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The World Bank

Report No: ICR00004131

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-4192, IDA-4639, IDA-4740, IDA-5172, TF011170)

ON

CREDITS AND A GRANT

IN THE AMOUNT OF SDR 134.0 MILLION
(US$199.25 MILLION EQUIVALENT)

TO THE

UNITED REPUBLIC OF TANZANIA

FOR AN

AGRICULTURAL SECTOR DEVELOPMENT PROJECT

March 27, 2017

Agriculture Global Practice
Country Department AFCE1
Africa Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective February 28, 2017)

Currency Unit = Tanzanian Shilling
TZS 1.00 = USD 0.000447
USD 1.00 = TZS 2,235

FISCAL YEAR
July 1–June 30

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
ASDP	Agricultural Sector Development Project
ASDS	Agricultural Sector Development Strategy
ASLM	Agricultural Sector Line Ministries
CAS	Country Assistance Strategy
CORDEMA	Client-Oriented Research and Development Management Approach
DADP	District Agricultural Development Plan
DEMOs	District Environmental Management Officers
DIDF	District Irrigation Development Fund
ECF	East Coast Fever
ESIAs	Environmental and Social Impact Assessments
ESMF	Environmental and Social Management Framework
ESMPs	Environmental and Social Management Plans
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
ICR	Implementation Completion and Results Report
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IPMP	Integrated Pest Management Plan
IRR	Internal Rate of Return
KATC	Kilimanjaro Agricultural Training Center
LGA	Local Government Authority
M&E	Monitoring & Evaluation
MAFC	Ministry of Agriculture, Food Security, and Cooperatives
MATI-Igurusi	Ministry of Agriculture's Training Institute at Igurusi
MTEF	Medium Term Expenditure Framework
MTR	Mid-Term Review
MKUKUTA	Mpango wa Kukuza Uchumi na Kuondoa Umaskini Tanzania (National Strategy for Growth and Poverty Reduction)
NPS	National Panel Surveys
O&M	Operation and Maintenance
PDO	Project Development Objective
PHRD	Japan Policy and Human Resources Development
RPF	Resettlement Policy Framework
SACCOs	Savings and Credit Co-operative Societies
SESA	Strategic Environmental and Social Assessment
SRI	System for Rice Intensification

SSA	Sub-Saharan Africa
SWAp	Sector-Wide Approach
WARCs	Ward level Agricultural Resource Centers
WRS	Warehouse Receipt System
ZARDEFs	Zonal Agricultural Research and Development Funds
ZARDIs	Zonal Agricultural Research and Development Institutes
ZIELUs	Zonal Information and Extension Liaison Units
ZITSUs	Zonal Irrigation Technical Support Units

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United Republic of Tanzania
Agriculture Sector Development Project

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A. Basic Information

Country:	United Republic of Tanzania	Project Name:	Agriculture Sector Development Project
Project ID:	P085752	L/C/TF Number(s):	IDA-4192, IDA-4639, IDA-4740, IDA-5172, TF011170
ICR Date:	March 27, 2017	ICR Type:	Core ICR
Lending Instrument:	SIL	Recipient:	Government of the United Republic of Tanzania
Original Total Commitment:	XDR 61.6 M	Disbursed Amount:	XDR 121.5 M
Revised Amount:	XDR 134.0 M		
Environmental Category:	B		
Implementing Agency: Ministry of Agriculture, Food Security, and Cooperatives			
Co-financiers and Other External Partners: Government of Tanzania, International Fund for Agricultural Development, African Development Bank, Government of Japan, Irish Aid, European Union, and Project Beneficiaries.			

B. Key Dates

Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	May/18/2004	Effectiveness:	Jul/01/2006	Oct/18/2006
Appraisal:	Feb/14/2006	Restructuring(s):		Jun/09/2009, May/28/2010, Oct/23/2012, Mar/24/2014, Nov/28/2014, Dec/12/2015
Approval:	Jun/15/2006	Mid-term Review:	Apr/20/2009	Sep/18/2008
		Closing:	Jun/30/2011	Sep/30/2016

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes:	Moderately Unsatisfactory
Risk to Development Outcome:	High
Bank Performance:	Moderately Unsatisfactory
Borrower Performance:	Moderately Unsatisfactory

C.2 Detailed Ratings of Bank and Borrower Performance

Bank	Ratings	Borrower	Ratings
Quality at Entry:	Moderately Satisfactory	Government:	Moderately Unsatisfactory
Quality of Supervision:	Moderately Unsatisfactory	Implementing Agency/Agencies:	Moderately Unsatisfactory
Overall Bank Performance:	Moderately Unsatisfactory	**Overall Borrower Performance:**	Moderately Unsatisfactory

C.3 Quality at Entry and Implementation Performance Indicators

Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	Yes	Quality at Entry:	None

Problem Project at any time (Yes/No):	Yes	Quality of Supervision:	None
PDO rating before Closing/Inactive status	Moderately Unsatisfactory		

D. Sector and Theme Codes		
Sector Code (as % of total Bank financing)	**Original**	**Actual**
Agricultural extension and research	27%	27%
General agriculture, fishing and forestry sector	35%	35%
Irrigation and drainage	21%	21%
Agro-industry, marketing, and trade	9%	9%
Other Public Administration	8%	8%

Theme Code (Primary/Secondary)		
Rural services and infrastructure (P)	55%	61%
Rural policies and institutions (S)	45%	39%

E. Bank Staff		
Positions	**At ICR**	**At Approval**
Vice President:	Makhtar Diop	Gobind Nankani
Country Director:	Bella Bird	Judy M. O'Connor
Global Practice Manager:	Mark E. Cackler	Karen McConnell Brooks
Project Team Leader:	Abel Lufafa	Robert Townsend
ICR Team Leader:	Abel Lufafa	
ICR – Primary Author:	Eustacius Betubiza	

F. Results Framework Analysis[1]

Project Development Objectives

The project had two complementary objectives: (i) to enable farmers to have better access to and use of agricultural knowledge, technologies, marketing systems and infrastructure; all of which contribute to higher productivity, profitability, and farm incomes; and (ii) to promote agricultural private investment based on an improved regulatory and policy environment.

Revised Project Development Objectives (*as approved by original approving authority*)

At the time of the second Additional Financing (AF), the wording of the first part of the PDO was modified slightly by removing the link to higher order sector objective outcomes, i.e. the phrase "all of which contribute to higher productivity, profitability, and farm incomes" was eliminated. The two complementary objectives read as follows:

(i) to enable farmers to have better access to and use of agricultural knowledge, technologies, marketing systems and infrastructure; and (ii) to promote agricultural private investment based on an improved regulatory and policy environment.

[1] This analysis relies on both data from the ISRs as well as from a number of impact surveys conducted during the course of the project.

(a) PDO Indicators[2]

	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator (1):	**Direct project beneficiary households (Number, Core)**			
Value:	0.00	Not set at appraisal	285,000	228,000
Date:	30-Dec-2006	N/A	30-Sep-2012	31-Dec-2015
Comments:	This indicator, which wasn't originally in the project, was added after 6 years into project implementation as part of the restructuring at the time of the 3rd Additional Financing in October 2012. Its belated addition undermined its accuracy since no reliable mechanisms for data collection had initially been put in place at appraisal.			
Indicator (1a):	**Female beneficiaries (Percentage, Core Supplement)**			
Value:	0.00		20%	25%
Date:	30-Dec-2006		30-Sep-2016	31-Dec-2015
Comments:	Female participation in village project committees and in farmer field schools was 40 percent.			
Indicator (2):	**Ratio of processed exported agricultural products to total exported agricultural products (Percentage, Custom)**			
Value:	18.70	23.00		27.40
Date:	30-Nov-2006	31-Mar-2014		31-Dec-2015
Comments:	This is a global figure that is not necessarily limited to direct Program beneficiaries. The data source is National Panel Surveys.			
Indicator (3):	**Flow of private funds into the agriculture sector (TZS Million) (Number, Custom)**			
Value:	167,000	463,000		691,000
Date:	13-Mar-2006	31-Mar-2014		31-Dec-2015
Comments:				
Indicator (4):	**Irrigation Area developed (New and Rehabilitated) (Hectare(Ha), Custom)**			
Value:	249,992	500,000	380,000	450,393
Date:	30-Nov-2005	31-Dec-2011	31-Mar-2014	30-Sep-2014
Comments:	The original target of 500,000 was revised downward during the second Additional Financing on May 28, 2010 to 380,000 as the original target was deemed ambitious. The final figure of 450,393 is as of September 2014. When most of the Program's Phase-I ended on March 31, 2013, the achieved area was 410,227 hectares. Source of data is the Irrigation Impact Assessment Report			
Indicator (5a):	**Smallholders using Oxen (Percentage, Custom Breakdown)**			
Value:	20.00	30.00		24.00
Date:	30-Jun-2003	31-Mar-2014		16-Jun-2015
Comments:				
Indicator (5b):	**Smallholders using Tractors (Percentage, Custom Breakdown)**			
Value:	3.00	5.00		14.00

[2] Most of the results are reported up to 2014. This is because after 2014, the focus of the project was exclusively on construction of warehouses, an activity that was envisaged to be the focus of the second phase of the ASDP.

Date:	30-Jun-2003	31-Mar-2014		16-Jun-2015
Comments:	This statistic refers to all tractor use, not necessarily smallholders as the national statistics do not differentiate the “small” from the “large”. Data source is the National Panel Surveys.			
Indicator (6a):	**Farm households using improved seeds (Percentage, Custom Breakdown)**			
Value:	18.00	35.00		19.80
Date:	30-Jun-2004	31-Mar-2014		16-Jun-2015
Comments:				
Indicator (6b):	**Farm households using fertilizers (Percentage, Custom Breakdown)**			
Value:	12.00	25.00		16.80
Date:	30-Jun-2004	31-Mar-2014		16-Jun-2015
Comments:				
Indicator (6c):	**Farm households using improved livestock breeds (Percentage, Custom Breakdown)**			
Value:	2.00	5.00		4.00
Date:	30-Jun-2004	31-Mar-2014		16-Jun-2015
Comments:				
Indicator (6d):	**Farm households using improved soil fertility management practices(Percentage, Custom Breakdown)**			
Value:	10.00	15.00		N/A
Date:	30-Jun-2003	31-Mar-2014		31-Dec-2015
Comments:	This indicator was added during the first Additional Financing (June 9, 2009) to reflect the soil management activities which were added to the project during that Additional Financing. However, mechanisms for its measurement were not put in place.			

(b) Intermediate Outcome Indicators

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator(1):	***LGAs that qualify to receive performance bonus (Percentage, Custom)***			
Value:	0.00	100.00		98.00
Date:	30-Jun-2006	30-Jun-2006		30-Jun-2013
Comments:	The level of resources accessed by qualifying Local Government Authorities were linked to annual performance on local level planning and implementation, agricultural services reform, the quality of local agricultural investments, and the local policy and regulatory environment.			
Indicator(2):	***Agricultural marketing regulations and legislations in place (Number, Custom)***			
Value:	7.00	21.00		23.00
Date:	30-Jun-2005	31-Mar-2014		30-Nov-2011
Comments:				
Indicator(3):	***Smallholder households participating in contract farming and marketing outgrower schemes (Number, Custom)***			
Value:	821,000	1,400,000		2,713,037
Date:	30-Jun-2006	31-Dec-2015		30-Jun-2011
Comments:	This indicator, which was not part of the Results Framework at appraisal was introduced into the Project in the “Updated Results Framework” as part of the first Additional Financing in May 2009. At that point,			

	the baseline was stated as 140,695, and the target as 468,660. However, ISR No. 12 (archived in December 2011) was the first to make reference to this indicator, but with a different baseline of 821,000 for the date of June 2006 and a target of 1,400,000. ISR No. 12 did not give a justification for the major shift, although this was probably driven by data newly obtained from national statistics. Such national statistics are general, intermittent, and often times inconsistent.			
Indicator(4):	***Operational research budget flowing through Zonal Agricultural Research and Development Funds (Percentage, Custom)***			
Value:	0.00	75.00	90.00	73.30
Date:	18-Oct-2006	31-Dec-2011	31-Mar-2014	30-Nov-2012
Comments:	The target was formally increased in the first Additional Financing (June 9, 2009). The outcome data were not updated after the Program's Phase-I closed in June 2013.			
Indicator(5):	***Private agricultural service providers in LGAs contracted for service delivery (Number, Custom)***			
Value:	0	558		50
Date:	18-Oct-2006	31-Mar-2014		30-Jun-2012
Comments:	There was little use of private agricultural service providers. Local government authorities reported not having enough resources to keep their own staff operational, let alone contract private extension service providers. Also, outcome data were not updated after the Program's Phase-I closed in June 2013.			
Indicator(6):	***Productivity of rice in irrigation schemes (Metric ton, Custom)***			
Value:	4.50	6.00		5.80
Date:	30-Nov-2010	31-Mar-2014		31-Jul-2014
Comments:	The above figures are as reported in the Program's documents and ISRs. However, they don't seem to represent the weighted average of schemes developed under the Program. The Program dealt with three types of schemes, each with a different baseline. First, brand new schemes (36 per cent of total developed area) had an initial rice yield baseline of zero. Second, traditional schemes, which were upgraded under the Program (comprising 52 percent of total area developed), typically had a baseline of 1 – 1.5 tonnes/hectare. Third, old, previously developed schemes which were rehabilitated (about 12 percent of total area developed under the Program) had a baseline line yield of about 2-3 tonnes/hectare. The weighted average baseline yield for all these schemes, based on data from the independent Impact Evaluation for Irrigation, was about 1.61 metric tonnes per hectare, and the weighted achieved yield was about 3.43 tonnes per hectare. However, a small number of already rehabilitated schemes that benefited from the System for Rice Intensification under the Program are the ones with the kind of high baseline and high endline profile that corresponds to what is reported in project documents and ISRs.			
Indicator(7):	***Farmers receiving visits from private and public extension staff (Percentage, Custom)***			
Value:	10.00	55.00		60.00
Date:	19-May-2006	31-Dec-2015		31-Mar-2013
Comments:				
Indicator(8a):	***Dip tanks constructed or rehabilitated (Number, Custom Breakdown***			
Value:	0	640		680.00
Date:	19-May-2006	31-Mar-2014		30-Jun-2013
Comments:				
Indicator(8b):	***Markets constructed or rehabilitated (Warehouses) (Number, Custom Breakdown)***			
Value:	0	1,185		1,266
Date:	30-Jun-2006	30-Sep-2016		30-Jun-2013
Comments:	This is the sum of 921 warehouses, 351 crop markets, and 58 livestock markets			
Indicator(8c):	***Irrigation Schemes constructed or rehabilitated (Number, Custom Breakdown)***			
Value:	0	600		386
Date:	30-Jun-2005	31-Mar-2014		30-Jun-2013
Comments:	The number of 386 schemes developed under the Program comes from the Irrigation Impact Assessment Report			

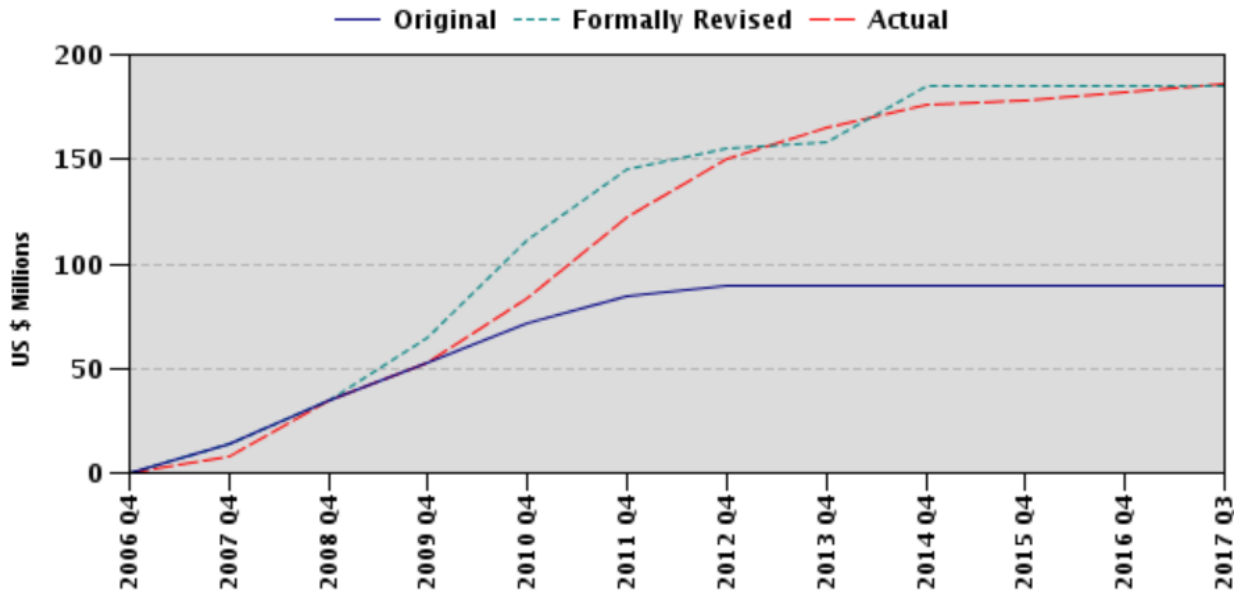
G. Ratings of Project Performance in Implementation Status and Results Reports (ISR)

