Report Number: ICRR0024633

1. Project Data

Project ID	Project Name
P102459	ZM- Irrigation Development Project(FY10)
Country	**Practice Area(Lead)**
Zambia	Agriculture and Food

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
IDA-48740,IDA-66570	15-Dec-2018	135,798,103.24
Bank Approval Date	**Closing Date (Actual)**	
07-Apr-2011	30-Nov-2024	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	115,000,000.00	0.00
Revised Commitment	145,000,000.00	0.00
Actual	135,798,103.24	0.00

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2. Project Objectives and Components

a. Objectives

The original Project Development (PDO), as stated in PAD (para 17) and Legal Agreement (page 5), was to increase yields per hectare and value of diverse products marketed by smallholders, benefitting from investments in irrigation in selected sites served by the project.

The revised PDO, as stated in the Restructuring Paper (RES32099, para 25) and Financing Agreement for additional financing (page 4), was to provide improved access to irrigation services in selected sites in the recipient's territory.

For this review, the original PDO is parsed into two subobjectives, and the revised PDO is only composed of one objective:

Original Subobjective One: To increase yields per hectare by smallholders benefiting from investments in irrigation in selected sites served by the project

Original Subobjective Two: To increase the value of diverse products marketed by smallholders, benefiting from investments in irrigation in selected sites served by the project

Revised Objective One: to provide improved access to irrigation services in selected sites in the recipient's territory

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

Yes

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

No

c. Will a split evaluation be undertaken?

Yes

d. Components

Component 1: Irrigated Agricultural Support Services (Appraised: US$22.3 million, of which International Development Association (IDA) US$18.3 million and the Government of the Republic of Zambia (GRZ) US$4 million; Actual IDA US$14 million)

The objective of this component was to strengthen the capacity of beneficiaries to design and operate medium to large-sized irrigation schemes on a sustainable basis.

The component supported i) irrigation planning and preparation, including prefeasibility studies on 25,000 ha and feasibility studies on 20,000 ha, ii) provision of scheme operation and marketing services facilitated by a transaction advisor to help the government structure about seven viable transactions, and iii) community mobilization and capacity building services to ensure fully informed decision making by communities.

Component 2: Public Infrastructure Investment (Appraised: US$95.50 million, of which IDA US$67 million and GRZ US$18.5 million; Actual IDA US$94.4 million)

The objective of this component was to provide bulk water supply and the associated infrastructure required to establish medium-to-large-sized smallholder irrigation schemes.

The component supported i) development of irrigation infrastructure to supply water to at least 10,000 ha at seven sites, ii) development of support infrastructure, including access roads to project sites and service roads within irrigation schemes, electrification schemes, storage and services to link farmers to markets, and iii) implementation of site specific Environmental Management and resettlement Action Plans.

Component 3: Development of Irrigation Management Capacity (Appraised: US$72.2 million, of which IDA US$20.4 million; Actual IDA US$11.5 million)

The objective of this component was to facilitate private and cooperative investments in productive equipment and assets in and around irrigation schemes.

The component financed i) improving access to long and short-term financing and investment capital for smallholder farmers by providing them with business development services and improving access to rural banking services, and ii) an Investment Support Fund (ISF) to include conditional partial grants for on-farm irrigation equipment as recommended by technical studies, on-farm equipment, essential inputs for production and marketing, and seed capital for small enterprise development. The fund included a special window for women, youth, and other vulnerable groups.

Component 4: Management and Coordination (Appraised: US$11 million, of which IDA US$9.3 million; Actual IDA US$15.9 million)

The objective of this component was to ensure efficient and timely delivery of project resources following the project's objectives and to strengthen the irrigation sector policy and institutional framework.

The project financed i) project management, ii) policy and institutional framework, iii) safeguards issues management and oversight, and iv) Monitoring and Evaluation.

Changes to Components

At the first restructuring, the four components were reorganized into three so that the project could focus on provision of irrigation infrastructure and institution strengthening.

- *Public Infrastructure Investment*: irrigation infrastructure and rural infrastructure and development (Approved: US$124.7; actual: US$108.4)
- *Irrigation Management Capacity*: provision of scheme operation services, community mobilization and support to national irrigation policy development (Approved: US$5.2 million; Actual: US$11.5)
- *Management and Coordination*: project management, safeguards, M&E and further studies (Approved: US$15.2 million; Actual: US$15.9).

