Nepal: Community Irrigation Project
ABBREVIATIONS

ADB – Asian Development Bank
DDC – district development committee
DICC – district implementation coordination committee
DMF – design and monitoring framework
DOLIDAR – Department of Local Infrastructure Development and Agricultural Roads
EIRR – economic internal rate of return
GESI – gender equality and social inclusion
GESI-AP – gender equality and social inclusion action plan
ha – hectare
LDO – local development officer
MFI – microfinance institution
O&M – operation and maintenance
PCU – project coordination unit
PIU – project implementation unit
PMIS – project management information system
PMISC – project management and implementation support consultant
RMDC – Rural Microfinance Development Center
STW – shallow tube well
t – metric ton
tons/hectare – tons/hectare
WUA – water users’ association

NOTE

In this report, “$” refers to United States dollars and “NRs” refers to Nepalese rupees.

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I. PROJECT DESCRIPTION

A. Rationale

1. Agriculture is Nepal’s primary economic sector and is largely rainfed. Its growth is essential for attaining broad-based development and improving livelihoods. In 2010, only 29% of the irrigated land in Nepal had year-round irrigation. Irrigation is key to increasing the production of staple crops and meeting the demands of expanding population. Insufficient year-round irrigation was a major constraint in achieving higher cropping intensity and yield, increasing on-farm incomes, and improving food security. Investments in small irrigation systems have proven to be more effective than investments in medium or large systems in supporting poor communities. Targeting the poor and disadvantaged farmers and influencing their water and land

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1. Agriculture supports diversifying and intensifying on-farm incomes, reducing rural poverty, and providing food security.

2. The incidence of poverty in irrigated areas is substantially less than in rain-fed areas.

management would offer great opportunities for alleviating poverty quickly. Recognizing this, the government formulated the Irrigation Policy 2003 and the Local Infrastructure Development Policy 2004 that supported small-scale irrigation systems targeting small farmers, with gender equality and social inclusion as an integral component.

2. Against this backdrop, the Community Irrigation Project (the project) was approved in September 2010 to support new construction and rehabilitation of small-scale, farmer-managed irrigation systems in 12 districts in Nepal. It utilized a community-driven participatory approach targeting the poor, women, and the disadvantaged groups. It was also a multisector approach, encompassing water productivity, access to microfinance, and improved agricultural practices.

B. Expected Impacts, Outcomes, and Outputs

3. The project’s expected impact was increased agricultural income of the rural poor and socially disadvantaged groups. The intended outcome was the intensification and diversification of agricultural practices toward higher value crops by the poor, women, and other disadvantaged farmers. The outputs were in three components. First, water users’ associations (WUAs) efficiently manage improved irrigation infrastructure. Second, participating farmers apply improved agriculture practices and have access to microfinance. Third, enhanced government capacity to plan and coordinate small-scale irrigation projects. For Component 1, WUAs subprojects were expected to have at least one-third female and proportional representation of disadvantaged groups in membership and leadership; and WUAs demonstrating their ability to plan, implement, operate, and maintain irrigation infrastructure. In preparing and implementing plans for equitable and efficient water distribution, at least 65% of WUAs were expected to contribute in the collection of 2%–5% of construction cost annually for major repairs. Component 2 aimed for 75% of surveyed farmers achieving their targets in cropping intensity and yields, and at least 50% of female farmers joining microfinance institutions (MFIs), with at least 40% of them accessing loans and savings. Component 3 consisted of five items, involving district and village leaders’ timely selection of subprojects according to project criteria, and public engineers in 12 districts approving appropriate designs for small irrigation infrastructure and effectively supervising construction. The other items included district government officials effectively coordinating subproject activities; subproject communities having access to village-based institutional, technical, and agricultural support for 2 years after scheme selection; and 80% of local development officers (LDOs), district technical office (DTO) chiefs, and district irrigation engineers seeing benefits of participatory approach.

