



1. Project Data

Project ID P132754	Project Name APNIP	
Country Kyrgyz Republic	Practice Area(Lead) Water	
L/C/TF Number(s) TF-A0645	Closing Date (Original) 30-Jun-2022	Total Project Cost (USD) 38,000,000.00
Bank Approval Date 11-Dec-2015	Closing Date (Actual) 30-Jun-2023	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	38,000,000.00	38,000,000.00
Revised Commitment	38,000,000.00	38,000,000.00
Actual	38,000,000.00	38,000,000.00

Prepared by Hassan Wally	Reviewed by Dileep M. Wagle	ICR Review Coordinator Ramachandra Jammi	Group IEGSD (Unit 4)
------------------------------------	---------------------------------------	--	--------------------------------

2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) of the Agriculture Productivity and Nutrition Improvement Project (APNIP) as articulated in the Global Agriculture and Food Security Program Grant Agreement (page 5) was identical to the one stated in the Project Appraisal Document (PAD, paragraph 12) and aimed to:

"Increase agricultural productivity and food and nutrition security of rural households in selected areas nationwide."



Parsing the PDO. The PDO will be parsed based on the following two Objectives:

1. To increase agricultural productivity of rural households in selected areas nationwide.
2. To increase food and nutrition security of rural households in selected areas nationwide.

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

Yes

Date of Board Approval

21-May-2020

c. Will a split evaluation be undertaken?

No

d. Components

The PDO was supported by the following four components:

1. Rehabilitation and Modernization of Irrigation and Drainage Infrastructure (appraisal cost: US\$28.00 million, actual cost: US\$25.17 million). This component financed: (a) civil works for the rehabilitation and modernization of selected existing irrigation and drainage (I&D) infrastructure systems, (b) provision of essential maintenance equipment to Water User Associations (WUAs) and Federation of Water User Associations (FWUAs), (c) off-farm irrigation infrastructure and water measurement structures, and (d) limited rehabilitation works on selected critical off-farm structures managed by the Department of Water Resources and Land Improvement (DWRLI).

2. Agricultural Advisory Services (appraisal cost: US\$3.50 million, actual cost: US\$7.34 million). This component was designed to provide agriculture advisory services to WUA members within selected local government areas (Aiyl Aimaks [AAs]) to increase irrigated agricultural production and improve access to markets, including (a) training and technical advisory support for participating WUAs on the rehabilitation of I&D systems and development of agricultural development plans (ADPs); (b) provision of small grants up to US\$30,000 to participating WUAs to implement ADPs; (c) advisory services for knowledge dissemination to a wider group of beneficiaries; and (d) on-farm water management demonstrations.

3. Nutrition Improvements (appraisal cost: US\$4.60 million, actual cost: US\$2.93 million). This component was designed to support improved productivity, food security, and nutrition levels of beneficiaries, especially women, female adolescents, and children in selected AAs, and consisted of four sub-components in support of a wide range of activities, as follows:

- 3.1. Improved household nutrition through nutrition education targeting women (18–49 years), children (0–5 years), and adolescent girls (12–17 years).
- 3.2. Provision of micronutrient and vitamin supplements for pregnant women, women of reproductive age and adolescent girls, and children of 6–24 months
- 3.3. Improved household nutrition and dietary consumption by improving domestic gardening and providing



options for household plot improvement; identification of the most vulnerable households to receive nutrition assistance; establishment of women's Self-Help Group (SHGs) and community seed banks for provision of good quality vegetable seeds; carrying out of detailed technical assessments of current agronomic and production practices, seed and crop status, soil fertility and soil testing, advisory services for individual households, including development of household plot production guidelines and demonstration materials, and establishment of household demonstration plots; and associated season-long training and financing for basic equipment.

3.4. Improved national coordination for food and nutrition security through provision of support for the Food Security Council (FSC).

4. Project Management (appraisal cost: US\$1.80 million, actual cost: US\$2.56 million). This component financed project management costs, including for the Project Implementation Unit (PIU) staff, training, equipment, operational costs, administration, coordination, engineering, procurement, financial management (FM), safeguards, and M&E.

Revised Components. While the project components were not changed during implementation, the March 2020 restructuring reallocated funds between the APNIP components and cancelled one of the sub-components under component 3 (see below for details).

e. **Comments on Project Cost, Financing, Borrower Contribution, and Dates**

Project Cost. The total project cost inclusive of taxes and duties was estimated at US\$38.0 million including US\$ 3.7 million of physical and prices contingencies. The actual cost according to the ICR (Data Sheet, page 2) was US\$38.00 million.

Financing. The project was fully financed through a Global Agriculture and Food Security Program Grant worth US\$38.00 million. The Grant was fully disbursed by project completion (ICR, Data Sheet, page 2).

Borrower Contribution. The project was fully financed through a Grant as mentioned above and no Borrower contribution was expected.

Dates. The project was approved on December 11, 2015 and became effective about ten months later on September 14, 2016 due to delays related to government approval, signing, and parliamentary ratification (ICR, paragraph 57). The Mid-Term Review (MTR) was conducted on May 22, 2020, which was about three years and three months after effectiveness. While the PAD did not specify a date for the MTR, this Review finds that the MTR was timely conducted and in-line relative to other Bank operations. The project closed on June 30, 2023 which one year beyond the original closing date on June 30, 2022. The project was restructured twice, both were Level 2, as follows:

1. On May 21, 2020, when the amount disbursed was US\$18.00 million, in order to revise the Results Framework and change components and costs. These changes aimed to better align indicators to the PDO and improve definitions and methodologies to better capture progress and achievements (ICR, paragraph 15). Also, to support the GoK's efforts to mitigate emerging food security risks and ensure sustainability of agricultural production during the COVID-19 pandemic. Specifically, funding for component 2 was increased by US\$2.27 million to provide seeds and fertilizers for the fall 2020 and spring 2021 planting seasons for 7,800 farmers in 30 participating WUAs. Sub-component 3.2 (Provision of Micronutrient Supplements) was



canceled as per the Recipient's request due to a change in the GoK's priorities and lack of progress due to persistent difficulties in procuring iron folic acid and micronutrient supplements. Furthermore, project management costs (component 4) were increased using cost savings from components 1 and 2

2. On February 24, 2022, when the amount disbursed was US\$32.32 million, in order to extend the Grant closing date by 12 months from June 30, 2022 to June 30, 2023. The extension was in response to the recipient's request primarily to allow completion of the I&D rehabilitation works that were subject to delays including those resulting from the coronavirus disease 2019 (COVID-19) pandemic (ICR, paragraph 16).