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

Project cost

The project was appraised at US$231 million, of which IDA would cover US$145 million. It was revised down to US$129 million, and the actual cost was US$135.8 million.

Financing

The project was financed with two IDA credits, totaling US$145 million: US$115 million and US$30 million. The project disbursed a total of US$135.8 million

Borrower Contribution

The borrower and local beneficiaries were expected to contribute US$86 million, of which the government was expected to contribute US$23 million. The government contributed US$10.2 million.

Dates

The project was approved on April 07, 2011, and it became effective on November 11, 2011. The Mid-term Review (MTR) was organized on February 01, 2016. The project was scheduled to close on November 30, 2018, but it closed 72 months, i.e., 6 years, later November 30, 2024.

Restructurings and additional financings

The project underwent three restructurings and an additional financing (AF):

December 12, 2018: to address significant delays in implementation that made it difficult to measure the achievement of the PDO. It entailed changes to the PDO, project components, and Results Framework (RF); and extension of the project closing date by two years. The changes to RF included downward revision of targets for a PDO indicator, dropping of two PDO indicators, elevation of one intermediate results indicator to PDO level, and addition of a new PDO indicator.

December 17, 2019: to include the first phase of the remedial measures on ten dams built under the closed Water Resources Development Project (WRDP). It entailed inclusion of the activity in revised component one.

May 29, 2020: to bring in Additional Financing of US$30 million for remedial work on the ten WRDP dams and allow for completion of remaining activities under the Irrigation Development and Support project (ISDP). It entailed AF and extension of the project by two years. The changes to RF included the introduction of several intermediate indicators and upward revision of targets for IRIs.

November 30, 2022: to allow for the rehabilitation of ten dams, which was significantly delayed. It entailed extension of the project by two years.

Changes to Results Framework (RF)

The changes included upgrading an IRI to PDO level, downward revision of targets, and the dropping of PDO level indicators. The Changes are summarized below.

Indicators	**Target**	
	Original	**Revised**
Direct project *beneficiaries*	70,000	26,000
Area covered with new/improved irrigation or drainage services (ha). *Intermediate level indicator upgraded to PDO level*	10,000	8,535

Farmers reached with agricultural assets or services (Number) *New indicator*		1,515
Yields (Tons/Ha) of major irrigated crops in the target sites for: Wheat Bananas Tomatoes Onions	 5.3 32.0 11.0 12.0	Dropped
Value of diverse agricultural products marketed (billion ZMK/year) in target areas	195	Dropped

Split rating

The PDO was revised. Some indicators were dropped, and targets for several others were revised downward. The project became less ambitious by seeking a lower-level outcome and by revising targets downwards. This analysis will, therefore, apply a split rating.

3. Relevance of Objectives

Rationale

Country context

When the project was appraised, Zambia was classified as a lower-middle-income country, with the economy growing at an average of 6 percent during the previous decade (2000 to 2010), driven by mining, construction, and service sectors. Agriculture and agro-processing contributed about 40 percent of GDP and approximately 12 percent of export earnings, with contributions from cane sugar, Burley tobacco, cotton lint, and fresh flowers. However, the agricultural sector contributed less than proportionately to the overall economic growth (PAD, para 1). Primary agriculture, which employed about 67 percent of the labor force, contributed only 20 percent to the gross domestic product (GDP). Agriculture was characterized by small-scale, labor-intensive practices, with most producers cultivating fewer than two hectares. The relatively weak performance of agriculture explained the limited reduction in poverty despite the relatively rapid growth of the overall economy (PAD, para 1).

Despite abundant land and water, about 12.5 million people cultivated only around 12 million hectares. The agricultural policies also prioritized intensifying production on small plots through maize and fertilizer subsidies to achieve food security, while neglecting the facilitation of a gradual shift towards larger-scale production of commercially viable commodities. A gradual increase in the utilization of available land and water would transform the sector and expand the benefits of growth.

Country strategy

The PDO was relevant to the Fifth National Development Plan (2006-2010), which aimed to raise agricultural productivity, particularly among smallholders, by, among others, opening up new “farm blocks” for commercial development (PAD, para 10). Developing irrigation was a priority in the Fifth Plan. The PDO has remained relevant to country strategies. Improving access to irrigation services is part of the strategy for growth, food security, and poverty alleviation in the Eighth National Development Plan (NDP, 2022-2026). The Ministry of Agriculture's strategic plan (2022-2026) also aims to promote irrigation under its first focus area (ICR, para 29).