C. Provision of Inputs

4. The project was approved in September 2010 and became effective in May 2011. The project’s closing date was originally scheduled in August 2017. This was revised to July 2018, with an extension approved through a minor change in scope in November 2016, and finally closed in March 2019. The extension covered the initial delays in engaging the project management and implementation support consultant (PMISC) due to the executing agency’s slow

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7 ADB. 2010. Report and Recommendation of the President to the Board of Directors: Proposed Grant to Nepal for the Community Irrigation Project. Manila.
selection process and external factors (i.e., 2015 earthquake, Terai unrest, lack of demand for shallow tube wells (STWs), and preparation of new surface irrigation subprojects).

5. At appraisal, the total project cost was $36.8 million, to be financed by an ADB grant for 72%, government financing of 18%, and the balance from beneficiaries. The total project cost was revised by the government and ADB to $34 million in July 2015, following the transfer of $2 million grant to the emergency fund for the 2015 post-earthquake relief and rehabilitation work. At completion, the actual total project cost was $31.38 million, or 92% of the revised cost estimate, of which $22.98 million was granted by ADB, $6.29 million was provided by the government and the remaining $2.11 million was contributed by the beneficiaries mostly in the form of labor.

6. The PMISC, consisting of a joint venture of two national consulting firms and two nongovernment organizations, was recruited using quality- and cost-based selection by June 2012 and provided technical and management support until mid-January 2018. It provided a total of 6,671 person-months of consulting services, including 1,350 person-months inputs from key professional staff. The procurement consultant supported procurement of civil works and services for 4 person-months. A monitoring specialist established a project management information system (PMIS), a project schedule, an impact monitoring and an evaluation system, and reporting formats for 12 person-months. Consulting services cost 19% less than estimated. The project was classified as category B for environment and for indigenous peoples, and category C for involuntary resettlement. It was categorized under the theme of gender equity (GEN). The gender equality and social inclusion action plan (GESI-AP) included ten activities with ten quantitative targets, which were aligned with the design and monitoring framework (DMF) and contributed to the project’s intended outcome.

D. Implementation Arrangements

7. As planned, the Ministry of Local Development (MOLD), through the Department of Local Infrastructure Development and Agricultural Roads (DOLIDAR), was the executing agency. The DTOs of the 12 project-related district development committees (DDCs) were the implementing agencies, responsible for irrigation infrastructure development, institutionalization, and capacity building of WUAs for participatory planning and management of irrigation systems. The Rural Microfinance Development Center (RMDC) was the implementing agency for microfinance services, responsible for strengthening capacity of local MFIs, and improving farmers’ access to microcredit services.

8. A district implementation coordination committee (DICC) was established in each district. The civil service organizations participated in the selection and design of subprojects. A project steering committee chaired by the secretary of MOLD provided policy-level guidance while a technical working group chaired by the director general of DOLIDAR helped guide technical matters.

9. The DOLIDAR established a project coordination unit (PCU) with its class II officer as project coordinator, and project implementation units (PIUs) headed by DTO chiefs. The PMISC

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9 Revised financing was $24.4 million from ADB, $6.2 million from the government, and balance from beneficiaries.
10 It was chaired by the DDC chief and had representatives from the District Agriculture Development Office, District Women Development Office, and civil society organizations, including the National Federation of Irrigation Water User’s Association, the Nepal Federation of Indigenous Nationalities, and the participating MFIs.
provided technical and management support to the PCU. The district coordination office (DCO) of PMISC supported the PIU. A Feasibility Approval Committee, coordinated by the DTO chief and having members from the Irrigation Development Division Office, the District Agriculture Development Office, and the District Forest Office, was responsible for technically reviewing and approving subproject feasibility assessment reports.

10. The executing agency complied with all 26 grant covenants, including four on financial management, four on social and environmental safeguards, and 18 on other issues. There was no covenant that was modified, suspended, or waived.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

11. The project completion report (PCR) rated the project relevant. The project was strategically aligned with the development priorities of the government, targeting small-scale irrigation systems. It was fully consistent with the Local Self-Governance Act 1999, the Irrigation Policy 2003 (footnote 5), and the Local Infrastructure Development Policy 2004 (footnote 6). These emphasized the development of small-scale irrigation infrastructure jointly with WUAs and aimed for efficient planning and management of improved irrigation infrastructure. Given its participatory approach with a focus on gender equality and social inclusion (GESI), the project was well aligned with the government’s Three-Year Interim Plan, 2007–2010. The plan underscored an inclusive management targeting the poor, women, and other socially disadvantaged groups, and the Nepal Agricultural Extension Strategy 2007. This strategy envisaged the involvement of community-based organizations in public sector extension services. The project was aligned with ADB’s Strategy 2020 and Water Operational Plan 2011–2020 and was part of its Country Partnership Strategy 2010–2012, targeting inclusive socioeconomic growth, borrower’s capacity building, and improved governance. The project also supported multisector approach to improve water productivity, agricultural practices, and farmers’ access to microfinance.

