



1. Project Data

Project ID P164326	Project Name GN - Integrated Agricultural Development	
Country Guinea	Practice Area(Lead) Agriculture and Food	
L/C/TF Number(s) IDA-62570	Closing Date (Original) 19-Jun-2023	Total Project Cost (USD) 35,454,279.56
Bank Approval Date 09-Jul-2018	Closing Date (Actual) 19-Jun-2023	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	40,000,000.00	0.00
Revised Commitment	36,999,973.96	0.00
Actual	35,454,279.56	0.00

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2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) of the Integrated Agricultural Development Project (PDAIG) as articulated in the Financing Agreement (FA, page 5) was identical to the one stated in the Project Appraisal Document and aimed to:

"Increase agricultural productivity and market access for producers and agricultural small and medium enterprises (SMEs) in selected value chains in project areas."



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

1. To increase agricultural productivity for producers in selected value chains in project areas.
2. To increase market access for producers and agricultural small and medium enterprises (SMEs) in selected value chains in project areas.

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

No

c. Will a split evaluation be undertaken?

No

d. Components

The PDO was supported by the following four components:

1. Increasing agricultural productivity (appraisal cost: US\$20.37 million; actual cost: US\$16.08 million). This component aimed to increase productivity of the selected value chains (rice, maize, potato, eggs, and fish) in the project area through climate-smart intensification of selected production systems focusing on enhancing water management and facilitating access to improved technologies and innovation. This component was comprised two subcomponents:

1.1. Improving water management. This included: (a) rehabilitation and/or development of small-scale irrigation schemes totaling about 3,000 ha; (b) adoption of simple, efficient, and labor-saving water management technologies to modernize production systems; and (c) creation or strengthening of water user's associations.

1.2. Increasing access to technology, innovation, and advisory services. This included: (a) multiplication of certified seed by cooperatives or firms to increase its availability and lower its cost to farmers; (b) technical assistance, training, and equipment for public and private advisory services to strengthen technology transfer systems; and (c) development of an e-extension platform, using digital solutions and applications to modernize advisory services and extend their reach.

2. Increasing market access (appraisal cost: US\$12.66 million; actual cost: US\$8.01 million). This component aimed to help producers, small-scale processors, and their organizations to increase the production and commercialization of marketable surplus for the targeted agricultural value chains (rice, maize, potato, egg, and fish) in the project area. This component was composed of three subcomponents:

2.1. Strengthening producer organizations. This included: (a) establishing and/or strengthening professional and interprofessional entities; (b) organizing and funding knowledge-sharing events, activities, and tools; and (c) rehabilitating and/or building small, community-managed infrastructure for market access.

2.2. Promoting business development services. This included: promoting business development plans for individuals, producer groups, small processors, agribusiness SMEs for activities such as agricultural intensification, mechanization, small-scale processing, efficiency improvements, marketing, and storage



investments. Women entrepreneurs and women-led producer organizations would be encouraged to participate through a targeted information campaign.

2.3. Financing productive investment projects. This included co-financing and implementation support for competitively selected investment initiatives of producers, small processors, and marketers. The project would co-finance microprojects costing up to US\$5,000 for individuals and US\$10,000 for groups, and SME sub-projects ranging from US\$10,000 to US\$50,000 for groups of investors and agricultural SMEs.

3. Strengthening institutional capacity (appraisal cost: US\$5.20 million; actual cost: US\$10.06 million). This component aimed to strengthen institutional capacity, focusing particularly on agricultural statistics and planning for a rapid response in the case of severe crises and emergencies. This component was composed of two sub-components:

3.1. Strengthening the public agricultural statistics system. This included: (a) developing and testing the methodology; (b) collecting, entering, processing, and analyzing the data; and (c) preparing and disseminating reports.

3.2. Contingency Emergency Response. This was designed to create a financing mechanism within the project for emergency demands arising from natural disasters and other shocks with a zero-dollar provision.

4. Project coordination and implementation (appraisal cost: US\$4.33 million; actual cost: US\$5.46 million). This component would finance the following activities: (i) expenses incurred in implementing the project through the Project Coordination and Implementation Unit (PCIU) as well as the participating implementing agencies and various service providers; (ii) technical assistance provided through consultancies, audits, and training to enhance implementation capacity of the PCIU; (iii) communication, knowledge production and sharing, and outreach activities; (iv) monitoring and evaluation of project outcomes and impacts; (v) citizen engagement; (vi) oversight of social and environmental safeguard policies; and (vii) institutional strengthening to ensure sustainability of the project's results.

Revised Components. The structure of the components was not changed, but with the potential fall-out from the prolonged disruptions triggered by the COVID-19 pandemic, US\$4.0 million was reallocated from other activities to the CERC sub-component (as part of the first restructuring see below) for: (i) providing improved inputs to producers and vulnerable households to forestall a sharp decline in their productivity and livelihoods; (ii) establishing a food security platform, including a mobile platform within the National Agency for Agricultural Statistics to monitor stocks and prices of agri-food products and the impact of COVID-19 on food and nutritional security and on agriculture as a whole; (iii) supporting SMEs in collaboration with the International Finance Corporation (IFC) and the Investment Promotion Agency through an online competition of innovative subprojects with a positive impact on agriculture and agribusiness; and (iv) supporting cooperatives and SMEs operating in production, processing, marketing, logistics areas, providing matching grants through online applications to facilitate the supply of food to consumption centers and to promote innovative ventures.