World Bank strategy

The PDO was relevant to the World Bank Group’s Country Assistance Strategy (CAS) for Zambia (FY 2008-11), which included the project with “improved access to water, energy services, and irrigation systems” as one of the expected outcomes. The PDO continues to be relevant. It is consistent with “improving access to irrigation services will support economic diversification,” a measure under objective five of the high-level objective three of the Country Partnership Framework (CPF) for Zambia (FY25-FY29), Food and Nutrition Security Global Challenge program, and IFC’s Africa Agricultural Accelerator Program (ICR, para 28).

The level at which the PDO is pitched

The PDO, both before and after restructuring, was pitched at outcome levels. Increasing yields and the value of traded diverse products would contribute directly to Zambia’s strategy to increase agricultural productivity. The revised PDO, to increase the area irrigated, was pitched at an output, at best, an intermediate outcome level, the achievement of which would only create the potential to improve productivity.

Summary: Although Zambia was growing at a reasonable rate, its smallholder-dominated primary agriculture lagged – despite abundant land and water – resulting in less poverty reduction than the growth suggests. The PDO to increase productivity and the value of marketed products was highly relevant to both Zambia’s agricultural strategy and the World Bank’s goals to boost productivity and expand access to irrigation services.

Rating
High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1
Objective
To increase yields per hectare by smallholders benefiting from investments in irrigation in selected sites served by the project

Rationale

Theory of Change (ToC)

The retrospectively articulated ToC in the ICR (Annex 7) states that project inputs/activities, such as i) strengthening the capacity of beneficiaries to design, build, and sustainably operate small to medium-sized irrigation systems, ii) providing bulk water supply and building the infrastructure needed to establish smallholder irrigation systems, iii) assisting individuals and cooperatives to invest in productive equipment and assets in and around irrigation schemes, and iv) strengthening irrigation policy and institutional framework would produce outputs, such as established and functional Water User Groups, number of dams with remedial measures completed, and an updated National Agricultural Water Management Policy and Investment Plan.

The outputs could be expected to increase the area that is provided with new/improved irrigation and drainage services, thereby enabling individuals and cooperatives to invest in productive assets to increase yields and the value of diverse products they market.

The ToC was plausible, and the project output could directly lead to the anticipated outcomes. However, a few assumptions needed to hold: farmers develop the capacity to manage small irrigation systems commercially and sustainably, and with access to irrigation and productive inputs, they would be able to increase yields and the value of products they market.

The PDO indicators, yields achieved and the value of products marketed, robustly measure the outcomes.

Outputs

The project outputs that contributed to achieving this outcome related to provision of irrigation services including the completion of a dam, establishment of water user groups and rehabilitation of rural roads. The indicators were as follows:

- Mwomboshi Dam was completed, as planned
- 26,647 hectares were covered by prefeasibility and feasibility studies, falling short of the target original target of 45,000 hectares
- 233 kilometers of rural roads were rehabilitated, exceeding the original target of 120 km
- 9,150 ha were provided with new or improved irrigation services, almost achieving the original target of 10,000 ha.

Outcomes

The achievement of the objective was measured by the yields achieved of four selected crops. The data was based on progress reports produced by the PIU. The data on yields obtained by ISF beneficiaries was a longer series than the rest, which were only from 2022 onwards. The data also pertained only to two of the four irrigation systems. Yields achieved by different categories of farmers, Tier 1&2 (individual or groups of farmers cultivating less than 20 ha), Tier 3 (large plots of 52-58 ha each owned by communities and leased to commercial entities), and on ISF sites (recipients of Investment Support Fund) are presented below.

Crop	Yield (tons/ha)			
	Tier 1&2	**Tier 3**	**ISF beneficiaries**	**Target**
Wheat	4	6	11	5.3
Banana				32
Tomatoes	15		15	11
Onions	15	15	15	12

No information is available on Banana as it was not cultivated. The data suggests that targets were exceeded, except in the case of wheat by tier 1 and 2 farmers. The Post Assessment Impact Survey (PAIS) and group discussions among beneficiaries of irrigation schemes confirmed that crop yields had increased by more than 100 percent (ICR, para 40).