ISR No.	Date	PDO	IP	Actual Disbursements USD Millions
01	05-Oct-2006	Highly Satisfactory	Satisfactory	0.00
02	28-Jun-2007	Satisfactory	Moderately Satisfactory	8.03
03	28-Nov-2007	Moderately Satisfactory	Moderately Satisfactory	22.80
04	31-Jan-2008	Moderately Satisfactory	Moderately Satisfactory	22.80
05	19-Sep-2008	Moderately Satisfactory	Moderately Satisfactory	45.46
06	02-Dec-2008	Moderately Satisfactory	Moderately Satisfactory	45.46
07	09-Jun-2009	Moderately Satisfactory	Moderately Satisfactory	51.80
08	04-Dec-2009	Moderately Satisfactory	Moderately Satisfactory	86.19
09	26-May-2010	Moderately Satisfactory	Moderately Satisfactory	109.46
10	17-Nov-2010	Satisfactory	Moderately Satisfactory	109.46
11	07-Jun-2011	Moderately Satisfactory	Moderately Satisfactory	126.31
12	26-Dec-2011	Moderately Satisfactory	Moderately Satisfactory	148.36
13	09-Jul-2012	Moderately Satisfactory	Moderately Satisfactory	150.69
14	18-Jan-2013	Moderately Satisfactory	Satisfactory	151.72
15	27-Jul-2013	Moderately Satisfactory	Satisfactory	165.53
16	05-Mar-2014	Moderately Satisfactory	Satisfactory	171.53
17	01-Nov-2014	Moderately Satisfactory	Moderately Satisfactory	176.79
18	23-Jun-2015	Moderately Satisfactory	Moderately Unsatisfactory	176.79
19	01-Feb-2016	Moderately Satisfactory	Moderately Unsatisfactory	179.58
20	03-Jun-2016	Moderately Unsatisfactory	Moderately Satisfactory	185.99

H. Restructuring (if any)

There were several restructurings to the original Project mainly related to Additional Financings (AFs): the first AF on June 9, 2009 for US$30.0 million to respond to the food crisis; the second AF on May 28, 2010 to respond to the financial crisis; and a third AF on October 23, 2012 to create a bridge between the project and the anticipated second phase. There was also a PHRD complementary grant on January 17, 2012 to supplement the credit resources. The bulk of the funds (about 90 percent) was disbursed by March 2014 at which point the Original Credit and AF-I and AF-II were closed. In November 2014, the closing date was extended to December 31, 2015. Again, in December 2015, another restructuring was undertaken to extend the closing date from December 31, 2015 to September 30, 2016 to allow completion of ongoing works contracts in warehouse construction. There were also some refinements to the project's indicators, as well as to the project's activities, especially with respect to the private sector promotion activities, as discussed later in the main text.

I. Disbursement Profile



United Republic of Tanzania
Agriculture Sector Development Project

1. Project Context, Development Objectives, and Design

1.1 Context at Appraisal

1. The 1990s were characterized by slow annual growth in the Gross Domestic Product (GDP), averaging around 3.5 percent, and similarly slow agricultural growth of around 3 percent. The Government, with support from its development partners, had initiated a series of reforms aimed at improving macroeconomic stability, shifting to more liberalized markets, and broadening the scope for private sector activity in the late 1990s. Regarding agriculture in particular, the Government had started in 1998 developing an Agriculture Sector Development Strategy (ASDS 2001-2020), which was completed in 2001, aimed at creating an enabling environment for improving farm incomes and reducing rural poverty. Government's efforts seemed to be paying off, with annual GDP growth averaging 6.2 percent for the period 2001-2005, and annual average agricultural growth of 5.1 percent.

2. Government was eager to maintain this momentum, and in its 2005 National Strategy for Growth and Poverty Reduction for the period 2006-2010 (commonly referenced by its Swahili acronym MKUKUTA), agriculture was considered one of the critical focus areas. This was in recognition of the lead role that the sector plays in the economy, accounting for 46 percent of GDP and about 60 percent of export earnings in the preceding three years, as well as serving as a source of food and raw materials for industries, and providing livelihoods to 82 percent of the population. In order to respond to these challenges and opportunities, Government had developed a 15-year Agricultural Sector Development Programme - that would follow a Sector-Wide Approach (SWAp[3]) - to implement the ASDS. Under the arrangements, all ongoing national and area based projects and programmes would be mainstreamed into the ASDP framework. Government had also established a Basket Funding mechanism (with the intention to shift towards budget support) for the ASDP and had invited the World Bank and other development partners contribute to the Basket Fund and to assist in implementation of the Programme, starting with the first phase covering the 2006/2007 to 2012/2013 fiscal years. This formed the basis for the World Bank's support in the form of the Agricultural Sector Development Project (ASDP), which was approved by the Board in 2006.

1.2 Original Project Development Objectives (PDOs) and Key Indicators (*as approved*)

Original development objective

3. The project had two complementary objectives: (i) to enable farmers to have better access to and use of agricultural knowledge, technologies, marketing systems and infrastructure; all of which contribute to higher productivity, profitability, and farm incomes; and (ii) to promote agricultural private investment based on an improved regulatory and policy environment.

[3] Under a SWAp, all significant funding for the sector supports a single sector strategy and expenditure framework, under government leadership, adopting common approaches across the sector, and progressing towards relying on government procedures to plan, disburse and account for all funds.

Original key performance indicators

4. The original key outcome indicators were:

(i) Percent of farmers accessing improved agricultural services and infrastructure (baseline for crop extension = 35 percent, by 2010 = 45 percent; baseline for livestock advice = 16 percent, by 2010 = 21 percent; baseline for irrigation use = 8 percent, by 2010 = 10 percent);

(ii) Percent of farmers that show sustained use of one or more relevant technologies and the sustainable use of productive infrastructure (by 2010 = 40 percent increase from baseline); and

(iii) Percent of private sector investment growth into agriculture (5 percent increase per year).

1.3 Revised PDO (*as approved by original approving authority***) and Key Indicators, and Reasons/Justification**

Revised PDO

5. During the second AF (approved on May 28, 2010) the wording (not substance) of the first part of the PDO was modified slightly by removing the link to higher order sector objective outcomes of productivity and incomes, presumably to circumscribe the project's accountability and attribution. The restated objectives after the reformulation are:

> (i) to enable farmers to have better access to and use of agricultural knowledge, technologies, marketing systems and infrastructure; and (ii) to promote agricultural private investment based on an improved regulatory and policy environment.

Revised project outcome indicators and targets

6. In 2008, the results framework for the Government Program were revised. In order to align the Project's results framework with that of the Government Program's results framework, some new PDO indicators were added to the Project's results framework, and the old ones were reformulated during the first AF (approved on June 9, 2009) as follows:

(i) Direct project beneficiaries (disaggregated by gender);
(ii) Ratio of processed exported agricultural products to total exported agricultural products;
(iii) Flow of private funds into the agriculture sector;
(iv) Irrigation Area developed (New and Rehabilitated);
(v) Smallholders using mechanization (Oxen, Tractor); and
(vi) Farm households using improved seed, fertilizers, improved livestock breeds and soil fertility management practices.

1.4 Main Beneficiaries

7. The primary target group of the project included, inter alia: (i) smallholders across the country who would benefit from project financed agricultural advisory services and physical investments, especially in small-scale irrigation and local infrastructure; (ii) the Local Government Authorities (LGAs) whose capacity in participatory planning, implementation, and monitoring of public programs would be strengthened; and (iii) the research community, through funding for client driven research and capacity building. Secondary beneficiaries included the private sector, such as: (i) private extension service providers contracted by some LGAs; (ii) input suppliers and contractors; and (iii) off-takers (traders and agro processors).

1.5 Original Components (*as approved*)

8. *Component 1: Local Level Support (IDA financing US$55.9 Million).* This component would primarily support achievement of the first project objective by improving LGAs' capacity to plan, support and co-ordinate agricultural services and investments in a more efficient, participatory and sustainable manner through well developed and implemented District Agricultural Development Plans (DADPs), including increasing farmer influence in resource allocation decisions for services and investments; progressing agricultural services reform and improving the quality of public expenditure. Project support would be structured around the local level block grant system used by the Government of Tanzania to channel funds to LGAs for local agricultural investments (including local infrastructure and small scale irrigation), local agricultural services, and local agricultural capacity building and reform.

9. *Component 2: National Level Support (IDA Financing US$34.1 Million).* This component would support achievement of both project objectives. The first objective would be supported through improvements in the relevance and responsiveness of the agricultural research system, including greater linkages with extension. The second objective would be supported through improvements in the national level policy environment to render it more conducive to market and private sector development, and through developing mechanisms for greater public-private partnerships, including carrying out preparatory work and investments in national level irrigation through public-private partnerships. Other national level activities would be geared toward ensuring food security as well as those related to project co-ordination, monitoring and evaluation.

1.6 Revised Components

10. At Mid-Term-Review (MTR) in September-October 2008, it was realized that some of the activities for supporting the second objective under the "market and private sector development" rubric were overly ambitious. To this end, these activities were reconfigured as: (i) improving local regulatory environment for private investment in small, medium and large scale interventions; (ii) promoting forward and backward linkages along value chains; (iii) targeting investments in processing; (iv) promoting contract farming and out-grower opportunities; and (v) promoting access to financial services.[4] In addition, during the first Additional Financing in June 2009, a new activity was added to support research and dissemination of soil fertility management technologies.

[4] Although the suggested changes were documented in the Aide-Memoire for the 3rd Joint Implementation Review (the MTR Mission), there is no evidence of a subsequent formal restructuring in the World Bank.

1.7 Other Significant Changes

11. Additional resources were progressively availed to the project, totaling US$109.25 million. The first AF on June 9, 2009 for US$30.0 million to respond to the food crisis and the second AF on May 28, 2010 from the Crisis Response Window to respond to the Global Economic Financial Crisis[5]. Even when they were justified and framed in the context of the food crisis and financial crisis, respectively, both the first and second AF just provided additional funding for activities related to the original project. A third AF was approved on October 23, 2012 to provide a one year financing 'bridge' for project activities in the larger government program. The third AF would sustain ongoing activities, strengthen initial successes and address some of the key challenges and risks to realization of overall objectives of the ASDP. There would be special focus on construction of warehouses, which was anticipated to be a major activity in the second phase of the ASDP.

12. There was also a Japan Policy and Human Resources Development (PHRD) complementary grant on January 17, 2012 to supplement the credit resources with a focus on scaling up activities related to rice production in 20 irrigation schemes. Specifically, the PHRD grant supported: (i) strengthening access to improved technologies for rice production in irrigation schemes, including postharvest technologies, agronomic practices, improved seed, and fertilizers; (ii) enhancing access to markets and value addition by improving storage capacity through construction of warehouses, processing, and quality control; and (iii) capacity building for irrigation development, including training for district irrigation technicians, village/ward extension staff, and farmers to increase their access to knowledge and skills related to irrigation development (see summary table below). The other changes entailed extension of the project closing date from December 31, 2014 to December 31 2015, and again from December 31, 2015 to September 30, 2016 to allow for completion of unfinished warehousing infrastructure. In addition, there was a reallocation of resources away from the Local Level Support to National Level Support to cater for the increased focus on agricultural research.

Restructuring	Date	AF (USD Mill)	CR/TF Number	Original Closing Date	Revised Closing Date	PDO Change	Change to indicators
First	09-Jun-2009	30.00	IDA-46390	30-Jun-2012	31-Mar-2014	None	None
Second	28-May-2010	35.00	IDA-47400	30-Jun-2013	31-Mar-2014	Changes to the wording (not substance) of the PDO	Yes
Third	17-Jan-2012	14.25	TF-11170	31-Dec-2014	30-Sep-2016	None	None
Fourth	23-Oct-2012	30.00	IDA-51720	31-Mar-2014	30-Sep-2016	None	None

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design, and Quality at Entry

i) Soundness of the background analysis supporting the project, lessons learned incorporated, and the rationale for the Bank's intervention

[5] This AF to was to support the Government's strategy to deal with the impact of the crisis by protecting core spending in priority sectors especially infrastructure and agriculture, protecting public investments, supporting employment and food security. Specifically, the AF was intended to close the funding gap of the District Irrigation Development Fund (DIDF), resulting from increased demand for irrigation and budget shortfalls due to costs overruns attributed to high fuel prices.

13. *Soundness of Background Analysis*. A lot of background analysis had been carried out with Government in the lead, supported by its Development Partners, including the World Bank. These included developing the ASDS, the ASDP, and the Program's Basket Funding mechanisms. Also, numerous working papers had been prepared relating to agricultural research, agricultural extension, farmer empowerment, and information and communication. However, a thorough analysis of the policy framework should have been done to gauge the extent to which the policy environment was limiting private investment flows into the agricultural sector as the project seemed to postulate. That would have helped in clearly distilling the key policy issues and properly calibrating the project's expectations, in nature and scope, regarding the likely policy response. Lack of such an analysis subsequently undermined the case for attribution of broad sector outcomes to policy actions undertaken by Government during the project period. Similarly, the size and dynamics of the agricultural sector seemed to not have been fully understood. As a result, sector-wide indicators were used to gauge the outcome from modest investments by a handful of basket-fund participants, with many projects still acting outside this framework. Also, a thorough capacity assessment of the Government entities involved in project implementation would have informed the options for the project's architecture. In particular, the "big bang", country wide approach from the get go, instead of a progressive roll-out seemed to have overestimated the central and local Government's capacity to implement such a Program. Finally, a better understanding of the central Government's budgetary and treasury processes would have helped avoid some of the funds flow difficulties that later plagued project implementation.

14. *Incorporation of Lessons Learned*. A number of good lessons learned from previous or ongoing operations within the country and elsewhere were duly reflected in the project's design, including: (i) building public agricultural service provision around demand-based approaches as they have demonstrated greater effectiveness in significantly increasing productivity and incomes; (ii) using incentive based systems to reform Local Government Authorities, with access to resources based on annual performance assessments; and (iii) integrating Development Partner financed projects into Government systems to reduce duplication and transaction costs.

15. *Soundness of Rationale for the Bank's Intervention*. Together with other development partners, the World Bank had been assisting the Tanzanian Government in combatting poverty, especially in rural areas. It had actively participated in elaborating the ASDP, and its presence in its implementation was critical both through its financial contribution and in sharing its experience in implementing similar sector-wide approaches elsewhere in the region (e.g. in neighboring Zambia).

ii) Assessment of the project design—objectives, components, and organization — including its realism and the degree of complexity

16. *Objectives and Components*. The project's first objective was generally clear, simple, and realistic, as were the associated project activities. The second objective, while pertinent, was too broad and vague, and the associated activities fairly ambitious. When these activities were refocused to local interventions at MTR, the second objective, and the corresponding Key Performance Indicators should have been reformulated to render them more coherent with the reformulated activities. For instance, the new, more local-level oriented activities could not lead to "processed agricultural exports" which was retained as a Key Performance indicator, along with

several other similar indicators.

17. *Organization*. The basket funding approach was a good design feature in as far as it sought to minimize transaction costs and to better align development partners' support to the Medium Term Expenditure Framework (MTEF) for agriculture. The components were also aligned to the Government's national and local level planning and budget process. In addition, the sub-components of the local level support were aligned to the National Government's system of block grants to LGA.

iii) Adequacy of government's commitment, stakeholder involvement, and/or participatory processes

18. *Government Commitment***.** The Agricultural Sector Development Program is truly Government's own Program, whose origins can be traced to as far back as 1998, when Government initiated a series of broad-based consultations that culminated in the ASDS in 2001, and the ASDP in 2005 as an implementation framework for the ASDS.

