Report Number: ICRR0023067

1. Project Data

Project ID P114264	**Project Name** Ghana Commercial Agriculture	
Country Ghana	**Practice Area(Lead)** Agriculture and Food	
L/C/TF Number(s) IDA-50770,IDA-62540,TF-14170,TF-A9432	**Closing Date (Original)** 30-Sep-2017	**Total Project Cost (USD)** 157,851,607.17
Bank Approval Date 22-Mar-2012	**Closing Date (Actual)** 31-Dec-2021	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	100,000,000.00	16,950,000.00
Revised Commitment	166,950,000.00	16,950,000.00
Actual	157,851,607.17	16,950,000.00

Prepared by	Reviewed by	ICR Review Coordinator	Group
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2. Project Objectives and Components

a. Objectives

The project development objective (PDO), as stated in the Financing Agreement (FA, 2012), and the Project Appraisal Document (PAD, 2012), for this Ghana Commercial Agriculture Project (CAP), was: “**to increase access to land, to private sector finance, and to input- and output-markets by smallholder farms through private-public partnerships (PPPs) in commercial agriculture in Accra Plains and SADA**

zone." The SADA zone referred to the Savanah Agricultural Development Zone, which was a target area for developmental support.

The PDO was revised twice, as follows:

First Revision (FA, November, 2015): The objective of the Project was "**to improve agricultural productivity and production of both smallholder and nucleus farms in selected project intervention areas with increased access to reliable water, land, finance, and agricultural input and output markets**";

Second Revision (FA, October, 2018): The objective of the Project was "**to improve agricultural productivity and production of both smallholder and nucleus farms in selected project intervention areas of the Recipient's territory**".

This ICRR parses the original and revised PDOs as follows:

Objective 1 (Original): "To increase access to land by smallholder farms through private-public partnerships (PPPs) in commercial agriculture in Accra Plains and SADA zone."

Objective 1 Revision 1: Dropped. Objective 1 was no longer a part of PDO after the first restructuring (ICR, para. 46).

Objective 2 (Original): "To increase access to private sector finance by smallholder farms through private-public partnerships (PPPs) in commercial agriculture in Accra Plains and SADA zone."

Objective 2 Revision 1: Dropped. Objective 2 was no longer a part of PDO after the first restructuring (ICR, para. 46).

Objective 3 (Original): "To increase access to input and output markets by smallholder farms through private-public partnerships (PPPs) in commercial agriculture in Accra Plains and SADA zone."

Objective 3 Revision 1: Dropped. Objective 3 was no longer a part of PDO after the first restructuring (ICR, para. 46).

Objective 4: None at appraisal.

Objective 4 Revision 1: "To improve agricultural productivity of both smallholder and nucleus farms in selected project intervention areas with increased access to reliable water, land, finance, and agricultural input and output markets." It was a new objective added at the first restructuring.

Objective 4 Revision 2: "To improve agricultural productivity of both smallholder and nucleus farms in selected project intervention areas of the Recipient's territory." It was a revised objective after the second restructuring.

Objective 5: None at appraisal.

Objective 5 Revision 1: "To improve agricultural production of both smallholder and nucleus farms in selected project intervention areas with increased access to reliable water, land, finance, and agricultural input and output markets." It was a new objective added at the first restructuring.

Objective 5 Revision 2: "To improve agricultural production of both smallholder and nucleus farms in selected project intervention areas of the Recipient's territory." It was a revised objective after the second restructuring.

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

Yes

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

Yes

Date of Board Approval

31-May-2018

c. Will a split evaluation be undertaken?

Yes

d. Components

Component 1: Strengthening investment promotion infrastructure, facilitating secure access to land (Appraisal/Original allocation: US$11.8 million; Revised: US$5.9 million; Actual: US$5.4 million). At appraisal, the planned activities included: (i) enhancing the investment climate and promoting investments; (ii) improving land governance in support of inclusive land access; and (iii) supporting out-grower arrangements, including developing a framework for out-grower schemes. At the second restructuring, the component title was changed to: "Facilitating investment promotion in commercial agriculture". Under the revised component title, similar activities as originally designed were implemented, with a stronger emphasis on promoting commercial agriculture.

Component 2: Securing PPPs and smallholder linkages in the Accra Plains (Appraisal/Original allocation: US$45.4 million; Revised: US$21.7 million; Actual: US$21.2 million). At appraisal, planned activities included: (i) technical assistance in support of the PPP transaction; (ii) a full feasibility study for the PPP and transaction advice; (iii) organizing small-holder participation in the PPP; and (iv) viability gap funding for the PPP. At the second restructuring the component title was changed to: "Promoting private sector investments and small-holder linkages in selected areas" and the relevant activities were adopted.

Component 3: Securing PPPs and smallholder linkages in the SADA zone (Original allocation (ref. component 3 at appraisal): US$64.3 million; Revised: US$117.9 million; Actual: US$105.4 million). At appraisal, planned activities included: (i) financing establishment costs and facilitating the development of out-grower schemes and contract farming arrangements; (ii) investing in land development for commercial agriculture; (iii) rehabilitating and constructing new agricultural storage infrastructure and processing facilities; and (iv) supporting business development services among agricultural service providers and investing in processing businesses. At the second restructuring, the title of the component was changed to: "Rehabilitation/modernization of irrigation schemes and reforming of irrigation institutions and management". After the second restructuring, activities focused on: Rehabilitation/modernization of irrigation schemes; Restructuring and Strengthening of Public Irrigation and Drainage Institutions; and Development of Water-User Associations and Private Scheme Management Entities.

Component 4: Project Management, Monitoring and Evaluation (Original allocation: US$14.3 million; Revised: US$21.2 million; Actual: US$22.3 million). At appraisal, activities under this component focused on the operations of the project implementing agencies. It would also finance the various monitoring and evaluation functions. After the second restructuring, this component implemented similar activities as envisioned at appraisal, while considering the various revisions.

Note: The original allocation at appraisal included US$3.0 million for reimbursement of PPF; and US$6.2 million for contingencies.

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

Project Costs: The total project costs at approval was US$145 million. Due to revisions in financing arrangements (see below), the revised project costs were US$166.9 million. The actual project costs at closing were US$157.3 million (or about 108% of the approved total costs) due to a shortfall in disbursements in some of the project activities.

Financing: At approval, the IDA credit (No. 50770) was US$100 million, supplemented by Trust Fund (TF) grant from USAID for US$45 million, with no Government counterpart contributions. During early implementation, the TF was reduced to US$16.95 million due to USAID's internal shifts of budget priorities. An additional IDA Credit was approved for US$50 million in 2018, resulting in a total project financing of US$166.9 million.

Borrower/Recipient Contribution: There was zero Government counterpart contribution, because of budgetary constraints, although Government contributed through its project management and technical personnel.

Dates: The Project was approved on March 22, 2012, and became effective on April 8, 2013. This lag was due to meeting the various conditions of effectiveness, especially with respect to the delay in establishing the trust fund for the cofinancing by USAID, coupled with the delay in preparing the Project Implementation Manual. The original closing date was September 30, 2017, with the final closing date being December 31, 2021 (for an additional 51 months).

Restructurings: Significant Changes During Implementation, Revised Objectives, Components and Allocations and Revised Indicators/Targets (see ICR, p. 8 - 13 for details of the main changes)

The project underwent two restructurings: in November, 2015, and in October, 2018. In each of these restructurings, the PDO, indicators and components were revised (see ICR, paras. 12 – 24).

<u>First Restructuring</u> (2015):

The PDO was revised as follows: "The objective of the Project was to improve agricultural productivity and production of both smallholder and nucleus farms in selected project intervention areas with increased access to reliable water, land, finance, and agricultural input and output markets". The original PDO was reformulated because it referred to "increased access to reliable water, land, finance and agricultural input and output markets", which were interventions envisaged under the project to achieve the ultimate and core development objectives of increasing agricultural productivity and production.

The PDO indicators were revised as follows: (i) all of the targets for the key indicators were decreased, and some were dropped (e.g., yields, gross margins, area under formal commercial arrangements, public-private partnership activities in the Accra plains irrigation PPP, no of direct beneficiaries), to reflect enhanced realism; (ii) several targets were added to reflect revised project components, with respect to: yields for vegetables; hectares (ha) of improved irrigation and drainage were introduced to reflect the addition of this component; restructuring and strengthening public irrigation management agencies, establishing Water User Associations.