The reported yields have exceeded the target, but the yields relate only to two of the four irrigation systems. Without details on outputs, it is also difficult to attribute the change to project activities. The project achieved the subobjective with only modest efficacy.

Rating
Modest

OBJECTIVE 1 REVISION 1

Revised Objective
to provide improved access to irrigation services in selected sites in the recipient's territory

Revised Rationale
ToC

The revised ToC articulated in the Restructuring paper (RES32099, page 12) states that project activities/inputs, such as i) the construction of irrigation infrastructure, including dams, pumping stations, reservoir canals, piping, and pivots, ii) capacity building, sensitization and training, including establishment and operationalization of community land trusts (CLTs) and Water user groups; and technical assistance for CLT registration, irrigation management contract development and updating irrigation policy would produce outputs, such as irrigation schemes developed and CLTs and Water User Associations (WUAs) formally established and operationalized.

The outputs could be expected to lead to the provision of bulk water supply to community-based irrigation organizations, thus increasing the area provided with new or improved irrigation and drainage services.

The ToC was plausible with a logical chain demonstrating that the activities and outputs could contribute to the desired outcome. Still, a critical assumption was that the capacity of community organizations could be adequately developed to manage small and medium irrigation systems.

The PDO indicator, area provided with new or improved irrigation and drainage services, robustly measured the outcome.

Outputs

The outputs that contributed to achievement of this objective relate to construction of dams, feasibility studies, the establishment of water user associations and contracting with them and updating of irrigation policies. The relevant intermediate indicators are as follows:

- Mwomboshi dam was completed and handed over to the government as planned
- 26,647 ha were covered by prefeasibility and feasibility studies, meeting the revised target of 26,647 ha
- 8 dams benefited from remedial measures, falling short of the revised target of 10
- 56 water user groups were established and functioning, exceeding the revised target of 45
- Agricultural Water Management policy and investment plans were being prepared, falling short of the target of having them under review
- 4 Water user associations were established, meeting the target of 4
- 233 km of rural roads were rehabilitated, exceeding the revised target of 116 km

Outcome

The outcome was assessed by the area provided with irrigation and drainage services, the number of people benefiting from the project, and the share of beneficiaries satisfied with the operation of their Community Land Trust (CLT). The indicators are as follows:

- 9,150 ha were provided with new or improved irrigation services, exceeding the revised target of 8,535 ha
- 1,554 farmers were reached with agricultural assets and services, exceeding the target of 1,515
- 55,570 people benefited directly from the project, exceeding the revised target of 26,000
- 96 percent of the beneficiaries were satisfied with the operation of their CLT, exceeding the revised target of 75 percent

The project succeeded in providing the targeted area with irrigation and drainage services. The objective was achieved with substantial efficacy.

Revised Rating
Substantial

OBJECTIVE 2
Objective
To increase the value of diverse products marketed by smallholders, benefiting from investments in irrigation in selected sites served by the project

Rationale
ToC

The ToC for objective one applies here.

Output

The outputs that contributed to increasing yields, listed under subobjective one, also contributed to increasing the value of products marketed by farmers.

Outcome

The outcome is assessed by the value of diverse products marketed in the targeted area. The indicator's definition was unclear, and no systematic effort was made to gather information after restructuring when the indicator was discontinued. The value of diverse products marketed was based on crop production reported in the PIU reports of 2023.

The value of agricultural products marketed in the target area was expected to reach 195 billion Zambian kwacha (ZMW) annually. When converted to U.S. dollars, the value of marketed products was estimated at USD 13,366,067, falling short of the target of USD 41,935,484. This estimate is based on production from nearly 2,325 hectares of irrigated land.

The targeted value of products marketed was not achieved. The subobjective has been achieved with modest efficacy.

Rating
Modest

OBJECTIVE 2 REVISION 1

Revised Objective
N/A

Revised Rationale

Revised Rating

OVERALL EFFICACY

Rationale
With Original PDO: strengthening the capacity of beneficiaries, supplying them with bulk water along with building the necessary infrastructure, and assisting individuals and cooperatives to invest in essential assets was expected to help producers increase yields and increase the value of the diverse products they market in the targeted areas. The efficacy in increasing yields was only modest, as yield increases above the target

were reported from only a part of the targeted areas. The efficiency in increasing the value of products marketed in the target areas was also modest, as the estimate value fell short of the target and the definition of the indicator was unclear. The overall efficacy in achieving the targets under the original objectives was modest.