12. During its implementation and completion, the project remained aligned with the government’s new intervening irrigation policies. It contributed to the preparation of the long-term Agriculture Development Strategy 2015–2035 targeting equitable, viable, and efficient expansion in the area of irrigation. The promotion of users’ participation in sustainable operation and maintenance of irrigation systems is a priority in the Approach Paper to the Fifteenth Plan. The project was consistent with ADB’s Country Partnership Strategy 2013–2017 and

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2020–2024, and Strategy 2030, where agricultural productivity, food security, gender equity and social inclusion are strategic and operational priorities.

13. The grant financing modality was appropriate because the project was to support economic development of vulnerable farmers heavily affected by the decade-long conflict and whose welfare was integral to post-conflict development. The project design was appropriate for achieving its intended outcomes as it took a sector approach to initiate selected subprojects, involving farmers to identify more subprojects during implementation. Lessons from earlier subprojects were applied to subsequent subprojects, and the implementation was phased well.

14. The DMF was well articulated, but a design-stage assumption required adjustments during implementation due to the change of irrigation type. In line with the government’s Irrigation Policy 2003, the project design assumed a “no-subsidy” policy for STWs. However, the government fully subsidized farmers to install STWs in a neighboring area and in 2013 it reintroduced subsidy for STWs. This unexpected self-contradictory policy made farmers reluctant to bear the full capital cost of STW projects. The government and ADB responded by replacing STWs with a 4,000-hectare (ha) groundwater irrigation area in Terai. As such, 214 additional surface irrigation subprojects were to meet the project target of irrigating 17,000 ha. ADB approved a minor change in scope in 2014, and selected a consulting firm to carry out survey, design, and preparation of the additional subprojects.

15. On the whole, the project was fully aligned with the government’s and ADB’s strategies. Issues with design-stage assumptions were addressed in a timely and appropriate manner, to achieve the intended outcome. This validation assesses the project relevant.

B. Effectiveness in Achieving Project Outcomes and Outputs

16. The PCR rated the project effective. At completion, of the five DMF outcome targets, the project exceeded three (crop yields, winter vegetable production, annual income of farmers), achieved one (irrigation coverage), and partially achieved one (annual crop production). With improved irrigation, the farmers, including women and disadvantaged groups, diversified toward higher-value crops (wheat and vegetables) in addition to paddy. According to project monitoring and evaluation survey of 47 sample subprojects covering 1,554 ha, the cropping intensity increased from 129% to 169%. The crop yield increased to levels exceeding the target of 15%. On average, yields in ton/hectare (t/ha) increased to 3.06 t/ha (by 33.6%) for rice, to 2.24 t/ha (by 25.1%) for wheat, and to 2.08 t/ha (30%) for maize. The winter vegetable cultivation area in Terai declined marginally (1%) but increased significantly in the hills (45%) and mountains (67%), leading to winter vegetable production increasing by 20% compared to the target of 8%. The coverage of irrigation was extended to 99.6% of the target of 17,000 ha.

17. The annual production increase in rice, wheat, maize, and vegetables was 10,341 metric tons (t) (74% of target), 8,303 t (488% of target), 1,911 t (25% of target), and 13,054 t (45% of target), respectively. Since farmers preferred cultivating wheat, which generally was less labor-intensive and less perishable, the other crops’ production were lower than expected. A better understanding of farmers’ crop preference would have helped to have more realistic
targets at appraisal. The project realized an incremental annual cereal production of 20,555 t, approximately 89% of the target, contributing to improving the food security of small and marginal farmers. The annual agricultural income of farmer households increased by 92%–155%, exceeding the targets by 72%–124% over the 2010 baseline.