While one PDO indicator was dropped and replaced by another and targets for two other PDO indicators were revised down during the March 2020 restructuring, this Review did not apply a split rating since the project scope and ambition did not change, and the actual final values at project closure indicated that the project not only achieved and exceeded the revised targets but also substantially met the original targets.

3. Relevance of Objectives

Rationale

Context at Appraisal. In 2014, the Kyrgyz Republic was one of the poorest economies in the Europe and Central Asia Region with an estimated per capita Gross National Income (GNI) of US\$1,250. The agricultural sector generated about one-fifth of the country's GDP and one-third of employment in 2014. Crop production was dominated by small-scale irrigation that covered around 82% of the 1.3 million ha of agricultural land. The agricultural production faced major constraints, including poor access to reliable irrigation, lack of maintenance of irrigation and drainage (I&D) systems, low usage of quality seed, and low rates of machinery replacement. Agricultural activities were also subject to natural hazards such as droughts, floods, and landslides. Household food insecurity was high, fluctuated substantially, and was more prevalent in rural areas (6–10% in the north and 10–20% in the south in 2014). The APNIP aimed to address issues in agriculture, irrigation, and nutrition mainly through the rehabilitation of the I&D infrastructure of selected WUAs to provide more reliable and equitable irrigation and contribute to increased crop production and introduce nutrition programs aimed at vulnerable groups.

Previous Bank Experience. The World Bank has extensive experience in irrigation rehabilitation in Kyrgyz as well as regional and global experience. Specifically, the APNIP approach was built on the World Bank's long-term program for I&D rehabilitation and development of the WUA approach in the Kyrgyz Republic—including the On-Farm Irrigation Projects 1 and 2. The APNIP's advisory services component was built on the long-term engagement of the World Bank and other development partners for the establishment of a nationwide network of financially independent rural advisory services including the Agricultural Support Services Project (ASSP) (P040721, May 1998–January 2013) and Agricultural Investments and Services Project (AISP) (P096993, April 2008–April 2016). The nutrition improvement component followed on from existing interventions delivered through the Community Action for Health Program and the country-wide partnership between the health system and Village Health Committees (VHCs). The domestic gardening program adopted some of the practices (such as Seed Funds and women's self-help groups) that were implemented under previous World Bank projects including the Agricultural Productivity Assistance Project



(APAP) (P118838, June 2011–August 2016). Overall, the World Bank was in a strong position to continue its involvement in the irrigation and agriculture sectors under the APNIP.

Consistency with Bank Strategies. At appraisal, the PDO was in line with the Bank's Country Partnership Strategy for Kyrgyz (CPS, FY2013–FY2017). The CPS noted the important role of both water resources management and irrigation for the country as a whole and agricultural productivity in particular, and maternal and child health care for improving the livelihoods of women and children. The project also contributed to the goals of the World Bank to reduce extreme poverty and promote shared prosperity. The rehabilitation of I&D systems and the provision of agricultural advisory services would improve agricultural production and marketing of higher value crops and increased seasonal employment resulting in increasing incomes of the rural population. Also, the provision of agricultural advisory services and educational campaigns for increased production and utilization of nutritious food combined with targeted provision of micronutrients and vitamins would improve nutrition and food security of rural poor in general and vulnerable groups in particular. Finally, improved coordination of food and nutrition security at the national level, would benefit the food and nutrition insecure vulnerable population.

At project completion, the PDO continued to be in line with World Bank's Country Partnership Framework for Kyrgyz (CPF, FY2024–FY2028). The CPF included three high level outcomes (HLOs): 1. Increased Private Sector-led Job Creation; 2. Improved Access to Sustainably Managed Natural Resources; and 3. Enhanced Human Capital and Empowerment of Vulnerable Populations. The APNIP, improved access to water, improved nutrition and training to help improve food security and increased efficiency of water use which mainly contributed to HLO2 of the CPF.,

Consistency with Government Strategies and Priorities. At appraisal, the PDO was in line with the national priorities and Government policies and strategies for agriculture, food, and nutrition security as reflected in the National Sustainable Development Strategy (2013–2017), the Concept of Food Security of the Kyrgyz Republic (2009–2019), and the Food Security and Nutrition Program (2014–2017). In the aforementioned documents, agriculture was considered essential for economic development, and required a comprehensive approach to help reduce social tensions and provide solutions for rural development. Also, a key medium-term policy for the Government was ensuring food safety through increasing domestic production and productivity in agriculture and by creating food reserves. In food and nutrition security, the Government aimed to provide all citizens with permanent access to sufficient food and had established a national-level Food Security Council (FSC) responsible for coordinating food security issues.

At project completion, the PDO continued to be in line with the National Development Strategy (2018–2040) which emphasized the development of energy and water-efficient irrigation networks, and the improvement of agricultural production to achieve food and nutrition security. The Government also adopted the National Irrigation Program (2017–2026) which featured the support and modernization of irrigation infrastructure to a climate-resilient irrigation infrastructure to (a) create new jobs, improve socioeconomic conditions, and reduce migration; (b) develop crop farming; and (c) increase tax revenues and GDP. The PDO was also aligned with the Food Security and Nutrition Program for (2019–2023) which aimed achieve sustainable development, ensure the country's food security, and respond to internal and external threats for the stability of the domestic food market.

Summary of Relevance of Objectives Assessment. The PDO statement was clear, focused and pitched at an adequate level of ambition. At completion, the PDO continued to be in line with Bank Strategy and the Government strategies/priorities as discussed above. However, the alignment of the PDO with CPF at



completion was noticeably at a lower level relative to the CPF at appraisal. Therefore, Relevance of Objectives is rated Substantial.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To increase agricultural productivity of rural households in selected areas nationwide.