19. *Other stakeholders***.** Internal stakeholders included farmer and community groups, LGAs, zonal research institutes, academic institutions, and the private sector. External stakeholders included a number of development partners, most notably the European Union, Japanese International Cooperation Agency, Danish International Development Agency, Irish Aid, International Fund for Agricultural Development (IFAD), and the World Bank.

iv) Assessment of risks and mitigation measures

20. The identified threats to the PDO included the possibilities of: (i) waning government commitment; (ii) adverse macroeconomic events; (iii) decline in development partner interest over time; (iv) slow implementation of cross-cutting reforms; (v) few private service providers; (vi) inadequate community empowerment; (vii) persistence of top-down approaches; (viii) weak implementation capacity at the national level; (ix) poor internal audit; (x) missing irrigation targets in quantity and quality; and (xi) insufficient LGA capacity. A number of the identified possible threats materialized to varying degrees of severity, and where they did materialize, the project's proposed measures were generally inadequate to mitigate them. For instance: (a) disruptive belated release of funds by Government (a sign of its sometimes uneven commitment to project implementation) persisted throughout project implementation; (b) incidents of top-down approaches by LGAs persisted in procurement management, especially in large irrigation schemes, partly due to slow behavioral change, but mostly due to the lack of practical modalities for involving local communities in complex procurement processes; (c) there were quality issues during the construction of some warehousing and irrigation infrastructure due to limited engineering skills and erratic funding; and (d) slow procurement processing due to limited capacity at the lead ministry persisted throughout the project's life.

2.2 Implementation

21. After a slow start, largely due to belated initial disbursements, project implementation started picking pace after the first year. A number of factors greatly facilitated project implementation, including annual joint implementation support missions with comprehensive action plans, and

active Government Thematic Working Groups that followed up on these action plans. However, a number of factors contributed negatively to project implementation progress including: (i) persistently late release of funds from the Exchequer to the LGAs, and often in amounts below those required to implement the approved plans, hence compromising quality in some cases[6]; and (ii) slow procurement at both LGA and national levels. Implementation of most project activities was finalized, except for two warehouses funded out of the PHRD resources, which are expected to be completed using government own resources.

2.3 Monitoring and Evaluation Design, Implementation, and Utilization

22. As stated earlier, a comprehensive Monitoring & Evaluation (M&E) Framework for the Government program was developed in 2008, leading to the revision of the Project Appraisal Document's original results framework at the time of the first AF in 2009 to ensure coherence[7]. Imbedding the project's M&E system within Government was a good design feature, fully consistent with the project's overall philosophy of working within and strengthening Government systems. However, for project monitoring purposes, the system had several shortcomings. First, several Project Key Performance Indicators could hardly be attributed to the project's activities (e.g. growth in processed exported agricultural goods, increased usage of tractors etc.). Second, because of LGAs' weak capacity, routine data collection, which was belatedly initiated in 2009, was largely focused on financial data and project activities, with generally no reporting on outcomes (such as yield). Third, data from National Panel Surveys (NPS), which would have helped fill some of the data gaps, was intermittent and too general to draw attribution[8]. In general, the M&E system's design, implementation, and use were unsatisfactory.

2.4 Safeguard and Fiduciary Compliance

Safeguard Compliance

23. *Environment*. The project's environmental category was B – Partial Assessment. The Environmental and Social Management Framework (ESMF) was disclosed prior to the project's appraisal. An Integrated Pest Management Plan (IPMP) was also prepared. However, the MTR in 2008 noted inadequate adherence to the ESMF. Consequently, a training module for District and Ward facilitation teams was developed in 2009 and training subsequently carried out. Furthermore, an environmental and social safeguard condition was added to the performance criteria for awarding competitive top-up investment grants to LGAs. A request was also made to LGAs to appoint District Environmental Management Officers (DEMOs) for ensuring integration of safeguard issues in subprojects. However, compliance remained a problem for most of the project duration. Many districts did not appoint DEMOs, and in most cases the mandatory Environmental and Social Assessments (ESIAs) or the Environmental and Social Management Plans (ESMPs)

[6] In irrigation, inadequate funding often resulted in prioritizing engineering surveys and designs, and getting the construction works started, while neglecting other aspects of the feasibility study, such as catchment water balance, geotechnical and soil analysis, irrigation agronomy, and the carrying out of Environmental and Social Impact Assessments.

[7] There was also a slight revision in 2011 to add an indicator reflecting the project's growing focus on irrigated rice.

[8] The first NPS conducted in 2008/2009, the second in 2010/11, and the third in 2012/2013. An Agriculture Sample Census Survey was also carried out in 2007/08.

were not done[9]. In the final years of the project, with most of the work focusing on construction of warehouses, compliance got better when environment management was centralized and managed out of MAFC. Whereas the Program is credited for the initial efforts in drawing up the framework documents, conducting some trainings, and the belated improvements in environment management, overall environmental safeguard compliance and oversight was very poor, and is, therefore, rated unsatisfactory.

24. *Social*. The Resettlement Policy Framework (RPF) had been prepared and disclosed prior to appraisal. Also, one of the activities added as part of the PHRD Grant related to the construction of hydraulics demonstration field plots at Igurusi training institute that would require about 50 acres of land which was being used by farmers to grow paddy and who would need to be compensated. Therefore, an Abbreviated Resettlement Action Plan was prepared and disclosed in 2013. Although the entire project was not audited for compliance, a sample audit revealed some instances where compensation under the resettlement framework had not yet been carried out (such as the 10 families that were displaced and not compensated at the Mahiga irrigation scheme, and 5 families at the Kitere irrigation scheme). Follow up by the Bank before project closure indicated that all the families that had lost land were compensated with other land, however, without due consideration to any impacts that the loss of their original land had on their livelihoods. Social safeguard compliance is, therefore, rated unsatisfactory. Moving forward, Government has put in place relatively adequate measures to deal with involuntary resettlement issues including the legal requirement that compensation, agreeable to any person that is to be displaced) precedes any expropriation of land.

Fiduciary Compliance

25. *Financial Management*. Overall, (i) there were adequate budgeting systems and plans based on the agreed annual work program and annual procurement plan approved by IDA; (ii) the financial accounting software (Epicor9) was operational at national and in some LGAs by Program's end; (iii) there were generally adequate and appropriate numbers of finance staff at the national and LGA levels, some of whom had been trained in the World Bank's financial management and disbursement procedures; and (iv) some LGAs had functional internal audit units and produced quarterly internal audit reports. Project audits of the Agricultural Sector Line Ministries (ASLMs) by the Controller Auditor General for all the fiscal years were unqualified, except for FY08/09 and FY13/14. About US$177,569 in ineligible expenses was belatedly accounted for using substitute documentation. As noted earlier, funds from the project's designated account tended to be held up in the exchequer system, sometimes for several months, raising the possibility of diversion of project resources to other uses. The basket funding arrangement used in the project relied on government procedures and systems to plan, disburse, and account for all project funds. Belated releases not only affected implementation but also led to carry over funds which were not adequately monitored or accounted for[10]. Belated accountability of funds from

[9] Even irrigation schemes that claimed that the ESIA had been carried out could not provide a copy of the purported report to a team of auditors in December 2014.

[10] This problem grew worse with time. Over the 7-year period of 2006/07 to 2012/13, LGAs' expenditures as a percentage of disbursed amounts within the fiscal year were 98, 63, 84, 37, 59, 34, and 30 percent respectively. Annual carry-overs averaged around US$20.2 million, at the period's average exchange rate of TZS 1,400.

LGAs affected timely submission of Interim Financial Reports to the World Bank. In view of the above, overall financial management is rated moderately unsatisfactory.

26. *Procurement*. Procurement was carried out in accordance with the World Bank's guidelines. However, implementation of procurement activities at the national level was often slow. Also, LGAs encountered some challenges, including: improper packaging of activities, delays in the preparation of tender documents and inadequate implementation of Procurement Plans due to insufficient procurement capacity. The project supported capacity building in procurement to national and LGA staff and subproject committees at community level which partly alleviated the problems. Overall procurement performance is rated moderately satisfactory.

2.5 Post-completion Operation/Next Phase

27. Project activities were mostly done at the Village Level, where committees were formed and trained to manage the project-financed investments as part of the project's community empowerment philosophy. In the post-project completion period, technical teams at the ward and the district levels are expected to continue backstopping these committees. In 2013, the Government enacted a new irrigation law which, among other things, created a National Irrigation Commission whose responsibilities include supporting irrigators and monitoring their compliance with maintenance requirements. Adequate maintenance of irrigation infrastructure, which remains a major challenge, will require concerted efforts by all parties (see Section 4 for details).

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design, and Implementation

Overall Rating: Substantial

28. *Relevance of Objective*. This is rated *High*. The project objectives remain valid today. They are consistent with the 2012-2015 Country Assistance Strategy (CAS), which posits that to sustain high growth and to make growth more inclusive to reduce poverty, Tanzania needs to increase agricultural productivity and value addition, among other things. These themes are retained in the CAS Progress Report which extended the current CAS period. This theme is further echoed in the World Bank's Africa Region Strategy, especially under the Competiveness and Employment pillar. In addition, this objective remains consistent with the 2010/11 — 2014/15 Second National Strategy for Growth and Poverty Reduction that emphasizes agricultural modernization and commercialization.

29. *Relevance of the Design*. This is rated *Substantial*. The project had good design features such as: (i) the basket funding approach to ensure coherence among development partners and reduce transaction costs; (ii) aligning disbursements with government's funding mechanisms for Local Government Authorities; (iii) local community empowerment to better respond to communities' felt needs and increase ownership; (iv) using a participatory experiential/hands-on learning approach to agricultural extension through farmer field schools to enhance adoption; (v) promoting client oriented research and development management (CORDEMA); and (vi) emphasizing capacity building for LGAs in participatory investment planning. All these

approaches and attributes are still very relevant. A few design shortcomings include: (i) using sector-wide indicators in the results framework to gauge project performance, even where a case for attribution could not be possibly made; and (ii) overambitious territorial coverage that diluted impact, and made close monitoring difficult.

30. *Relevance of Implementation*. This is rated *Substantial*. Implementing the project through the Government structures, in keeping with the Paris Declaration, helped in greatly aligning the basket funds with the agricultural sector's MTEF, and in integrating the program's activities in the local governments' development plans. However, it would have been better to start with a smaller number of districts and progressively expand to other districts (say after MTR) to give Government and its development partners an opportunity to make corrections as needed. The big-bang approach taken led to many errors going unmonitored and uncorrected, as the project struggled with limited capacity (shortage of irrigation engineers, environmental specialists, and agricultural extension specialists) in the public and private sector to cover the entire country.

3.2 Achievement of Project Development Objectives (Efficacy)

Overall Rating: Modest

31. As indicated earlier, the revised project objectives were: (i) to enable farmers to have better access to and use of agricultural knowledge, technologies, marketing systems and infrastructure; and (ii) to promote agricultural private investment based on an improved regulatory and policy environment[11]. As discussed further below, the project made significant progress on the first objective, although there were some shortcomings in attaining some of the targets (even with the cumulative closing date extension of more than 60 months), coupled with the inability to decipher the number of beneficiaries in the various activity segments in order to more adequately gauge the program's sub-sectoral outreach. There were also concerns about long term sustainability of some of the investments especially some warehouses and irrigation infrastructure the quality of which was generally low. Achievements on the second objective, while promising is a number of cases, especially on policy formulation, were comparatively more limited as it was relatively too early to assess the likely impact of a number of them. Nonetheless, the Program's achievements were quite substantial.

Objective 1: Increasing access to and use of knowledge, technologies, marketing systems and infrastructure.

32. ***Access to knowledge and technology***. About 774,156 farmers and livestock keepers were trained on good crop and animal husbandry practices and different technologies. To accomplish this, the program established 16,330 farmer field schools[12], built or rehabilitated 319 agricultural

[11]Even with the formal revisions, the substance of the PDO did not change to warrant an assessment against both the original and revised project objectives.

[12] A farmer field school is defined as a participatory experiential (hands on) adult learning of a defined group of 20-25 members (farmers) working with a pre-defined curriculum implemented through experimental and/or demonstration plots in the farmers' own community. The 16,330 field schools reached 344,986 farmers (138,461 women and 206,525 men).

resource centers at the ward administrative level[13], established 105 oxen training centers, 32 artificial insemination centers, 136 fish ponds, and 51 livestock development centers, to cite a few. These activities were facilitated by increasing the number of extension officers from 3,379 in 2007/2008 to 9,558 by 2013/2014. Overall, adopters of improved technologies enjoyed income gains of about TZS 631,600 (US$396)[14] over non-adopters due to multiple factors, especially adopting better crop and livestock husbandry, utilizing improved genetic materials, practicing value addition, and enhancing their labor productivity.

33. Crop/Livestock Production. For instance, through better seed and management practices, maize production in the Southern Highlands increased by 20 percent – 50 percent among farmer field school participants, and by 153 percent in Arusha region (from 1.5 to 3.8 tons/hectare). Generally, yields among farmer field school participants were 50 percent – 100 percent higher. Similarly, yields among farmers practicing the System for Rice Intensification were 34 percent higher than their peers. Livestock mortality was also down by some 20 percent, with dramatic results in some communities, such as in Torontho-Mbugani (Korogwe District) where calf-mortality rate reduced from 75 percent to 2 percent.[15] In addition, reduced morbidity among adult livestock increased milk production and weight gain as well. Through better animal husbandry and genetic improvement through artificial insemination and bull rotation, milk yield improved in many instances by up-to 100 percent (e.g. in Meru District, from 6 to 12 liters/cow/day). Cross-breeding between local chicken and improved cockerels increased egg production from 40 to 60 eggs per hen per year and improved the average weight of local chicken from 1.5 to 2.5kg.

34. Value Addition. In order to create awareness about the practice and economics of value addition, the project purchased and distributed to farmer groups about 598 agro-processing machines for various crops, including coffee, maize, paddy, sunflower, cassava, ginger, palm fruit, meat, and milk. The machines are operating with monthly processing capacity of 36,655 tons of sunflower, 30,772 tons of paddy, 11,142 tons of coffee and 5,513 tons of cassava which has added to farmers' revenue. For instance, in Mbinga District (Kitanda village), properly pulped coffee fetched a 36 percent premium in 2008/09 over traditional practices (TZS 2,288/kg versus TZS 1,677/kg). Farmers' consciousness about quality has been raised. For instance, about 90 percent of cashew sold in 2009/2010 was of Grade I, compared to 75 percent in 2006/2007.

35. Labor productivity. Labor productivity has also been enhanced among project beneficiaries. In addition to promoting ox plowing, a total of 65 tractors, 1,972 power tillers and 1,321 ploughs were cumulatively provided to farmers through cost sharing arrangements in 2009/2010 to enhance farmers' appreciation for labor-saving technologies in general. First, the timeliness of farming operations has been significantly improved. Utilizing well-trained oxen reduced the time for plowing one hectare from 30 days using a hand hoe to 2 days. At the price of TZS 2,500 per labor-day, this translates into gross savings of TZS 70,000 per hectare. There were also gains from the associated timely planting, and the ease of applying water conservation technologies. In one village

[13] The purpose of a Ward Agricultural Resource Center is to provide agricultural information to farmers, extension workers, and the public. These centers are managed by farmers at the ward level. They can become meeting places, allowing farmers to share experience and expertise with researchers and extension workers.

[14] Source: An Assessment of the Performance of Extension Services under the Agriculture Sector Development Program in Tanzania, March 2013

[15] Source: Joint Implementation Review, May – June, 2012.

in Nyombe district, the combination of these factors increased maize production from 0.6 tons per hectare to 2-3 tons per hectare. Similar increases have been observed in rice. Total cropped area per household has also increased from 2 to 5 acres on average among oxen users. Similar gains have been observed when moving from hand hoes to powered tillers, with reports of 8 to 10 times reduction in plowing time.