Project components were increased from four to seven (see ICR, Table 2), with the 3 additional components, as follows: (i) component 5: Investments in physical rehabilitation and modernization of selected existing public irrigation and drainage infrastructure; (ii) component 6: Support for the restructuring and strengthening of public irrigation and drainage institutions; (iii) component 7: Support for the development of water users' associations and private scheme management entities.

Second Restructuring (2018):

The PDO was revised as follows: "The objective of the Project was to improve agricultural productivity and production of both smallholder and nucleus farms in selected project intervention areas of the Recipient's territory". The main reason for the revision was to simplify further the objective by removing reference to project activities.

Other revisions included: (i) an additional activity for supporting agricultural inputs for Government's priority program (Planting for Food and Jobs/PFJ); (ii) reduction of irrigation schemes; (iii) consolidating the project components, from 7 to the original 4 components.

Based on the above revisions, there was: an overall reduction in the scope of the project and level of ambition of the PDO, with respect to most of the original targets, while adding realistic targets to the revised components; substantially revising intermediary indicators, especially by adding new indicators to reflect the project's strengthened focus on irrigation rehabilitation and institutional strengthening of irrigation management entities.

Split Rating: The project's level of ambition decreased through the two restructurings to reflect greater realism, while the project commitments increased by additional financing. IEG concurred with the ICR (para. 29) that a split evaluation was deemed necessary, also consistent with the harmonized guideline between OPCS and IEG.

3. Relevance of Objectives

Rationale

Country and Sector Context: The project objectives were relevant to addressing relevant criteria identified during project design involving: the sector context and critical constraints; aligning with opportunities and associated strategies of the Government and Bank; building on and integrating relevant sector experience. Key sector constraints addressed by the project were: low levels of productivity and production by most smallholders and commercial farmers; associated high levels of poverty, especially in the SADA and Accra plain areas; limited access to land, input and output markets, agricultural technologies, and finance, as major constraints to transitioning to commercial agriculture, and to increasing productivity, production, and incomes; limited access to Government's approved public-private partnership framework, which was expected to induce increased investments in agriculture; high potential for irrigated commercial agriculture in the Accra plains.

Relevance to Government Strategies: At appraisal, the Project was strongly relevant and aligned with supporting the implementation of core components of the Government's Agricultural Strategy (2010-2015). At project closing, the Project aligned with the Government's flagship program, "Coordinated Program of Economic and Social Development Policies (2017-2024)" e.g., this program was underpinned by 7 pillars for promoting agricultural development; ACIP was strongly alignment with 4 of these pillars – ICR/para.28).

Relevance to Bank Assistance Strategies: At appraisal, the Project was in line with the Bank's Country Assistance Strategy for Ghana (CAS, FY08-FY12, Pillar 1, outcomes 2 and 3). At project closing, the Project was strongly aligned with the subsequent Bank Country Partnership Frameworks (FY12-FY16, FY17-FY20, FY22-FY26), especially the 3rd focus area (i.e., promoting resilient and sustainable development, including "promoting irrigation inclusive agricultural development"; ICR, para. 28).

Prior Sector Experience: The Project was built on the Bank's previous sector experience and lessons, since the 1990s (and generally according to high priority of the sector in each of the country strategies). The project design also considered strategic aspects of relevant and complementary on-going projects financed by the Bank (e.g., Public Private Partnership Project (P125595) and Second Land Administration Project (P120636). These projects highlighted the importance of designing/implementing: appropriate institutional roles, arrangements, and mechanisms; and well-focused capacity building of key public/private entities.

At the project design stage and also by project closure, the PDO, including the revised PDO following project restructuring, was most relevant in terms of there being full alignment between project objectives and the Government's and Bank's strategy of promoting Ghana's competitive and sustainable agricultural development. The revised PDO's emphasis on promoting agricultural productivity and production of smallholders further strengthened the project's high strategic relevance. Subsequently, and during early phases of implementation, it was confirmed that the targets were overly ambitious, given various constraints arising during implementation (further discussed below). Nevertheless, the project's design focus remained highly relevant.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To increase access to land through private-public partnerships (PPPs) in commercial agriculture in Accra Plains and the Savanah Agricultural Development (SADA) zone. (Original, valid for the implementation period of April 2013 to November, 2015).

Rationale

The PAD did not include a theory of change (ToC) because it was not required at the time the PAD was written. The ICR reconstructed a ToC for the project which was consistent with its overall objective, strategy, and components (ICR, Figure 1, para. 4). The ICR highlights the rationale for the project, and the role of expanding commercial agriculture by smallholders and commercial farmers, and associated actors.

<u>Theory of Change</u>: The ToC postulated the following activities to contribute to the achievement of objective 1: promoting land-leasing mechanisms, strengthening land commission, and conducting campaigns to promote PPPs. These activities were postulated to generate outputs including: protocol/framework for dealing with investors at agricultural sector level established; model land lease agreement developed; framework for out-grower scheme developed; and community investor guidelines for large-scale land transactions prepared. These outputs were postulated to contribute to an outcome of increased access to land. In the long-term, the ToC postulated that the three original objectives were inter-related, and each contributed toward the broader objectives of increasing productivity and production (which became more explicit in the two restructurings).

Critical assumptions for the ToC included: the Government would take a lead and effective role in dissemination of appropriate technologies to smallholders, who were assumed to adopt them; adequate investor-smallholder incentives and demand to engage in their partnerships and to make the required investments.

<u>Outputs</u>: (ICR, paras 29-33)

(i) Protocol/framework dealing with investors at agricultural sector level was established, achieving the original target.

(ii) Model for land-lease agreement was developed, achieving the original target.

(iii) Framework for outgrower scheme was developed, achieving the original target.

In addition to the results measured by the results framework, the ICR reported the following 3 strategic outputs, which did not have any formal targets.

(iv) Community-investor guidelines for large scale land transactions were completed.

(v) Suitable lands for improved rainfed rice cultivation in the SADA zone were identified.

(vi) Diagnostic review of land rights and land uses in the Nasia-Nabogo valley were conducted and completed..

<u>Outcomes</u>: (ICR, paras 29-33)

The ICR did not provide relevant evidence regarding the outcome of the increased access to land, while including the following results on the long-term outcomes on the increased productivity.

(i) Yields of targeted crops (noting that yields for most crops were revised downwards during 1st restructuring):

(a) The yield of maize in SADA zone increased from the baseline (BL) of 1.96 metric tons (MT) per hectare (ha) to actual/A of 2.80 MT/ha, not meeting the original target/OT of 3.92 MT/ha (71% of the original target); (b) rice (SADA zone): Baseline/BL: 1.53; OT: 3.06; A: 5.54; Actual as % of Original Target: 181%; (c) soya (SADA zone): BL: 1.26; OT: 2.52; A: 3.66; Actual as % of Original Target: 145%;(d) rice (Accra plains): BL: 2.47; OT: 4.94; A: 5; Actual as % of Original Target: 101%; (e) vegetables (Accra plains): BL: 8.18; OT 8.18; A: 11.86 Actual as % of Original Target: 145%;

(ii) 14,264 Direct Beneficiaries were reached, well below the original target of 50,000 direct beneficiaries (29% of the original target). Although the number of beneficiaries is a corporate indicator, the number of direct beneficiaries did not measure the outcome level results of Objective 1.

(iii) 40,900 tons of main crops (i.e., maize, soyabean, rice) were produced (by 2015), vs. an end-of-project production target of 97,000 tons for these 3 major crops (or 42%; ICR, para. 32);

Referring to the ToC above, no evidence on increases in land access was provided in the ICR. In addition, while the critical assumptions on the sufficient interests from investors and communities and the high level of investments were ambitious, no evidence was provided regarding to what extent these critical assumptions were fulfilled. Therefore, the attributability of the increased yields and inferred production of target crops to the project was weak. Thus, the achievement of objective 1 is rated modest.

Rating
Modest

OBJECTIVE 1 REVISION 1

Revised Objective
Dropped. Objective 1 was no longer a part of the PDO after the first restructuring (ICR, para. 46).