Overall Efficacy Rating	**Primary Reason**
Modest	Low achievement

OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale

With revised PDO: Constructing irrigation infrastructure to supply water in bulk and building capacity of beneficiaries to manage their irrigation systems, including by organizing and operationalizing CLTs, was expected to increase the area provided with irrigation and drainage services. The project met the target for the area to be provided with irrigation and reached the targeted number of farmers with assets and services. The objective was achieved with substantial efficacy.

Overall Efficacy Revision 1 Rating

Substantial

5. Efficiency

Ex ante

The ex ante analysis evaluated the increases in production and value of agricultural outputs resulting from the development of irrigation. It was based on a financial analysis of returns with and without the project for nine crops: tomato, onion, cabbage, wheat, maize, Irish potato, beans, tobacco, and banana. The study estimated that gross financial margins per hectare would rise to US$1,852 from US$112 without the project. It aggregated the incremental benefits from irrigation development across 11,600 hectares.

The Economic Net Present Value (NPV), using a social discount rate of 10 percent over 25 years, was estimated at $97.7 million, with an Economic Internal Rate of Return (IRR) of 21 percent. Sensitivity analysis indicated that the project could withstand significant adverse impacts, such as a decrease in incremental net benefits, while still achieving an ERR above the opportunity cost of capital.

Ex post

The Ex post analysis is based on i) benefits from 9,150 ha of irrigated crop, ii) incremental benefits from new roads built 9,233 km), iii) improved access to drinking water, iv) benefits from reduced greenhouse gas (GHG) and increased carbon sequestration. In an exchange on October 23, 2025, the Bank Team noted that 34,806 people directly benefitted from safety measures taken at the eight dam sites. However, the benefits were not quantified.

The financial analysis examined eight crops that were promoted in the irrigation schemes – beans, cabbage, Irish potato, maize, onion, soybean, tomato, and wheat. The results showed an additional gross margin per household of US$2,340 per annum.

The analysis estimated a Net Present Value (NPV) of US$118.39 million, at 6 percent over 25 years, and an Economic Rate of Return (ERR) of 18.9 percent. Including environmental benefits, the NPV and ERR increase to US$128.2 million and 20.2 percent (ICR, para 55). Sensitivity analysis showed that the estimates were robust. The ICR notes that the ex-post ERR of 18.9 percent is slightly lower than the ex-ante ERR of 21 percent that was prepared in 2011, due to significant implementation delays.

Administrative efficiency

The project was delayed by 72 months for several reasons.

- Since there were no feasibility studies or designs in place, the procurement of feasibility and design studies, environmental and social plans, and contracting took longer than expected.
- The resettlement of families delayed the start of construction. The late release of counterpart funding delayed the implementation of the Resettlement Action Plan (RAP). As a result, physical work did not begin until five years after the project was approved.
- Frequent turnover of staff in key positions, especially that of the procurement specialist, also hampered the project implementation.
- Disagreements, including over the content of the MTR Aide-memoire, between the GRZ and the World Bank team, and the delay in the Government providing a satisfactory action plan to improve performance, caused delays in restructuring.
- The inclusion of remedial work on dams built during a previous project and the challenges in carrying out that work distracted from the project's core activities.

Countrywide loadshedding due to drought in 2024 affected the operation of irrigation pumps. The project had to rely on diesel-powered generators to compensate, which increased the operation costs.

Since the estimated costs per irrigated hectare were based on limited experience with such projects in Zambia, the actual costs were nearly double the estimate. However, the average cost of US$11,000 per hectare was comparable to similar investments in Sub-Sahara Africa (ICR, para 56).

The estimated returns, which included the benefits from building roads and drinking water provision, were lower than initially projected but exceeded the cost of capital, and irrigated area was established at comparable costs despite a six-year delay. Not all the irrigated areas developed were cultivated, but in an exchange on October 26, 2025, the Bank team noted that an additional 1,109 ha had been brought under cultivation. Cost escalations occurred partly due to insufficient preparation and the share of administrative costs also increased due to delays. The delayed project tied up capital and postponed benefit realization, potentially reducing its overall development impact.

Considering these factors – the delays, the need for additional financing, and lower than projected returns – the efficiency is rated Modest.