Rationale

Theory of Change (ToC). To achieve the stated objective, the project supported the following activities:

1. Finance the rehabilitation of I&D infrastructure to ensure improved and sustained access to adequate agriculture water resources which would contribute to increasing agricultural productivity. Specifically, the project would finance civil works for the rehabilitation and modernization of the existing command area of I&D systems on about 60,000 ha managed by approximately 30 WUAs; essential maintenance equipment would be provided to WUAs; support installation of off-farm irrigation infrastructure, and water measurement structures at the intakes of around 300 WUAs for measurement of water delivered; and support limited rehabilitation works on critical off-farm structures managed by the DWRLI.
2. The project would support the provision of agricultural advisory services to WUA members in order to improve farm practices and technology and improve access to markets, which would contribute to both increasing irrigated agricultural productivity and food and nutrition security. Specifically, the project would support training and technical support for the 30 WUAs selected for rehabilitation of I&D systems to prepare and manage agricultural development plans; provide technical advisory services for the 30 WUAs selected for rehabilitation works and to WUA members in the 30 adjacent AA for the implementation of the agricultural development plans; finance small grants of up to US\$ 30,000 for the implementation of the agricultural development plans managed by the WUAs; support additional advisory services for further knowledge dissemination for a wider group of beneficiaries; and support on-farm water management demonstrations, including drip irrigation.
3. Support nutrition improvements which would contribute to both improved productivity and food and nutrition security through nutrition education, provision of micronutrient supplements, and production diversity and yield growth of more nutritious crops on household plots. Specifically, the project would support establishing a community level nutrition education program; dietary diversification through improved domestic gardening on household plots; and support improved national coordination for food and nutrition security.

The following outputs were expected: increase in the number of water users with improved I&D service, increase in the area with improved I&D service, and increase in the number of operational water user



associations (WUAs); improved capacity of WUAs and WUAs members, number of client training days provided, development plans prepared and implemented by WUAs, number of farmers receiving seeds and fertilizers; increase in the number of self-help groups (SHGs) members adopting methods to improve household nutrition, proportion of target beneficiaries participation in household nutrition campaigns.

Those activities combined were expected to contribute to increased agricultural productivity based on the following three outcomes: average percent increase in crop productivity for WUAs, Operational WUAs strengthened, and WUA members with increased adoption of improved crop management practices. Anticipated higher level outcomes included: improved economic opportunities and higher income for rural population, improved social welfare and health of the rural population, and better nutrition.

The achievement of the stated objective was underpinned by the following critical assumptions: 1. Improved irrigation coupled with improved advisory services would lead to increased agricultural productivity and improved food nutrition; 2. Local contractors would have sufficient capacity to carry out rehabilitation works; 3. Preparation of ADPs and small grants for agricultural inputs and machinery, plus training, would strengthen the capacity of WUAs to provide services; 4. Formation of SHGs combined with training would increase production of nutritious vegetables and thus better nutrition; and 5. Nutrition training and coordination would lead to better nutrition.

The activities stated in the ToC were directly connected to the outputs and outcomes in a plausible causal chain. The stated assumptions were logical and realistic.

Outputs/Intermediate Results

The information below is based on the ICR (Annex 1) unless referenced otherwise.

- 31 WUAs were providing irrigation water delivery in line with agreed irrigation schedule exceeding the target of 30.
- 64,632 ha were provided with improved irrigation and drainage services exceeding the target of 60,000 ha.
- 31 WUAs were operational and strengthened exceeding the target of 30.
- 31 irrigation schemes were successfully rehabilitated exceeding the target of 30.
- 30 development plans were prepared and implemented by WUAs fully achieving the target of 30.
- 81% of WUA members showed evidence of increased adoption of improved crop management practices exceeding the target of 80%.
- 20,663 farmers received seeds and fertilizers exceeding the target of 7,800.
- 34,767 farmers benefitted from improved I&D services including 6,715 women exceeding the target of 2,600 females (target achieved).
- 5,713 WUA administration staff and members were trained in ADP preparation, procurement and contract management, financial management, operation of agricultural machinery, and establishment of a revolving fund (no target provided).
- 25,339 WUA members (73% of total members), of which 8,419 were women, trained in modern agronomic technologies.
- 65 on-farm demonstrations established showing improved water management technologies. These included 30 demonstrations on drip irrigation and 35 on improved water management (short-furrow



and contour irrigation), plus use of water measurement devices on a range of orchard, vegetable, and field crops.

- 150,682 client days of training were provided exceeding the original target of 7,200 and the revised target of 96,900. Also, 96,938 client days of training were provided for females exceeding both the original target of 3,600 and the revised target of 79,560 (targets exceeded).
- 2,704 WUA members benefited from the use of agricultural machinery in 2022 covering 10,530 ha. The use of equipment contributed to more timely field operations and improved land preparation. Also, planting/seeding machines resulted in more precise planting and improved seed germination, reduced losses from weeds, and fewer losses during harvesting, and thus contributes to increased productivity (ICR, paragraph 30).

Outcomes

- The project activities resulted in an average increase of 65% for the productivity (over the baseline) of major field crops (alfalfa, barley, beans, cotton, maize, sainfoin, and wheat) (PDO outcome indicator 1) for WUAs that received a full package of project inputs (improved irrigation, seeds and fertilizers, agricultural machinery, and training), significantly exceeding the 10% target.
- According to the ICR (Table 2) the highest percentage increase relative to the baseline was 157% for maize and the lowest was 27.5% for sainfoin. Alfalfa recorded a 84.5% increase in productivity, followed by barley at 69.7%, wheat at 45.7%, and lastly was beans at 27.7% increase. The baseline was in 2018 while the end line recordings were in 2022.
- Productivity increases were verified also through a PIU conducted survey of the 30 WUAs in 2022. The survey estimated productivity increases specifically for WUA members who received seeds of three crops (wheat, barley, and maize) and fertilizers as well as improved irrigation. The weighted average yield increase was 44% higher than the 2016 National Statistical Committee (NSC) data for the project-supported districts (i.e., before the project) and 29% higher than the 2022 NSC data. The NSC figures reflected the yields that would be expected without the project (ICR, paragraph 26).
- The ICR (paragraph 28) noted that while the areas cultivated with main field crops remained the same, there was a small shift to higher value crops (maize, berries, and vegetables) following irrigation improvements. Also, the area of alfalfa for livestock feeding and sale also increased.
- By project completion, water users provided with improved irrigation and drainage services reached 34,767 users substantially achieving the original target of 36,000 and exceeding the revised target of 26,000 (PDO outcome indicator 2). Also, 6,715 female water users were provided with irrigation and drainage services substantially achieving the original target of 7,200 and exceeding the revised target of 2,600 (PDO outcome indicator 3).
- According to the end line study, 80% of farmers received irrigation water in the required quantity and frequency, while 91% confirmed improved water supply. The time required to deliver water was reduced (1.5 times more farmers received water within one hour), and conflicts were reduced due to better scheduling (63% of farmers indicated that the schedule was not violated). The PIU estimated that the coefficient of water use increased from an average of 56 to 76% because of the improvements. This allowed previously partially irrigated land (area not provided) to be fully irrigated and a greater number of irrigations to be applied (ICR, paragraph 29).
- According to the ICR (paragraph 79) the project activities resulted in improving the coefficient of water from 56 to 76% and reduced conveyancing losses from 44 to 24%.