Revised Rationale
Dropped.

Revised Rating
Not Rated/Not Applicable

OBJECTIVE 2

Objective
To increase access to private sector finance through PPPs in commercial agriculture in Accra Plains and SADA zone. (Original, valid for the implementation period April 2013 to November 2015).

Rationale

Rationale: Same as stated above for Objective 1.

Theory of Change: The ToC postulated the following activities to contribute to the achievement of objective 2: strengthen the capacities/expertise and role of the Ghana Investment Promotion Center in commercial agriculture promotion; carry out investment promotional campaigns among target communities and potential investors; promote investment-oriented PPPs among Government, investors, and smallholders. These activities were postulated to lead to outputs including: protocol/framework dealing with investors at agricultural sector level established; model for land-lease agreement developed; and framework for out-grower scheme developed. These outputs were postulated to contribute to the intermediate outcome on the increased access to finance for the potential investors of out-grower schemes, further contributing to the outcome on the increased area in the SADA zone under formal commercial arrangements. In the long-term, the ToC postulated that the three original objectives were inter-related, and each contributed toward the broader objectives of increasing productivity and production.

While the ToC did not include explicit actions for expanding access to finance by target beneficiaries, the ToC assumed that the above activities and assumed profitability levels would “enable” and achieve expanded access to finance to target beneficiaries from financial entities in the targeted project areas.

Outputs (ICR, paras 29-33, some of which also contributed to Objective 1 outlined above):

(i) Protocol/framework dealing with investors at agricultural sector level was established, achieving the original target.

(ii) Framework for out-grower scheme was developed, achieving the original target.

(iii) US$26.5 million private investment was mobilized, which was equivalent to of Ghanaian Cedi (GHc) 44.5 million (with the exchange rate of GHc1.67615 = US$1 as of January 31, 2012 (PAD, page ii), and exceeding the original target of Ghanaian Cedi (GHc) 30 million.

In addition to the results measured by the results framework, the ICR reported the following outputs, which did not have any formal targets.

(iv) Community-investor guidelines for large scale land transactions were completed.

(v) US$9.4 million of matching grants were allocated to 31 grantees in the first round (May, 2014), while also leveraging $2.2 million in private capital contributions by the grantees. The matching grants supported land development (40% of the matching grant funds disbursed), irrigation infrastructure (17%), warehouses (20%), capacity building (10%), technical assistance (8%), and roads and electricity (5%).

Outcome (ICR, paras 29-33):

(i) 5,946 ha of area in the SADA zone were under formal commercial arrangements such as out-grower schemes and contract farming, not achieving the original target of 25,000.00 ha (24% of the original target).

Referring to the ToC above, no indicator measured increases in access to private financing. Less than one quarter of the original target of the PDO indicator on the area under formal commercial arrangements was achieved. Thus, the achievement of objective 2 is rated modest.

Rating
Modest

OBJECTIVE 2 REVISION 1

Revised Objective
Dropped. Objective 2 (improved access to private sector finance) was no longer a part of the PDO after the first restructuring (ICR, para. 46).

Revised Rationale
Dropped.

Revised Rating
Not Rated/Not Applicable

OBJECTIVE 3

Objective
To increase access to input and output markets through PPPs in commercial agriculture in Accra Plains and SADA zone. (Original, valid for the implementation period April 2013 to November 2015).

Rationale
Theory of Change: The ToC postulated that the following activities would contribute to the achievement of objective 3: rehabilitating and constructing new agricultural storage infrastructure and processing facilities; and supporting business development services among agricultural service providers and investing in processing businesses. These activities were postulated to help generate key outputs, including: farmers applying improved technologies or management practices; storage capacity increased; and incremental sales increased. These outputs were postulated to contribute to the outcome of increased gross margins of selected crops. In the long-term, the ToC postulated that the three original objectives were inter-related, and each contributed toward the broader objectives of increasing productivity and production.

Critical assumption of the ToC was: the project activities to facilitate PPP transactions would contribute to expanding beneficiary access to input and output markets in the targeted project areas.

Outputs (ICR, paras 29-33):

(i) 100% of farmers applying improved technologies or management practices, exceeding the original target of 80%.

(ii) The total storage capacity (from GCAP interventions) increased from the baseline of 0 MT to 15,340 MT, not achieving the original target of 23,000 MT (67% of the original target, and 130% of the down-ward revised target of 11,700 MT).

(iii) Value of incremental sales (collected at farm-level) increased to GHc18.7 million (or 95% of the revised target). The original target was 200% increase from the baseline that was under preparation at appraisal (PAD, page 35). No baseline and original target for this indicator was reported in the ICR.

Outcome (ICR, paras 29-33):

Gross margins of maize and rice in the SADA zone were more than doubled, while that of soya in the same area almost achieved the original target. On the other hand, less than two-thirds of the original target of gross margin for rice in Accra Plains were met (for detailed figures, see ICR, Table 3). Referring to the ToC, the mixed achievements of the outputs and the missing baseline and target for the increase in the incremental sales at farm level negatively affected the attributability of the achieved outcome to the project. Thus, the achievement of objective 3 is rated modest.

Rating
Modest

OBJECTIVE 3 REVISION 1

Revised Objective
Dropped. Objective 3 was no longer a part of the PDO after the first restructuring (ICR, para. 46).

Revised Rationale
Dropped.

Revised Rating
Not Rated/Not Applicable

OBJECTIVE 4

Objective
None at appraisal.

Rationale
None at appraisal.

Rating
Not Rated/Not Applicable

OBJECTIVE 4 REVISION 1

Revised Objective

To improve agricultural productivity of both smallholder and nucleus farmers in selected project intervention areas with increased access to reliable water, land, finance, and agricultural input and output markets. (Added at the first restructuring, for implementation period December 2015 - October 2018).

Revised Rationale

Theory of Change: The ICR did not highlight specific changes in the ToC arising from the first restructuring, while making reductions in the scope of the original targets for production (and productivity) increases of the major target crops, in both rainfed and irrigated areas (average decrease of production target of about 51%, ICR, Tables 3 and 4, para. 34), to reflect greater realism. The various activities, outputs and outcomes specified in the ToC (ICR, Figure 1), including increased productivity and area under production (under formal commercial arrangements), and expanded irrigation activities, were assumed to contribute toward this objective of increased productivity (and increased gross margins and incomes of beneficiaries). The role and effects of the project's addition of support for irrigation was not discussed explicitly in the ToC. The analyses and results of the ICR imply that the project's support for enhancing and modernizing irrigation facilities/more reliable water supplies contributed to increased productivity and gross margins. It would have been useful if the ICR included more explicit analyses of the direct effects of the project's irrigation activities. Also, the ToC with respect to revised Objective 4 assumed that smallholder and nucleus farmers would seek to expand their production area under irrigation, and that smallholder and nucleus farmers would adopt the improved technologies to enable increased crop productivity and gross margins. These are sound assumptions, based on global experience.

Outputs: (ICR assumes these outputs contributed to the productivity objective and targets)

(i) Area with improved irrigation and drainage services provided (new and existing):

Revised target: 7,690 has; Actual: 9,312 has.; Actual as % of Target: 121%;

(ii) Framework for outgrower scheme developed:

Original target: Yes; Actual: Yes

(iii) National framework for outgrower and contract farming arrangements:

Target: Yes; Actual: Yes

(iv) Increased storage capacity (resulting from GCAP interventions):

Revised Target: 11,700 tons; Actual: 15,340; % of Revised target: 131%;

(v) Training activities for staff of Ghana Irrigation Authority (GIDA) and Irrigation Company of Upper Region: No target was provided; 11,504 person hours;

(vi) Rehabilitation of Tono and Kpong Left Bank Irrigation Schemes (new and improved irrigation and drainage):

Revised Target: 10,000 has.; Actual: NA; "good progress" (ICR, para. 34);

(vii) Procurement progress of Kpong Right Bank Irrigation Schemes: overall "good progress" (ICR/para. 34);
(viii) Passage of Water Users Association Law: Target not Specified in ICR; Approved in May, 2016;

Outcomes: (ICR assumes project outputs contributed to the productivity objective):

(i) Yields of Rainfed Maize (MT/ha.): Revised Target: 2.74; Actual: 2.8 (at completion); % of Target: 102%;

