To match the public sector planning and reporting cycle, the IPR will be produced on a quarterly basis and submitted within 45 days from the end of the preceding quarter .

7.16 Audit

7.16.1 Internal Audit

235. The District Treasury Controller Office (DTCO), Kailali , is responsible to carry out the internal audits of both PIO and ACIU. Internal audits are carried out on trimester basis. Each cost center is responsible to maintain its accounts by budget heads. The PIO will also work with the National Vigilance Center for the purpose of carrying out technical audits. The Bank will also arrange for special reviews of program implementation as part of its implementation support.

7.16.2 Performance Audit

236. An arrangement will be made to carry out the performance audit of the Project in about two year's time after the project implementation starts. The performance audit will be carried out through the Office of the Auditor General as mandated by the Constitution of Nepal, and required resources will be provided by the Government of Nepal for this purpose.

7.16.3 External Audit

237. Annual consolidated project financial statements and will be audited by Auditor General's Office (OAG), which is considered acceptable by IDA for this purpose, and submitted to IDA within six months after the end of the fiscal year – January 15. The Financial Procedure Act (Federal Level) and Financial Procedure Rules of the GoN will be followed in the entire financial and accounting system /process.

8. Monitoring and Evaluation and Reporting Mechanism

238. Monitoring & Evaluation (M&E) system is the most useful tool to provide the state-of-the-art information for tracking the project progress, evidence based outcomes and impacts. The rigorous integrated method of M&E enables better implementation, mid-course corrections, supports learning, and enables policy changes and enhanced transparency and accountability in the project. The focus of the project's monitoring system is to enable appropriate oversight and management, self-learning by project staff and beneficiaries, and detail evaluation of project experience.
239. The PIO, through its Social Environment and Institutional Development Unit (SEIDU) and Project Implementation Consultants will be responsible for overall M&E of the project including social and environment safeguarding activities. The SEIDU, a M&E unit will regularly analyze/monitor project progress and outputs with specific reference to impacts on various segment of society.
240. The quarterly review of programmatic and financial progress will be conducted following the government calendar year of operations. The PIO will prepare the Trimester reports and share with the WB in accordance with agreed plan.
241. Similarly, The Local Environment Monitoring Committee (LEMC) will monitor most indicators including safeguard compliances in quarterly basis as a third party monitoring agency. LEMC comprises elected local government representative, district/local chapter of FNCCI, local NGOs & CBOs engaged in the promotion of irrigated agriculture, wild life conservation, environment protection and inclusive developments are to be included in the process of third party monitoring.
242. A separate independent monitoring will be conducted after completing the implementation of planned activities by independent monitoring expert hired by the project. The exercise is expected to provide an independent observation of ground realities and serve as an important input for planning monitoring for the succeeding year.
243. Additionally, at WUA level, a system of self-monitoring will be established by providing technical assistance to WUA. The technical assistance will be provided in the form of various templates to be applied for collecting and analyzing data in order to establish in-house monitoring system. The required capacity to conduct self-monitoring will be imparted through the training program provided under WUA strengthening component. The monitoring methods and responsibilities are summarized in Table 8.1.

Table 8.1: Monitoring Methods and Responsibilities

Performance/results				
Type of monitoring	Frequency	Against	Tool, process/Method	Responsibility
Process	Day to day	Action Plan	Field visits, progress review, public hearing/auditing	WUA+PIO
Progress	Quarterly/annually	Action Plan	Field visits, progress review, public hearing/auditing	PIO
Involvement party/group				
Internal	Quarterly, annually	Work plan, progress report, field visit report	Field visits, progress review, public hearing/auditing	WUA+PIO
Third-party	Quarterly	Work plan	Progress review. interaction with stakeholder	LEMC
Independent	At least once during the implementation period	Issues based, progress or field report	Progress review. interaction with primary stakeholder	Independent experts hired by PIO
Joint	At the end of the fiscal year	Annual program	Progress review. interaction with primary stakeholder	All stakeholder involved

244. Annual project review or evaluation will be organized by DOI at the end of the project fiscal year. The performance of the plan will be assessed against the indicators presented in the various safeguard action plan. After the completion of activities, a final evaluation study will be conducted. Independent consultant directly recruited by the PIO with specific terms of reference will be involved to carry out assignment.

8.1 M&E by the Bank:

245. The Bank will have field supervision missions to evaluate implementation progress. These missions will support implementation and will participate in addressing problems and issues that affect progress. Moreover, the Bank will carry out a midterm evaluation focusing on (i) progress in achieving the development objectives, (ii) institutional arrangements, (iii) the monitoring and evaluation system, and (iv) review plans for the remaining life of the project.