- However, demonstrated drip irrigation systems were not widely adopted, partly because of high costs (currently around US\$2,800–\$3,200 per hectare). Alternatively, farmers installed simpler and cheaper modified systems, especially on small plots and in the south (ICR, paragraph 32).

Summary of Efficacy Assessment. The project-supported I&D rehabilitation contributed to increased agricultural productivity through improving the efficiency of water delivery, and enabling more timely irrigation scheduling to farmers in 31 WUAs, including tail-enders who before the project did not receive sufficient water. The project also contributed to increased productivity through the provision of good quality seeds and fertilizers and the purchase of more efficient farm machinery. Further, the project provided-training contributed to increased productivity where 81% of farmers/WUA members applied the knowledge gained to increase the productivity of their crops (ICR, paragraph 31). Finally, the project significantly achieved its target for the PDO outcome indicator achieving an increase of 65% in crop productivity compared to a target of 10%. Based on the observed increases in yields (as noted above) from the combination of irrigation and crop production improvements, more efficient irrigation and strengthened WUAs, the efficacy with which this objective was achieved is rated Substantial.

Rating

Substantial

OBJECTIVE 2

Objective

To increase food and nutrition security of rural households in selected areas nationwide.

Rationale

Theory of Change (ToC). To achieve the stated objective, the project supported nutrition improvements through supporting the following activities: domestic gardening, nutrition training, micronutrient supplements, improve national coordination for food and nutrition security. The expected outputs included: number of SHGs adopting methods to improve household nutrition, and proportion of target beneficiaries participating in household nutrition campaigns. The overall expected outcome was increased food and nutrition as evidenced by: (a) increased proportion of women 15-49 years of age who consumed at least 5 out of 9 food groups, and (b) the number of people receiving improved nutrition services. Anticipated long-term outcomes included; improved social welfare and health of the rural population, and better nutrition.

The achievement of the stated objective was underpinned by the following critical assumptions: 1. Improved irrigation coupled with improved advisory services would lead to increased agricultural productivity and improved food nutrition; 2. Formation of SHGs combined with training would increase production of nutritious vegetables and thus better nutrition; and 3. Nutrition training and coordination would lead to better nutrition.

The activities stated in the ToC were directly connected to the outputs and outcomes in a plausible causal chain. The stated assumptions were logical and realistic.

Outputs/Intermediate Results

The information below is based on the ICR (Annex 1) unless referenced otherwise.



- 98% of households had a Food Consumption Score (FCS) above 28.5 points (already exceeded by completion of baseline survey in 2019).
- 150,682 client days of training provided in nutrition, health, and domestic gardening - 96,938 were female exceeding the overall revised target of 96,900 and the original target of 7,200, and exceeding the revised target and original targets for females of 79,560 and 3,600, respectively.
- 1,340 Self-Help Groups formed (89.5% women) with 11,100 members and were provided with good-quality seeds and season-long training (no target provided).
- 11,100 members of Self-Help Groups adopted methods to improve household nutrition exceeding the original target of 9,000 (original target was not revised).
- The project trained 1,269 medical workers (93% women) in 60 AAs on infant and young child feeding (IYCF) and nutrition and anemia in Women of Reproductive Age and adolescent girls, exceeding the target by 5.7% (ICR, paragraph 36).
- 130,255 households were trained on topics such as the importance of a varied diet, anemia prevention, IYCF practices, food safety, and sanitation and hygiene with the help of 4,500 volunteers (ICR, paragraph 36).
- The project provided training for 225 Village Health Committees (VHCs) and in villages where no VHCs existed, training was provided to local initiative groups, which were then converted to VHCs (ICR, paragraph 36).

Outcomes

- The project contributed to increased food and nutrition security by increasing dietary diversity. The irrigation improvements discussed under Objective 1 contributed to increased agricultural crop productivity, including staple foods, which were major contributors to food and nutrition security.
- The end line evaluation showed that an increase in dietary diversity and (production and) consumption of iron-rich and nutrient dense food resulted from the combination of increased agricultural productivity, nutrition training at the community level and through local health centers, and increased production in household plots. The proportion of women 15–49 years of age who consumed at least 5 out of 9 food groups increased from 67.3% at baseline to 78.0% at project completion exceeding the end target of 75% (PDO outcome indicator). The survey also indicated that consumption of iron-rich foods increased from 94 to 97% and vitamin A-rich foods from 84 to 85%. Further, 1.5 times more families with a woman as the main breadwinner confirmed that their nutrition became more varied, and that participation in information events significantly motivated them to maintain a proper balanced and varied diet, including consumption of food rich in iron and vitamin A.
- The project activities also contributed to nutrition education and information dissemination which resulted in improved household nutrition and health. Specifically, 17% more households began to boil water before use, and washing hands increased to 96% from 88% (ICR, paragraph 36).
- The project enhanced food and nutrition security through improved domestic gardening. To improve food quality and quantity from household plots, 1,340 SHGs were established from 2018 to 2021 in 246 villages, covering 11,100 people (including 89.5%). The average increase in yields for SHG members was 27% for vegetables and 31% for fodder crops compared with farmer's practice. The production increases resulted in an increase in sales income averaging about KGS 10,480 in each year for SHG participants and an increase in household consumption of vegetables. The ICR (paragraph 37) reported the training program was also highly valued, with 83% of SHG members implementing their knowledge of nutrition and processing compared to a baseline of 35%.



Summary of Efficacy Assessment. To support increased food and nutrition security, the project financed a combination of nutrition education, dissemination of information on nutrition and health issues, improved domestic gardening to produce a greater quantity of nutritious vegetables and increase household incomes, strengthening of VHCs, and improved national coordination for food and nutrition security. The project exceeded its target for the outcome indicator and met or exceeded most of its targets for the IRIs. Therefore, the efficacy with which this objective was achieved is rated High.

Rating

High

OVERALL EFFICACY

Rationale

Overall Efficacy is rated Substantial. As discussed above, the project substantially contributed to both objectives: increased agricultural productivity (Objective 1, rated Substantial) and increase food and nutrition security (Objective 2, rated High) of rural households in selected areas nationwide.