(ii) Yields of Rainfed Rice (MT/ha.): Revised Target: 2.14; Actual: 5.54; % of Target: 259%;

(iii) Yields of Rainfed Soya (MT/ha.): Revised Target: 1.76; Actual:3.66; % of Target: 208%;

(iv) Yields of Irrigated Rice (MT/ha.): Revised Target: 3.09: Actual: Not Available (NA);

(v) Yields of Irrigated Vegetables (MT/ha.): Revised Target: 10.23; Actual: NA;

(vi) Gross Margins (maize in SADA zone): ($/ha.): Revised Target: 815; Actual:2785; % of Target: 342%;

(vii) Gross Margins (rice in SADA zone): ($/ha.): Revised Target: 1436; Actual: 5464; % of Target: 380%;

(viii) Gross Margins (soya in SADA zone): ($/ha.): Revised Target: 3201; Actual: 5447; % of Target: 170%;

(ix) Gross Margins (rice in Accra plains): ($/ha.): Revised Target: 1874: Actual: 3800; % of Target: 203%;

(x) No. of Direct Beneficiaries: Original Target: 50,000; Revised: 14,000; Actual (2021): 240,264;

As shown above, the project met, exceeded or made good progress toward meeting the productivity (by end of 1st restructuring and end of project) and gross margin targets of all target crops, as well as good progress toward meeting other associated output and outcome targets shown above, also consistent with the above ToC. These achievements warrant a **Substantial** rating.

Revised Rating
Substantial

OBJECTIVE 4 REVISION 2

Revised Objective
To improve agricultural productivity of both smallholder and nucleus farms in selected project intervention areas of the Recipient's territory. (Revised at the second restructuring, for implementation period Nov. 2018 – Dec. 2021, primarily to simplify project objectives).

Revised Rationale
Theory of Change: The ICR did not highlight specific changes in the ToC arising from the second restructuring, while considering reductions (in first restructuring) in the scope of the original targets for productivity increases of the major target crops, in both rainfed and irrigated areas (average decrease of production target of about 51%, ICR, Tables 3 and 4, para. 34), to reflect greater realism. The various activities, outputs and outcomes specified in the ToC (ICR, Figure 1), and a general reference to "improved

agricultural technologies promoted by the project" (ICR, para. 38, with no details specified), were assumed to contribute toward this objective of increased productivity, and therefore, also assumed to contribute to increased gross margins of key crops and incomes of direct beneficiaries.

Outputs (ICR, paras 29-40 and annex 1): (ICR assumes these outputs contributed to the productivity objective and targets)

This involved progress for the same outputs outlined above, under Objective 4/Revision 1. There is one additional output introduced as part of revision 2:

(i) Length/kms. of irrigation canals newly constructed: Target: 100; Revised: 150: Actual (2021): 85; Actual as % of Revised Target: 57%;

Outcomes (ICR, paras 29-40 and annex 1):

(i) Farmers in GCAP intervention areas who applied improved agricultural technologies (% of total farmer beneficiaries): Target (2017): 97%; Actual: 100%; % of Target: 103%;

(ii)   Yields of Rainfed Maize (MT/ha.): Revised Target: 2.74; Actual (at completion): 2.8; % of Target: 102%;

(iii) Yields of Rainfed Rice (MT/ha.): Revised Target: 2.14; Actual: 5.54; % of Target: 259%;

(iv) Yields of Rainfed Soya (MT/ha.): Revised Target: 1.76; Actual:3.66; % of Target: 208%;

(v) Yields of Rice/Accra Plains (MT/ha.): Revised Target: 3.09: Actual: 3.09; % of Target: 100%;

(vi) Yields of Vegetables/Accra Plains (MT/ha.): Revised Target: 10.23; Actual: 11.86; % of Target: 116%;

(vii) "Significant increases" in gross margins of target crops: "well above" the 30% target increase;

(viii) No. of Direct Beneficiaries: Revised Target: 14,000; Actual (2021): 240,264;

(ix) No. of WUAs established and functional (at canal/scheme levels): Target (2017): 42; Actual: 40; % of Target: 95%;

As shown above, following the second restructuring and by the end of the Project, and consistent with the ToC, it met or exceeded all of the productivity targets, as well as other targets for activities and indicators which contributed to meeting the objective of increased agricultural productivity. This included the additional output of newly constructed irrigation canals. Accordingly, the rating is **Substantial**.

Revised Rating
Substantial

OBJECTIVE 5
Objective

None at appraisal.

Rationale
None at appraisal.

Rating
Not Rated/Not Applicable

OBJECTIVE 5 REVISION 1

Revised Objective
To improve agricultural production of both smallholder and nucleus farms in selected project intervention areas with increased access to reliable water, land, finance, and agricultural input and output markets. (Added at the first restructuring for implementation period December 2015 – October 2018).

Revised Rationale
Theory of Change: The ICR did not highlight specific changes in the ToC arising from the first restructuring, while making reductions in the scope of the original targets for production (and productivity) increases of the major target crops, in both rainfed and irrigated areas (average decrease of production target of about 51%, ICR, Tables 3 and 4, para. 34), to reflect greater realism. The various activities, outputs and outcomes specified in the ToC (ICR, Figure 1), including increased productivity and area under production, were assumed to contribute toward this objective of increased production (and increased gross margins and incomes of beneficiaries). This ToC and expected outcomes assumed there would be adequate technical expertise developed/applied effectively, sufficient investor and community interest/demand and increased public and private sector investments.

Outputs: (ICR assumes these outputs contributed to the production objective and targets)

(i) Area with improved irrigation and drainage services provided (new and existing): Revised target: 7,690 has; Actual: 9,312 has.; Actual as % of Target: 121%;

(ii) Framework for out grower scheme developed: Original target: Yes; Actual: Yes

(iii) National framework for out grower and contract farming arrangements: Target: Yes; Actual: Yes

(iv) Increased storage capacity (resulting from GCAP interventions): Revised Target: 11,700 tons; Actual: 15,340; % of target: 131%;

(v) Training activities for staff of Ghana Irrigation Authority (GIDA) and Irrigation Co. of Upper Region: 11,504 person hours; target training hours were not specified

(vi) Rehabilitation of Tono and Kpong Left Bank Irrigation Schemes (new and improved irrigation and drainage): Revised target: 10,000 has.; “good progress” (ICR, para. 34);

(vii) Procurement progress of Kpong Right Bank Irrigation Schemes: overall "good progress" (ICR/para. 34);

(viii) Passage of Water Users Association Law: Approved in May, 2016; (note: ICR did not specify target).

Outcomes: (it is understood that productivity increases outlined above also contributed to increased production):

(i) Production of Rainfed Maize (000s MT): Revised Target: 14; Actual: 7.5; % of Target: 54%;

(ii) Production of Rainfed Rice (000s MT): Revised Target: 4.3; Actual: 2; % of Target: 47%;

(iii) Production of Rainfed Soya (000s MT): Revised Target: 1.6; Actual:1; % of Target: 63%;

(iv) Production of Irrigated Rice (000s MT): Revised Target: 61.8: Actual: 79.9; % of Target: 129%;

(v) Prod. of Irrigated Fruits./Vegetables (000s MT): Revised Target: 54; Actual: 54; % of Target: 100%;

(vi) Overall Production (i - v) (000s MT): Revised Target: 135.7; Actual: 144.4; % of Target: 106%;

(vii) Gross Margins (maize in SADA zone): ($/ha.): Revised Target: 815; Actual: 2,785; % of Target; 342%;

(viii) Gross Margins (rice in SADA zone): ($/ha.): Revised Target: 1,436; Actual: 5,464; % of Target: 380%

(ix) Gross Margins (soya in SADA zone): ($/ha.): Revised Target: 3,201; Actual: 5,446; % of Target: 170%;

(x) Gross Margins (rice in Accra plains): ($/ha.): Revised Target: 1,874: Actual: in process;

(xi) No. of Direct Beneficiaries: Revised Target: 14,000; Actual (2021): 240,264;

Based on the achievement of the reduced targets (in 2015) for most of the indicators associated with increased production, and consistent with the ToC, the project's achievement of this objective is rated **Substantial**.