36. ***Access to Transport and Market Infrastructure.*** The Program financed the construction or rehabilitation of 492.2 kilometers of feeder roads. Transport costs went down by 75 percent in some communities after feeder road rehabilitation, and partly due to reductions in transport costs, farm gate prices increased significantly (e.g. up by 56 percent for maize in Nkasi District, from TZS 15,000 to TZS 27,000 per bag). In addition, feeder roads led to increased frequency of extension services by 33 percent. The Program also financed a number of markets: 351 for crops and 58 for livestock. Use of market infrastructure added 20-25 percent to farmer prices. Another major project success has been the construction of warehouses, a total of 921 units constructed. Rice farmers are obtaining up to 60 percent intertemporal price gains by avoiding selling during the glut period. Judicious market entry, thanks to warehouses, is also becoming popular among other crops. In Singda region, for instance, sunflower farmers obtained an unprecedented 243 percent price increase from storage (from TZS 210 to TZS 720 per kg) through better market timing. As discussed under "Objective 2" further down, warehouses are also vital in attracting capital flows to the agricultural sector. A key concern with respect to market infrastructure, especially of warehouses, is the sustainability of the developed infrastructure as various program reviews showed inadequacies in quality assurance during construction.

37. ***Access to Irrigation Infrastructure***. About 386 irrigation schemes, totaling about 160,345 hectares were developed or rehabilitated. This translated into an increase in agricultural production of about 100 percent, from an average yield of 1.67 tons per hectare of paddy, to an average of 3.43 tons per hectare. The actual baseline and endline values varied significantly depending upon the original state of the scheme's infrastructure, the extent of the scheme's improvement under the Program, and the degree of use of improved seed, fertilizer, and other recommended agronomic practices by Program beneficiaries. As was the case with warehouses, there were lapses in quality assurance during construction of the irrigation infrastructure and this will undermine long-term functioning and therefore continued access to irrigation infrastructure.

Objective 2: Promoting agricultural private investment based on an improved regulatory and policy environment.

38. In recent years, the Government has been engaged in a continuous process of updating its legal and regulatory framework, including statutes and regulations aimed at promoting the private sector, several of which have a bearing on the agricultural sector as well. For instance, the Public Private Partnership Act of 2010, which circumscribes the contours of Government partnership with the private sector, could benefit such partnerships in agro-processing, agricultural inputs, and irrigation development. Some of the laws passed and regulations adopted by the Government were specific to the agricultural sector. For instance, the Irrigation Development Act of 2013 has set up a framework that facilitates private investment in irrigation. In addition, a number of laws and regulations have been put in place for, among other things, establishing standards in various sub-sectors (namely cereals, cashew-nuts, sisal, cotton, and coffee) in order to improve these

commodities' national and international competitiveness and thus enhance their potential to attract private investments[16]. They also contain provisions for regulating contract farming. The impact of all these laws and regulations on private investment flows to the various levels of the agriculture value chain is not yet known. However, there has been some uptick in the use of contract farming for which a more conducive regulatory framework might be a contributing factor, although a definitive determination is yet to be made. Input pre-financing under contract farming arrangements would significantly contribute to capital flows into the agricultural sector.

39. However, one area that has already demonstrated potential for facilitating some capital flows to the agricultural sector is warehouse receipt financing[17]. While by no means claiming credit for the birth of this financial product, ASDP actively enabled its growth by funding the construction of a number of warehouses (921 by project's close). Warehouse receipt financing is picking pace in some sub-sectors. For instance, a large quantity of the country's cashew-nuts is now marketed through the Warehouse Receipt System (WRS), which was first piloted in 2007 to improve transparency in the marketing of raw cashew-nuts. The WRS, coupled with the auction system, is believed to have contributed to a jump in farm-gate prices for cashew-nuts, from US$290 per ton in 2007/2008 to US$750 per ton in 2011/2012, triggering a major supply response, from 79,100 tons in 2008/2009 to 158,000 in 2011/2012[18]. The WRS is making inroads into coffee, and to some extent into cotton. It is also gaining traction among rice farmers where ASDP farmers who store paddy in program-funded warehouses are already securing investment and working capital finance against stored grain. Rural cooperatives are a critical element of the WRS. Government, which is acutely aware of this symbiotic relationship, is keen on revitalizing the cooperative movement and has, through the new Cooperatives Societies Act of 2013, strengthened their support and oversight. A number of financial institutions have been active in underwriting the growth in warehouse financing, principal among which are: the National Microfinance Bank, the Cooperative and Rural Development Bank, and Kilimanjaro Cooperative Bank Limited. Also, a number of Savings and Credit Co-operative Societies (SACCOs) are being organized around ASDP-funded warehouses, to provide financing against the stored commodities. Apart from using the loans for working capital, several farmers have used the proceeds for capital investments, such as powered tillers.

3.3 Efficiency

Overall Rating: Modest

40. Mainstreaming the program into Government structures to reduce administrative overheads (in addition to strengthening ownership and ensuring sustainability) and using basket funding to reduce transaction costs and ensure coherence in the support by development partners was a positive efficiency attribute. In addition, the community demand-driven approach adopted by the

[16] Such as the Cereals and Other Produce Act of 2009 and related Regulations of 2011; the Cashew nut Industry Act of 2009; the Sisal Industry Regulations of 2011; the Cotton Regulations of 2011; the Coffee Industry Regulations of 2013, etc.

[17] Warehouse Receipt financing is a loan secured by non-perishable commodities like coffee, cotton, paddy/rice, maize, cashew nuts, sunflower, sesame, cocoa and other crops which are stored in a warehouse licensed by the Tanzania Warehouse Receipt Licensing Board. This is based on the Warehouse Receipts Act of 2005.

[18] Source: Gideon E. Onumah, Agricultural Economist/Rural Finance Specialist at the Natural Resources Institute, University of Greenwich, United Kingdom. *https://www.agrifinfacility.org/warehouse-receipt-financing-agriculture-africa.*

Program ensured that activities financed responded to the communities' most pressing needs, implicitly enhancing the Program's efficiency in resource allocation. Furthermore, unit investment costs under the Program for some activities seem to be comparable to those of similar activities in Tanzania and elsewhere in Sub-Saharan Africa (SSA). For example, unit costs of irrigation development, a major activity in the program, were US$3,050 per hectare in new irrigation schemes (versus US$5,600 in SSA), US$1,030 per hectare for rehabilitation (versus US$2,000 in SSA), and US$2,240 per hectare for improving existing traditional schemes (versus US$2,000 in SSA).[19] These figures are meant to give the order of magnitude since a direct comparison is not possible as some schemes were not completed to design. Also, Evans et al reported in their paper that new irrigation development in Tanzania for river diversion is generally around US$4,250 per hectare, which is consistent with unit costs under this program, even when extrapolated to account for the schemes' deficiencies.[20] River diversion was the principal source of water under this Program (86 percent of surface area developed).

41. As already highlighted in the previous section, the Program's economic value derived from, among other things: (i) increased production and productivity; (ii) access to markets; (iii) value addition to raw products; and (iv) labor productivity. At appraisal, it had been posited that the Program's use of resources would be deemed efficient if the return on investment for funded activities surpassed the opportunity cost of capital of 12 percent. Although the above observations point to potentially high financial and economic gains by the Program on a wide array of activities, poor data availability and quality cannot allow a more refined analysis. Such an analysis would require systematic and reliable data for the principal activities, including the level of gains and the corresponding number of beneficiaries to facilitate credible aggregation at the Program level, information that wasn't systematically monitored and documented during Program implementation. An Internal Rate of Return (IRR) was attempted for irrigation where some reasonable estimates could be made, with an indicative rate of return of 38 percent on irrigation investments (see Annex 3). In conclusion, although the Program demonstrated many efficiency attributes, including a high likelihood of significant rates of returns on Program investments, these are tempered by questions surrounding the quality of some of the investments (especially the irrigation infrastructure), occasional lengthy procurement processes, and inadequate data to more affirmatively substantiate the Program's financial and economic performance. Hence, efficiency is rated as "Modest".

3.4 Justification of Overall Outcome Rating

Rating: Moderately Unsatisfactory

42. The relevance of the project's objectives, design, and implementation is quite substantial, some shortcomings that were noted earlier notwithstanding. The M&E system was indeed found wanting, undermining a thorough and credible assessment of the program's impact. However, the

[19] Source: Impact Evaluation of Irrigation Investments of the Agricultural Sector Development Programme, April 2013. Existing scheme improvement constituted 52 percent of the Program's irrigation investment, new development was 36 percent, and rehabilitation was 12 percent.

[20] Source: Investing in Agricultural Water Management to Benefit Smallholder Farmers in Tanzania, AgWater Solutions Project Country Synthesis Report 146, International Water Management Institute Working Paper, edited by Alexandra E. V. Evans, Meredith Giordano, and Terry Clayton, 2012.

program-commissioned impact assessments and the various implementation support missions noted evidence of significant productivity and income gains from program-funded activities. Whereas the impact of some of the laws and regulations adopted by Government are yet to bear fruit, the potential of the program-funded warehouses to catalyse the nascent warehouse receipt financing industry is very promising, and the legal and regulatory framework on crop standards and contract farming might be contributing to the ongoing (albeit still modest) capital infusion into those sub-sectors. In addition, the Program demonstrated some elements of efficiency, although some of the lustre was stained by quality concerns over some of the investments, and some inadequacies in safeguard compliance. Cognizant of these challenges, desirous of buttressing the Program's gains, and committed to ensuring the long-term sustainability of the Program's investments, especially irrigation infrastructure, the Government has set up a commission under the Irrigation Act of 2013 solely dedicated to addressing these issues. In view of the above, the overall outcome rating is assessed as Moderately Unsatisfactory.

3.5 Overarching Themes, Other Outcomes, and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

43. *Poverty Impact*. Although there was no specific targeting of the poor, project beneficiaries were largely the rural poor, engaged in subsistence agriculture. Some project activities were particularly suitable for rural residents with little resource endowments, such as cross-breeding local chicken with improved cockerels which improved the average weight of local chicken from 1.5 to 2.5kg and increased egg production from 40 to 60 eggs per hen per year as noted earlier. Other participants benefited from vegetable production and other similar activities that could be carried out with limited means.

44. *Gender*. At the community level, beneficiaries would elect a Project Committee of not more than ten members, of whom at least 40 percent were women. Of the 344,986 farmers who participated in the 16,330 farmer field schools organized on various technologies by the project, 138,461 (or 40 percent) were women. In addition, women benefited indirectly from some technologies developed under the project, such as the "push weeder" which not only reduced time of weeding one acre from 2 weeks to 2 days, but men found it more user-friendly and got more involved in weeding, a backbreaking chore generally reserved for women.

45. *Social Development*. Community Empowerment had the greatest impact on social development. Local communities were responsible for identifying their challenges and opportunities, including taking charge of their chosen subprojects' implementation, operation, and maintenance. Although, there were instances of persisting top-down practices, especially in large investments, this paradigm shift was progressively streamlined into LGA planning processes. Where it was properly done, it imparted a sense of ownership upon these communities, thus increasing the likelihood of sustainability for project-sponsored investments, and possibly other future community endeavors.

(b) Institutional Change/Strengthening

46. The principal focus of the project's institutional strengthening efforts were the LGAs. This was in keeping with the Government's devolution policy, where LGAs are at the frontline of providing services to the population. This entailed both physical and human capacity building, especially in the areas of planning, financial management, and monitoring and evaluation. The project also supported: (i) zonal irrigation and technical service units; (ii) some agricultural training institutes (such as Igurusi and Kilimanjaro); and (iii) zonal research institutions, with a particular emphasis on making their work client-oriented.

(c) Other Unintended Outcomes and Impacts

47. Unintended outcomes and impacts have not been properly documented. For instance, there appear to be an increase in reported cases of malaria and bilharzia in some irrigation scheme communities. About a quarter of the 29 schemes visited by the impact assessment team reported an increase in malaria and bilharzia. Also, salinity seems to be building up in some schemes (Mawala, Mbarangwe, Sakalilo, Kinyope, Ochuna, Ruvu, Ruaha Mbuyuni, Ngindo, Bugerega, Mvumi and Mbeya Mbuyuni)[21]. Government is keenly aware of these environmental degradation and public health issues associated with irrigated agriculture and now, as a matter of policy, conditions public support for irrigated agriculture on availability of designs which appropriately take into consideration environment and public health issues as well as plans for awareness creation on public health risks such as bilharzia and malaria (National Irrigation Policy, 2010, National Irrigation Act, 2013).

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

48. There were no end-of Program Beneficiary Satisfaction Surveys or stakeholder workshops. The impact assessment studies commissioned by the Program were not designed to systematically solicit beneficiary feedback[22].

4. Assessment of Risk to Development Outcome

Rating: High

49. Local administrations are responsible for routine and periodic maintenance of public infrastructure, such as feeder roads. The operation and maintenance of small community-owned infrastructure (such as dip tanks, community markets) is vested with the communities through various committees. Generally, these obligations are within the communities' technical competence and financial reach, and should be easy to maintain. Maintenance of irrigation infrastructure poses the greatest challenge. This is a chronic problem in Tanzania which in this particular case, is further complicated by the low quality of the irrigation infrastructure developed

[21] Note that these are not necessarily impacts of the program *per se* since most schemes already existed before the program, and were either being upgraded or rehabilitated. New schemes accounted for only 36 percent of total irrigated area developed by the program.

[22] The impact studies relate to: (i) irrigation; (ii) small infrastructure; (iii) extension; and (iv) environmental and social safeguard compliance.

under the project. The irrigation impact assessment study noted that the skills for carrying out a thorough Operation and Maintenance (O&M) needs-assessment were "alarmingly low", and none of the schemes visited had established a proper O&M budget. Contribution by beneficiaries towards O&M ranged between 0.2 and 0.5 percent of annual gross income per unit area – far below the typical 7-8 percent global average. The National Irrigation Act of 2013 lays out the respective responsibilities of irrigators and the Government, and stipulates the setting up of a commission to support the irrigators as well as monitor their compliance. The future of these schemes hinges on each party fulfilling its respective obligations. Other state agencies will have to fulfill their responsibilities too, including various Basin Water Boards, especially with respect to the administration of water permits. Some upstream irrigators have been known to carry out significant unauthorized irrigated area expansions and water abstractions to the detriment of downstream irrigators, a practice that might jeopardize the continued use of program-sponsored downstream schemes[23]. There is also need for improved watershed management to limit excessive sedimentation loads as well as ensure sustainable water supply for the irrigation schemes, a growing problem in a number of schemes. Because of all these uncertainties, the risk to the PDO is rated high.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

Bank performance in ensuring quality at entry

Rating: Moderately Satisfactory

50. The Bank's collaboration with other development partners ensured harmonious and complementary interventions through a Basket-Funding approach, which also lessened the transaction burden on the Government. Several activities under the program drew lessons from Bank-financed interventions as well as those supported by other development partners. However, Government's own budgetary processes should have been studied to assess their implication for the project, which was dogged by belated and erratic release of funds. Monitoring and evaluations systems should have received greater attention during project formulation. More analytical work could have been done to gauge the policy response to better calibrate the projects outcome expectations. A more thorough assessment of the Government's implementation capacity would have influenced the project's architecture, especially the choice between a pragmatic gradual roll-out versus an immediate nation-wide coverage. Quality at entry is, therefore, rated Moderately Satisfactory.

Quality of supervision

Rating: Moderately Unsatisfactory

51. Several positive attributes to implementation support performance include: (i) a country office based task team leader throughout most of the project's life, constantly supporting project

[23] For instance, Magozi irrigation scheme has a rainy season irrigation water use permit of 600 liters/second only, a flow rate that is adequate to irrigate about 300 hectares. However, the area developed for rainy season irrigation is 1,175 hectares.

implementation; (ii) quarterly meetings of the Basket-Funding Steering Committee (including the World Bank) to ensure the program's smooth execution; (iii) annual multi-stakeholder implementation support missions with a wide range of skills which provided comprehensive action plans for the following year; and (vi) project restructuring at MTR. Some shortcomings include: (i) not ensuring environmental and safeguard compliance; and (ii) not ensuring that the M&E is functional sooner, as well as recalibrating it in order to circumscribe the project's expected outcomes to the activities which the project, in its evolved reconfiguration, was responsible for. Overall, implementation support performance is rated Moderately Unsatisfactory.

5.2 Recipient Performance

Government performance

Rating: Moderately Unsatisfactory

52. Government undertook several actions to facilitate the project's implementation, including: (i) enacting a number of laws and adopting a series of regulations to create a conducive environment for private sector investment in agricultural value chains; (ii) adopting laws and establishing institutions to improve irrigation management and oversight; and (iii) providing counterpart funding. However, this strong record was blemished by belated release of funds that plagued the program throughout its implementation period, triggering poorly monitored carry-overs of funds at LGAs, and incomplete designs and works which in some cases undermined the quality of the program's investments. Government's overall performance is, therefore, rated Moderately Unsatisfactory.