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



Project Cost. The total project cost was estimated at US\$42.56 million. This amount was revised down to US\$36.99 million. The actual cost according to the ICR (Data sheet, page 2) was US\$39.61 million.

Financing. The project was financed through an Investment Project Financing (IPF) in the amount of US\$40.00 million from IDA. The actual amount disbursed was US\$35.45 million or 88.6% of the appraisal amount (ICR, Data sheet, page 2). The ICR (paragraph 11) reported that US\$3.00 million of the project funds were cancelled due to the cancellation of some irrigation contracts that were performing poorly (see below).

Borrower Contribution. The Borrower was expected to contribute US\$1.10 million from the Government of Guinea and US\$1.50 million from the project beneficiaries. The actual amounts of counterpart funds contributed were US\$2.50 million and US\$1.66 million of counterpart funds from the Government and the beneficiaries, respectively.

Dates. The project was approved on July 9, 2018 and became effective eight months later on March 8, 2019. The Mid-Term Review (MTR) was conducted on May 24, 2021, about three years after effectiveness. The MTR date was timely conducted and in line with the suggested date in the PAD (paragraph 63) "a Mid-Term Review will be conducted no later than June 30, 2021." The project closed on June 19, 2023, which was the original expected closing date at appraisal. The project was restructured twice, both level 2, as follows:

1. On February 20, 2021, when the amount disbursed was US\$17.00 million, in order to reallocate funds between disbursement categories. Reallocations into the CERC were done to mitigate the impact of COVID-19 on agriculture (ICR, paragraph 16).
2. On June 14, 2023, when the amount disbursed was US\$34.13 million, in order to reallocate funds between disbursement categories and cancel US\$3.00 million, since irrigation development contracts were terminated because of poor performance, and there was not sufficient time in the project for a fresh tender (ICR, paragraph 11).

3. Relevance of Objectives

Rationale

Context at Appraisal. At the time of the project's appraisal in 2018, Guinea's poor economic diversification and very low agricultural productivity were major impediments to poverty reduction. Agriculture employed approximately 52% of the active population and provided income for 57% of rural households, where women play a central role. However, the agriculture sector had constantly been characterized by very low productivity, making the poor struggle to meet their food security needs, limiting their ability to grow their income. Constraints to agricultural productivity included low use of improved seed and fertilizer, poor market access, limited access to finance, and negligible value addition, among others. This project would enhance agricultural productivity, access to markets, and improve food and nutrition security through supporting the rice, maize, potato, eggs, and fish value chains. The project would also contribute to rural poverty reduction.



Previous Bank Experience. The World Bank Group (WBG) had accumulated relevant experience from the Bank-financed West Africa Agricultural Productivity Program (WAAPP, P122065) which closed on 31-Dec-2019. Also, the Bank benefited from the experience of other projects including: the Guinea Agricultural Support Project (P148114), the Senegal River Basin Multi-Purpose Water Resources Development Project (P131323), and the Niger River Basin Water Resources Development Program in Guinea (P093806). Overall, the Bank had a solid experience in designing and implementing agricultural projects similar to PDAIG.

Consistency with Bank Strategies. At appraisal, the PDO was in line with WBG-Guinea Country Partnership Framework (CPF, FY2018-FY2023). The project supported the third focus area of the CPF related to increasing agricultural productivity and economic growth. The project also contributed to three CPF cross-cutting themes: women's empowerment, economic diversification and resilience. Further, the project was expected to contribute to the achievement of the WBG's twin goals of ending extreme poverty and boosting shared prosperity, as well as the realization of the Sustainable Development Goals (SDGs) of no poverty and zero hunger by 2030.

At completion, the PDO continued to be in line with WBG-Guinea Country Partnership Framework (CPF, FY2018-FY2023) which focused on greater economic diversification and higher agricultural productivity. The continued relevance of the PDO was emphasized further through the approved IDA-financed Guinea Commercial Agriculture Development Project (P164184, approved by the Board on 22-Sep-2020 and closing on 31-Jan-2026) which, among other things seeks to incentive farmers to invest in productivity and fosters connectivity to markets.

Consistency with Government Strategies/Priorities. At appraisal, the PDO was in line with Government's agricultural development agenda as defined in the National Economic and Social Development Plan (PNDES). The project would contribute to PNDES objectives of reducing the incidence of poverty (from 55% in 2012 to 45% by 2020) and accelerate growth of the private sector by focusing on increasing agricultural productivity and strengthening value chains. The project also supports Guinea's gender policy (Politique National Genre -2011) by increasing women's access to productive resources and income-earning opportunities.

At completion, the PDO continued to be in line with the National Agricultural and Food Security and Nutrition Investment Plan (PNIASAN, 2018–2025) which was supported by the African Union and Economic Community of West African States. PNIASAN emphasized themes of boosting productivity of staple crops, improving access to markets, and promoting women and youth in agriculture. The PDO was also in line consistent with the Economic Recovery Plan (Plan de Relance Économique, or PRE) adopted by the current transition government. The PRE focused on improving productivity, diversifying exports, and improving living standards.

Summary of Relevance of Objectives Assessment. While the PDO statement was pitched at an adequate level of ambition, it could have benefited from better formulation to improve clarity. For example, improving productivity (i.e. crop yields) was mainly for producers or farmers in the project area, while improving market access was for producers (farmers) and small and medium SMEs. However, the formulation of the PDO statement bundled everything together, which did not accurately reflect the project ToC. At completion, the PDO continued to be in line with the Bank strategies and the Government strategies/priorities. Therefore, Relevance of Objectives is rated High.



Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To increase agricultural productivity for producers in selected value chains in project areas.

Rationale

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

1. Develop small scale irrigation systems to reduce dependence on rainfall and increase cropping intensity, and strengthen water user associations (WUAs) to establish a more sustainable infrastructure. The expected outputs included: increasing the irrigated area and strengthening WUAs with more involvement of women and youth. The expected outcomes were better water control and irrigation management and better maintenance of infrastructure by WUAs.
2. Support the diffusion of climate smart agriculture (CSA) technologies and technology innovations which would improve crop management and reduce post-harvest losses, support the multiplication of improved seeds which would improve productivity, and strengthen extension services to better support farmers. The expected outputs included an increase in the area covered with climate smart agriculture and technology innovations, number of men and women benefitting from CSA and technology innovation, improved seed produced, extension agents trained, and application of e-extension through digitization. The expected outcomes were better access to improved technologies and CSA by men and women, increased used of improved seeds, and more men and women accessing advisory services.

All these activities combined were expected to contribute to increasing agricultural productivity for producers in selected value chains in project areas. Anticipated long-term impacts included: improved resilience to climate change, improved food security with improved productivity which would also result in more marketable produce, development of sound commercial agriculture, all of which would result in more income for producers and other operators in the targeted value chains, job creation and less poverty.

The ToC reflected relevant activities that were directly connected to the outputs, and outcomes in a plausible causal chain. However, the ToC in the both the PAD and the ICR lacked the critical assumptions that underpinned the achievement of the PDO. In a further communication with IEG, the project team explained that the critical assumptions could include: (i) sufficient implementation capacity given the country's low-capacity environment; (ii) adequate political stability given the country's high fragility; and (iii) continued Government commitment to improve food and nutrition security.

Outputs/Intermediate Results

- 1,352 ha of irrigated land were provided with new/improved irrigation or drainage services which was below the original target of 3,000 ha (target was modestly achieved). The rehabilitation significantly



increased the utilization of the 1,352 ha from 40% before the rehabilitation, to 100% after the rehabilitation. Also, cropping intensity increased significantly, allowing two annual harvests for rice and up to three harvests for potatoes.

- 23 operational water user's associations created and/or strengthened which was below the original target of 50 (target was modestly achieved).
- 47,470 ha of land area were under improved technologies diffused by the project substantially achieving the original target of 50,000 (target substantially achieved).
- 96,875 producers, including 41,370 women, were users of improved technologies diffused by the project which substantially achieved the original target of 100,000 and exceeded the women target of 40,000.
- 1,425 agricultural technicians were trained under the project significantly exceeding the original target of 1000.

Notable results not reflected directly as part of the RF:

- 150 farmer field schools (FFS) for rice, maize, and potatoes, were set up which made it possible to directly reach nearly 4,000 producers and disseminate innovations, good practices, and improved varieties in the intervention area (ICR, paragraph 19).
- The project upgraded the e-Voucher system which was used in targeting input distribution among the most vulnerable thus enhancing their yields.
- The project supported the distribution of 3,500 tons of fertilizers (NPK and Urea), 60,000 liters of phytosanitary products, distributed improved potato seeds to 5,750 beneficiaries significantly exceeding the 3,000 farmers projected at appraisal, and promoted good poultry rearing practices.
- 150 water bodies were developed for at least 11,460 beneficiaries (42% of whom were women) against an appraisal projection of 1,000 beneficiaries.
- Mitigating the impact of COVID-19 under the CERC. The project acquired and distributed kits for rice, maize, vegetables, poultry, and aquaculture production to nearly 40,000 vulnerable households to sustain/increase agricultural productivity that was being threatened by the pandemic-related disruptions. Also, 3,100 tons of maize and rice seeds and fertilizers were distributed to vulnerable households. In addition, 112 sub-projects were financed through grants ranging between US\$5,000 to US\$20,000 with technical assistance support (ICR, paragraph 20).

Outcomes

- By project completion, the overall aggregate increase in productivity of targeted value chains achieved by project direct beneficiaries reached 22%, which slightly exceeded the end target of 20% (PDO Outcome indicator 1). Specifically, rice yield increased by 30% (target fully achieved), potato yield increased by 18% which was slightly below the end target of 20%, maize yield increased by 30% exceeding the end target of 20%, egg production increased by 17% which was below the end target of 20%, and fish production increased by 25% which exceeded the end target of 20%. However, these results lacked a control group for comparison and attribution. In total, 149,000 farmers (including 58,924 women and 45,645 youth) were reached with agricultural assets or services substantially achieving the overall target of 150,000 and women target of 60,000 and slightly exceeding the youth target of 45,000.
- However, the project achieved only 45% of the target for the area provided with new/improved irrigation or drainage services. This shortcoming was attributed to poor quality of contractors, COVID-



19 restrictions and disbursement suspension of IDA funds under OP 7.30 following the political events of September 2021 (ICR, paragraph 19).