8.2 Administrative Arrangement

246. A number of national and project level institutions are involved with their key role in the various level of project implementation. At the centre, a high-level Project Steering Committee (PSC) chaired by the Secretary of the Ministry of Energy Water Resources and Irrigation is mandated to coordinate and provide overall policy guidance and ensures the coordination between the agencies involved in the project activities.
247. The Department of Irrigation (DoI) is a principle institution responsible for implementing the project through its Project Implementation Office (PIO) set up at Tikapur town. A small liaison office has been established in DoI Kathmandu to liaise with related agencies and stakeholders on behalf of PIO. Activities related to Scheme Modernization and Strengthening Water Users Associations will be implemented directly by PIO whereas Department of Agriculture through its Project Implementation Unit office at Tikapur will implement activities under agriculture Production Support Component.
248. There is a provision of multi-disciplinary team with defined responsibilities for various activities in the project. Five different sections, i.e., Social, Environmental, and Institutional; Technical; Procurement; Administration and Financial Management are directly responsible for the implementation of diverse project activities.
249. The Social, Environmental and Institutional Development Unit (SEIDU) is largely responsible to; (i) identify the training needs of WUA at various stages of the project (ii) prepare and organize need based training/tour events for variety of stakeholder during various stages of project implementation; (iii) re-orient the technical staffs of PIO with special focus on "Working with Farmer" (iv) organize periodic training on Safeguards (social and environment) and Gender Equality and Social Inclusion (GESI) awareness and conduct periodic compliance monitoring of social and environmental plans.
250. For effective implementation of phase-II, specifically the activities related to the strengthening of WUA and implementation of social safeguarding, existing (SEIDU) at PIO will be capacitate and made it responsible and authorized for all social and environmental safeguard oversight, management, coordination and capacity building support. Moreover, the SEIDU will be equipped with qualified and required social and environmental safeguard personals as well as social mobilizers to carry out the specific jobs like as: (i) screening prospective projects for impacts on IPs & vulnerable groups; (ii) safeguard plan preparation and appraisal; (iii) plan monitoring; and (iii) reporting. Similarly, The DOI will makes effort to train the relevant project staff on management of social issues, provide guidance to explain WB's and GoN's social safeguard obligations, their importance, and benefits and encourage them to build requisite capacities.

8.3 Reporting

251. Data generated through regular monitoring and surveys will be the basis of the following reports to be prepared by project management: (i) internal trimester reports produced by PIO and ACIU on the status of implementation activities; (ii) regular reports by external M&E agency on its concurrent monitoring activities; (iii) consolidated mid-term implementation and evaluation report by PIO and ACIU and mid-term impact assessment report by the external, independent third party M&E agency, which will form the basis of the Mid-Term Review to be undertaken by the Bank and GoN; and (iv) consolidated project implementation and assessment report by PIO

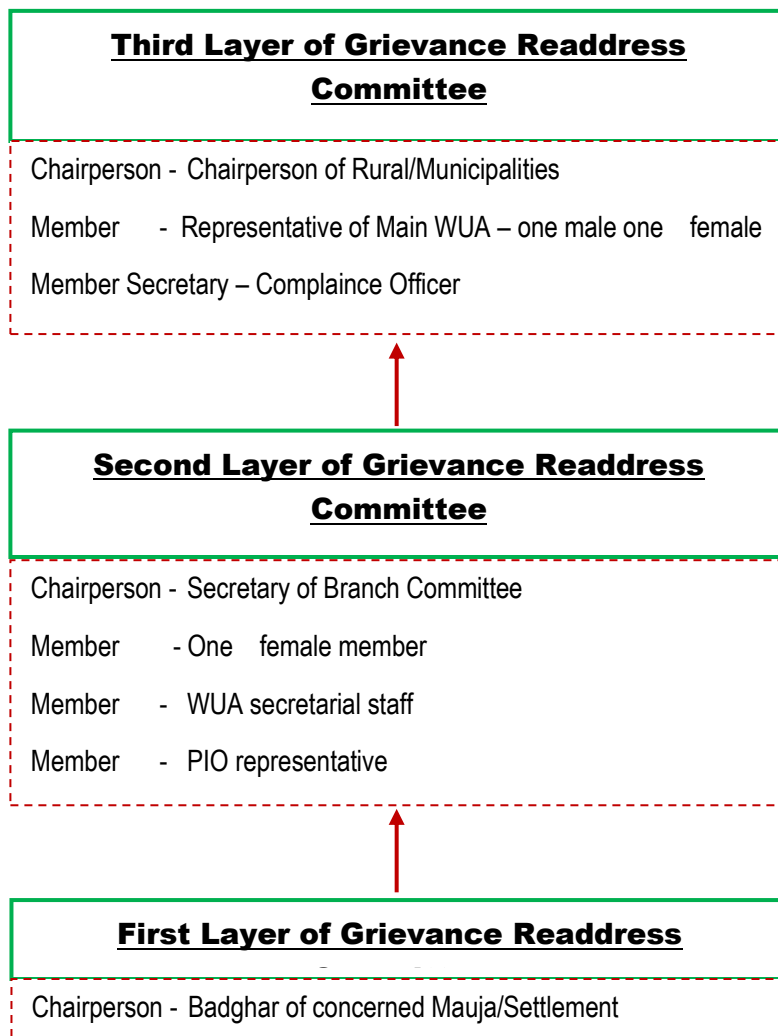
and overall project impact evaluation report by the end of the project, to be used for the preparation of the project Implementation Completion Report (ICR). Standard reporting formats for above mentioned reports will be developed by PIO. A simple format for reporting progress over Project Development Objective (PDO) indicators is in Annex 8.1.