Implementing agency or agencies performance

Rating: Moderately Unsatisfactory

53. The Ministry of Agriculture, Food Security, and Cooperatives (MAFC) and other Agriculture Sector Line Ministries undertook several actions to facilitate the project's smooth implementation, including: (i) forming a number of Thematic Working Groups which worked hard to resolve several technical issues, produce requisite guidelines, etc.; and (ii) strengthening the capacity of LGAs, including sharing good practices from well-performing LGAs with those falling behind. However, more could have been done to: (i) enforce compliance with ESMF and RPFs; (ii) ensure better quality of both irrigation and warehousing infrastructure; and (iii) collect project outcome related data to gauge project performance. Overall, the implementing agencies' performance is rated Moderately Unsatisfactory.

Justification of rating for overall recipient performance

Rating: Moderately Unsatisfactory

54. Government's strong performance on the policy front, and the implementing agencies' generally diligent follow-ups on recommendations from implementation support missions are tempered by the treasury's erratic and frequently belated release of funds, and the implementation

agencies' poor enforcement of environmental and social compliance, coupled with a very inadequate monitoring and evaluation system, hence the Moderately Unsatisfactory rating.

6. Lessons Learned

55. *It is important to design the M&E system prior to project appraisal.* Relegating the system's design to a project's implementation phase fails to capture early stage data, the system often becomes under-resourced, and eventually becomes unhelpful as a management tool. It is also important to evaluate M&E performance during MTR and undertake pertinent corrective actions, rather than wait till the Implementation Completion and Results Report (ICR) stage to lament about how deficient the system was. One corrective measure would be the commissioning of targeted case studies for example, to evaluate the returns to some of the project investments.

56. *For projects mainstreamed into Government Systems, the Government's patterns for budget discussions and release of funds should be studied during project preparation, possible impacts assessed, and mitigation measures instituted.* In the case of Tanzania, the August/September budget discussion cycle that prevailed in most of the program years was inevitably bound to affect first and second quarter activities, given that the fiscal year starts in July[24]. Sometimes, funds came in the 3rd or 4th quarter. In addition, the budget and funds release system should accommodate subprojects that have a multi-year development period. Or else, some subprojects will not be implemented to design. Furthermore, the Government's erratic release of funds should have been well understood during project preparation and its implication assessed and addressed. Finally, fungibility of resources at district level needs to be closely monitored. In many instances, districts simply reallocated to other uses their own resources that would ordinarily have been set aside for agriculture, thus negating the additionality objective of the Program's resources.

57. *The anticipated aggregate cost of sub-projects solicited from project beneficiaries should not be at great variance from resources available under the MTEF*. In particular, funds to be released from the treasury that fiscal year have to be communicated to the LGAs in time. Otherwise, there is a high risk of discouraging communities whose hopes are dashed when, after going through elaborate sub-project identification processes, their fully conforming sub-projects are not taken up due to the all-of-a-sudden less-than-expected funds from the central Government to their LGAs, as was sometimes the case.

58. *Beneficiary Communities have to be involved at all stages of sub-project development to maximize ownership*. Even in cases of highly technical activities, a role for them has to be devised, and the implications of the project, including the requisite operation and maintenance demands, clearly explained to them. This could positively influence communities' investment choices when they are fully aware of what they are getting into.

59. *A Sector-Wide Approach (SWAp) requires comprehensive participation by all key stakeholders.* Several development partners kept operating outside the SWAp framework, which

[24] Effective from 2013, Government shifted to April-June the tabling of annual budgets to Parliament.

made the envisaged sector-wide parameters a poor reflection of the program's humble contribution.

60. *A nation-wide program, whether a SWAp or otherwise, needs a progressive rollout to iron out teething issues before full country-wide expansion.* A progressive rollout allows for identifying and addressing capacity constraints at all levels (central or local, public or private), refine implementation policies and procedures, and review alternative options. Such a comprehensive assessment could be done at MTR. Otherwise, the same mistakes are carried through till project completion. In addition, such programs demand a lot of discipline on the part of government in terms of safeguards, M&E, and fiduciary compliance and more intensified supervision (with the appropriate skills mix) by the Bank to ensure quality.

61. *It is crucial to have a comprehensive understanding of pathways for the envisaged policy actions in order to properly calibrate expectations about policy outcomes.* Under this program, sector performance could, in some cases, not be positively associated with the various policy actions undertaken by Government as the policy response pathways had not been adequately studied and monitored, and attribution could, therefore, not be reasonably argued.

62. *Effective value chain development requires optimal concentration of activities to facilitate the emergence of viable backward and forward linkages.* The Program's diverse and dispersed miscellany of activities with no organizing principles to drive meaningful value chain development was largely unable to stimulate robust value chains as anticipated.

63. *Basket-Funding reduces transaction costs, but harmonizing implementation support traditions among participating development partners can be a challenge.* The approach and rigor to implementation support varies across development partners. Less rigorous implementation support standards can undermine ensuring effective fiduciary and safeguard compliance. In cases where challenges associated with basket-funding outweigh the risk, one alternative is for each development partner to, while maintaining the basic tenets of donor-harmonization, identify aspects of the Government program to support in a separate operation, albeit well-coordinated with other development partners.

64. *In cases where a project contributes to a bigger government program, it is essential to ensure that the project title does not coincide with the name of the government's program.* This would ensure that the project and its circumscribed activities and achievements are not conflated with those of the program and that also program challenges and shortcomings are not wholly ascribed to the project.

65. *Appropriate skills mix is key to quality supervision.* The project made significant investments in infrastructure which ended up being of a low quality. Presence of engineers with adequate expertize on the supervision team would have to some extent mitigated the poor quality issues observed for some of the infrastructure.

66. *Investments in irrigation at a national scale should be prefaced with a proper understanding of the water balance at the appropriate scale.* In this case, water abstraction for irrigation purposes proceeded without an understanding of the cumulative impact of the irrigation needs on the

availability of water for other uses. This has contributed to the observed increased competition for water between the energy agriculture and tourism sectors in the country.

7. Comments on Issues Raised by Recipient/Implementing Agencies/Partners

(a) Recipient/Implementing agencies

See summary of borrower's ICR in Annex 5

(b) Other partners and stakeholders

None

Annex 1: Project Costs and Financing
TANZANIA: Agriculture Sector Development Project

(a) Project Cost by Component

Component	Program Allocated (USD Million)	Bank Allocated (USD Million	% of Total	Program Disbursed (USD Million)	Bank Disbursed (USD Million)	% of Appraisal
1. Local Level Support	297	151.02	76	288.4	119.58	79
2. National Level Support	243	48.23	24	186.0	70.41	146
Total Project Costs	**540**	**199.25**	**100**	**474.4**	**189.99**	**90**

(b) Financing

Sources of funds	Type of co-financing[2]	Program Approved Estimate (USD million)	Program Actual (USD million)	% of Approved
Irish Aid	Grant	48	40.4	84
Japan International Cooperation Agency	Grant	26.05	2.97	11
European Union	Grant	9.4	9.4	100
World Bank	Credit	199.25	189.99[3]	95
African Development Bank	Credit	62.6	62.5	100
International Fund for Agricultural Development	Credit/Grant	98.9	98.6	100
Sub-Total DPs		**444.2**	**393.45**	**89**
Government	Pa	95.5	82.9	87
Grand Total		**539.7**	**476.35**	88

[2]All funding was by way of a joint basket-fund.

[3]This includes PHRD resources.

Annex 2: Outputs by Component
TANZANIA: Agriculture Sector Development Project

1. The project had two main components: (1) Local Level Support; and (2) National Level Support.

2. **Component 1: Local Level Support**. This component was implemented through the following three subcomponents: (1) local agricultural investments; (2) local agricultural services; and (3) local agricultural capacity building and reform.

3. ***Subcomponent 1.1: Local agricultural investments.*** Support was supposed to be provided in form of District Agricultural Development Grants for local agricultural investments on a cost-sharing basis, including, among other things: (i) public infrastructure, such as rural roads; (ii) small-scale irrigation schemes; (iii) food storage facilities; (iv) productive community investments, such as risk-bearing innovative equipment, crops and livestock; (v) market infrastructure; (vi) reforestation of degraded areas; (vii) environmental investments; and (viii) community nurseries. Top up funds for irrigation would also be provided through District Irrigation Development Fund Grants. Main outputs under this sub-component are summarized in the Table 2.1 below.

Table 2.1: Output from local District Agricultural and Irrigation Development Grants

Activity	Output
Rural Roads	- 492.2 kilometers of feeder roads rehabilitated/constructed.
Small-Scale Irrigation	- 160,345 ha[25] rehabilitated or constructed on 386 schemes
Food storage facilities	- 921 warehouses constructed
Productive Community Investments	- 473 chaco (floodwater retention) dams constructed - 80 shallow wells built - 65 tractors, 1,972 power tillers, 1,321 ploughs - 105 oxen training centers established - 104 veterinary clinics built - 680 dip tanks constructed and rehabilitated - 1,852 general processing machines installed
Market Infrastructure	- 351 crop markets
	- 58 livestock markets

4. The Program's M&E system did not provide information on reforestation of degraded areas, environmental investments, and community nurseries.

5. ***Subcomponent 1.2: Local agricultural services.*** Support was supposed to be provided in form of Extension Block Grants for contracting, by farmer groups, of private agricultural service

[25] A total of 386 irrigation schemes were rehabilitated. However, only 355 schemes reported their surface area, totaling 147,468 hectares, i.e. an average of 415 ha per scheme. Using this average for the entire 386 schemes results in a total of 160,345 hectares. About 52 percent of the area consisted of traditional schemes which were upgraded, 36 percent related to entirely new schemes, and 12 percent were previously developed schemes which were rehabilitated.

providers for advice on agricultural production and marketing. The funds could also be used to facilitate farmer-to-farmer visits and learning.

6. The Program's extension impact assessment noted limited use of private extension service providers by way of contracting. There were cases of collaboration been some LGAs and Non-Governmental Organizations under relationships that could be characterized more as mutual collaboration rather than contractual[26]. However, the extension impact assessment noted a few isolated cases where LGAs had contracted out services to entities such as agricultural research institutes for soil analysis and on-farm crop and fertilizer trials, or training institutes on certain areas as poultry or rice production[27]. There seem to have been isolated cases where for-profits were contracted for promoting ox-drawn technologies, fruit tree establishment, and improved rice technologies, although such cases were rare[28]. The main reason advanced by LGAs for limited contracting of private service providers is insufficient funds. Moreover, in all these cases, it was the LGAs involved in the contracting, not the beneficiary communities as envisaged at appraisal.

7. Some of the Program beneficiaries were facilitated with bicycles to enable them to visit other farmers in the village. LGAs also organized "*saba saba*" agricultural shows involving farmers and other stakeholders. From such events, the best famers would be identified and sponsored to participate in the zonal farmers' day *(nane nane)* show.

8. ***Subcomponent 1.3: Local agricultural capacity building and reform.*** Through Capacity-Building Grants, this subcomponent was supposed to finance capacity building interventions aimed at: (i) improving district agricultural planning and agricultural investment appraisal, and reforming agricultural services; (ii) promoting farmer empowerment for activities such as interacting with Local Government, procuring and managing contracted services, networking at farmer fora, strengthening their leadership capacity, and testing various technologies; and (iii) promoting the development of private sector agricultural service providers through awareness raising activities, and providing training on operating modalities, and technical and business practices.

9. A number of trainings were held for farmers, public extension officers, as well as prospective private agricultural service providers (see Table 2.2 below).

[26] Examples of organizations noted in the Extension Impact Assessment include CONCERN, ACT, TAGRODE, Technoserve and SHILDA in Iringa District, INADES, RLDC, World Vision, LVIA and LWR in Chamwino and Kongwa Districts, MUVEK and WISE in Kibaha, World Vision and 2Seeds in Korogwe District, RLDC and TAMPA in Mvomero and KINNAPA in Kiteto District.

[27] Examples include Iringa District which contracted Uyole Agricultural Research Institute for soil analysis and on-farm trials of maize, beans, soya and cowpea varieties/lines; Korogwe District which contracted Mlingano Agricultural Research Institute for soil analysis and for fertilizer trials, while Mvomero District contracted Morogoro Livestock Training Institute and YES Development to provide training in poultry production, and Mkindo Farmers Training Center for training farmers in rice production. Likewise, Bagamoyo District contracted the Lutheran Church to conduct training on dairy cattle for Mdaula, Chalinze and Lugoba villages in the District.

[28] Such as the case of Iringa LGA which hired MGM Consult Co. Ltd for promotion of ox-drawn technologies, Eastern Arc Crops Tree Enterprises for promoting fruit tree establishment, and TanRice Ltd for promotion of improved rice technologies.

Table 2.2: Key outputs from local agricultural capacity building and reform

	Farmers	Extension Officers		Private Sector
		Short Courses	Long Courses	
Arusha	6,214	127	13	1
Dodoma	170,643	664	50	604
Iringa	3,378	1,832	0	0
Kagera	37,416	99	265	2
Kigoma	5,146	0	4	0
Kilimanjaro	16,081	783	798	65
Lindi	23,770	1,291	20	338
Manyara	10,971	1,597	35	20
Mara	220,753	184	25	20
Mbeya	45,497	1,044	62	36
Morogoro	8,962	480	61	23
Mtwara	25,642	781	25	180
Mwanza	51,853	151	12	237
Pwani	28,415	393	40	7
Rukwa	1,965	9	2	0
Ruvuma	22,837	156	20	37
Shinyanga	59,779	4,642	25	58
Singida	7,313	207	21	0
Tabora	8,526	1,010	18	0
Tanga	18,995	1,106	23	700
Total	**774,156**	**16,556**	**1,519**	**2,328**

10. **Component 2: National Level Support.** This component was implemented through the following subcomponents:

11. ***Subcomponent 2.1: Agricultural services.*** This subcomponent sought to reform agricultural services, primarily in the field of research and extension, by: (i) improving the management and accountability of Zonal Agricultural Research and Development Institutes (ZARDIs) through implementation of a Client-Oriented Research and Development Management Approach (CORDEMA); (ii) establishing, financing, and expanding Zonal Agricultural Research and Development Funds (ZARDEFs) across all agro-ecological zones; and (iii) facilitating policy and institutional reforms, such as preparation of a code of practice for extension and research, and finalization of an agricultural services reform strategy for other related technical services.

12. This activity was characterized by a belated start up and slow roll-out. An intensive skills-based training program for CORDEMA was developed in May 2008, and training of scientists and District Facilitation Teams followed thereafter. But by June 2012, the training had not reached all the intended targets. Similarly, funding for research under ZARDEFs started in FY2008/2009. Some of the challenges encountered in its implementation included: (i) a low budget ceiling for individual research (TZS 30 million); (ii) delays in receiving funding; (iii) insufficient and outdated equipment; and (iv) lack of internal review of the research projects. The Program tried to intervene by rehabilitating 8 research stations, procuring some research equipment, and supporting short and long term training. Other activities done under the component include establishing Ward

level Agricultural Resource Centers (WARCs)[29]. By June 2012, some 319 WARCs had been newly constructed (147) or rehabilitated (65) across the country and a total of 16,330 farmer field schools conducted on various technologies - reaching 344,986 farmers (138,461 women and 206,525 men). Other outputs are summarized in Table 2.3.

Table 2.3: Some outputs related to agricultural services

Activity	Output
Agricultural research	- 236 research projects funded through ZARDEF - 31 PhD, 76 MSc and 37 Bachelors supported to improve human resources - 22 vehicles and 7 motorcycles procured for logistical support to researchers - 2 new staff houses constructed and 23 rehabilitated - 87 computers, 52 printers and 22 photocopiers for research stations
Extension Services	- 16,330 farmer field schools established - 774,156 farmers trained - 441 private sector service providers contracted. - 106 motor vehicles, 2,343 motor cycles and 3,389 bicycles distributed in 131 LGAs for extension staff to improve their effectiveness - 319 Ward Agricultural Resource Centres established - 475 computers and printers procured to equip offices of extension staff.