Revised Rating
Substantial

OBJECTIVE 5 REVISION 2
Revised Objective
To improve agricultural production of both smallholder and nucleus farms in selected project intervention areas of the Recipient's territory (Revised at the second restructuring for implementation period Nov. 2018-Dec. 2021).

Revised Rationale

Theory of Change: The ICR did not highlight specific changes in the ToC arising from the second restructuring, while making reductions in the scope of the original targets for production (and productivity) increases of the major target crops, in both rainfed and irrigated areas (average decrease of original production target of about 51%, ICR, Tables 3 and 4, para. 34), to reflect greater realism. The various activities, outputs and outcomes specified in the ToC (ICR, Figure 1), including increased productivity and increased area under production, including increased areas under irrigation, and the seed distribution program partnered with the PFJ program, were assumed to contribute toward this objective of increased production (and increased gross margins and incomes of beneficiaries). This ToC and expected outcomes assumed there would be adequate technical expertise developed/applied effectively, sufficient investor and community interest/demand and increased public and private sector investments.

Outputs (ICR, paras 29-40 and Annex 1): (ICR assumes these outputs contributed to the production objective and targets)

This involved progress for the same outputs outlined above, under Objective 5/Revision 1.

Outcomes (ICR, paras 29-40 and Annex 1): (it is understood that productivity increases outlined above also contributed to increased production, with further details provided in ICR, para. 39 and Annex 1):

(i) Increase in area under formal commercial arrangements (nucleus & out grower farms): (000s of has.): SADA

Original Target (2017): 25; Revised Target: 5.5; Actual: 5.9; % of Revised Target: 109%;

(ii) Increase in area under formal commercial arrangements (nucleus farms): (000s of has.): Accra:

Original Target (2017): 3; Revised Target: 1; Actual: 1.2; % of Revised Target: 120%;

(iii) Increase in area under formal commercial arrangements (out grower farms): (000s of has.): Accra:

Original Target (2017): 4; Revised Target: 4; Actual: 4.8; % of Revised Target: 120%;

(iv) Farmers in GCAP intervention areas who applied improved agric. technologies (% of total farmer beneficiaries):

Target (2017): 97%; Actual: 100%; % of Target: 103%;

(v) Annual net increase in production of targeted crops among beneficiaries (also arising from added productivity):

annual incremental production increases (in 2021) in maize, rice, soybeans (SADA zone): Actual of 129,900 MT vs. target of 61,200 MT (or 212% of the target): maize: 43,000; rice: 79,400 MT; soyabean: 7,500 MT;

(vi) Improved seed financed under the project (under the PFJ program), and distributed to 226,000 smallholder farmers, resulted in additional production increases: 192,600 MT of maize; 83,300 MT of soyabean; and 120,000 MT of rice;

(vii) Increased storage capacity of 15,000 MTs, resulting in reduced post-harvest losses;

(viii) Increased 800 has. of banana plantation (due to project's bulk water supplies), resulting in additional 32,000 tons of banana per year;

(ix) Improved reliable water supply from rehabilitation of water conveyance system for 1,200 has.;

(x) Production of Rainfed Maize (000s MT): Revised: 14; Actual: 7.5; % of Revised: 54%;

(xi) Production of Rainfed Rice (000s MT): Revised: 4.3; Actual: 2; % of Revised: 47%;

(xii) Production of Rainfed Soya (000s MT): Revised: 1.6; Actual:1; % of Revised: 63%;

(xiii) Production of Irrigated Rice (000s MT): Revised: 61.8: Actual: 79.9; % of Revised: 129%;

(xiv) Prod. of Irrigated Fr./Vegetables (000s MT): Revised: 54; Actual: 54; % of Revised: 100%;

(xv) Overall Production (000s MT): Revised: 135.7; Actual: 144.4; % of Revised: 106%;

(xvi) Gross Margins (maize in SADA zone): ($/ha.): Revised: 815; Actual: in process;

(xvii) Gross Margins (rice in SADA zone): ($/ha.): Revised: 1,436; Actual: in process;

(xviii) Gross Margins (rice in SADA zone): ($/ha.): Revised: 1,436; Actual: in process;

(ix) Gross Margins (soya in SADA zone): ($/ha.): Revised: 3,201; Actual: in process;

(xx) Gross Margins (rice in Accra plains): ($/ha.): Revised: 1,874: Actual: in process;

(xxi) Passage of Water Users Association Law: Approved in May, 2016;

(xxii) No. of Direct Beneficiaries: Revised: 14,000; Actual (2021): 240,264;

Based on the achievement of the reduced targets (revised in 2015) for all of the indicators associated with increased production, the efficacy of the objective is rated **Substantial**.

Revised Rating
Substantial

OVERALL EFFICACY
Rationale
The efficacy of the extent to which the original objectives were achieved was modest. Several of the activities which lay along the critical path for attaining these objectives were completed during this initial phase,

including: key frameworks were developed as envisioned (e.g., a model land lease agreement; community investor guidelines for large scale land transactions; a national framework for out grower and contract farming arrangements); some progress toward the PDO for the SADA zone; some initial progress toward several key targets (e.g., yields and gross margins). However, the envisioned PPP in the Accra Plains was not able to take off, and there was low progress on some of the other targets, especially with respect to the unrealistic targets which were reduced after the first restructuring. Therefore, the ICR reached a sound decision to show a Modest efficacy rating, with respect to the original objectives.

Overall, the efficacy of the original objectives is rated **modest**.

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

OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale

The overall efficacy of the two revised objectives after the first restructuring was Substantial, for several reasons (ICR, para. 34). First, good progress was achieved toward the productivity targets of the target crops, especially in the light of meeting or exceeding most of the yield targets, and of other associated targets indicated above. Second, significant progress was made on the production targets for rainfed farming in the SADA zone. Third, significant progress was made in irrigated farming, including good progress in rehabilitation and construction of existing and new irrigation schemes, as well as approval of the Water Users Association Law (2016), and provision of staff capacity building of key implementation entities (GIDA and ICOUR).

Overall, the efficacy of the revised objectives (revision 1) is rated **substantial**.

Overall Efficacy Revision 1 Rating

Substantial

OVERALL EFFICACY REVISION 2

Overall Efficacy Revision 2 Rationale

By the end of the second restructuring, the targets for all of the PDO indicators (and other key intermediate indicators) for increased agricultural productivity and production had been fully attained or surpassed. Increased productivity was enabled by land development, dissemination and farmer adoption of improved agricultural technologies. Survey results showed that project participants achieved higher productivity levels vs. non-project participants for target crops (ICR, p. 17). Increased and improved irrigation areas, strengthened market linkages, expanded storage/warehouse facilities, coupled with the productivity increases, contributed to increased agricultural production in the target areas (SADA and Accra plains), gross margins (30 % above the target). The second restructuring involved modest reduction in the area under commercial arrangements (and with more realistic targets). The ICR, paras. 38 and 39 provide further details.

Overall, the efficacy of the revised objectives (revision 2) is rated **substantial**.

Overall Efficacy Revision 2 Rating

Substantial

5. Efficiency

Overall, the project performance and results demonstrated an efficiency rating of **Substantial**, based on the various evidence-based tools applied and presented in the ICR (paras. 41 – 45, and Annex 4, also informed by the Project's Impact Evaluation Study). The project's cost-benefit analyses demonstrated improved efficiency, especially following the two project restructurings, compared to values at appraisal.

Financial Analyses: The objectives of the Project's financial analysis presented in the ICR are: to assess the financial viability of the project's interventions; to assess the impact of project interventions on the incomes of the beneficiary households targeted; and to provide a framework and building blocks for conducting the project's economic analyses. The ICR (Annex 4) provides details of this financial analyses. The main methodology used is sound. The financial analysis concludes that the project provided substantial financial increases to project beneficiaries; the financial analysis demonstrates that all project scenario models are profitable from a farmer perspective. Based on an aggregation of financial incremental benefits and costs, the ICR's estimated Financial Internal Rate of Return (FIRR) is 19.5%, which confirms the financial viability of the investments. While the PAD included a detailed financial analysis of component 3 (based on farm models, Annex 7), it did not generate an overall FIRR.