Efficiency Rating

Modest

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	✓	21.00	0 ☐ Not Applicable
ICR Estimate	✓	18.90	0 ☐ Not Applicable

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

6. Outcome

Since the PDO and its achievement indicators were changed during the first restructuring, the outcome rating is calculated by a split analysis of the outcome using both the original PDO before restructuring and the revised PDO after restructuring. The outcome before restructuring was only modest, but it improved to satisfactory after restructuring. The average outcome rating for the project, weighted by the share of funds disbursed during both phases, is Moderately Unsatisfactory. The details are as follows.

	With original PDO	With revised PDO
Relevance of PDO	High	
efficacy	Modest	Substantial
Efficiency	Modest	
Outcome	Moderately Unsatisfactory	Moderately Satisfactory
Numerical outcome value	3	4
Disbursement (US$ million)/Share (%)	80.4 (0.59)	55.40 (0.41)
Weighted outcome value	1.77	1.64
Combined outcome rating	Moderately Unsatisfactory (1.77+1.64=3.41, rounded to 3.0)	

a. Outcome Rating

Moderately Unsatisfactory

7. Risk to Development Outcome

Irrigated agriculture and productivity: Whether farmers will be sufficiently supported with extension services and access to inputs to utilize the irrigation facilities, maintain their increased yields, and further improve yields in areas targeted for irrigation development during the second half of the project remains a significant risk to development outcomes.

Value chain development: Irrigation development has created a significant production base. Whether marketing systems and connections with markets will be developed to offer incentives to producers poses another risk, without the support to smallholders for engaging with off-takers and accessing value chains.

Management of irrigation infrastructure: Whether the Special Purpose Vehicle being established to own the irrigation assets and serve as the contracting authority for scheme operators will be effective in managing the infrastructure remains a risk.

Irrigation scheme viability: Whether the irrigation systems, especially those of Tier 3 farmers, will make timely payments for water and land poses a risk to the viability of the systems and development outcome.

Maintenance and safety of rehabilitated dams: The long-term operation, surveillance, and maintenance of the dams after rehabilitation remain a significant concern, even though the project prepared Emergency Preparedness Plans (EPPs), an operation and maintenance plan, and established dam committees for all supported dams. However, the Ministry of Water Development and Sanitation (MWDS) needs to establish the necessary institutions, provide resources, and build the required capacity.

8. Assessment of Bank Performance

a. Quality-at-Entry

The project was designed to meet the country's strategic objective of increasing agricultural productivity and commercialization to contribute more to the overall economy. The project components, which included the building of infrastructure for bulk water supply, building capacity and facilitating partnerships that created small to medium irrigation systems, supporting farmers and cooperatives to make the needed investments, along with developing suitable policies, could be expected to achieve the objective.

The design was based on lessons from past investments in irrigation in Zambia and other locations. Some lessons included: commercial production can be viable across various farm sizes if good management is achieved; overhead irrigation is better due to topographical factors, and smallholders and commercial operators can work together through mutually beneficial productive arrangements.

The implementation plans relied heavily on contracting with private entities. The Ministry of Agriculture and Cooperatives (MOCO) was assigned the overall responsibility to implement these plans through partnership agreements with qualified firms capable of designing, constructing, and maintaining irrigation systems. Each site, whose feasibility is assessed by a consulting firm, would be built and operated by a concessionaire. Bulk water assets would be owned by a special-purpose vehicle, which would serve as an interface between MOCO and the concessionaire. A farming company would operate tier 3 farms and provide services for smaller Tier 1 and 2 farms. A transaction advisor will support MACO in establishing partnership agreements for each site. A community mobilization and capacity-building service provider would mobilize and train the beneficiaries.

The overall risk was assessed as high. To combat systematic corruption, the project depended on contracts with private companies for most of the implementation, expecting that this would enhance transparency if the contract details could be made public. The project also recognized that there was a considerable risk private operators might not be interested in the proposed opportunities.

The M&E framework was adequate for tracking project activities and assessing outcomes, although some indicators could have been more clearly defined.

However, the project was initiated without conducting feasibility studies or creating detailed designs, even after four years of preparation. This led to significant delays because the components had to be procured through contractual agreements. The cost estimates were unreliable, resulting in substantial cost overruns that limited the scope of work completed by the project. The expected private investment in Tier 3 models, which was supposed to provide services to Tier 1 and 2 systems, did not materialize, necessitating revisions during restructuring (ICR, para 74).