Summary of Efficacy Assessment. The project contributed to productivity increases mainly through improved access to inputs, farmer training, and to a lesser extent access to irrigation. For the targeted value chains, the project achieved its target increase for rice and exceeded the target for maize and fish. However, the project slightly fell short on achieving its target on potatoes and poultry. The shortcoming in potato was attributed to using varieties susceptible to downy mildew, while the outbreak of avian influenza combined with the delayed start-up of matching grant funding negatively impacted poultry. While the ICR (footnote #5) explained that irrigation beneficiaries were estimated at 5,000 out of 150,000 project beneficiaries, the cancellation of 55% of the irrigation rehabilitation activity was expected to negatively impact productivity. Specifically, since irrigated agricultural areas usually result in higher and more stable agricultural productivity than rainfed agricultural areas. Furthermore, the absence of a clear comparison to a control group makes assessing attribution difficult. That said, in a further communication with IEG in May 2024, the project team explained that Nationwide agricultural census data (that was not officially published at the time of the ICRR) allowed “similar region” comparisons. The data on the yields for rice, maize, and potatoes showed an average increase of 7% in the non-project areas (which was close to the baseline), versus a 26% accomplished among project beneficiaries at project closing. Also, there were clear cases where “before-and-after the project” comparisons were adequate for attribution (e.g., inexistence of a fishpond before the project versus the presence of a newly established, project financed alternative). Based on the the new data provided by the project team, IEG finds evidence that supports the “before-and-after” comparison, and it is plausible to assume that the increments in yields in the project areas were attributable to the project activities.

Even though the project achieved the yield targets, it was over less than half the irrigated land. Only, 1,352 ha of irrigated land were provided with new/improved irrigation or drainage services which was below the original target of 3,000 ha/ Therefore and based on the reported achievements and the team's communication, the efficacy of achieving this objective is rated Substantial with moderate shortcomings.

Rating

Substantial

OBJECTIVE 2

Objective

To increase market access for producers and agricultural small and medium enterprises (SMEs) in selected value chains in project areas.

Rationale

Theory of Change (ToC). To achieve the stated objective the project supported strengthening the Producer Organizations (POs), provided business development services, and financed productive investment sub-projects. However, financing community type infrastructure did not materialize. The expected outputs included: preparation of business plans for POs and SMEs, projects financed for SMEs, men, women and youth, and two matching grants windows set: micro-projects and SMEs. The expected outcomes were: establishing producers-buyers relationships, POs and SMEs employing business skills, and better access to



finance. This was expected to result in better access to markets, more sales, more profit to SMEs and POs, producers and SMEs become business oriented, and more investment flows into the sector.

The ToC reflected relevant activities that were directly connected to the outputs, and outcomes in a plausible causal chain. However, the ToC in the both the PAD and the ICR lacked the critical assumptions that underpinned the achievement of the PDO.

Outputs/Intermediate Results

- 566 micro-projects were financed with matching grants which was below the end target of 900 (target not achieved). The lower-than-expected achievement rate of 62.8% was according to the ICR due to: "(i) the belated operationalization of the matching grants mechanism; (ii) COVID19-related disruptions; and (iii) a six-month disbursement suspension by IDA."
- 62 sub-projects were financed through the matching grants for Small and Medium Enterprises (SMEs) exceeding the target of 50 (target exceeded).
- 2,045 (including: 680 women, 685 youths and 120 SME) producers, agri-entrepreneurs and SMEs were trained slightly exceeding the overall target of 2,000, as well as the targets of 600 for each of women and youth, and 100 for SMEs. (targets slightly exceeded).
- An agricultural and livestock census was completed (target achieved).
- However, the envisaged community market infrastructure did not materialize. This was due to the late on-boarding of the Technical Assistance Firm, COVID19-related disruptions, and the disbursement suspension by IDA, the procurement process which required more time than what was left under the project.

Other notable project achievements not directly captured by the RF included:

- The project supported 101 cooperatives by structuring them according to the OHADA uniform act and training their members and elected officials on management and strategic business planning (ICR, paragraph 22).
- The project financed post-harvest equipment including 50 improved rice parboilers, 10 improved fish smokers with sheds, 20 rice hullers, 20 maize hullers and mills. This facilitated value addition and benefited 4,357 people including 2,885 women and 2,507 young people (ICR, paragraph 22). The quantity of rice hulled rapidly grew from 4.1 tons in 2020, to 5.8 tons in 2022, thus contributing to growth in sales within a higher value market segment. Also, the gross revenue of 5 smoking groups supported by the project between 2020 and 2022 was on a positive growth path with a 3% increase in 2021 and 6% increase in 2022 relative to the baseline in 2020.
- 6 collaboration contracts were signed between producer cooperatives and processor cooperatives, and 5 contracts between producer cooperatives and women trading cooperatives.
- The project supported an integrated maize sub-project which brought together 258 farmers to cultivate 1,531 ha. Under this sub-project, 7,000 tons of maize were produced of maize produced, and 2,400 tons were collected and marketed by FUPRONA as part of a revolving financing fund mechanism (ICR, paragraph 24).
- The project established the food security platform, including a mobile platform at the National Agency for Agricultural Statistics to monitor closely stocks and prices of agri-food products and monitor the effects of COVID-19 on food system.



Outcomes

- By project completion, the overall percentage increase in the volume of market sales for five project-supported products (rice, maize, potato, fish and eggs) reached 42% slightly exceeding the end target of 40% (PDO outcome indicator 3). Specifically, maize showed the highest increase at 52%, followed by rice at 45%, then fish at 42%, potatoes at 35%, and lastly came eggs at 34%.