Economic Analyses: Using sound assumptions and methodology, and generally reliable datasets, the economic internal rate of return (EIRR) at completion was estimated in the ICR to be 26.9%, which compares favorably with the EIRR estimated at appraisal, of 20%. When environmental benefits were considered in the ICR stage, the EIRR was estimated at 28.1%. The Net Present Values (NPVs) in the ICR (based on assumed discount rate of 5%) also compares favorably with the appraisal NPV (based on a discount rate of 12%) -- US$154 million vs. US$36.7 million, respectively. The ICR shows that the economic returns are relatively robust – a decrease of 20 % in the incremental benefits corresponds with an EIRR of 19.5%, and a NPV of US$99 million.

With respect to cost-effectiveness measures, the ICR (para. 44) shows positive efficiency results attributed to the project, including:

a. Switching to irrigation "rehabilitation and modernization" capitalized on sunk costs from previous investments, equivalent to low hanging fruit;
b. The project leveraged/mobilized US$13.7 million in private capital, mostly in irrigation development;
c. Even before formalizing the shift to irrigation rehabilitation (1st restructuring in 2015), several activities pertaining to the anticipated irrigation rehabilitation already had been initiated or completed, thereby saving time;
d. The cost per hectare for irrigation schemes (e.g., US$8,000/ha. – US$10,500/ha., for rehabilitated and new irrigation schemes, respectively) is comparable to similar schemes in Sub Saharan Africa (e.g., $8,000 to $14,500);

The ICR (para. 43) recognized the following minor project inefficiencies incurred during design and implementation phases:

a. One year was “lost” between Board approval (March 2012) and Project Effectiveness (April 2013), due to the delays in establishing the Trust Fund for the USAID grant and preparing the project implementation manual;
b. Project implementation was extended because of the switch from the original design of the PPP to the new design (following the first restructuring in 2015);
c. Lockdowns in India and China, coupled with other COVID19-related challenges, disrupted the supply and certification of critical irrigation automation equipment purchased by the project;
d. The USAID Trust Fund reduction in commitments described in section 2.e. necessitated additional financing to the project, which also involved an exchange rate loss of US$11 million and disrupted programming;
e. There was a high turnover of the Bank’s Task Team Leaders during early years of the project, as described in section 8.a.; and

The ambitious rehabilitation timelines assumed during appraisal did not consider/factor adequately weather events outside the client’s control, thereby delaying implementation and requiring extension of closing date.

Efficiency Rating

Substantial

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

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	20.00	90.00 ☐ Not Applicable
ICR Estimate	✓	26.90	93.00 ☐ Not Applicable

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

6. Outcome

The Outcome Rating is based on a split evaluation of the performance of the project’s objectives, for reasons stated in Section 2.e., and influenced by the features and emerging results of the project’s two restructurings during the project’s implementation period. These key changes involved changes in the project’s objectives, reduced levels of ambition for many of the key indicators and their corresponding targets. Based on the project’s high relevance, modest to substantial ratings for efficacy, and substantial efficiency, this ICRR concludes that the project’s overall outcome is rated “Moderately Satisfactory”. Table 1 provides the basis for this assessment.

The overall evidence used for the ratings of the three core elements cited above for determining the project's overall outcome rating are as follows:

(1) **High rating for relevance of PDO**, based on the project's strong alignment with (at appraisal and at completion): (a) Government's national, sectoral, regional policies and strategies for promoting increased agricultural productivity and production, relying on effective PPPs and an expanded role of an inclusive private sector; (b) IDA's country assistance/partnership strategy, while building on the relevant lessons of relevant previous and on-going analytical work and investments which focused on promoting increased agricultural productivity, production and competitiveness;

(2) **Modest and Substantial Ratings for efficacy**, based on the evidence of the project's achievements and results toward meeting the two revised objectives, defined in Section 2a of the review, and in the light of the performance indicators and, in most cases, exceeding their revised targets, which were amended by the project's two restructurings to be more realistic;

(3) **Substantial Rating for Efficiency**, considering the financial and economic achievements, as reflected in positive financial and economic rates of return, coupled with other positive project efficiency results, notwithstanding some of the project's identified inefficiencies.

Table 1: Split Rating for Project Overall Outcome Rating

Rating Aspects/Dimensions	Original Objectives	Objectives After First Restructuring	Objectives After Second Restructuring
1) Relevance of Objectives	High		
2) Efficacy			
Objective 1: Increase access to land (dropped as objective)	Modest		
Objective 2: Increase access to private sector finance (dropped as objective)	Modest		
Objective 3: Increase access to input and output markets (dropped as objective)	Modest		
Revised Objective 1: Improve agricultural productivity		Substantial	Substantial
Revised Objective 2: Improve agricultural production		Substantial	Substantial
Overall Efficacy	Modest	Substantial	Substantial
3) Efficiency	Substantial		
Outcome Rating	Moderately Unsatisfactory	Satisfactory	Satisfactory
Numerical Value of Outcome Ratings	3	5	5
Amount Disbursed (US$ M)	35.44	32.46	89.93
Disbursement (% of total)	22.45%	20.57%	56.98%
Weight Value of Outcome Rating (Row 2 x Row 4)	0.67	1.03	2.85

Final Outcome Rating	4.55 (rounded to 5)
Overall Outcome Rating	Satisfactory (5)
Note on Ratings: Highly Unsatisfactory = 1; Unsatisfactory = 2; Moderately Unsatisfactory = 3; Moderately Satisfactory = 4; Satisfactory = 5; Highly Satisfactory = 6	

a. Outcome Rating
Satisfactory

7. Risk to Development Outcome

There is Moderate risk to sustaining the project's outcomes and contribution to the project's expected impacts. The ICR provides sound evidence of the project's complementary risk mitigating actions with respect to the following four main types of risks (ICR, para. 68):

(a) Technical Risks and Mitigation Actions:

- To help ensure sustainability of technical aspects of operation and maintenance (O&M) of irrigation schemes, farmers have been trained in on-farm water management practices and organized into 45 Water User Associations (WUAs) (see below also);

(b) Financial Risks and Mitigation Actions:

- To help ensure proper billing to direct beneficiaries, and subsequent adequate O&M funding, two of the rehabilitated irrigation schemes had their canal gates automated using digital technology;
- To help ensure clear and updated sound cost recovery charges and the corresponding requirements for adequate O&M of the irrigation schemes, water billing mechanisms were operationalized;

(c) Risks Related to Institutional Support and Mitigation Actions:

- To ensure adequate institutional support arrangements and mechanisms for ensuring sustainability of irrigation schemes, private management entities which will be responsible for the bulk water infrastructure were being recruited at the time of project closing. In the meantime, the Kpong Irrigation Scheme (KIS) and Kpong Left Bank Irrigation Scheme (KLBIS) were being managed by interim scheme management entities, comprised of staff from GIDA (Ghana Irrigation Development Authority), while awaiting completion of the recruitment procurement process.

(d) Stakeholder Ownership Risks and Mitigation Actions:

- To ensure adequate O&M and sustainability of the irrigation schemes, farmers have been trained in on-farm water management practices and organized into 45 WUAs with adequate training in WUA organization, group dynamics, farm record keeping and O&M of irrigation infrastructure; these actions also help address the above risks;
- To ensure sustained access to working capital, continued efforts to strengthen and sustain outgrower arrangements in the SADA zone will be made, building on the training provided by the project, and using the existing and enhanced institutional roles, arrangements and capacities supported by the project (i.e., Ministry of Food and Agriculture/MOFA, and its various directorates, the Savanah

Agricultural Development Authority/SADA, and GIDA).The ICR implies that adequate budgets will be provided to these entities to help ensure sustainability of the schemes, although not assured.

8. Assessment of Bank Performance

a. Quality-at-Entry

The ICR (para. 65) provided evidence on the following positive aspects at project entry:

(i) During design and appraisal stages, the project was strongly aligned with the Bank's Country Partnership Strategy, FY08-FY12 (especially Pillar 1/Outcomes 2 and 3, focusing on improved agricultural productivity and enhanced enabling environment for agrobusiness), and with Ghana's agricultural sector strategy (especially its Food and Agriculture Sector Development Policy: 2010-2015), regarding the project's contribution to growth in incomes and increased competitiveness and market integration (priority areas 2 and 3);

(ii) The project leveraged, and was well coordinated with, other ongoing Bank-supported activities (i.e., namely Public Private Partnership Project for Ghana (P125595)) and the Land Administration Project (P120636)).