The project successfully delivered the planned outputs. Of the 11 DMF output targets, the project exceeded five and achieved six. A total of 456 WUAs were formed and registered under the project. The PCR indicated that of the total membership of 4,401 in all the WUAs, 39% were women (exceeding the target of 33%), 22% were indigenous peoples (Janajati) and 14% were Dalits (caste group historically marginalized). Of the 1,722 leadership positions in WUA executive committees, 590 (34%) were women, 390 (23%) were Janajati, and 160 (9%) were Dalits. WUAs actively participated in office management, account keeping, construction quality control, micro-irrigation, among other things. They were involved in the planning and design of irrigation system construction and rehabilitation. About 89% of WUAs were active in system operation and maintenance (O&M). By project completion, over 95% of WUAs were collecting annual irrigation service fees, 71% were able to collect more than 2% of the construction cost for major repairs. All WUAs received training on water management and use of micro-irrigation for optimized use through water conservation technology. Plans were prepared and implemented for equitable and efficient water distribution.

The project led to improved agriculture practices and access to micro-finance. About 75% of surveyed farmers achieved their targets in cropping intensity and yields. A total of 55 local MFIs in the project area incorporated 13,403 beneficiary farmers of 278 subprojects as shareholders. This involved 67% women of 17,480 women farmers in 34,961 households. Of the 11,754 women in MFIs, 46% got loans for agriculture improvements.

The government capacity to plan and coordinate small-scale irrigation projects was enhanced through the delivery of pertinent outputs. For example, the DICC representatives including LDO, DTO, and district level representatives selected subprojects following agreed processes and criteria. These subprojects were also discussed with village development committees. The district level DDC, DTO, and project appraisal committee officials coordinated well the subprojects’ activities and supported timely approvals and decision-making. The project mobilized four women engineers among the 12 engineers recruited in the project districts. The engineers were engaged in approving the design of small-scale irrigation infrastructure and supervision of construction. Subproject farmers received institutional, basic technical and agriculture support through district-based institutions as well as district coordination office and village-based field team. The support was initiated immediately after selection and design of

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25 These were female representation in WUAs, percentage of WUAs collecting irrigation fees, percentage of female farmers joining MFI groups, number of women engineers, percentage of local staff receiving trainings.

26 WUAs’ ability to plan, implement, operate, and maintain irrigation systems, WUAs preparing and implementing plans for water distribution, percentage of surveyed farmers achieving targets in cropping intensity and yields, district and village leaders participating in selecting subprojects, district officials coordinating subproject activities, provision of village-based support.

27 According to the PCR (Footnote 11, para. 9), 198 WUAs were new and 258 were rehabilitated. The government PCR cited that the feasibility assessment reports identified 464 subprojects but only 447 subprojects were approved. With an added 9 subprojects, the total completed subprojects became 456; Government of Nepal, Department of Local Infrastructure. 2019. Project Completion Report: Community Irrigation Project. Kathmandu (Unpublished), para. 10.

28 Footnote 11, para. 10.

29 The PCR (Footnote 11, Appendix 1) indicated that a performance-based monitoring and evaluation (PBME) survey was carried out in 47 sample subprojects. Details of the duration and sampling were not given. The government PCR (Footnote 27, para. 14) listed increase in cropping intensity for the WUAs ranging from 18% to 80%.
subprojects. The local government and provinces also started to give direct financial and technical support to sustain the benefits of improved irrigation. The project conducted a series of capacity development trainings on planning, execution and management of small-scale irrigation development through community participation, benefiting 471 participants including 399 LDOs, DTO chiefs, DOLIDAR staff and project engineers, 72 sub-engineers and accountants of DDCs and DTOs. About 80% of the trained staff appreciated the qualitative aspects of the trainings, including the participatory approach and the distinctive GESI focus.