13. The Program supported ZARDEF financed a total of 236 research projects (157 on crops and 79 on livestock). Some 86 improved crop varieties were developed and released after validation by the National Seed Release Committee. These varieties had various positive attributes including high yielding, drought tolerance, diseases and pest resistance, good marketability and early maturing.

14. The Mid-Term-Review mission in September/October 2008 determined that the exercise of developing the code of conduct for extension and research was "no longer valid". However, other reforms took place, with various degrees of success. For instance, in order to strengthen research-extension linkages, the Zonal Information and Extension Liaison units (ZIELUs), headed by zonal information and extension liaison officers were established to link research activities at agricultural research institutes with extension services in the districts through farmer field schools, various farmer trainings, farmer field days, and client-friendly publications. The ZIELUs are responsible for technology verification, transfer and knowledge dissemination. The 7th Joint Implementation Review of May/June 2012 noted that the ZIELUs were not operating to expectation due to shortage of staff, funds, transport, and necessary communication facilities leading to limited dissemination of research messages to beneficiaries.

15. ***Subcomponent 2.2: National irrigation development.*** Support under this sub-component was to facilitate, through the National Irrigation Development Fund, the carrying out of due diligence preparatory work for future small-, medium- and large-scale irrigation investments in National and International Basins. Activities would include: (i) participatory development and

[29] The purpose of a WARC is to provide agricultural information to farmers, extension workers, and the public. These centers are managed by farmers at the ward level. They can become meeting places, allowing farmers to share experience and expertise with researchers and extension workers.

operationalization of appropriate identification, screening and prioritization mechanisms; (ii) support for technical designs, studies, and environmental impact assessment, including the strategic environmental assessment; (iii) capacity strengthening at the national, zonal and district levels, including in monitoring and evaluation; and (iv) carrying out of activities to attract private investment, such as awareness raising and improving the policy environment for public-private partnerships. Support would also be provided for the actual carrying out of physical infrastructure investments in irrigation at the national level in National Water Basins through public-private partnerships.

16. Some activities were carried out, but not all. The Strategic Environmental and Social Assessment (SESA) for the national irrigation master plan and the national irrigation policy was completed in May 2011. The SESA identifies potentially adverse environmental and social impacts emanating from the implementation of the national irrigation policy/national irrigation master plan, such as degradation of river catchments and riparian ecosystems/biodiversity, soil salinization, loss of forests and other vegetation, reduction of environmental flows, degradation of ecologically sensitive areas, etc., and provides strategic guidance on how to minimize and mitigate those impacts when implementing irrigation development projects/programs in the sector.

17. In addition, training was conducted for zonal and district staff on the Comprehensive Irrigation Guidelines developed under the Program. District Irrigation Development Team members were trained on Operation and Maintenance. A new National Irrigation Act was passed in 2013, which lays out the foundation for effective irrigation sector management, including the setting up of an Irrigation Commission to promote and oversee the sector's development. Other recent laws which have a bearing on irrigation development include the Water Resources Management Act of 2009 which lays out the framework for sustainable water resource use, and the Public-Private Partnership Act of 2010 which circumscribes the contours of Government partnership with the private sector, including in irrigation. However, no technical studies were done or any investments done in the meaning of this subcomponent.

18. ***Subcomponent 2.3: Marketing and private sector development.*** This subcomponent aimed at scaling up new approaches to private sector led agricultural market development, including support to smallholder marketing associations, linkages to external markets, and capacity building and investment along the entire marketing chain; empowerment of producer marketing groups at the district level; improvement of formulation of agricultural regulations and laws and strengthening capacity for their implementation; support for agricultural policy analysis and formulation; carrying out of annual assessments of public expenditure in agriculture, at both national and district levels; and annual sector reviews.

19. At Mid-Term Review, it was noted that this sub-component was too ambitious. It was, therefore, proposed to redefine Marketing and Private Sector Development activities, to focus on: (i) increased access to value chains; (ii) targeted investment in processing; (iii) contract farming and out-grower opportunities; (iv) financial services; and (v) improving local regulatory environment for private investment in small, medium and large scale interventions.

20. Although the Mid-Term Review reoriented the focus of this sub-component, only a few activities were actually carried out. With respect to value chain development, the concept was

vaguely defined and there were no deliberate actions aimed its development, except for some processing equipment that were distributed to farmer groups as indicated earlier. It is important to note that the Program's architecture did not lend itself easily to value chain development. Activities were scattered across the country, which diluted the kind of geographic concentration that facilitates the development of viable backward and forward linkages. This was accentuated by the demand-driven approach of the Program which resulted in a diverse and dispersed miscellany of activities with no organizing principles to drive meaningful value chain development. Hence, little progress was made.

21. Regarding contract farming and out-grower opportunities, the Government has (at the national level) entrenched the concept in various sector laws. For instance, the Cereals and Other Produce Act of 2009 and related Regulations of 2011, the Cashew nut Industry Act of 2009, the Sisal Industry Regulations of 2011, the Cotton Regulations of 2011, and the Coffee Industry Regulations of 2013 all have contract farming provisions to protect all parties to such contracts. However, no specific actions were undertaken by the Program to promote contract farming and out-grower opportunities at the local level.

22. Regarding financial services, the Government strengthened the oversight of SACCOS under the Cooperatives Societies Act of 2013. SACCOs, and other financial institutions, such as the National Microfinance Bank, the Cooperative and Rural Development Bank and Kilimanjaro Cooperative Bank Limited, are taking advantage of some of the 921 warehouses financed by the Program to offer credit under the Warehouse Receipt Financing arrangements. This has been a successful activity.

23. ***Subcomponent 2.4: Food security.*** This subcomponent financed activities for inclusion of vulnerable and food insecure groups in planning, preparation and implementation of DADPs through technical advisory services and training to LGAs, and conducting rural vulnerability assessments.

24. The interpretation of "food security" kept evolving over the course of the Program's implementation, and progressively digressing from the initial intent of ensuring inclusion. At one time, one "food security" food item was supposed to be identified per district (which was difficult to implement given the agro-ecological diversity across districts, and the demand-driven approach espoused by the project). By 2010, nutrition had been added to the Food Security Guidelines. The inclusion of vulnerable people, the original intent, did not work out very well due to lack of practical modalities for its implementation. Overall, the "food availability" dimension of food security improved among participants in the Program due to increased productivity and diversification, e.g. vegetable production, poultry raising, etc.

25. ***Subcomponent 2.5: Coordination, monitoring and evaluation.*** This subcomponent financed activities aimed at (i) strengthening of the national, regional, and district level mechanisms for planning, implementation and reporting of agricultural investments and services, including quality control; and (ii) overall Program coordination, and monitoring and evaluation.

26. The MAFC successfully coordinated the project through its Department of Policy and Planning. It worked very closely with other ministries involved in the project, namely: the MAFC;

the Ministry of Livestock and Fisheries Development; the Ministry of Water and Irrigation; the Ministry of Industry and Trade; and the Prime Minister's Office (Regional Administration and Local Government). However, monitoring and evaluation was a challenge. A comprehensive M&E Framework for the Government program was developed in 2008, leading to the revision of the Project Appraisal Document's original Results Framework at the time of the first AF in 2009 to ensure coherence[30]. However, for project monitoring purposes, the system had several shortcomings. First, several Project Key Performance Indicators could hardly be attributed to the project's activities (e.g. growth in processed exported agricultural goods, increased usage of tractors etc.). Second, because of LGAs' weak capacity, routine data collection, which was belatedly initiated in 2009, was largely focused on financial data and project activities, with generally no reporting on outcomes (such as yield). Third, data from National Panel Surveys, which would have helped fill some of the data gaps, was intermittent and too general to draw attribution[31].

[30] There was also a slight revision in 2011 to add an indicator reflecting the project's growing focus on irrigated rice.
[31] The first NPS conducted in 2008/2009, the second in 2010/11, and the third in 2012/2013. An Agriculture Sample Census Survey was also carried out in 2007/08.

Annex 2
Appendix 1

THE JAPAN POLICY AND HUMAN RESOURCE DEVELOPMENT (PHRD) DETAILED IMPLEMENTATION ASSESSMENT

1. The Japan Policy and Human Resource Development (PHRD) project was a Recipient Executed Grant of US$14.25 million from the Government of Japan to the United Republic of Tanzania in the form of an additional/complementary financing to the ASDP. The PHRD grant focused on scaling up ASDP funded activities related to rice production in 20 irrigation schemes in Mainland Tanzania benefiting 33,000 rice farmers. The grant became effective on January 17, 2012 and closed on September 30, 2016. The grant supported three components, namely: (i) strengthening access to improved technologies for irrigated rice production; (ii) enhancing access to markets and value addition; and (iii) building capacity for irrigation development.

Component 1: Strengthening access to improved technologies for irrigated rice

2. Implementation under this component was through three activities: (i) introducing improved rice production technologies; (ii) strengthening the research-extension-farmer linkages; and (iii) disseminating technology through farmer field schools.

3. **(i) Introducing improved rice production technologies**. The focus of this subcomponent was introduction of the System for Rice Intensification (SRI) in the target 20 irrigation schemes. SRI increases rice productivity while using less water, seed and fertilizers.[32] SRI was introduced through farmer field schools in a total of 17 irrigation schemes. The SRI package included: (i) use of improved rice varieties particularly, SARO 5 TXD 306/307; (ii) use of mechanization technologies, such as push weeders; and (iii) use of inorganic fertilizer (Urea, Di-Ammonium Phosphate and Minjingu Mazao), and pesticides. A total of 1,133 farmers adopted SRI technology for a total area of about 268.5 hectares, and their productivity has reportedly increased from an average of 6.14 tons/hectare to 8.23 tons/hectare.

4. **(ii) Strengthening the Research-Extension-Farmer Linkage**. This involved enhancing collaboration between researchers, extension and farmers in technology generation and dissemination. The Department of Research and Development was responsible for leading research activities under the project. Several on-farm technology verification trials, such as variety evaluation, agronomic practices such as spacing and fertilizer application rates, weeding, etc. in the SRI context were conducted by researchers in 11 irrigation schemes, in collaboration with the village extension staff and irrigation technicians. Soil analysis, on-farm fertilizer trials and field days were carried out in schemes such as Nakahuga in Songea by researchers with participation of extension staff. In addition, Ukiriguru Agricultural Research Institute researchers in collaboration with scheme extension staff conducted SRI training in schemes such as Mkula.

[32] SRI is based on four main principles: (i) early and quick establishment of healthy plants; (ii) reduced plant density; (iii) organic-matter-enriched and aerated soils; and (iv) reduced and controlled water applications.

5. **(iii) Disseminating technology through farmer field schools and farmer-to-farmer extension approach.** The project used farmer field schools as the main pathway for disseminating SRI and other related rice technologies. In this approach farmer leaders train 5 farmers each, and subsequently each farmer trains 2 other farmers. Through this approach a total of 1,694 farmers were trained in 2013/14 season, including 727 women and 663 men. Farmers also participated in exchange visits and study tours.

Component 2: Enhance access to domestic and regional markets and value addition

6. The objective of this component was to enhance farmer income by improving storage facilities and collective access to markets, and value addition. The component included: (i) rehabilitation and construction of warehouses in six irrigation schemes: and (ii) acquisition of processing facilities – milling and packaging equipment and on-farm processing equipment (harvesters and threshers) for 14 irrigation schemes.

7. **Warehouse Construction**. The project funded the construction of warehouses in six irrigation schemes. Because of significant delays (mainly occasioned by delays in procurement, delays in remitting advances to contractors, low frequency of supervision of sites by the supervising consultant, and in two of the cases, due to land disputes), two warehouses had not been finalized by the closing date. Government is however committed to completing the construction of these warehouses.

8. **Processing Facilities**. Rice milling, grading, and packaging equipment for the 14 irrigation schemes were delivered and installed.

Component 3: Capacity Building for Irrigation Development

9. This component sought to strengthen irrigation development activities by building the capacity of: (i) the MAFC and Zonal Irrigation Technical Support Units (ZITSUs); (ii) the Ministry of Agriculture's Training Institute at Igurusi (MATI-Igurusi); (iii) the Kilimanjaro Agricultural Training Center (KATC); (iv) farmers; and (v) warehouse administrators and scheme leaders.

10. **(i) MAFC and ZITSUs Capacity building**. Surveying equipment, computers, software and equipment were distributed to MAFC departments and the 6 beneficiary ZITSUs. About 70 irrigation and village/ward extension staff from Local Government Authorities were trained.

11. **(ii) MATI-Igurusi Capacity Building**. This entailed providing equipment and developing a hydraulics demonstration field and rehabilitating the water supply system at Igurusi Training Institute. Construction of irrigation infrastructure designed for training purposes was also done. The project also provided training equipment. Rehabilitation of the Soil Laboratory at Igurusi was completed and the sprinkler and drip irrigation systems were installed.

12. **(iii) KATC Capacity building**. This included enhancing KATC's training capacity to accommodate additional technical areas such as entrepreneurship, marketing, business, cooperatives management, etc. Training of KATC tutors on new rice value chain development aspects was, in part, hampered by delays in the release of funds.

13. **(iv) Farmer training**. MATI-Igurusi and KATC trained a total of about 651 farmers including scheme leaders from 20 irrigation schemes on: (i) operation and maintenance of irrigation structures and facilities; (ii) water management techniques; (iii) water allocation and distribution; (iv) crop water use and irrigation water requirements; (v) management of irrigation schemes through irrigators' organizations; (vi) rice storage and value addition; (vii) post-harvest management practices; (viii) gender in irrigated farming; and (ix) environmental management. The project also supported farmer exchange visits and in-country study tours.

14. **(v) Warehouse administrators and scheme leaders training**. A total of 80 people from the 20 irrigation schemes implementing PHRD activities participated, i.e. two scheme leaders, an extension officer and a farmer, making 4 people per irrigation scheme. The major topics covered included: rice farming as a business, importance of cooperatives in small scale irrigation schemes, loan accessibility and availability for small scale farmers, entrepreneurship, rice storage processes, and warehouse operation and management.

Annex 3: Economic and Financial Analysis
TANZANIA: Agriculture Sector Development Project

1. INTRODUCTION

1. The project had two complementary objectives: (i) to enable farmers to have better access to and use of agricultural knowledge, technologies, marketing systems and infrastructure; and (ii) to promote agricultural private investments based on an improved regulatory and policy environment.

2. The project used a community-driven development approach where, at project appraisal, only the broad contours of possible project investments were traced out, with the mix and scope of specific investments to be determined by beneficiaries themselves during project implementation. By the time of the ICR, the beneficiary communities' revealed preferences were as follows:

Table 3.1: Distribution of expenditures on community investments

	Target Expenditure Item	Percentage
1	Improvement of Water Availability for Crops and Livestock	42
2	Market Infrastructure for Crops and Livestock	21
3	Genetic Improvement for Crops and Livestock	14
4	Machinery and Equipment	13
5	Infrastructure for Animal Health	6
6	Feeder Roads	5
	Total	**100**

Source: Project Documents

3. Beneficiary communities displayed a high level of interest in water development, mostly for increasing crop production through irrigation. Water related structures for livestock were mostly chaco dams for extending water availability in the dry season. Beneficiaries were also interested in market and other post-harvest infrastructure, especially storage facilities, improved genetic materials, machinery and equipment, livestock dips, and feeder roads.

2. DETERMINING THE PROGRAM'S ADDED VALUE

4. The Program's economic value derived from, among other things: (i) increased production and productivity; (ii) access to markets; (iii) value addition to raw products; and (iv) labor productivity.

2.1. Increased Production and Productivity

5. *Crops*: Productivity gains were primarily driven by improved availability of water for irrigation, and to a lesser extent increased use of improved crop varieties, coupled with better crop husbandry practices.

- Irrigation. A total of 386 schemes were either upgraded from traditional schemes (52

percent of the schemes), or newly constructed (36 percent), or rehabilitated (12 percent) for a combined total of 160,345 hectares.[33] Irrigation schemes grow almost exclusively rice, partly due to lack of market access for perishable alternatives. Productivity gains vary according to the original status of the scheme (usually higher in newly constructed than rehabilitated schemes). On average, paddy productivity increased by 105 percent. In some cases, maize was grown, with about 63 percent productivity gains.

- Improved Planting Materials and Husbandry Practices. Farmer training was carried out in multiple ways, but principally through 16,330 farmer field schools, where 774,156 farmers were trained on various technologies. However, technology adoption rates were low. According to a sample-based assessment commissioned by the Program, the rate of technology adoption among farmer field school participants was estimated at 37 percent among rice farmers and 27 percent among maize farmers (compared to 12 percent among non-participants).[34] However, adoption was remunerative, with a reported income differential of TZS 631,601 (US$396)[35] for participants versus non-participants.