Overall Efficacy Rating

Substantial

5. Efficiency

Economic and Financial Analysis (EFA)

ex-ante

- Economic and financial rates of return (ERR & FRR) for the overall project were estimated at ERR of 26.3% and ENPV of US\$48.2 million and FRR of 24.8% and FNPV of US\$64.2 million.
- The project was expected to generate agricultural and nutritional benefits. Main agricultural benefits included: (i) increased irrigated crop productivity due to improved irrigation water supply and application of improved farm practices and technologies on around 60,000 ha operated by around 36,000 farm families; and (ii) increased agricultural profitability due to diversification towards higher value crops and increased marketed share of crops for around 50,600 farm families operating approximately 84,000 ha. Key nutritional benefits included: (i) improved availability (and consumption) of nutritious food; (ii) improved access to nutritious food by raising farm households' incomes; (iii) provision of micronutrient supplements and vitamins; and (iv) improved food utilization.
- Quantified agricultural and nutrition benefits included: (i) 15% yield increases for all field crops and 10% increase for orchards; (ii) incremental production on 5% of irrigated lands that were left unused due to lack of irrigated water supply; (iii) prevented workforce losses from nutrition-related mortality; and (iv)



averted productivity and income losses to children who were under five at the project start. Also, the project investments in rehabilitation of I&D systems and agricultural extension and marketing is expected to generate incremental agricultural net benefits at US\$ 2.3 million annually. Financial returns for representative farms located in the North and South, with respective average holding sizes of 3.63 ha and 1.25 ha were analyzed. The respective incremental gross margins to the Southern and Northern farmers will be US\$380 and US\$682.

- Sensitivity Analysis. Four sensitivity variables were tested: (i) an increase in the project cost, (ii) a benefits decline, (iii) a two-year delay in benefit accumulation and (iv) a simultaneous increase in the project cost and reduction in benefits. The results showed that the project was moderately sensitive to changes in the all variables, but within 20% changes in the four variables, the EIRR remains higher than 20%, so the project was considered robust.

ex-post

- The ex-post economic analysis estimated an ERR of 28.7% and an ENPV of US\$59.3 million, which was slightly higher when compared to the appraisal estimates at an ERR of 26.3% and ENPV of US\$48.2 million. While the ex-post EFA mostly followed the same methodology at appraisal to ensure consistency and comparability, the ICR (Annex 3, Table 4.2.) listed some differences related to the financial and social discount rates, the length of the analytical period, expected increase in yields, and adoption rates.
- The economic analysis assessed country-level project impact through converting financial prices into economic values (using the conversion factors and removing the value added tax of 12%) to assess the real costs and benefits from the social (country) point of view, and undertaking economic analysis of the overall project by aggregating all costs and benefits.
- The ex-post economic and financial analysis were conducted based on project investments to assess the project's overall effect, particularly using the actual beneficiary number/implementation of sub-projects and the actual project expenditures schedule.
- Crop models used a without and with project to estimate financial net returns per hectare. Also, farm models were prepared to assess the project's impact at the household level.
- However, the nutrition benefits could not be estimated under the changed nutrition indicator (Increase in proportion of women 15–49 years of age who consumed at least 5 of 9 food groups), as there was no evidence of how this could be translated into a benefit stream and what would be the attribution rate of the project (ICR, Annex 3, paragraph 2).
- Sensitivity Analysis. Economic returns were tested against changes in benefits and costs and for various lags in the realization of benefits. These changes did not have a significant impact on the ERR, and the economic viability remained well above the discount rate of 13% despite a 20% decline in benefits (ERR 23.9%) or a 20% increase in costs (ERR 24.9%). A two-year delay in project benefits reduced the ERR to 19.6%.
- Implementation Efficiency. Declaration of effectiveness was delayed for about 10 months and the project experienced implementation delays at the start. A one-year extension of the closing date was required to accommodate initial delays and the impact of the COVID-19 pandemic and the associated restrictions. All project activities were completed by the extended closing date and the project disbursed 100% of the allocated funds. The project was also able to finance I&D rehabilitation for 31 WUAs (one more than the planned target 30 WUAs). The project also provided a greater quantity of seeds and fertilizers and farm machinery to the WUAs than planned and established a larger number of SHGs than expected. However, project management costs increased from the originally planned 4.74% of the total project cost



to 6.7%. According to the ICR (paragraph 43) this increase in management cost enabled "the PIU to be sustained and to manage the project over the extended implementation period."

Summary of Efficiency Assessment. The ex-post ERR was estimated at 28.7% which slightly exceeded appraisal estimate at 26.3%. The extension of the project closing date was justified given the initial delays and the COVID-19 disruptions. Overall, the project was efficiently implemented and disbursed 100% of the allocated funds. However, management costs were higher than anticipated and the nutrition benefits could not be estimated. The ex-post EFA in the ICR (Annex 3) was detailed and provided a solid justification of the project investments. Therefore, and based on the above-reported information, Efficiency is rated Substantial.

Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	26.30	0 <input checked="" type="checkbox"/> Not Applicable
ICR Estimate	✓	28.70	0 <input checked="" type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

Relevance of Objectives was rated Substantial. Overall Efficacy was rated Substantial. The project substantially contributed to both objectives: increased agricultural productivity (Objective 1) as evidenced by the reported increase in crop productivity, and increased food and nutrition security (Objective 2) of rural households in selected areas nationwide as evidenced by increase in the proportion of women 15–49 years of age who consumed at least 5 out of 9 food groups. Efficiency was rated Substantial. The ex-post ERR was estimated at 28.7% which slightly exceeded the appraisal estimate at 26.3%, and the project was efficiently implemented and disbursed 100% of the allocated funds.

Based on the assigned rating for the three Outcome criteria, the Outcome of the project is rated Satisfactory.

a. **Outcome Rating**
Satisfactory

7. Risk to Development Outcome



The following risks could potentially impact the Development Outcome:

1. Institutional risk. While the project WUAs were considerably strengthened under the project, there is a risk that the role of the autonomous WUAs could be weakened in the future with uncertainty over the roles of local government (AO), district-level water authorities (RayonVodKhoz), and the WUA Support Units (WSUs) under the national Water Resources Service (WRS). Through project support, the WUAs were strengthened from a weak base both at the technical level through irrigation rehabilitation and at the management and administrative levels through training. WUAs also were provided with assets that increased income for investment and O&M. The fee collection rate increased, and the revolving funds provided additional income. The project emphasized the value of autonomous farmer led WUAs, which has been supported by the World Bank since 1997 and is codified in the 2002 Law on WUAs. However, further efforts from the World Bank and WRS are required to define the roles and strengthen the water institutions in their roles and responsibilities to achieve long-term technical and financial stability.