21. The project was correctly classified for safeguards categories. The environmental assessment and review framework (EARF) contained environmental criteria for subproject selection. It concluded that there was to be minimal impact as construction works were to be small scale in nature. Environmental due diligence was carried out for all subprojects, with screening documented in the monitoring reports. Subprojects did not require environmental impact assessment or initial environmental examination (IEE), given the size and nature of the work. In line with the EARF, an IEE with an environmental management plan was prepared for the Kothi Baandh surface irrigation scheme due to its area being more than 150 ha. Monitoring and reporting were conducted by the executing agency and three environmental monitoring reports were prepared and submitted for the period of July 2015–June 2018. The project did not involve any involuntary resettlement. According to the resettlement framework, subprojects would be screened for involuntary resettlement. Those subprojects requiring involuntary resettlement would be dropped. The project involved large indigenous beneficiary population. An indigenous people planning framework was prepared to meet ADB requirements. As significant negative impacts were not identified, a full indigenous peoples plan was not required. Three social monitoring reports were prepared for the period of January 2017–June 2018. On the whole, the project’s safeguard performance was satisfactory.

22. The GESI-AP implementation was considered by the PCR as successful. The project’s GESI objectives, with specific targets in the DMF30 and GESI-AP, were designed to align with the government’s poverty reduction strategy, as outlined in the Three-Year Interim Plan 2007–2010 (footnote 13). The project consultations and capacity development activities included significant representation of women and disadvantaged groups, which contributed to GESI in human development. At completion, all 10 activities of the GESI-AP were completed and all 10 combined quantitative gender-related targets in the GESI-AP and DMF were achieved.

23. On the whole, the project was able to deliver all planned outputs which led to the intended outcome. This validation assesses the project effective.

C. Efficiency of Resource Use

24. The PCR rated the project efficient as the reevaluated economic internal rates of return (EIRRs) of seven sample subprojects ranged from range of 15.8%–24.9%, all higher than the benchmark of 12%. The reevaluation of the EIRRs was consistent with the approach taken at appraisal and also aligned with ADB guidelines.31 The economic investment costs of the

30 These included: (a) WUAs in subprojects have at least one-third female and proportional representation of disadvantaged groups in membership and leadership; (b) at least 50% of female farmers join MFI groups, at least 40% of whom access loans and savings; (c) project engineers (at least 3 women) in 12 districts approve designs for small irrigation infrastructure and effectively supervise construction; (d) subproject communities have access to village-based institutional, technical and agricultural support for 2 years after scheme selection; (e) 80% of LDOs, DTO chiefs, and community irrigation project engineers see benefits of participatory approach (with gender disadvantaged group focus).

subprojects were derived from the actual expenditures. The annual O&M cost of irrigation infrastructure was estimated as a percentage of subproject-specific investment cost. The economic benefits were generated from the net incremental crop production attributable to the estimated difference in crop yields and cropping intensities between the with and without project scenarios. For internationally traded goods (rice, wheat, and maize) as major outputs and chemical fertilizers (urea, diammonium phosphate, and potash) as major inputs, the economic farm-gate prices were derived based on world market prices with adjustments. For other inputs and outputs, the economic prices were calculated using a standard conversion factor.

25. Sensitivity analysis under the adverse scenarios (i.e., 10% increase in O&M costs, 10% decrease in incremental benefits, and a combination), suggested that all subprojects would remain economically viable. The recalculated EIRRs at completion and at appraisal for three of the seven subprojects were fairly close in value, with the difference caused by command area, investment cost per hectare, cultivation of products, and additional investment for intake structure. The sensitivity tests at appraisal and at completion for the three were consistent. The seven sample subprojects were representative of the type of irrigation systems, geographical distribution and size of command area under the project. Using pooled data of the seven subprojects, an aggregate EIRR was estimated to be 19.12%, which was a reasonably good approximation of the project's EIRR and was robust for sensitivity analysis.

26. The project period was extended by 10.5 months, which is acceptable for an irrigation project covering remote areas. Also, this validation notes that the project did not incur any cost overrun. On the basis of process efficiency, combined with the recalculated EIRRs which were higher than 12%, this validation assesses the project efficient.

D. Preliminary Assessment of Sustainability

27. The PCR did not estimate the project's financial internal rate of return because the project was nonrevenue generating, and the major share of the investment was contributed by ADB and the government. Irrigation service fees were being collected. However, these were to cover the maintenance and repair of irrigation services, rather than recovery of the capital investment of the irrigation infrastructure. It rated the project likely sustainable based on institutional arrangements, irrigation system operation, agricultural practices, policy reform, and safeguards.