On the other hand, the ICR appropriately highlighted five design shortcomings (para. 65):

(i) the project development objective lacked precision, and was basically a list of project activities; (ii) the proposed Accra Plains PPP was ambitious, and no market test had been performed to assess investor interest; (iii) irrigation rehabilitation timelines were too optimistic; (iv) a couple of project results indicators had unrealistic targets (namely the increase in area under formal commercial arrangements, and the number of direct beneficiaries); and (v) the delayed establishment of the trust fund for the USAID Grant (along with preparation of the Project Implementation Manual) was critical in delaying project effectiveness.

On balance, this review rates the project's quality at entry as moderately satisfactory.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

The quality of supervision support was satisfactory, based on the evidence provided in the ICR (para. 66), and other supporting project documentation especially Implementation Support Reports (ISRs) and project restructuring papers. The positive aspects during supervision included the following:

(i) In addition to continuous ongoing support provided by the Accra World Bank Office staff, the Bank's project team maintained an average of 1.8 times a year of formal implementation support missions, as well as periodic virtual interactions to resolve implementation issues as they arose;

(ii) The Bank's project team was proactive in addressing the project's critical issues, including restructuring the project to accelerate implementation when the Accra Plains PPP did not materialize;

(iii) The Bank's project team consisted of adequate skills mix that reflected the wide range of the requisite expertise for the project's requirements;

(iv) When implementation support was handicapped by the COVID-19 travel restrictions, the project implementation support team intensified virtual interactions to make up for that shortcoming.

However, it is notable there were frequent (five) task team leadership changes over the project's nine-year implementation period, although transitions were handled with extended overlaps to lessen possible negative impact on continuity and to ensure consistent messages.

Overall, the Bank performance is rated moderately satisfactory, based on the harmonized guideline between OPCS and IEG.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The ICR correctly noted the project's M&E design provided a sound basis to guide implementation and was used as a tool to track and help generate expected results. Project documentation and the ICR (para. 57) provided adequate evidence that the project's M&E system had sound arrangements for sound data collection methodologies, staffing, funding, timely baseline surveys, systematic and periodic project reviews and mid-term assessments to inform decision-making during project implementation, and end-of-project impact assessments to derive relevant lessons.

At the same time, the design of the M&E system had some shortcomings: (i) the PDO had an undefined marketing arrangements indicator; (ii) the production objective lacked a target; (iii) the results framework misclassified some of the outcomes and outputs (e.g., adoption rates as outputs); (iv) some target values were overly optimistic (e.g., "areas under formal commercial arrangements" and number of "direct project beneficiaries"). It was appropriate that the Bank's team, with its Government counterparts, carried out and used two restructurings to reformulate the PDO and revise the relevant indicators.

b. M&E Implementation

The ICR provided adequate evidence that the M&E system/activities were implemented as planned (para. 58): (i) the PCU was staffed with qualified M&E specialist; (ii) monitoring and evaluation activities were generally well carried out, with a baseline survey to establish baselines of key output and outcome performance targets (albeit a shortfall in omitting some key indicators, such as "value of incremental sales"), good monitoring of project inputs, outputs, and performance indicators; (iii) the M&E system was adjusted at the first restructuring, and further modified at the second restructuring to reflect the project's evolution since appraisal; (iv) at the first restructuring, the level of ambition was reduced, and new indicators were added to reflect the revised project focus; (v) the project achievements and lessons learned are captured in the government completion and project impact evaluation documents; (vi) project activity reports were produced in a timely manner; and (vii) an impact assessment and a detailed project review were carried out and demonstrated good quality.

c. M&E Utilization

Overall, the project documents (ISRs and evaluations) show that there was good utilization of the M&E system by both the Bank and Government project teams, and in a consistent and complementary manner.

The experience gathered from the first round of Matching Grant implementation informed the design of the second round, especially with respect to supporting Grantees in implementing environmental and social safeguards in which they had limited capacity. Also, project M&E data and analyses were used to adjust the project at the first restructuring and the Additional Financing (ICR, para. 59).

Notwithstanding some shortcomings in the M&E system, during implementation it was retrofitted and used effectively to help track and assess the objectives and the links in the results chain, and used as a tool to help generate the project's expected results.

Overall, the M&E quality is rated substantial.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was classified as environmental category B (partial assessment), and triggered the following environmental and social safeguard policies: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), Pest Management (OP 4.09), Physical Cultural Resources (OP/BP 4.11), Involuntary Resettlement (OP/BP 4.12), Dam Safety (OP/BP 4.37), and International Waterways (OP/BP 7.50). The Environmental and Social Management Framework (ESMF), and the Pest Management Plan (PMP) were disclosed before appraisal. During project implementation, site-specific Environmental and Social Impact Assessments (ESIAs) and Environmental and Social Management Plans (ESMPs) were publicly disclosed as required, although with some delay in the case of Matching Grants because of the initial low capacity at the PCU which was strengthened with additional staff. Environmental impacts were mainly local and of a temporally nature: noise, dust, and nuisance. Pumping water was negligible compared to the available resource. Training was provided on pesticide and farm waste management. Construction waste was handled appropriately. Trees were planted to replace those uprooted during civil works: 4,979 trees covering 5.2 ha in Nasia Nabogo (northern Ghana), and 7,889 trees covering 18 Ha in the Accra Plains. Overall, the ICR provided evidence showing the project complied with the Bank's various environmental and social safeguard policies, supported by the appropriate mitigation activities (ICR, para. 10.a.).

Social Compliance (ICR, para. 62): The project triggered OP/BP 4.12 on Involuntary Resettlement. Government prepared a Resettlement Policy Framework (RPF). During project implementation, there was one case that necessitated compensation to the affected persons, which was done. An Abbreviated Resettlement Action Plan was belatedly prepared, but otherwise satisfactorily implemented. Two zonal (i.e., for Accra Plains and SADA zone) Grievance Redress Committees were established in 2014 and trained by the Judicial Training Institute in Alternative Dispute Resolution. Twenty-seven Community Grievance Redress Committees were also established and trained. In all, 114 varied grievances were expressed, all which were satisfactorily responded to by the Project Coordination Unit. The project established and implemented procedures to ensure health and safety of workers during the COVID-19 pandemic.

b. Fiduciary Compliance

(i) Financial Management (ICR, para. 63): By the project's completion, the available evidence shows that the project's financial management was satisfactory. Accounts were up to date, bank reconciliation statements regularly drawn up, and the quality of reporting, was good. Project audits were supplied within the timeframe under the Financing Agreement. The Project's final audit concluded there were no outstanding financial audit issues, and with no qualified opinion from the external auditor.

(ii) Procurement (ICR, para. 64). Notwithstanding some procurement delays, especially at start-up, the project's overall procurement performance was satisfactory. There were no cases of mis procurement. Also, the PCU recruited and maintained competent procurement staff. COVID-19 related disruption contributed to procurement delays of irrigation automation equipment. Otherwise, there were no other major procurement issues.

c. Unintended impacts (Positive or Negative)

The ICR highlighted seven unintended positive outcomes and impacts, contributed by the project. While recognizing some attribution challenges with respect to the precise role, extent and contributions of this project, the nature/scope of these other results are summarized below for three unintended impacts which meet ICRR criteria for inclusion in this section, based on evidence from the ICR. Gender and institutional strengthening, and mobilizing private sector financing were actually planned project activities and benefits, with the ICR providing useful evidence (ICR, paras. 47 – 49).

(i) Poverty Reduction and Shared Prosperity (para. 50): About 14,000 farming households directly participated in the project. Some 226,000 smallholder farmers benefited from improved seeds through the

Planting for Food and Jobs (PFJ) program. In addition, there were several downstream and upstream direct beneficiaries, including input retailers, rice millers, aggregators, and other participants in the value chains supported by the project (maize, rice, soya, and vegetables). For each participating farming household of 4.4 members, per capita gross income increased by US$259, which was equivalent to an increase of 11 percent of the estimated national average per capita GDP of US$2,312 (in 2021).