2. Financial risk. The Ministry of Finance required repayment to the budget of 25% of the costs of rehabilitation and 50% of the costs of the excavators provided as a part of component 1. Most repayments are now due, with a concomitant large increase in WUA costs. The project mitigated this risk through enabling the WUAs to improve delivery of water and provide additional services (agricultural machinery and good-quality seeds and fertilizers). This allowed WUAs to increase the irrigation fee level and collection rate from WUA members. That said, many WUAs were concerned that the WUA membership fees will not suffice to fully cover the repayment requirements. This could result in reducing the ability of WUAs to continue investment in improving the I&D system including expanding the works to cover all the command area. It will be necessary for the WSUs/WRD to continue to monitor and propose solutions for continuing investment. Also, there is a risk that the agricultural machinery purchased through the small grants will not be replaced or added to, and that the value of the revolving funds that were set up for repayments of the value of the seeds and fertilizers provided will wind down over time. These risks were mitigated by the preparation of guidelines at the outset of the project governing the operation of machinery including allocating a proportion of funds for depreciation and for the operation of revolving funds for seed and fertilizer. The actual terms for repayment into the revolving fund and the level of charges for machinery use are determined by the WUA management and approved by the WUA General Assembly of members, thus it is in the interest of members to sustain these programs. Further, the use of good quality seeds and fertilizer has a demonstration value and should generate increased income for farmers allowing further purchases of these inputs. Nevertheless, it will be necessary for the WSUs/WRD to continue supporting the WUAs through monitoring the WUA budgets and expenditures and providing advice and training on maintenance of the machinery and revolving funds.

3. Technical risk. This risks relates to infrastructure rehabilitation and O&M. All I&D infrastructure rehabilitation was successfully completed, and the infrastructure is currently being satisfactorily operated and maintained by the WUAs. While the rehabilitated assets are expected to last 25 years, inadequate and non-timely O&M will reduce the lifespan of the works. This risk was partially mitigated by the project's WUA capacity strengthening. In addition, the provision of excavators limits the modest risk that some on-farm irrigation channels could silt up again in the long term.

4. Environmental risk. Reduced availability of water for irrigation was a problem in 2012 and 2023, although 2022 was a good year. This is a recurrent problem (typically every 5 or 6 years) but may be exacerbated by climate change. The project aimed to mitigate this effect through better conveyancing, measurement, and delivery of water. The coefficient of water use increased from 56% to 76% because of the project, and conveyancing losses were reduced from 44% to 24%.



5. Project specific risk. The project-supported activities for the WUAs, farmers, SHGs, and village women were beneficial and improved the beneficiaries' knowledge and skills. While the training material is available online and as hard copies, the benefits will wane over time as WUA management and people move on. Training should not be considered a 'one-off' activity, but should be continued to involve new people over the long-term. Also, the nutrition training and formation of SHGs were beneficial, but there is a risk that additional training will be needed over time. This risk can be mitigated by including ongoing training as part of future projects, especially grant projects such as those funded by GAFSP. There is also a risk that some of the nutrition activities will not be continued after the project closes. This risk has been mitigated by agreements with local governments (AOs) to allocate funds from their budget for continuing nutrition and health programs, incorporation of project-related nutrition training modules into national-level training programs, and establishment of additional VHCs.

8. Assessment of Bank Performance

a. Quality-at-Entry

- **Strategic relevance and approach.** The project was strategically relevant and in line with the Government priorities. The PDO was also in line with the Bank strategies (see section 3 for details). Agriculture was considered essential for economic development, and a comprehensive approach was expected to help reduce social tensions and provide solutions for rural development.
- **Technical, financial and economic aspects.** The project design was built on the World Bank's long-term program for I&D rehabilitation and development of the WUA approach in the Kyrgyz Republic. The design featured an advisory services component that was built on the long-term engagement of the World Bank and other development partners for the establishment of a nationwide network of financially independent rural advisory services. The nutrition improvement component was modeled based on existing interventions delivered through the Community Action for Health Program and the country-wide partnership between the health system and Village Health Committees (VHCs). While the domestic gardening program adopted some of the practices under previous World Bank projects including the revolving Seed Funds and women's self-help groups (SHGs). The project design benefited from international expertise in irrigation engineering, preparation of an implementation manual for ADPs, and nutrition planning (ICR, paragraph 73). The PAD included a detailed economic analysis that provided adequate justification of the project investments.
- **Poverty, gender, and social development aspects.** The project activities were expected to benefit poor tail-end farmers who received less irrigation water and often experienced an uncertain supply. The project also targeted the most food-insecure individuals and households to reduce poverty in the project area through the nutrition and SHG programs. Women benefitted from I&D rehabilitation partly because of improved water delivery to the participating/benefiting households, including in some cases to household plots that were normally managed by women. The Results Framework featured sex disaggregated indicators to capture women participation.
- **Environmental and Fiduciary aspects.** The project had adequate environmental and financial management arrangements. However, procurement capacity was weak and contributed to implementation delays.



- **Implementation arrangements.** The PIU had experience in implementing World Bank irrigation projects but lacked experience in agricultural advisory services or nutrition. A notable shortcoming was the failure of the PIU to timely fill all the needed positions with competent staff resulting in implementation delays at the project's outset. Also, the PIU was responsible for several interlinked irrigation projects. This was not the best arrangement and the PIU had to be reorganized such that dedicated PIU staff oversaw the implementation of APNIP.
- **Risk assessment.** Eight risks were identified at appraisal with an overall rating of Substantial. The risks related to political and governance, technical design of project or program, and institutional capacity for implementation and sustainability were all rated substantial. While the identified risks had adequate mitigation measures, the risks related to rising prices, limited availability of construction materials (such as prefabricated concrete forms); and difficulty in carrying out works during the irrigation season were not anticipated.
- **M&E arrangements.** While M&E was under the responsibility of the PIU, there were no M&E specialists specifically working on the APNIP until seven months after project effectiveness. M&E design had some shortcomings as several PDO outcome indicators were revised at restructuring. Also, the Food Consumption Score (FCS) proved not to be an adequate indicator of nutrition benefits, as the estimated target value was found to be fully met at the time of baseline survey.

Summary of Quality at Entry Assessment. The project was strategically relevant. Design featured a comprehensive approach that addressed irrigation concerns, advisory services and improved nutrition. Design could have benefited from a marketing component to address the expected surge in crop production. Environmental and fiduciary aspects were adequate, but staffing issues impacted implementation readiness. While the identified risks had adequate mitigation measures, some risks were not anticipated. M&E design had minor shortcomings.