Summary of Efficacy Assessment. The project contributed to increasing market access through strengthening and funding farmers' cooperatives/groups and SMEs, fostering market linkages, facilitating value addition to increase competitiveness of products, and aggregation for more efficient offtake of agricultural output by other value chain actors. While the project slightly exceeded its PDO outcome target (42% compared to 40%), it fell short on achieving its targets for two intermediate results indicators, namely, financing microprojects with an achievement rate of 62%, and establishing community market infrastructure which totally did not materialize. Therefore, and based on the above-mentioned results, the efficacy with which this Objective was achieved is rated Substantial with moderate shortcomings.

Rating

Substantial

OVERALL EFFICACY

Rationale

Overall Efficacy is rated Substantial with moderate shortcomings.

For Objective 1, while the overall aggregate increase in productivity of targeted value chains achieved by project direct beneficiaries reached 22%, which slightly exceeded the end target of 20%, potatoes and egg productivity increase fell short of their respective targets. Also, the project achieved only 45% of its target for irrigation rehabilitation. For Objective 2, while the overall percentage increase in the volume of market sales for five project-supported products (rice, maize, potato, fish and eggs) reached 42% slightly exceeding the end target of 40%, the project fell short on achieving its targets for two intermediate results indicators, namely, financing microprojects with an achievement rate of 62%, and establishing community market infrastructure which totally did not materialize. Further, the lack of a control group made it difficult to accurately assess the contribution of the project to the reported achievements. In a further communication with IEG in May 2024, the project team explained that there were cases where "before-and-after the project" comparisons were adequate for attribution (e.g., inexistence of a fishpond before the project versus the presence of a newly established, project financed alternative). However, crop yield increases required contemporaneous "with-and-without project" comparisons. Attempts to use non-project participants in the project areas suffered from project-contamination. Nationwide agricultural census data allowed "similar region" comparisons. The data hadn't been officially published at the time of the ICRR (it now is), but had shown that by the project's closing, yield for rice, maize, and potatoes had only increased by an average of 7% in the non-project areas (which was close to the baseline), versus 26% accomplished among project beneficiaries at project closing. Hence, the "before-and-after" comparison still demonstrated attribution.



Overall Efficacy Rating

Substantial

5. Efficiency

Economic and Financial Analysis (EFA)

ex-ante

- The overall Economic Internal Rate of Return (EIRR) was estimated at 31% and the Financial Internal Rate of Return (FIRR) was estimated at 23%. The estimates of financial and economic benefits were based on cash flows modeled over ten years. When carbon benefits were included, the EIRR was estimated at 51%. A discount rate of 6% was used and a project time horizon of 10 years, except for the GHG benefits where the considered time horizon was 20 years.
- The economic analysis focused on the estimated impact on the net income of producers and agricultural SMEs in each value chain and the growth of this net income arising from project activities. Indirect economic and financial impacts, as well as the net counterfactual, were accounted for by using a conservative multiplier of 1.25 on positive cash flows.
- The EFA estimated the impact on the net income of these beneficiary businesses based upon a base case for typical producers and agricultural SMEs in the value chains targeted by the project and in the project areas. For rice producers, a per hectare farm model was used to estimate project impact on net income in an estimated area of 3000 ha that were expected to be rehabilitated under the project.
- Sensitivity Analysis. The analysis showed that if there was 10% fewer beneficiary businesses, and 10% fewer hectares for rice over base case the EIRR would drop to 26% and the FIRR to 19%, while if there was a 20% lower margin for rice over the base case the EIRR would drop to 12% and the FIRR to 6%.
- Overall, the EFA in the PAD (Annex 2) was detailed with regards to benefits that resulted from improving productivity of targeted value chains. However, assessing the overall project benefits lacked details.

ex-post

- The EFA at completion estimated the EIRR at 41% and US\$37.4 million for ENPV, while the FIRR was estimated at 30% and US\$23.7 million for the FNPV. Both estimates exceeded the appraisal estimates at 31% for EIRR and 23% for FIRR.
- There were three main differences between the EFA at appraisal and at completion: first, the analysis at completion used probabilistic modelling to factor in uncertainties; second, the irrigated rice areas at completion contributed 22% of the total NPV compared to 42% at appraisal; and third, the analysis at completion accounted for the entirety of the project disbursement (US\$35 million), which included US\$13.59 million (38% of the disbursed amount) for components 3 (Strengthening institutional capacity) and component 4 (Project coordination and implementation). The ICR (Annex 4) stated that components 3 and 4 were both "supporting component 1 and 2 objectives in a transversal fashion."
- Sensitivity Analysis. Applying probabilistic modelling showed that only 1.2% of the tested scenarios yielded an EIRR below 25%; 89.3% of the computed IRR were in the 25% to 50% range, and 9.5% were exceptionally high and above 50%; and only 9.5% of scenarios came below 32%.



- Implementation efficiency. While the project experienced implementation delays, it closed on its expected closing date. The recruitment of the Technical Assistance Firm to assist the PCIU was significantly delayed and happened 21 months after its effectiveness. This resulted in significant delays in implementing activities under component 2. The project disbursed 87.33% of its original financing (the US\$ appreciated relative to the SDR and the GNF appreciated versus the US\$ which resulted in an overall shortfall of US\$3.0 million), and US\$3.0 million was cancelled after on-going irrigation development contracts were terminated. The cost of component 3 was 193% of the appraisal estimate due to the activation of the CERC. Also, component 4 (project management) came in slightly higher at 126% of its appraisal estimate.
- The analysis could have benefitted from shedding light on the economic/financial performance of the sub-projects under SMEs and micro-projects under producers.