(ii) Effects of WUAs (para. 51): The establishment and operationalization of WUAs have strengthened social cohesion of participating communities. This effect has the potential to extend to other spheres of social and economic development beyond the explicit objectives of the project, serving as entry points for community initiatives, such as in health (e.g., sensitization on water borne diseases), and nutrition;

(iii) Effects of Warehouses (para. 51): Although the rationale for including warehouses in the project was the reduction in post-harvest losses and facilitating commodity aggregation, women have found them to be effective means of retaining authority over their harvests, as grain stored in homes was found to be more subject to unauthorized sales by their husbands; and although linking Warehouses to the Ghana Commodity Exchange had not been envisaged initially, such linkages were established in two cases (Farmers Training Center, Akandem Farms), creating opportunities for market access and possible warehouse receipt financing.

d. Other

Not applicable.

11. Ratings

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

12. Lessons

The ICR presents six relevant and sound lessons which have broader application beyond this project. The section below consolidates key aspects of these lessons into three lessons, together with their strategic implications (ICR, paras. 69 – 74).

Lesson 1: For large scale irrigation development, ensuring realistic implementation timeframe and structuring PPPs with sequential investment outlays by the partners is likely to succeed vs. being overly optimistic and using co-financing approaches.

First, teams often underestimate the time required to rehabilitate large irrigation schemes. At appraisal, the timelines envisaged were too ambitious and did not consider the impact of the procurement processes, climate change or extreme weather events. As a result, the client could not have completed the rehabilitation of the irrigation schemes without extending the project's closing date.

Second, because of the high cost of water conveyance structures, prospective investors are likely to be attracted if the Government bears that responsibility and the private investors finance subsequent land development and on-site infrastructure. However, such an approach needs a fallback position in the event private sector demand falls below expectations. Under this project, water delivered through the upstream conveyance infrastructure, and from which the private sector benefited, also was serving smallholder farmers. The use of sumps for temporally water storage allowed for efficient water use between smallholder farmers and private investors. In addition, it is important to sufficiently assess private sector enthusiasm and evidence of commitment before designing a project in which private sector participation is a critical element.

Lesson 2: It is important to identify design and financing challenges early during implementation in order to undertake timely and effective remedial actions. During the Implementation Support Mission of June 23-July 11, 2014 (only 11 months after project effectiveness), the Bank's implementation support team and the Government counterpart team were already seriously concerned about the feasibility of the Accra Plains PPP as designed, and had started exploring options. This early response resulted in the project's re-orientation that underpinned the first restructuring, thus ensuring a rapid turnaround in project implementation. This experience of focused and sustained engagement with the Project Coordination Unit and all the other project partners is critical for timely detection and correction of project implementation challenges. Innovative aspects of project design (e.g., sound safeguard instruments for the project's matching grant scheme, and other innovations) will require appropriate and timely technical and administrative support during implementation. Also, ensuring appropriate financing arrangements will be vital to help ensure smooth and timely implementation. The funding arrangements for the USAID grant and the IDA financing were initially joint (often times splitting the funding of certain activities in stipulated proportions). Difficulties in the availability of the USAID grant handicapped project activities and triggered a restructuring of the project.

Lesson 3: Out-grower schemes are effective when coupled with arrangements for working capital for the participants. Anchor farmers had to mobilize working capital for themselves and for their out-growers, which most found difficult to do, and when they did, they suffered losses from low repayment rates. Such schemes could include financial literacy training, linkages with financial institutions, revolving funds, and other mechanisms to ensure timely and sustainable access to finance by the participants.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

Overall, the quality of the ICR is “Substantial”. The ICR was well written, consistent with ICR guidelines, analytical (including a generally sound reconstructed Theory of Change, albeit some shortcomings, outlined below, and solid economic and financial analyses), candid, sound and clear rationale for the project’s two restructurings, results-focused and generally supported by adequate evidence to justify the assessment and proposed ratings. The main evidence integrated and included in the ICR the results of the analyses of data presented in the: Results Framework (Annex 1), with the corresponding components, indicators, targets, revisions arising from the two restructurings (ICR, Tables 1 and 2); and from the Project’s Impact Evaluation Study.; The ICR exhibited various shortcomings, although mostly presentational and absence of explicit information. Subsequently, the ICR author provided to the IEG evaluator a very informative note providing relevant clarifications (for items b – g), as indicated below (dated Feb. 13, 2023).; Given the project’s two restructurings and reduced scope of many of the performance targets, it is appropriate that the ICR carried out a split evaluation. Sound methodology requires a split evaluation to assess the project’s achievements across the project’s entire lifetime, against both the original and revised project objectives and their corresponding outcome targets. The ICR partially followed this procedure. In some tables in section II (outcome), the ICR measured the actual achieved prior to restructuring, and compared the actual with the indicator and the target used at the time of restructuring; Unclear role of the project in contributing to generating and disseminating improved agricultural technologies, and to increased adoption by beneficiary farmers. The reconstructed theory of change (ToC) outlined in the ICR (Figure 1) did not make explicit reference to project activities in providing improved technologies, although the text made a general reference to improved technologies promoted by the project which contributed to increased productivity (ICR, para. 38). Also, in the ToC there was no explicit reference in outputs to improved technologies and in outcomes to farmer adoption of improved technologies. It is recognized that the results framework (RF, Annex 1) did include an indicator on “farmers in target GCAP intervention areas who have applied improved technologies or management practices”, with a 100% adoption rate at completion. Subsequently, the TTL provided to IEG additional clarifications on various project activities which promoted expanded dissemination and adoption of improved agricultural technologies, including support from the grant from USAID and project-supported training activities, which contributed to spreading and using improved technologies by beneficiaries; The TOC and RF lacked reference to the project contributing to increased incomes of direct beneficiaries, especially considering the estimated high gross margins to beneficiary farmers. Subsequently, the TTL provided to IEG additional clarifications on various project activities which contributed to increased farmer incomes, including improved land development, access to inputs and improved farmer technologies, strengthened farmer-market linkages, and documentation provided in the project’s matching grant impact assessment report; While the ICR highlighted the outcome of mobilizing private sector financing, the ICR was not clear on the role of the project in expanding access to private sector finance by direct beneficiaries, and to the role of the project in expanding the role of the private sector, although implied in the ICR. Subsequently the TTL provided useful clarifications, including: beneficiaries from the matching grants provided a minimum of 20% of the cost of the investments; recipient farmers of matching grants use their newly acquired assets as collateral to mobilize additional investment funding into their businesses; examples of various businesses which mobilized additional investments catalyzed by project investments; mobilizing larger scale commercial farmers who invested in their irrigation schemes and covered irrigation services charges to help sustain project investments; The RF (Annex 1) showed a large increase in the final number of direct beneficiaries (original target of 50,000 vs. actual of 240,264), but the text did not elaborate on the on the basis for this large increased number, aside from a brief reference to 226,000 smallholders “benefitting from improved seeds through the Planting for Food and Jobs Program” (ICR, para. 50). Subsequently, the TTL provided useful clarifications, including: the project's subsequent (in 2017) engagement with a Planting for Food and Jobs Programme, which promoted the distribution and adoption of seeds and fertilizers to a larger number of direct beneficiaries, well beyond the numbers reached under the irrigation schemes; The RF/PDO presented “area with improved irrigation and drainage services” as part of the PDO, rather than being an “intermediate outcome” (or output); and; The developmental effects of various project actions and important indicators were not discussed in the ICR, and rather, were presented in the RF (Annex 1) as achieved, "yes" or "no" (e.g., protocol/framework for dealing with investors at agricultural sector level established; framework for out grower scheme developed; model lease agreement developed; GIDA reform completed). Even a brief summary assessment would have been useful. Subsequently, the TTL provided useful clarifications, including: (i) project-supported strategic plan implemented by the project to promote investors into the sector, including investor start-ups, investor aftercare, investor screening; (ii) the project supported the development of an Outgrower Framework", used under the matching grants scheme, and subsequently adopted and used by the Ministry of Agriculture; (iii) the use of the model lease agreement by various strategic stakeholders, including investors, landowners, Ghana Investment Promotion Centre (GIPC), and Lands Commission; (iv) reforming/restructuring/strengthening GIDA to make it more efficient and effective organization.

a. Quality of ICR Rating

Substantial