In a further communication on May 27th, 2024, the project team explained that the PIU being responsible for several interlinked irrigation projects was the accepted and applied practice in the Kyrgyz Republic. Also, the team noted that it was considered normal for any irrigation project to anticipate some difficulties with scheduling construction works during the irrigation season as farmers want a continuous supply of water during the season. Finally, the team explained that the correct target value for the Food Consumption Score could be foreseen. There was no information about the state of the food consumption score in the country, and the target for the Food Consumption Score was derived from the experience in other countries. The Food Consumption Score was not an appropriate indicator for the project, and the team addressed that issue by restructuring the project and introducing a new indicator on dietary diversity to reflect the nutrition activities under the project better.

Overall, and based on the team's clarifications noted above, the Quality at Entry (QAE) is rated Satisfactory.

Quality-at-Entry Rating
Satisfactory

b. Quality of supervision



- The World Bank team provided regular implementation support with 14 missions carried out including an MTR and virtual missions during COVID-19 restrictions. After the MTR, closer implementation support was provided through monthly meetings on irrigation rehabilitation progress, and additional technical missions on the agriculture and nutrition components.
- The project implementation benefited from the support provided by the World Bank experts throughout the project for the irrigation and agriculture components including the SHG activity as well as safeguards and procurement. The continued presence of the co-task team leader and subsequently the task team leader in the country provided the opportunity to quickly respond to arising challenges. Implementation also benefitted from international consultants on technical and institutional aspects who joined the missions and carried out technical visits and provided advice to both the team and the PIU.
- While nutrition support activities benefitted from an international consultant, there was less continuity by the Bank for nutrition activities in the first half of the project. After the MTR a dedicated Bank staff oversaw nutrition activities and provided support.
- Finally, the Bank team was both proactive and supportive of the Government's requests to restructure the project based on findings of an MTR in 2020. The Bank used the restructuring to refine the RF and revise indicators and corresponding targets.

Summary of Quality of Supervision Assessment. The Bank team successfully guided the project towards a successful outcome. The project team provided technical support and was proactive to restructure the project after the MTR. Overall, Bank Supervision is rated Satisfactory.

Based on the assigned rating to QAE and Bank Supervision, the Overall Bank Performance is rated Satisfactory.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

- The PAD did not include a Theory of Change (ToC) since it was not yet required by the Bank at the time of appraisal. Nonetheless, the ICR included a ToC that reflected the relationship between the project activities, outputs, outcomes and long-term impacts in a plausible causal chain. This Review reconstructed a ToC narrative for each objective based on the detailed project description in the PAD (Annex 2) in combination with the ToC reported in the ICR.
- The PDO was composed of two objectives (see section 2), which were assessed based on the following four PDO outcome indicators: 1. Average percentage increase in crop production for WUAs (with completed I&D and advisory services); 2. Proportion of beneficiary households with food consumption score (FCS) above 28.5 points; 3. Number of water users provided with



new/improved irrigation and drainage services; and 4. Number of female water users provided with improved irrigation and drainage services. While the four PDO level indicators were measurable and connected to the project activities, there were some shortcomings. For example, the first indicator referred to "production" which included not only yields but cropped areas and prices, which were beyond the project scope, and the "WUAs" lacked specificity in terms of the project support received. Also, the FCS indicator was not the best choice to measure the support to nutrition because the baseline study showed that 98% of households already had a score of 35 points and thus the target was already achieved by 2019. Finally, with regards to PDO outcome indicator #3, the project was working with existing WUAs so the inclusion of the term "new" as part of the third PDO indicator was not accurate.

- The Results Framework (RF) included 14 intermediate results indicators (IRIs) to track the progress of the different project activities. Most of the IRIs were measurable, reflected reasonable targets, and were connected to the project activities. However, some IRIs needed further clarification and one IRI was duplicated.
- Overall, M&E design was adequate and included an independent baseline, mid-term, and end line surveys to assess the PDO and intermediate indicators and evaluate the project's contribution to agricultural productivity and food and nutrition security. However, there were some weaknesses pertaining to the PDO outcome indicators as noted above.

b. M&E Implementation

- M&E implementation was initially delayed because there were no M&E specialists specifically working on the APNIP until seven months after project effectiveness (ICR, paragraph 64).
- M&E implementation improved after recruiting an M&E specialist. The project progress reports and Results Framework updates were generally timely and made available for the implementation support missions. The contracted consultants provided detailed assessments of the results of the ADP preparation, demonstration program, and SHG activities.
- After the 2020 MTR, the project was restructured to clarify the formulation of some indicators and make them more measurable. The ICR (Annex 8) provided a detailed list of all the PDO and IRIs that were revised. Most notable was dropping PDO outcome indicator # 2 and replacing it with a more suitable indicator.
- The baseline survey assessment of the PDO and intermediate indicators was completed in June 2019 due to delays in contracting a suitable local company and finalizing the report. This delay resulted in the cancellation of the mid-term assessment as the limited time before the MTR (March 2020).
- The M&E rating was lowered to Moderately Unsatisfactory from June 2021 to January 2022 due to limitations in reporting (ICR, paragraph 64). As M&E reporting improved towards completion, the project closed with a Satisfactory M&E rating. An end line survey was eventually carried out in 2022 and finalized by project completion in 2023, according to the ICR the end line survey was "adequate."
- The ICR (paragraph 64) noted that the PIU carried out additional surveys toward the end of the project to assess yields obtained by farmers receiving seeds and fertilizers, use of revolving funds, and adoption of technologies.



c. M&E Utilization

- While the M&E results were used to inform the project management, the ICR noted that at times "decision-making appeared to be guided more by technical engineering aspects than other considerations (paragraph 65)."
- M&E data were useful in adjusting the target indicator values at MTR and ensuring their measurability and attribution to the project activities.
- By project completion, the M&E system generated a database on irrigation rehabilitation, WUA performance, and crop productivity. This proved useful for project management and would be available through the WRS for use to inform and support future project implementation.