28. The project mobilized farmers, prepared constitution, and supported them to establish WUAs through election and obtain registration with government agency. This enabled farmers to operate professionally as an institution for sustainable operation and management of the irrigation systems. The farmers were trained in office management, leadership, and accounts keeping, construction quality control, O&M, water distribution, improved farming, among other things. Training and subproject implementation developed farmers' skills in undertaking repair and maintenance of the irrigation systems, using their own resources generated through collection of irrigation service fees. At project completion, over 95% of WUAs were collecting annual irrigation service fees. Of these WUAs, 71% were able to collect more than 2% of the construction cost of the system for major repairs. The fee collection supplemented the traditional and indigenous rules of canal operation that were being practiced locally. These self-sustaining activities, along with the incremental production and incomes owing to the improved irrigation system and agricultural

32 There are three main types of irrigation subprojects: surface water irrigation systems, pond/tank systems with reticulated pipe conveyance and distribution systems, pumped (or "lift") irrigation systems (Footnote 27, para. 3). The seven sample subprojects included two gravity irrigation system (piped and inundation), four surface irrigation (two of which had headworks), and one lift irrigation system (Footnote 11, Appendix 9, Table A 9.1).
practices, contributed significantly to the long-term operational sustainability of the systems. The local governments supported the WUAs in maintaining canals and in extending the irrigation area. Financial support was provided when damages to the irrigation systems were beyond the capacity of local farmers (e.g., caused by monsoon). Local governments supported expanding irrigated areas and gave agriculture inputs for vegetable farming. Agriculture nursery and cold storage facilities in command areas of some subprojects were also developed using government resources, helping sustainability of the systems.

29. The project was environmentally sustainable, with all subprojects having a minimal environmental impact due to their size and methods of implementation. The project excluded subprojects requiring involuntary resettlement and thus involved no property acquisition and compensation. It contributed directly and significantly to the economic and social empowerment of the poor, vulnerable, and disadvantaged groups. The project also contributed to sector development and policy reform. Many WUA members and farmers were elected in local bodies responsible for implementing community infrastructure. Their knowledge and experience from the project made them better at planning and decision-making in local infrastructure development. Recognizing the importance of improved irrigation, the local bodies started providing budgetary support to system maintenance, agriculture inputs and command area extension. All these would have a larger impact on the sustainability of the project and beyond. Based on the above, this validation assesses the project likely sustainable.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

30. The PCR rated the project's development impact satisfactory. The project directly benefited 204,104 rural poor and disadvantaged groups in 34,961 households through increased agricultural production and higher agricultural incomes. It contributed in expanding the area under year-round irrigation from 29% in 2010 to 41% in 2018. The improved irrigation infrastructure enabled the farmers to gradually shift toward high-value crop cultivation, leading to the construction and operation of collection centers and cold-storage facilities. These, in turn, support trading of local products to markets with higher levels of the commodity value chain. All of these outcomes contributed significantly to local economic development. According to official statistics, the agriculture GDP of Nepal increased from NRs 366,744 million in 2009 to NRs 779,347 million in FY 2016/17, which was 97.7% of the project target set for 2017. This validation assesses the development impact of the project satisfactory.

B. Performance of the Borrower and Executing Agency

31. The PCR rated the performance of the borrower and the executing agency satisfactory. The government performed its functions, demonstrating full ownership of the project and giving it high priority. The executing agency established the PCU and PIUs on time and it gradually improved in project management and gained strengths in safeguards compliance, the GESI-AP, and coordinating agriculture and microfinance activities. The pace of project implementation increased after initial delays. The PCU performed well making counterpart funds available,

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33 There was an inconsistency in the national database regarding the year-round irrigation area, causing the project to set an ambitious target of achieving 64% from 41% for year-round irrigation of the irrigated area between 2009 and 2017. Noting this, Food and Agriculture Organization recorded 29% year-round irrigation in 2010 in its Irrigation Yearbook 2011. This was recorded as 41% in 2018 in the government’s Fifteenth National Plan Approach Paper.

coordinating with the 12 DCOs, maintaining the quality of procurement, complying with grant covenants and contract administration, meeting safeguards and fiduciary requirements, submitting annual financial audit reports as scheduled, and participating in ADB review missions. The training and capacity building activities enabled DDC and DTO staff to develop a good understanding of improved agriculture and acquired capacity in the design and implementation of small-scale irrigation projects. These contributed to improved practices and compliance with project covenants as well as national standards. This validation assesses the performance of the borrower and the executing agency satisfactory.