6. *Livestock*: Most economic gains arose from reduced mortality and increased productivity per animal because of improvements to local breeds.

- Reduced Mortality. The use of communal dip tanks financed under the Program helped reduce livestock mortality by 20 – 60 percent by controlling diseases such as East Coast Fever (ECF). In 1999, annual losses due to ECF in Tanzania were estimated at US$43.3 million. Mortality is particularly acute among calves. ECF is not only responsible for cattle deaths, but also results in stunting of calves and reduced milk production in animals that survive. Where the disease is present, farmers may be discouraged to adopt highly productive but highly susceptible breeds. A 20 percent reduction in mortality could reduce losses by US$8.7 million a year.

- Genetic Improvement. The Program financed the procurement and distribution of 139 dairy animals, 213 heifers, 374 bulls, and 5,285 cockerels. Through livestock revolving arrangements, and later through Artificial Insemination at centers established under the Program, herd improvement where it occurred was remunerative to the beneficiaries, with milk production increasing from 2 liters/cow/day to 10 – 12 liters/cow/day. Egg production increased from 40 to 60 eggs (i.e. 50 percent), and poultry weight at maturity increased from 1.5 to 2.5 kilograms (i.e. 67 percent).

2.2. Access to Markets

- Feeder Roads. About 492.2 km of feeder roads were rehabilitated under the program. There is no information on frequency of use. However, according to some observations, transport costs decreased significantly in some locations, from TZS 40,000 per ton of agricultural merchandize to TZS 10,000. In some instances, farm gate prices increased by 100 percent

[33] Only 355 schemes reported their surface area, totaling 147,468 hectares, i.e. an average of 415 ha per scheme. Using this average for the entire 386 schemes results in a total of 160,345 hectares.
[34] An Assessment of the Performance of Extension Services under the ASDP in Tanzania, March 2013.
[35] At the exchange rate of TZS 1,594 per US$ prevailing during 2012/2013.

in some communities, the magnitude depending upon how severely constraining the lack of access was.

- Physical Markets. The Program financed 351 crop markets. It is estimated that prices in markets were 20-35 percent higher than farm gate prices. However, there is no reliable data on the volumes of transactions in these markets.

2.3. Value Addition

- Intertemporal Value Addition. ASDP financed the construction of 921 warehouses. The margin between the peak and trough of the price cycle can be significant, averaging around 60 percent for paddy, with benefits from storage ranging from TZS 24,000 to TZS 45,000 per 100 kilogram bag.

- Processing Value Addition. The program financed 1,852 machines, such as coffee hullers, which add about 40 percent to the price of coffee received.

2.4 Labor Productivity

- Animal draught. ASDP established 105 oxen training centers. Plowing with oxen reduced the time for plowing one hectare from 30 days using a hand hoe to 2 days. At the price of TZS 2,500 per labor-day, this translates into gross savings of TZS 70,000 per hectare. There were also gains from the associated timely planting, and the ease of applying water conservation technologies. In one village in Nyombe district, the combination of these factors increased maize production from 0.6 tons per hectare to 2-3 tons per hectare. Similar increases have been observed in rice. Total cropped area per household has also increased from 2 to 5 acres on average among oxen users.

- Farm Machinery. ASDP distributed 65 tractors, 1,972 power tillers, and 1,321 ploughs. Farmers also purchase their own power tillers using loans from Warehouse Financing because of the warehouses financed by the Program. Some farmers have reported reducing plowing time by 8 to 10 times when moving from hand hoe to power tiller plowing, with labor savings, productivity gains, and area expansion as noted above.

3. FINANCIAL AND ECONOMIC ANALYSIS

7. Although, as noted above, several activities generated value for the Program's beneficiaries, the M&E system did not adequately document the changes and benefits induced by the Program. For instance, estimating the aggregate benefits from feeder roads requires information on use that is not available. Same as markets, or cattle dips, or any other infrastructure financed by the project. The data is not reliable enough for carrying out a credible analysis.

8. A significant portion of the Program's resources were invested in rice production. Even here, data quality was very low. For instance, out of the 386 irrigation schemes constructed or rehabilitated by the program, 31 schemes did not report their total surface area. None of the schemes reported their production data. The baseline information was simply a consolidation of

data from various studies and surveys, with questionable quality.

9. Nonetheless, a financial analysis for the irrigation investments was attempted by extrapolating sample data collected in the impact assessment studies commissioned by the Program. The average yield differential between the with-project versus the without-project scenario is estimated at 105 percent (3.43 tons per hectare versus 1.67 tons per hectare). Other assumptions include 12 percent opportunity cost of capital, a 15-year investment horizon. The analysis is done for the entire 386 hectares. Scheme average data is used for missing surface area data. Based on these assumptions, the IRR for the irrigation scheme is estimated at 38 percent.

Sensitivity Analysis.

10. The main advantage of irrigated agriculture is access to water, and lack of it is the principal threat to the beneficiaries' incomes. About 86 percent of the irrigation schemes financed under the Program depended on river diversion without a water retention dam. However, river flows can vary significantly from year to year, due to variability in annual precipitation. This is accentuated by poor conservation of upstream catchment areas that would ensure steadier stream flows. Reduced water availability leads to corresponding reductions in productivity, with downstream irrigators affected the most. Other possible causes of reduced productivity are poor management of irrigation infrastructure, leading to a drop in water use efficiency. There are also threats from pests and diseases. To simulate these impacts, the analysis assumed a drop of 20 percent in yield induced by any of these factors. Such an occurrence would result in a drop in the schemes' IRR to 18 percent.

Comparison with Appraisal Estimates

11. A different approach was used at appraisal, namely: determining by how much agricultural productivity would have to increase in order to generate a return on investment of at least 12 percent. It was not possible to make an ex-poste assessment for the entire Program given the data limitations cited earlier. However, based on the assessment carried out for irrigation investments, the program generated a return significantly higher than 12 percent as already indicated.

Annex 4: Bank Lending and Implementation Support/Supervision Processes
TANZANIA: Agriculture Sector Development Project

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Amon Mattee	Institutional Arrangements	Consultant	
Arnu Braun	Empowerment/Communication	Consultant	
Bart Meertens	Empowerment	IFAD	
Bjarne Larsen	Private Sector Development	Consultant	
Donald Mneney	Procurement Specialist	AFTPC	
Edith Mwenda	Sr. Counsel	LEGAF	
Frits Ohler	Agronomist	FAO/CP	
Geoffery Shoo	Financial Management	Consultant	
Guy Evers	Agriculturist	FAO/CP	
Henry Gordon	Sr. Economist	AFTS2	
Ijsbrand de Jong	Sr. Water Resources Specialist	AFTS2	
Jacob Kampen	Agricultural Services Specialist	ADTS2	
James Monday	Safeguard Specialist	EASEN	
Jane Kibbassa	Rural Development Specialist	AFTS2	
Jim Phelan	Agricultural Extension Specialist	Consultant	
Junior Davis	Private Sector Development	Consultant	
Ladisy Chengula	Sr. Natural Resource Management Specialist	AFTS2	
Malcolm Blackie	Agricultural Research Specialist	Consultant	
Melissa Brown	Economist	FAO/CP	
Mercy Sabai	Sr Financial Management Specialist	AFTFM	
Modupe Adebowale	Senior Finance Officer	LOAG2	
Nick Champan	Monitoring & Evaluation	Consultant	
Per Tidemand	Local Government Reform	Consultant	
Robert Townsend	Sr. Economist	AFTS2	
Sheetal Asrani-Dann	Legal Associate	LEGOP	
Supervision			
Abel Lufafa	Team Leader	GFA13	
Andrew Mwihia Karanja	Sr. Agriculture Economist	GFADR	
Bella Lelouma Diallo	Sr. Financial Management Specialist		
Christine E. Cornellius	Consultant	AFTAR	

David Rohrbach	Senior Agriculture Economist	AFTA3	
Donald Paul Mneney	Senior Procurement Specialist	GGODR	
Emma Cuthbert Isinika Modamba	Consultant	AFTA3	
Geoffrey Shoo	Consultant		
Hayalsew Yilma	Irrigation engineer		
Helen Z. Shahriari	Sr. Social Scientist	GSURR	
Henry F. Gordon	Sr. Sector Economist		
Herman Pfiffer	Sr. Agricultural Economist	AFTAR	
Hubert Elitira Mengi	Financial Management Specialist		
Ida Manjolo	Sr. Social Protection Specialist	GSPDR	
IJsbrand Harko de Jong	Lead Water Resource Mgt Spec.		
James Orehmie Monday	Safeguards Specialist	GENDR	
Jane A. N. Kibbassa	Senior Environmental Specialist	GENDR	
Johanna van Tilburg	Safeguards		
Judith Elimhoo Mziray	Program Assistance		
Juma Kayonko	Consultant	AFTAR	
Madhur Gautam	Lead Economist	SASDA	
Markus Moeller	Consultant		
Mary C.K. Bitekerezo	Social Safeguards		
Mercy Mataro Sabai	Sr. Financial Management Specialist	GGODR	
Naima A. Hasci	Sr. Social Scientist		
Pascal Tegwa	Procurement Specialist	GGODR	
Paulina Proches Shayo	Team Assistance		
Pierrick Fraval	Sr. Water Resources Specialist	GWADR	
Rafik Fatehali Hirji	Sr. Water Resources Specialist		
Reginald Lekule	Consultant		
Srilatha Shankar	Team Assistance		
Vildan Verbeek-Demiraydin	Sr. Economist		M&E
Winter M. Chinamale	Procurement		
Zainab Z. Semgalawe	Sr. Rural Development Specialist	GFADR	
ICR			
Abel Lufafa	Team Leader	GFA13	
Eustacius Betubiza	Consultant	GFA13	

(b) Staff Time and Cost

Stage of Project Cycle	*Staff Time and Cost (Bank Budget Only)*	
	No. of staff weeks	*USD Thousands (including travel and consultant costs)*
Lending		
FY04	18.29	131,402.75
FY05	44.92	210,094.09
FY06	62.68	297,594.73
Total:	**125.89**	**639,091.57**
Supervision/ICR		
FY06	0.00	16.70
FY07	21.60	109,418.18
FY08	52.21	134,081.42
FY09	45.47	121,291.99
FY10	29.45	65,425.46
FY11	30.89	75,061.93
FY12	24.63	72,545.67
FY13	49.30	85,355.27
FY14	17.38	35,758.07
FY15	8.71	29,735.05
FY16	11.10	65,942.97
FY17	11.33	781,72.94
Total:	**302.07**	**872,805.65**
Grand Total :	**427.96**	**1,511,897.22**

Annex 5: Summary of Borrower's ICR
TANZANIA: Agriculture Sector Development Project

CHAPTER ONE: INTRODUCTION

1.1 Programme Background, Context and Rationale

1. At appraisal, Tanzania's annual Gross Domestic Product growth was increasing, from about 3.5 percent in the mid-1990s to about 6.5 percent in 2004. However, the agriculture sector, which accounted for about 46 percent of GDP, was characterized by low productivity, poor coordination, limited capacity, and under-developed supporting facilities. To address these issues, an Agricultural Sector Development Strategy (ASDS) was developed in October 2001 to enable it to contribute to the overall national poverty reduction goal as spelled out in the National Poverty Reduction Strategy (MKUKUTA). To support the implementation of the ASDS, the Agriculture Sector Development Programme (ASDP) was developed, supported by Government and its development partners through a multi-donor *Basket Fund* that was initiated on July 1, 2006.

1.2 Programme Development Objectives and Key Performance Indicators

2. The programme had two sets of objectives: (i) to enable farmers to have better access to, and use of, agricultural knowledge, technologies, marketing systems and infrastructure, all of which contribute to higher productivity, profitability and farm incomes; and (ii) to promote agricultural private investment based on an improved regulatory and policy environment.

3. The following performance indicators and their targets were agreed upon at appraisal:

- Percent of farmers accessing improved agricultural services and infrastructure (baseline crop extension = 35 percent, by 2010 = 45 percent; baseline livestock advice = 6 percent, by 2010 = 21 percent; baseline for irrigation use = 8 percent, by 2010 = 10 percent).
- Percent of farmers that show sustained use of one or more relevant technologies and the sustainable use of productive infrastructure (by 2010 = 40 percent increase from baseline).
- Percent of private sector investment growth into agriculture (5 percent increase per year).

1.3 Programme Costing and Financing

4. The ASDP was financed by Government of Tanzania and some Development Partners through a Basket Fund. A total of US$ 474.4 million was spent for Programme implementation from 2006/2007 to 2013/2014 of which US$82.9 million was contributed by the Government and US$ 391.5 million by Development Partners. Of the total funds, US$ 288.4 million was allocated at the local level and US$186 million at the national level.

1.4 Significant changes to programme implementation

1.4.1 Programme indicators

5. The design of the programme entailed too many indicators (over 100 indicators) that were deemed difficult to measure. Two years after implementation, a decision was made by the Basket Fund Steering Committee (BFSC) to revise and reduce the indicators to make them simple and achievable and to align them with the MKUKUTA cluster strategy of identifying new markets, promoting products that maximize value addition, and tapping new opportunities for supply chains in the country; pursuing policies that attract public and private investment in agriculture (including livestock) and natural resources. The ICR team based its assessment on the revised Results Framework.

1.4.2 Programme restructuring

6. The programme received additional/supplementary funding from three participating Development Partners, notably: the World Bank Group (US$95 million); the Japan International Cooperation Agency (US$14.25 million); and International Fund for Agricultural Development (US$56 million). In addition, the value chain approach was introduced in District Agricultural Development Plans (DADPs) in 2012/2013 to maxime benefits for programme beneficiaries.

1.4.3 Description of Original and Revised Components

7. The programme comprised two main components, which were not revised and remained the same throughout implementation:

8. ***Component 1: Local Level Support:*** The objective of this component was to build the capacity of Local Government Authorities (LGAs) to plan, support, and co-ordinate agricultural services and investments through the development and implementation of DADPs. It comprised three sub-components: (i) local agricultural investments; (ii) local agricultural services; and (iii) local agricultural capacity building and reform.

9. **Component 2: National Level Support:** The component focused on five areas: (i) reforming of agricultural services, primarily research and extension; (ii) improving overall sector policy, regulatory and legal framework, marketing and private sector development, capacity building, and information and communication; (iii) investing in strategic national level irrigation infrastructure and technical support for local level irrigation investment; (iv) enhancing food security; and (v) establishing a framework to ensure the quality and technical soundness of investments and delivery of services at local levels.

CHAPTER TWO: THE ASSESSMENT

2.1 Programme Design, Preparation and Risk

2.1.1 The Design

10. The Programme's design was typically that of a Sector-Wide Approach (SWAp) which sought to bring together key development partners to support the Government's sector development agenda using a Basket Fund mechanism[36]. Programme financing was integrated into the Government's Medium Term Expenditure Framework based on the strategic plans of the ASLMs[37]. At the local level, programme financing was based on District Agricultural Development Plans.

2.1.2 The preparation

11. ASDP was prepared as the first phase of a fifteen-year investment programme intended to support the implementation of Tanzania's ASDS. Programme preparation was very participatory and involved representatives of key stakeholders, particularly the ASLMs and the development partners such as the World Bank Group, the Japanese International Corporation Agency, Irish Aid, the European Union, the International Fund for Agricultural Development, the African Development Bank, the Food and Agriculture Organization of the United Nations, and the Danish International Development Agency. However, not all donors came on board at the time of preparation and design, e.g. the United States Agency for International Development and the Department for International Development (of the United Kingdom). The Danish International Development Agency participated in the programme's preparation but did not contribute funds.

2.1.3 Relevance of the programme to the objectives

12. The programme's relevance to objectives is *high*. The programme objectives are relevant and remain consistent with the Government's strategic priorities as stated in MKUKUTA II. The programme is also consistent with the Government's current Big Results Now initiative. The programme's design was relevant to the objectives as its menu of activities and interventions sought to address the achievement of the PDOs. The programme's Results Framework had clear stated objectives, but limited in its linkage to intermediate outcomes because of too many indicators most of which were not easy to measure.