Summary of M&E Quality Assessment. M&E design was adequate overall, but there were some weaknesses pertaining to the PDO outcome indicators. While M&E implementation had some weaknesses including a delayed baseline survey, most design weaknesses were rectified at restructuring. Finally, as noted above the project generated a database on the different supported activities that informed the project management and the ICR. This helped project management and was expected to inform future projects. Therefore, the Quality of M&E is rated Substantial with moderate shortcomings.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

- **Environmental Category and Safeguards.** The project was classified as a Category B - partial assessment because it was not expected to involve any large-scale, significant, or irreversible adverse environmental impacts. Four environmental and one social safeguard policies were triggered: Environmental Assessment (OP/BP 4.01), Pest Management (OP/BP 4.09), Safety of Dams (OP/BP 4.37), Projects on International Waterways (OP/BP 7.50), and Involuntary Resettlement (OP/BP 4.12). An Environmental Management Plan (EMP) identified preventive and/or mitigation measures. A Resettlement Action Plan (RAP) as well as a Resettlement Policy Framework (RPF) were prepared.
- **Compliance with Environmental and Social Safeguards.** The ICR (paragraph 67) reported that "the APNIP was implemented in compliance with the World Bank environmental safeguards policies as well as national environmental requirements and was rated Satisfactory on compliance with environmental safeguards throughout implementation." Involuntary Resettlement - OP 4.12 was triggered for site-specific works requiring small-scale land acquisition. A Grievance Redress Mechanism (GRM) was established at an early stage to address involuntary resettlement. In total 57 grievance cases were registered (10 complaints and 47 appeals), and according to the ICR (paragraph 69) "all grievances were resolved satisfactorily by the project completion date." The APNIP did not finance enlargement or development of new irrigation systems, the project fell under the exception to the riparian notification requirement in paragraph 7(a) of OP 7.50. Some small dams (less than 15 m in height) were present, and in line with OP/BP 4.37, appropriate actions were



taken to ensure dam safety. Finally, appropriate training of agricultural advisers and WUA staff in integrated pest management (IPM) was carried out by qualified and experienced IPM trainers.

b. Fiduciary Compliance

- **Financial Management (FM).** The PIU had adequate budgeting capacity, and the quarterly financial reports and annual audits were issued on time and were satisfactory to the World Bank. In December 2020 the guaranteeing bank refused to repay the advance payment of KGS 5.5 million under a terminated contract due to the absence of a written refusal from the contractor. The PIU resolved the issue by establishing a payment schedule with the contractor such that the whole amount was recovered by July 2021. The FM rating was generally Satisfactory, while the closing FM was rated Moderately Satisfactory in the latest World Bank Implementation Status Report. This downgrade in the FM rating was due to internal control issues involving unjustified payments to a contractor and manipulation of accounting records discovered during the FM review in December 2022 (ICR, paragraph 71). These shortcomings were fully addressed by project closing, including a change of the financial manager and full recovery of funds. The ICR highlighted that these FM shortcomings were not noted in the annual audits as those were sample based and did not pick up all issues. This Review is in agreement with the recommendation by the ICR that the World Bank should ensure "through the Terms of Reference, considering the elevated risks associated with construction contracts, that auditors undertake comprehensive audit examinations and substantive procedures for such contracts."
- **Procurement.** Procurement experienced initial delays because of weak PIU staff capacity in conducting procurement processes. In 2017, the procurement rating was downgraded to Moderately Unsatisfactory because of slow progress in the procurement of civil works and the two complaints regarding the first contract award under component 1. In the second half of project implementation, procurement performance benefitted from regular monitoring and capacity building provided by the World Bank procurement staff, and by replacing staff and hiring additional specialists. However, minor shortcomings persisted concerning contract management, advertisement and disclosure arrangements, bidding processes, and incomplete information uploaded in the Systematic Tracking of Exchanges in Procurement (STEP) tool. The project closed with a Moderately Satisfactory procurement rating (ICR, paragraph 72).

c. Unintended impacts (Positive or Negative)

None.

d. Other

The ICR (paragraph 54) noted that "Although not part of the project design, the APNIP helped strengthen the capacity of the WUAs and WUA members to respond to climate change challenges. More efficient irrigation; demonstrations of drip irrigation; introduction of good quality seeds; more efficient farm machinery for better land preparation; and farmer and SHG training which included climate-smart agriculture



techniques such as efficient land preparation and soil fertility management, integrated pest management, more timely harvesting, and improved storage contributed to improving farmers' capacity to adapt to climate change over the longer term."

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

The ICR included five lessons, the following three are emphasized with some adaptation of language:

1. Projects aiming to support rural livelihoods could benefit from a comprehensive cross-sectoral approach comprising irrigation, agriculture, and nutrition. The experience of the project showed that such approach provided synergistic benefits in terms of agricultural productivity and food and nutrition security. The project also demonstrated the value of implementing project activities aimed at all households in the same geographical areas, that is, in the selected WUAs, the same AAs and same villages.

2. To increasing agricultural production and improve food security, irrigation rehabilitation interventions should be clearly linked to on-farm agricultural support. Farmers were able to obtain high-quality seeds and, in conjunction with improved irrigation water supply, training, and agricultural machinery. This enabled farmers to increase productivity and change their cropping pattern to higher-value crops. It is noted that there are 481 WUAs in the country, with only 31 covered by the project, leaving considerable scope for future activities.

3. To improve nutrition of vulnerable households, the SHG methodology can be a successful approach to introduce quality seed and increase productivity on household plots. Self-help groups (SHGs) are comprised of 5-7 members, 90% of which are expected to be women. The key characteristic is that SHGs are a small group of women who work together effectively as demonstrated through the project experience. This approach enabled the improvement of nutrition for vulnerable households, especially for women. Good social mobilization and season-long training were an essential part of this methodology. Similar programs will be valuable in the future to ensure that projects represent all household members and women-headed households.



13. Assessment Recommended?

No

14. Comments on Quality of ICR

- **Quality of Evidence.** The ICR provided an adequate evidence base to support the achievements reported.
- **Lessons.** Lessons reflected the project experience and were based on evidence and analysis.
- **Results Orientation.** The ICR included an adequate discussion on the achievement of the two elements of the PDO. The discussion was balanced between reporting on the PDO outcome indicators and what actually was achieved on the ground.
- **Consistency with guidelines.** The ICR used the available data to justify most of the assigned ratings. The ICR also included an explicit statement on the compliance with the World Bank's safeguard policies.
- **Conciseness.** As a whole the ICR was well written, provided a clear and concise coverage of project activities, and candidly reported on most shortcomings. Additional information was reported in the Annex section which was cross referenced multiple times in the main text. However, the Quality at Entry section could have benefited from more details.
- **Summary of the Quality of ICR Assessment.** The ICR provided a solid assessment of outcomes, and the lessons drawn by the ICR were relevant. Most sections were concise yet thorough and reflected relevant information. Overall, the Quality of the ICR is rated Substantial.

a. Quality of ICR Rating
Substantial