C. Performance of the Asian Development Bank

32. The PCR rated ADB's performance satisfactory. ADB worked closely with the borrower, executing agency, implementing agencies, and related stakeholders to ensure timely preparation, approval, and implementation of the project. ADB's leadership, responsiveness, and flexibility throughout the project implementation was critical in ensuring appropriate resolutions of project issues, such as supporting the executing agency in replacing STWs with surface water irrigation, expanding the project area to accommodate the increased number of subprojects, mobilizing additional village-based field teams, reallocating funds, and extending the project period. ADB's close supervision and coordination contributed to the timely project completion.

33. ADB's safeguard work quality at appraisal and supervision was satisfactory. The translation of environmental and social requirements to project documents was adequate and sufficiently described the project safeguard issues and dealt with the expected impacts. The quality of the monitoring frameworks was satisfactory and included adequate management and monitoring. Three environmental monitoring reports and three social monitoring reports are posted on the ADB webpage. These reports were supplemented by ADB monitoring mission reports. A two-tier grievance redress mechanism, involving DICC on the district level and WUAs on the subproject level, was established and operational in all subprojects. All 59 grievances registered during implementation were resolved at project completion. Most grievances related to water sources conflict, labor contribution, compensation of the crops, missing canal lining, and repair of flood damages to intake structures. Out of the 59 grievances, 52 were settled from the grievance redress subcommittee, while seven grievances were resolved at grievance redress committee. This validation assesses ADB's performance satisfactory.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

34. The PCR rated the project successful. This validation assesses the project relevant due to its alignment with the government's and ADB's strategies, and the appropriate design. It was effective, having achieved the intended outcome and outputs. The project is efficient on the basis of process efficiency and the EIRRs that were well above the benchmark. The project's institutional, operational, social, and environmental aspects and its contribution to the sector development collectively suggest likely sustainable outcome. Overall, this validation assesses the project successful.
### Overall Ratings

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ADB = Asian Development Bank, IED = Independent Evaluation Department, PCR = project completion report.
Source: ADB (IED).

### B. Lessons

35. The PCR identified four lessons. First, early identification of risks associated with policy inconsistency is important for project success. Second, collection of irrigation service fees is important to keep funds ready for emergency repairs of local infrastructure. Third, high interest rates of microfinance limited farmers' enthusiasm to use the services. Fourth, to attain the expected benefits for women farmers, ensure their meaningful participation in WUA leadership and decision-making and also synchronize the access to loans with agricultural training and irrigation improvement works.

36. This validation identifies five more lessons. First, at the project-level, community-driven projects benefit from comprehensive and inclusive stakeholder consultations. For adequacy and accuracy, these need to be planned in consensus with the relevant government agencies and cover all project stages, agricultural improvement activities and selection of “Ilakas” and subprojects. This approach enhances local ownership and enables decision making on various aspects such as O&M, financial contributions, mode and management of construction, and participation and representation of disadvantaged people in the WUAs. It also helps to accurately identify baseline indicators and define achievable project targets. Second lesson, also at the project-level, a timely change in scope responding to unexpected circumstances can ensure continued project relevance and smooth implementation.

37. Third, at sector-level, a better understanding of farmers’ preferences and concerns ensures the feasibility of project targets. Strengthening local and traditional practices, combined with the project, establishment of an improved system of regular cash collection for water utilization, guarantees the sustainable operation and maintenance. Farmers preferred the traditionally collected irrigation service fee in cash and deposited in their accounts for emergency repair and maintenance. Improvements through the project led to the replacement of earthen structures with concrete lining. Maintaining these do not require the traditional mode of resource mobilization. The system of irrigation service fee collection can be a combination of both cash and kind provision (contextualized to the field situation). This facilitates timely repair and
maintenance of the system, which is important to prevent environmental damage caused by slides and soil erosion by repairing damages in time.\textsuperscript{35}

38. Fourth, continued capacity development training of local officials and WUAs during project management, including for safeguard issues, ensures sustainable O&M of irrigation infrastructure and improved agricultural practices. With continued monitoring and guidance during project implementation, capacity of local officials and WUAs improves at project completion. Support for environment-friendly practices could be taught to new graduates to be environmental monitors.