9. Grievances Redressal Mechanism

9.1 Grievance Redress Committee (GRC):

252. Grievance Redress Committees (GRC) are locally constituted committee in accordance with the project provision for dispute resolution with regard to overall project intervention. The GRCs established at the various level of the project will mandated to receive and facilitate the resolution of APs' concerns and grievances about physical and economic displacement including other impacts due to project intervention, paying particular attention to the impacts on vulnerable groups.
253. The Grievance readdress mechanism (GRM) consists of three layers. The first layer of the GRC will be at Mauja or settlement level led by Badghars (Community Leaders). This will be the continuation of existing indigenous practices of grievance resolution. The second layer of GRCs will be created at branch canal level, led by the secretary of Branch committee whereas the project level, the GRC will be led by the elected chairperson of rural/municipalities. The structure of GRM is presented as followings.

Structure of Grievance Readdress Mechanism



9.2 GRC procedures:

254. The information about the existence and working procedures of GRCs will widely be disseminated in the project area. The committees are mandated to address the concerns of APs' and complaints promptly, using an understandable and transparent process that is gender responsive and socially inclusive, culturally appropriate, and readily accessible to the APs at no costs and without retribution.
255. The APs may submit their concerns or grievances verbally or in writing to the Committee. All complaints/grievances received are documented properly at branch and system level GRCs. Respecting the indigenous practices of grievance handling at Mauja/ settlement by Badghar, documentation of complaints/grievances will not be mandatory, however the project will encourage them to document grievance received at settlement level too. The followings steps will follows for grievances management: Grievances reporting, Grievances received and grievance redressal status (Annexes 8.1, 8.2, 8.3 and 8.4) will be prepared and updated with in reporting time frame.

Steps 1: APs file the complaints in GRC at settlement level. Complaints of APs on any aspect resulted due to project intervention or issues related to land donation, compensation, relocation or unaddressed losses is in the first instance are discussed and settled verbally or in written form with GRC at settlement level. The GRC at this level will have to respond within 7 days from the date of complain registration.

Steps 2: If no understanding or amicable solution reached from the GRC at settlement level, APs can appeal to their respective branch level GRC. While lodging the complaint, the AP must produce documents to support his/her claim. The Committee will have to make field-based assessment to verify and examine the grievances. After proper examination and verification of the grievances, the committee will facilitate WUA, APs, and other concerned parties to agree on a time-bound action plan to resolve the grievance if found to be genuine. The GRC at branch level will have to provide the decision within two weeks from the registration of the appeal.

Step 3 If the grievances are not settled at branch level APs can appeal to the project level GRC. While lodging the complaint, the AP must produce documents to support his/her claim. The working procedures of the committee will be decided itself. The GRC at project level will have to provide the decision within one month from the registration of the appeal. In the case of voluntary donation, the aggrieved person may appeal to the CDO of the concerned district

Steps 4: If AP is not satisfied with the decision of project level GRC or CDO or in the absence of any response of its representatives, within one month of the complaint, the AP, in his/her last resort, may file the case to the appropriate courts of law and access the country's legal system.

9.3 Complaints Redress policy

256. The Project policy on grievance handling follows the following principles:

- Beneficiaries/other relevant members shall be treated fairly at all times.
- Complaints can be made at any time and without any hindrance.
- Encourage to settle grievances at settlement level.

- Responsible person/committee shall be dealt with grievances raised by beneficiaries on time.
- Complainants will be fully informed of the actions over their grievances within the GRC and their rights to alternative remedy will be respected, if they are not fully satisfied with the response of the GRC at any level.
- The Project Management Team (PMT) and GRC will work in good faith and without prejudice to the interests of the beneficiaries.
- Anonymity of the complainant, if requested, shall be fully maintained and proper action will follow to any members of the project who violates this provision.

9.4 Provision of Compliance Officer (CO)

257. The Project Director (PD) will deputed one of the Officers in PIO to work as a Compliance Officer (CO). In the event that the CO is unable to carry out her/his function the PD will designate another officer to work as CO. CO will work under the direct control and supervision of PD of the project and shall act as a secretary of project level GRC.

10. Governance and Accountability Action Plan (GAAP)

258. The Governance and Accountability Action Plan (GAAP) has been prepared to improve the transparency and accountably arrangement in the Project (Annex 10.1) . Following aspects has been considered for ensuring governance accountability and transparency in the project implementation.

1. Right to Information
2. support better accountability and transparency
3. Improving procurement practices
4. Strengthening preventive vigilance
5. Third party monitoring
6. Development of monitoring indicators for compliance and outcomes
7. Increasing competition and mitigating collusion
8. Financial Management