Summary of Efficiency Assessment. The *ex-post* EIRR at 41% exceeded the EIRR at appraisal estimated at 31%. However, it was not clear whether the *ex-post* EIRR accounted also for carbon benefits (EIRR with carbon benefits was estimated at 51% at appraisal). Also, the analysis at completion accounted for the entirety of the project disbursement (US\$35 million) of which 38% went to components 3 and 4 (compared to 22% according to appraisal estimates). However, the analysis at completion did not account for any benefits from components 3 and 4. The project also experienced some implementation delays and disbursed about 87% of its appraisal financing amount with US\$3.0 million cancelled. The project experienced several areas of under-achievements, which would negatively impact the project benefit streams and cast doubt on the project efficiency. For example, the cancellation of 55% of the irrigation activity will negatively impact efficiency since irrigated farming is known to result in higher and more stable agricultural productivity than rainfed farming. Also, the micro-projects matching grants achieved 62% of the appraisal target, and the envisioned community market infrastructure did not materialize. Therefore, Efficiency is rated Modest due to the aforementioned under achievements and the significant increase in the cost of components 3 and 4 without a clear contribution to the estimated EIRR at completion.

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	✓	31.00	0 <input checked="" type="checkbox"/> Not Applicable
ICR Estimate	✓	41.00	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 High. Overall Efficacy was rated Substantial with moderate shortcomings. While the overall aggregate increase in productivity of targeted value chains achieved by project direct beneficiaries reached 22%, which slightly exceeded the end target of 20%, potatoes and egg productivity increase fell short of their respective targets. Also, the project achieved only 45% of its target for irrigation rehabilitation. Thus, the productivity increase was achieved over less than half the envisaged area. The overall percentage increase in the volume of market sales for five project-supported products (rice, maize, potato, fish and eggs) reached 42%, which slightly exceeded the end target of 40%, but the project fell short on achieving its targets for two intermediate results indicators, namely, financing micro-projects and establishing community market infrastructure, where the latter did not materialize. Efficiency was rated Modest. While the *ex-post* EIRR at 41% exceeded the EIRR at appraisal estimated at 31%, there were several under-achievements that could negatively impact the project benefit streams. This was combined with a significant increase in the cost of components 3 and 4 without a clear contribution to the estimated EIRR at completion.

Based on the assigned ratings for the three Outcome criteria, the project Outcome is rated Moderately Satisfactory due to moderate shortcomings pertaining to the operation's Efficacy and Efficiency.

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

The following risks could potentially impact the Development Outcome:

1. Institutional risk. This relates to continued access to improved inputs. While some farmers' organizations were trained to multiply improved seeds, domestic multiplication and distribution systems of improved seed are still not fully developed. Therefore, continued government support and monitoring will be required to maintain seed quality and supply, including promoting greater private sector involvement. Similarly, access to fertilizer is likely to remain problematic - given the current high prices of fertilizer, which is exacerbated by the supply disruptions due to Russia's invasion of Ukraine. While some farmers were trained in making compost, this is not sufficient to supply optimal soil nutrient requirements on a large scale. The government is actively working with the private sector and farmers' organizations such as the Federation of Unions of Maize Producers (FUPROMA) as well as farmers' cooperatives to address fertilizer constraints. Finally, fish fry replenishment for the aquaculture activity, producers will need continuous monitoring and support from the National Aquaculture Agency of Guinea.

2. Technical risk. This relates to the maintenance of the irrigation infrastructure. Water users' associations were established and trained in irrigation management, infrastructure maintenance, and collection of water fees. However, these associations will need to be continuously monitored by the National Directorate of Rural Engineering (DNRR) to assess their sustained efficacy and resolve any issues that might arise. Regarding fish, management committees were established for each fish farming site, and training provided in sustainable management of the water bodies and in fish farming techniques.



3. Environmental risk. This mainly relates to climate change and disease outbreaks. For climate change, while the project introduced several climate smart agricultural practices which will help farmers adapt to the increasing risks, the residual risk continues to be high. For disease outbreaks, the likelihood of an Avian Influenza outbreak remains high, and there will be a need for constant monitoring by the Government through its ongoing animal disease monitoring programs.

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 improve rural incomes, reduce the poverty rate, and improve food security.
- **Technical, financial and economic aspects.** The project featured a comprehensive design that addressed different bottle necks in the agriculture sector. The design included an irrigation sub-component to reduce dependence on rainfall and increase cropping intensity. This was complemented with activities aimed to boost productivity through supplying better inputs and improved crop management. Finally, design featured a marketing component to improve access to markets, which is a critical element for any project aiming to boost agricultural productivity. The project also coordinated closely with ongoing projects and programs to optimize development outcomes. The PAD included a detailed economic and financial analysis that reflected logical and realistic assumptions, but lacked enough details on the estimation of the overall project benefits.
- **Poverty, gender, and social development aspects.** The project contributed to poverty reduction through its emphasis on value chains that were most depended upon by the poor smallholder farmers for food security and nutrition. Females constituted 60,000 out of the total 150,000 beneficiaries. A number of RF indicators were disaggregated by gender to reflect women participation in the project activities.
- **Environmental and Fiduciary aspects.** Adequate social and environmental safeguards were put in place with all requisite disclosures made.
- **Implementation arrangements.** The Ministry of Agriculture was responsible for overall project implementation. The existing WAAPP Project Coordination and Implementation Unit (PCIU) in the Ministry of Agriculture oversaw the project preparation and was responsible for project implementation. Its staffing was strengthened to meet the specific needs of the project. A Technical Assistance Firm to assist the PCIU in project implementation, especially component 2, was expected to be recruited after effectiveness. However, this was delayed and only happened 21 months after effectiveness, which contributed to significant implementation delays.
- **Risk assessment.** Eight risk were identified at appraisal. One risk was rated High relating to institutional capacity for implementation and sustainability, four risks were rated Substantial, and three were rated Modest. While the identified risks had adequate mitigation measures, the technical and financial capacity of local SMEs to execute and supervise the envisaged irrigation schemes was not carefully assessed. A deeper assessment of the SMEs would have revealed their weaknesses and therefore informed mitigation measures.