39. Fifth, resources devoted for post completion survey during the project design stage help facilitate assessment, especially for community-driven demonstration projects with potential higher-level impacts. Such survey could be integrated with the PMIS to ensure that sufficient data is collected at the WUA level and support a more representative number of subprojects for stronger socioeconomic monitoring.

C. Recommendations for Follow-Up

40. The PCR made a few recommendations closely related to the identified lessons. They were: (i) building knowledge and capacity of local government, including addressing the continuous barrier on marketing (to enable farmers to realize more incomes from increased fresh produce), (ii) establishing collection centers and market links for local products, (iii) promoting small-scale farmer-managed irrigation systems, (iv) adopting coordinated measures for women farmers’ greater participation in and benefit from irrigation projects, and (v) addressing the challenge of interagency coordination impeding successful project implementation through the establishment of an efficient institutional network involving government bodies at all levels.\textsuperscript{36}

This validation makes an additional recommendation that direct financial support should be provided by local governments to sustain the benefits of improved irrigation.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

41. During implementation, the performance indicators were monitored against the baseline in the feasibility assessment reports. The achievements were recorded through regular field monitoring and project impact monitoring surveys. The farmers’ construction monitoring committee supervised work quality and reported to the PMISC through the PMIS, which was used by PCUs to consolidate project progress reports submitted to ADB. ADB monitored the project with review missions. The RMDC supervised and reported the progress of the partner MFIs in mobilizing farmers to form cooperatives and provide microcredit using field monitors. The executing agency and the RMDC submitted audited financial statements on time. However, the validation notes that the representative sample of seven subprojects for the recalculated EIRR

\textsuperscript{35} The traditional practices of canal operation were mainly limited to mobilization of beneficiary households for recurrent maintenance twice a year and used cash collection. To enforce these, specific institutional arrangements are placed such as: a Mahatawa who estimates the resources needed for a particular work and mobilizes canal operation (in Parseni Taal irrigation subproject); Aguwa (in Jeetpur irrigation subproject of Dang). Similarly, need-based collective action are also effectively practiced in other villages. The farmers pay irrigation service fee in food grain to Kulalo for taking care of the canal as remuneration for its operation. A Kulalo gets around 8–10 quintal food grain/year collected from user combined with community irrigation project established an improved system of regular cash collection as the service fee for water utilization guarantees the sustainable operation and maintenance of the irrigation subprojects.

\textsuperscript{36} This was categorized as a lesson in the PCR. This validation categorizes it as a recommendation.
is too small to give better insight on the viability of the 456 WUAs. IED notes that the PMIS have been better designed to collect disaggregated data on WUA level during the regular field monitoring and project impact monitoring surveys.

B. Comments on Project Completion Report Quality

42. The PCR is well prepared and consistent with the relevant guidelines. It provides a comprehensive description of the project design and implementation and presents a convincing assessment of the achievements and implementation issues. The DMF is informative and articulate, with strong and logical links of results chain up to the high-level development impacts. Its outcomes and outputs targets and indicators were appropriate after minor adjustment, although more specific baseline data could have been presented explicitly. However, the representative sample for computing EIRR is too small. The safeguards, gender, and social aspects are succinctly summarized. The findings, lessons, and recommendations are appropriate, thereby providing useful reference to future projects. The quality of the PCR is assessed satisfactory.

C. Data Sources for Validation

43. Data sources for this validation include the PCR, RRP, grant and project agreements, mission reports, safeguard assessment, environmental and social monitoring reports, national and ADB strategies, and ADB guidelines.

D. Recommendation for Independent Evaluation Department Follow-Up

44. The PCR suggested that a project performance evaluation report (PPER) be prepared in early 2022. This validation considers it a reasonable timing for a PPER.