The design was appropriate and included the right components to meet the country's objectives, but due to the project's lack of preparedness and resulting delays, the quality at entry is rated moderately satisfactory.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

Over the 13.5 years of implementation, 24 supervision or technical missions were carried out, along with ongoing support through continuous dialogue with the PIU and the Ministry of Agriculture (ICR, para 81).

The team organized multiple restructurings and obtained additional financing for the project to fulfill the country's requirements, while negotiating commitments and adjustments necessary to ensure the project's completion.

Task team leaders stationed in Zambia for the past five years have ensured close collaboration with the counterpart team, along with frequent field visits, missions, and continuous follow-up over the last 18 months, which has enabled the project to achieve its goals.

Overall: Due to effective interventions—such as restructuring and negotiations with the government—to address deficiencies caused by inadequate entry preparation, the overall bank performance is rated Moderately Satisfactory.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The M&E framework was sufficient to monitor progress and evaluate outcomes. The PDO indicators properly tracked the achievement of the objective and were measurable, but one of them ('value of diverse commodities marketed') could have benefited from a clearer definition.

Ten intermediate results indicators were introduced. Eight of them were output indicators, such as the area provided with irrigation and drainage services or technologies demonstrated. The rest indicated intermediate results like gross margins from agriculture and livestock production.

The PIU was responsible for overall M&E. For each irrigation development site, the project's M&E system included: baseline data, impact evaluations, an annual user satisfaction survey, performance indicators monitored by the concessionaire, ad-hoc surveys, and participatory assessments.

b. M&E Implementation

The RF was amended twice to accommodate changes in the PDO and activities. The original PDO indicators and several intermediate result indicators were eliminated. Three PDO-level indicators measured the outcome of the revised PDO. One of them, the number of farmers reached with assets and services, lacked a clear connection to the PDO. The indicators were supplemented by nine intermediate-level indicators, eight of which measured outputs such as rehabilitated kilometers of road. Only one indicator on beneficiary satisfaction represented an intermediate outcome.

The PIU conducted regular field visits to verify data and ensure compliance with the M&E framework. The use of modern tools and technologies, such as Kobo Toolbox and mobile data collection applications, improved the efficiency and accuracy of data collection (ICR, para 86).

c. M&E Utilization

The M&E data were used extensively to inform project management and decision-making (ICR, para 87).

They were used to make necessary adjustments in the project. For example, M&E findings highlighted the need for additional capacity building and changes to irrigation infrastructure design to better meet the needs of beneficiaries.

Summary: The results framework was sufficient for assessing outcomes despite some unclear indicator definitions, with necessary modifications made during restructuring and successful implementation as intended.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was classified as an environmental risk Category A (Full Assessment) with significant adverse environmental and social impacts, activating a total of eight safeguard policies: OP/BP 4.01 (Environmental Assessment); OP/BP 4.04 (Natural Habitats); OP/BP 4.09 (Pest Management); OP/BP 4.12 (Involuntary Resettlement); OP/BP 4.36 (Forests); OP/BP 4.37 (Safety of Dams); OP/BP 11.03 (Cultural Property); and OP/BP 7.50 (Projects in International Waterways).

Since it was recognized that fully assessing potential impacts before reaching agreements with communities on the specific boundaries and scope of the irrigation development was difficult, an Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF) were prepared and disclosed in the country and on the World Bank's website in August 2010.

The project conducted environmental and social screenings and prepared specific studies based on the ESMF and RPF. All IDSP sub-projects, including those of the ISF, underwent EIAs. The EIAs and RAPs were prepared and approved for implementation by both the World Bank and the GRZ through the Zambia Environmental Management Agency (ZEMA). The IDSP Safeguard team also ensured that additional safeguard instruments were created as needed. Notable instruments included the Contractor's Environmental and Social Management Plan (ESMP), Integrated Pest Management Plan, Accidents and Incident Reports, Blasting Management Plan, Restoration Plan, EPPS, and Grievance Redress Mechanism (GRM).

The dam safety remediation efforts involved raising embankments, installing drainage systems, and building spillways to control water flow and prevent overtopping. These actions were essential to reduce risks linked to dam failures, such as flooding and structural collapse, which could have severe impacts on both human lives and agricultural output.