- **M&E arrangements.** M&E arrangements were adequate. The RF reflected relevant indicators, and institutional arrangements and staffing to generate data for testing the Theory of Change were in place. While the PAD (paragraph 61) called for the collection of baseline data, there was no explicit reference to a control group.

Summary of Quality at Entry Assessment. The project was strategically relevant. Design featured a comprehensive approach that addressed irrigation concerns, productivity and access to markets. Environmental and fiduciary aspects were adequate, but delayed recruitment of the technical assistance firm impacted implementation readiness. While the identified risks had adequate mitigation measures, the risk related to technical and financial capacity of local SMEs was not carefully assessed. M&E arrangements were adequate. Overall, Quality at Entry is rated Moderately Satisfactory. There were moderate shortcomings related to risk identification, and the hiring of the technical assistance firm, which should have been ensured at the preparation stage because it was connected to multiple activities.

Quality-at-Entry Rating Moderately Satisfactory

b. Quality of supervision

- The project faced some implementation challenges including the COVID-19 restrictions that started early in 2020 and a six months suspension of disbursements that came on the heels of political events in September 2021.
- The project conducted ten supervision missions over the course of implementation with an average of two formal implementation support missions per year. The project implementation support team conducted virtual interactions during the COVID-19 restrictions. The skill mix of the project team matched with project activities.
- The project implementation benefited from the support provided by the Conakry World Bank Office staff through close interactions with government counterparts, which allowed solving implementation issues as they arose. Implementation also benefited from continuity of the Bank team as there was only one team leadership change and very limited changes in the task team members throughout the project's preparation and implementation.
- The Bank team was pro-active in addressing the project's critical issues. This was demonstrated in restructuring the project to realign resources to mitigate the impact of COVID-19, and devising alternative arrangements for filling the gaps in extension services and data collection when government reduced its field staff.
- However, the Bank team should have addressed the delay in recruitment of the Technical Assistance Firm earlier to avoid the unnecessary delays in the implementation of the related activities.

Summary of Quality of Supervision Assessment. The Bank team successfully guided the project towards a achieving its outcomes. The project team provided adequate support and was proactive to restructure the project to address critical issues. Overall, Bank Supervision is rated Satisfactory.



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

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

- The PAD included a Theory of Change (ToC) that was reiterated by the ICR. The ToC 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 three PDO outcome indicators: 1. Percent increase in yield of targeted products achieved by project direct beneficiaries (disaggregated by product: rice, maize, potato, egg, fish); 2. Number of farmers reached with agricultural assets or services, of which female (at least 40%) and youth (at least 30%); and 3. Percent increase in volume of market sales of targeted products achieved by project direct beneficiaries (disaggregated by product: rice, maize, potato, egg, fish). The first two outcome indicators measured objective 1 and the third measured objective 2. All three indicators were directly connected to their corresponding objectives, clear, measurable, specific, and reflected reasonable targets.
- The Results Framework (RF) included 13 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, strengthening institutional capacity was not fully captured.
- M&E design called for baseline surveys, continuous data collection to gauge progress, and end-of-project impact assessments to gauge performance and draw lessons. However, M&E design lacked a control group which is a critical element to accurately assess the attribution of results.
- Overall, M&E design included adequate indicators for gauging progress towards attaining the PDO and testing the Theory of Change.

b. M&E Implementation

- M&E data utilized a computerized M&E system (HIVE software package) to provide real-time data on the project's indicators and on its technical and financial aspects. All data collected was disaggregated by gender and age groups to adequately inform decision making on gender and the youth. According to the ICR (paragraph 49) M&E had implementation benefited from adequate staffing and funding.



- The baseline study, the mid-term evaluation and the final evaluation were carried out, as well as annual follow-up surveys of the results framework indicators.
- During implementation, the availability of some of the agricultural extension officers for primary data collection was affected by the reorganization taking place at the parent ministry. The project mitigated this through engaging grassroots farmers' organizations and the field staff of the Technical Assistance Firm that had been recruited to support the PCIU to ensure continuous data collection.
- Overall, M&E activities were successfully implemented as envisioned.

c. M&E Utilization

- The M&E system was used to guide project implementation. This was demonstrated through four key aspects: First, M&E data helped to continuously gauge the relevance and effectiveness of the farmer field schools, facilitating constant adapting and tailoring of program content; Second, M&E proved useful in gauging the performance of cooperatives, especially women and youth groups, and constantly recalibrating and offering targeted support according to the nature and level of needs; Third, M&E data on crop yields revealed which crop varieties were doing well (for example, potato varieties susceptible to downy mildew were substituted with more resistant varieties); and Fourth, M&E guided the maize initiative to achieve significant yield improvements through a combination of inputs and capacity building.
- The National Confederation of Civil Society Organizations of Guinea (CNOSC) as well as the media kept the public informed about the project's implementation status and accomplishments.