Stakeholders were consulted throughout the project cycle. An independent consultant was contracted one year after the project became effective to develop Stakeholder Engagement Plans that helped the project identify the concerns and issues of the participants, as well as how they could be addressed. It took more than three years to convince the local communities of the social and economic benefits of the project and the need for involuntary relocation.

A total of 388 Project Affected Households (PAH) were relocated, 1,308 received cash compensation either directly into their accounts or through CLT's accounts, and communal properties were constructed for them. The GRM remains operational with a total of

The project was classified as an environmental risk Category A (Full Assessment) with significant adverse environmental and social impacts, activating a total of eight safeguard policies: OP/BP 4.01 (Environmental Assessment); OP/BP 4.04 (Natural Habitats); OP/BP 4.09 (Pest Management); OP/BP 4.12 (Involuntary Resettlement); OP/BP 4.36 (Forests); OP/BP 4.37 (Safety of Dams); OP/BP 11.03 (Cultural Property); and OP/BP 7.50 (Projects in International Waterways).

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All mitigations and corrective actions were implemented, and compensation payments were included, except for the one pending dispute. However, due to delays in compensation and frequent complaints and/or ongoing land disputes, the project's environmental and social rating was almost continuously rated Moderately Unsatisfactory until the project's closure (ICR, para 92).

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b. Fiduciary Compliance

Procurement

Procurement was rated between Moderately Unsatisfactory and Moderately Satisfactory, mainly because of high turnover in the procurement specialist position, which delayed procurement processes. All processes were managed by the Department of Agriculture Director, restricting access to the Ministerial Procurement Committee, leading to delays and hindering priority actions. Capacity limitations also caused inconsistent updates to the Systematic Tracking of Exchanges in Procurement (STEP). Despite these challenges, construction firms successfully completed all dam contracts and the irrigation schemes developed under the project. The project procurement rating was upgraded to Moderately Satisfactory in January 2024.

Financial management (FM)

FM was rated Moderately Satisfactory for nearly the entire project. However, the rating was downgraded to Moderately Unsatisfactory at times, notably in 2013 after delays in submitting the first external audit report for fiscal year 2012, and in 2022-2023 due to delays and errors in interim financial reports. The rating was considered satisfactory in 2018-2019. During implementation, especially in the first half of the project, bureaucratic bottlenecks delayed the transfer of funds from the account at the Bank of Zambia to the project's account. The bank team in a communication on September 8, 2025 added that the usual periodic and required external audits were conducted throughout the project's duration.

c. Unintended impacts (Positive or Negative)

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d. Other

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11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Unsatisfactory	The original rating pre-restructuring was rated as MU and post restructuring MS. A split evaluation results in MU rating.
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	
Quality of M&E	Modest	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

Failing to properly prepare for projects—by conducting feasibility studies, creating designs, estimating costs, and engaging with stakeholders likely to be affected—can cause delays,

cost overruns, significant restructuring, and compromise of objectives (ICR, para 100). Inadequate preparation for the Irrigation Development and Support Project delayed the start of dam construction by nearly five years. It forced the project to be downgraded to focus on supplying irrigation rather than increasing yields and revenues of farmers.

Relying on borrower contributions for critical project actions can increase the risk of delays unless steps are taken to ensure the timely availability of funds (ICR, para 101). The Irrigation Development and Support Project experienced significant delays because the government of Zambia did not release the necessary counterpart funds to implement Resettlement Action Plans before civil works could start.

Including additional activities after design may improve the outcomes, but failing to examine the implications of doing so can threaten the original goals (ICR, para 104). Although it was crucial for protecting communities, including the implementation of safety measures on previously constructed dams in the Irrigation Development and Support Project, greatly shifted the project's focus and efforts.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The report offers a comprehensive review that provides a clear understanding of the complexities of this project, which was delayed for six years. It uses information generated by the M&E and internal reports. The authors take a reasonable approach to assessing the outcomes and linking the outputs to the outcomes. The writing is clear, and the report identifies relevant lessons from the project experience.

The report could have been more outcome-oriented to say more about how the outcomes mattered to the community, perhaps drawing more from the Post Assessment Impact Survey (PAIS).

Overall, the Quality of ICR is Substantial.

a. Quality of ICR Rating

Substantial