Summary of M&E Quality Assessment. M&E design reflected adequate indicators for gauging progress towards attaining the PDO and testing the Theory of Change. While M&E implementation faced some challenges, it was successfully implemented with enough data generated to assess the project outcomes. Finally, M&E utilization was evident as noted above in guiding implementation and managing the project activities. Therefore, the Quality of M&E is rated Substantial.

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 potential environmental and social adverse impacts and risks of the project were expected to be moderate and mostly site specific, with no significant or long-term negative impacts. Four environmental and one social safeguard policies were triggered: Environmental Assessment (OP/BP 4.01), Pest Management (OP/BP 4.09), Physical Cultural Resources (OP/BP 4.11), Projects on International Waterways (OP/BP 7.50), and Involuntary Resettlement (OP/BP 4.12). Environmental and Social Management Plans



(ESMPs) and the Pest Management Plans (PMPs) were prepared. A Resettlement Policy Framework (RPF) and a Resettlement Action Plan (RAP) were also prepared.

- **Compliance with Environmental and Social Safeguards.** The ICR (paragraphs 53 & 54) reported that "the project complied with environmental management safeguards" and "complied with social safeguards." While the project triggered Physical Cultural Resources (OP/BP 4.11), there were no cases of physical cultural resources involved in the project. Environmental screening and social assessments were carried out at the level of all subprojects financed by the project in line with the World Bank's environmental and social safeguard policies. However, some challenges were related to the quality of the screening. With regard to land acquisition and resettlement, 133 people affected by the project (PAPs) were identified for a total compensation amount of US\$100,370 (ICR, paragraph 54). A digital Grievance Redress Mechanism (GRM) platform through the Geo-Enabling initiative for Monitoring and Supervision (GEMS) tool allowed effective monitoring and processing of complaints. A total of 30 complaints were registered through the GRM. According to the ICR (paragraph 54) "all complaints were resolved in an inclusive manner involving the complainants, the committees, and the PCIU."

b. Fiduciary Compliance

- **Financial Management (FM).** Project audits were submitted on time and financial statements were certified without reservation (ICR, paragraph 57). As part of the process of transferring the unfinished irrigation work to new projects, the Bank has requested the Government to carry out a special audit of the terminated contracts. The disbursement rate under IDA financing was 87.33% of the appraised amount because of unfavorable foreign exchange movements (the US\$ appreciated relative to the SDR and the GNF appreciated versus the US\$ which resulted in an overall shortfall of US\$3.0 million) and cancellation of the poorly performing irrigation contracts worth US\$3.0 million. FM was rated Satisfactory in the final ISR.
- **Procurement.** Procurement utilized the Systematic Tracking of Exchanges in Procurement (STEP) to upload documents for all contracts financed by IDA as well as all signed contracts, acceptance certificates and payment documents. According to the ICR (paragraph 56) "there was no reported malfeasance in the procurement processes." Two procurement contracts were terminated by the project due to weak capacity of the contractors and the non-compliance with the clauses of the contract. Procurement was rated Moderately Satisfactory in the final ISR.

c. Unintended impacts (Positive or Negative)

None.

d. Other

None.



11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Moderately Satisfactory	Efficacy and Efficiency both had moderate shortcomings.
Bank Performance	Satisfactory	Moderately Satisfactory	QAE had moderate shortcomings.
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. In a low-capacity context, building on existing projects’ operational framework is more effective than establishing a new PCIU. The WAAPP and the Agricultural Sector Support Projects were foundational to the PDAIG, serving as a knowledge base and operational launching pad for the PDAIG. The project experience demonstrated that starting on a good footing helped the project to successfully navigate through the COVID-19 period and adapt to the changing context of the country. Despite the disturbances of the pandemics and the several-month-long disbursement suspension of Bank operations, the project was able to meet most of its development targets within the allotted implementation timeframe. In low capacity contexts, a unified capacitated permanent project and program coordination unit in the sector would have multiple benefits including: (i) strengthening the government's capacity to manage projects; (ii) reducing operating costs; (iii) capitalizing on project management skills and know-how (particularly in safeguards, procurement, FM, and M&E), (iv) strengthening the synergy and complementarity between projects; (iv) preserving the institutional memory; (v) reducing the long delay in achieving the effectiveness conditions; and (iv) finally improving the readiness for a quick start of new projects.

2. To ensure smooth implementation, crucial technical assistance needs to be recruited very early in the project cycle. PDAIG had envisaged very important technical assistance for the PCIU given the diverse nature of the project activities. However, its belated recruitment resulted in major delays in implementing some of these activities. Therefore, it is important to start the procurement of such critical technical assistance during project preparation to ensure timely onboarding.

3. To correctly identify adequate design approaches, the overall capacity for irrigation development needs to be critically assessed during project appraisal for projects with irrigation development activities. This includes assessing the technical and financial capacity of local SMEs to execute and supervise the envisaged irrigation schemes. Such an assessment is critical in informing options for procurement planning, including possibilities of packaging various lots to attract more capable regional and international firms.



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 and provided a clear and concise coverage of project activities and candidly reported on most shortcomings. However, there was no explanation provided for the moderately satisfactory ratings for overall safeguard performance and for environmental and pest management. Also, the ICR reflected Physical Cultural Resources (OP/BP 4.11) under social safeguards when it should be under environmental safeguards. The ICR did not report on the critical assumptions that underpinned the achievement of the PDO.

Summary of the Quality of ICR Assessment. The ICR provided an adequate 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