2.1.4 The programme risk

13. The Programme's risk at appraisal was rated *moderate*. The preparation team identified and mitigated key risks that could potentially affect programme implementation. Prominent among them: (i) the risk that programme funds might not be efficiently and economically used, mitigated

[36] Participants in the Basket Fund included the World Bank Group, the Japanese International Cooperation Agency, Irish Aid, the International Fund for Agricultural Development, and the African Development Bank.
[37] MAFC; Ministry of Livestock and Fisheries Development; Ministry of Water and Irrigation; and Ministry of Trade and Industry.

through the regular implementation reviews and oversight by the Basket Fund Steering Committee; and (ii) the risk of weak internal audit capacity within the ASLMs and LGAs, mitigated through capacity building and audit committees in all the ASLMs.

2.2 Programme outcome

2.2.1 Achievement of Programme Development Objectives (PDOs)

14. The programme's investment through the implementation of DADPs enhanced the LGAs capacity to plan and implement their own development projects. The capacity building interventions conducted at both national and local levels, improved the beneficiaries' ability to implement their activities. The urgently needed agricultural infrastructure, irrigation, extension facilities and market facilities supported by the programme had significant impact on the productivity, profitability and incomes of the beneficiaries as well as enhanced national capacity to increase agricultural production and productivity that had positive bearings on poverty reduction, food security and self-sufficiency at household and national levels. Notable achievements revealed in this ICR in line with PDO are as follows:

- ***Agricultural knowledge and technology development and transfer****:* The programme established 319 Ward Agricultural Resource Centres, 105 Oxen Training Centres, 136 fish ponds, and 51 Livestock Development Centres. These facilities provided the opportunity for farmers to improve their knowledge and skills in crop and livestock production. Over 125,882 oxen have been trained at different Oxen Training Centres compared with 23,794 oxen at programme inception. Through the establishment and utilization of Farmer Field Schools (FFS) the programme increased farmers' access to improved technologies. About 774,156 farmers and livestock keepers were trained on good agricultural husbandry and different technologies in 41 established demonstration plots and 16,330 FFS throughout the country. Total income for farmers who benefited from Farmer Field School technologies was reported to be Tsh 1,469,000 compared with Tsh 735, 649 for Non-FFS group[38]. The extension services coverage has increased from 35% to 45% as targeted. During ASDP implementation, the public extension system has been strengthened leading to an increase of extension officers from 3,379 in 2007/2008 to 9,558 by 2013/2014. In addition, intensive on-the-job training and long term training was provided to extension officers to upgrade participative extension approaches.

- ***Development of agriculture marketing systems and infrastructure***: Agricultural marketing systems and infrastructure have been improved by the programme as 450 warehouses were constructed and rehabilitated nationwide. This figure surpasses the end of programme target of 250 warehouses. The investment in warehouse construction shall have a positive externality effect on the planned commodity exchange system and current emphasis for the farmers' collective bargain through the provision of collection and storage facilities of agriculture produce. The programme also built 382 community markets representing about 46.4 percent of total community markets in the country. In addition, the

[38]An Assessment of Extension Services Performance under the Agriculture Sector Development Programme (ASDP) in Tanzania, final report, 25th March 2013.

programme constructed 137 livestock markets and 2,364 dip tanks surpassing the end of programme target of 640 dip tanks.

- ***Irrigation development****:* The programme financed construction and rehabilitation of 1,325 irrigation schemes over a baseline value of 1,000 schemes, but less than 1,520 end of programme target schemes. As a result, the irrigation area for new and rehabilitated schemes increased from 249,992 hectares at baseline to 386,907 hectares at end of programme. The figure surpasses the end of programme target of 380,000 hectares. Moreover, there has been significant increase in productivity of rice under the irrigation schemes from 4.5 MT/ha at baseline to 5.0 MT/ha at end of programme, slightly lower than end of programme target value of 6.0 MT/ha.

- ***Use of agricultural mechanization****:* The total number of tractors used in various farms across the country increased from 7,210 at programme inception to 8,466 at the end of the programme. In addition, the use of power tillers increased from 281 at the start of the programme to 4,571 at the end of the programme. Also, the use of animal drawn ploughs increased from 1,307,655 to 1,589,258 over the same period. The percentage of smallholder farmers using mechanization increased significantly over the course of programme implementation. At the end of the programme, 24 percent of smallholders were using oxen, an increase of four percentage points from a baseline value of 20 percent, but less than end of the programme target of 30 percent. The increased use of agricultural mechanizations among smallholder famers led to significant increase in the area under cultivation. Available national statistics shows that about 1,955,270 hectares which is 14.1 percent of total area under cultivation (13,915,789 hectares), have been cultivated using tractors and power tillers compared with 3,404,494 hectares under drought animal power and 8,560,517.5 hectares under hand hoe respectively.

- ***Utilization of improved crops varieties and livestock breeds***: The programme supported Zonal Agricultural Research Development Fund to finance a total of 236 research projects (157 on Crops and 79 on livestock), leading to the development of 86 improved crop varieties that were released and validated by the National Seed Release Committee. These varieties are high yielding, drought tolerant, diseases and pest resistance, good marketability and early maturing. Household utilization of improved seeds increased from 18 percent at beginning of the programme to 19.5 percent at end of the programme. In the area of livestock production, the programme supported farmers with 139 dairy cattle, 213 heifers, 374 bulls and 5,285 cockerels to help increase production and also distributed improved livestock breeds and good husbandry. This led to increased productivity of milk from 1.9 litres at programme inception to 2.1 litres per cow per day at end of the programme for traditional cows, and 6.5 litres at the beginning of the programme to 6.8 litres per cow per day at end of programme for improved cows. The success of the interventions led to increased households using improved breeds from two percent at the beginning of the programme to four percent at end of programme, which is slightly below the target of five percent.

- ***Promotion of private sector participation in agriculture***, Through contracting arrangements, the LGAs were to increase private sector participation to enable them to

provide a wide range of services, including construction work, provision of specialized training, provision of veterinary and Artificial Insemination (AI) services, establishment and management of demonstration plots, management and supervision of crop and livestock production, supply of various materials, including pesticides and other related services. At the end of the programme, 441 private sector service providers were contracted by the LGAs compared with the end of programme target of 558.

2.2.2 Efficiency

15. The unit cost of investment in new irrigation schemes (USD 3,050 per hectare) and rehabilitation (USD 1,030 per hectare) in Tanzania is lower than the equivalent unit costs of new development (USD 5,600 per hectare) and rehabilitation (USD 2,000 per hectare) in Sub-Saharan Africa. However, the corresponding unit costs of improvement in Tanzania is slightly above the SSA average as there are a significant number of uncompleted irrigation schemes, which could increase costs substantially. An analysis of cost per beneficiary for programme activities for which data were available confirms that the programme was cost efficient (TZS 47.10 or US$0.028**).** However, there were some operational and administrative inefficiencies early in the programme resulting in a slow start which affected disbursements, and continued to encounter significant fund flow issues leading to a lot of carryover of funds at the local level as noted in Section 3.1.3, resulting in delay in implementation of many infrastructure activities. As many as 163 subprojects (livestock markets, abattoirs, charcoal dams, dip tanks, fish ponds etc.) and a significant number of irrigation projects had not been completed at the time of the ICR.

2.2.3 Overall rating of programme outcome

16. Taking into consideration the programme's relevance, achievement of the PDO, and its efficiency, the overall programme outcome is rated as *moderately satisfactory*. The programme was relevant and remained consistent with the Government's sector priorities as indicated in MKUKUTA and the ASDS. It contributed significantly to addressing poverty issues and strengthening government institutions at the national and local levels through a decentralized participatory development approach. However, implementation challenges mainly due to fiduciary factors caused a significant amount of delays in carrying out key activities and as a result, the programme did not fully achieve its development objectives.

2.3 Assessment of project institutional development impact, sustainability, post-completion operations and next phase

2.3.1 Institutional development impact

17. The institutional development impact of the programme has been *substantial*. At the national level, the programme helped improve the capacity of the four ASLMs in various aspects of programme implementation, including procurement, financial management and monitoring and evaluation. At the local level, the programme strengthened the capacity of the unit in charge of Regional Administration and Local Government in the Prime Minister's Office (PMO-RALG) to enable it to play its role of coordinating and implementing local level activities. District Facilitation

Teams and Ward Facilitation Teams provided hands-on training to the beneficiaries to help in addressing implementation issues at subproject level.

2.3.2 Ongoing Research Reforms

18. The Tanzania Livestock Research Institute Act was enacted in July, 2012 to improve coordination and execution of livestock research in the country. In addition, the Ministry of Agriculture Food Security and Cooperative is establishing a semi-autonomous organization to be known as the Tanzania Agricultural Research Institute to ensure more efficient and effective research management and coordination, and client responsive agricultural research and development in Tanzania.

2.3.3 Programme sustainability

19. The programme document laid out strategies for sustaining the programme's outcomes, including project committees, user fees, and water users associations. They received basic training to enable them to prepare their Operation and Maintenance budgets, and keep both operational and financial records, which are regularly reviewed and inspected by the district irrigation engineer. However, an irrigation impact assessment study found low contribution of user fees, and some schemes had not been developed to design due to inadequate funding. The ICR team's visit to some project sites revealed that many of them have difficulty in marketing their products.

2.3.4 Post-completion operations/next phase

20. The Government is preparing an overall ASDPII programme which will encompass all the projects and programmes funded by various donors in the sector, including the Big Results Now initiative. Together with stakeholders, the Government prepared Tanzania Agriculture and Food Security Investment Plan, which aims at transforming the sector to create wealth, reduce poverty and achieve food and nutrition security. The ASDS has also been revised to meet current development challenges in the sector.

2.4 Programme development impacts (poverty, gender, and social development)

21. According to the irrigation impact evaluation, these impacts, among others, include increased land value, increased business in intervention areas, increased employment, increased water supply, greater demand for goods and services and increased rural services. Also, according to the extension impact assessment report, the extension technologies adopted through the Famer Field Schools supported by the programme led to significant increase in incomes of maize, rice, and cattle farmers. However, the link between the increased incomes and improved well-being (e.g. acquisition of assets and properties, support to famers' children education, improved access to health care, etc.) of the beneficiary farmers was not established in the report.

2.5 Assessment of government, agency and development partners performance

2.5.1 Government performance

22. Government performance is rated *satisfactory*. The Government showed a high level of commitment during programme preparation. It fully supported the sector-wide approach. However, over time, the Government allowed a proliferation of stand-alone projects implemented in parallel with the basket-funded SWAp, which eventually weakened the growth of the SWAp initiative. It also could have improved its Public Finance Management systems and procedures to improve the flow of funds.

2.5.2 Implementing agency performance

23. The implementing agency performance is rated *moderately satisfactory*. The Secretariat played its coordination role to ensure smooth preparation of the programme. However, during programme implementation there were no systematic and good records of programme results.

2.5.3 Development partners' performance

24. Development partners' performance with respect to programme preparation, design, and implementation is rated *moderately satisfactory*. Development Partners were fully involved in programme preparation, and worked closely with the government team to address key implementation issues through a number of Joint Implementation Review missions. However, programme design could have been strengthened with simplified implementation arrangements as well as the design of the results framework, including anticipating the difficulties in tracking the army of indicators developed.

CHAPTER THREE: PROGRAMME CHALLENGES

3.1 Fiduciary-related challenges

3.1.1 Procurement

25. Key factors that accounted for delays in carrying out procurement activities are, among others: (i) at the national level – weaknesses in procurement capacity among the ASLMs; (ii) belated approval of bidding documents by the ministerial procurement tender board; (iii) impact of late disbursement of funds on procurement processes; (iv) changes in the local government procurement regulations; (v) weaknesses in procurement capacity at the local level; and (vi) frequent reshuffle of procurement officers within the Central Government, including ASLMs. In view of the above factors, procurement performance was rated *moderately satisfactory* by almost all the Joint Implementation Reviews by the Development Partners and the Government.

3.1.2 Financial management

26. Financial management performance was initially rated satisfactory with improved planning and budgeting, adequate and appropriate number of accounting staff at both national and local level, improved internal controls and financial reporting, and establishment of financial accounting software (Epicor 9.05). However, there were some challenges, notably: (i) late release of funds due to delays in submission of quarterly reports from the LGAs; (ii) lack of harmonization of donor deposits into the basket fund (later resolved by making annual deposits by development partners before 1st July, while the BFSC retained the funds' control); and (iii) belated parliamentary budget approvals which usually took place in August.

3.1.3 Carry over funds

27. At the local level, the programme suffered from frequent carry-over of funds due to: (i) shortage of technical personnel, such as irrigation engineers and technicians; (ii) few consultancy firms; (iii) prolonged procurement processes; (iv) ineffective information flow within LGAs; and (v) irregular supervision and monitoring by the ASLMs. Carry-over funds declined over time.

3.2 Programme management-related challenges

28. At the national level, the programme was managed through three key structures: an Inter-ministerial Coordinating Committee (ICC), Committee of Directors (CoD), and Basket Fund Steering Committee (BFSC), supported by the Programme Secretariat for day-to-day coordination of programme activities. However, during the third year of programme implementation, the ICC was fused with the BFSC as it appeared to have related functions. Although the CoD carried out its functions as required, sometimes it failed to meet as scheduled. The BFSC performed its functions remarkably well, although the meeting faced limited representation of higher level officials as required. One of the Programme Secretariat's shortcomings is that it was difficult to obtain detailed and consolidated data and information on the Programme's outcome due to a weak M&E system. At the local level, the Regional Secretariats performed their functions generally well, although weaknesses in technical capacity of key Secretariat staff and inadequate funds for monitoring and supervision affected implementation. Programme implementation and coordination at the local level was conferred upon the PMO-RALG. Whereas it performed its functions as required, it faced the challenge of getting the requisite specialists such as livestock specialists, engineers, and fisheries specialists. In addition, weaknesses in the capacity of Regional Secretariats on which it depended for its day-to-day activities and for reporting affected its operations and hence programme implementation.

3.3 Other programme-related challenges

29. Other significant programme related-challenges include: unavailability of qualified contractors and consultants for DADP funded infrastructure works, and lack of understanding and application of the value chain initiative at the local level.

3.4 Environmental and social safeguards compliance

30. The programme was classified as category B in accordance with the World Bank Group's environmental safeguard policy classification. Against this backdrop, the Government and

Development Partners prepared an Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) at appraisal, which provided guidance on how to address environmental and social issues triggered by programme investments. However, environmental management issues were not integrated into DADP guidelines in the first three years of implementation; as a result, little knowledge about environmental issues existed at the local level initially. In spite of the above shortcomings the government has been proactive in dealing with environment safeguard issues, including: (i) integrating safeguards issues in the planning of sub-projects and implementation of associated mitigation measures; (ii) conducting various capacity building activities and providing technical support both at national and local level to enhance understanding and application of safeguard principles and procedures; (iii) incorporating ESMF principles into the training modules and DADP guidelines; (iv) distributing ESMF and RPF documents to all districts; and (v) strengthening the coordination and monitoring of the implementation of safeguard issues at national and local levels. An environmental unit was established in the ASLMs and the LGAs appointed District Environmental Management Officers (DEMOs) responsible for coordination and supervision of national ASDP investments to ensure integration of safeguard issues in subprojects. Also, Social and Environmental Safeguard Assessment for the national irrigation master plan and the national irrigation policy was completed in May 2011.

3.5 Monitoring and Evaluation

31. Almost a year after programme effectiveness, a monitoring and evaluation (M&E) framework was developed and approved, and guidelines prepared.

3.5.1 M&E design

32. The M&E design was weak. Over 100 indicators were formulated, many of which were difficult to measure. These indicators were reduced to about 25 indicators to make them more measurable, but most of them were still difficult to measure as their linkages to the PDOs were hard to establish. The M&E design was short on specific impact assessments/studies that would have measured programme impacts at baseline, midpoint, and end-of-programme. Instead, agricultural surveys conducted by National Bureau of Statistics (NBS) in collaboration with ASLMs, Regional Secretariats, and LGAs were seemingly a replacement of impact assessments/studies.

3.5.2 M&E implementation

33. A baseline report was prepared two years after project implementation. But, the reliability of the baseline indicators is questionable. The data presented in the report was mainly a compilation of data from various reports and studies. By design, programme outcome indicators were measured by national survey instruments such as the National Sample Census of Agriculture (NSCA) conducted in 2002/03 (NSCA1) and again 2007/08 (NSCA2) and the Rapid Agricultural Panel Survey (RAPS). The NPS and NSCA used different samples and questionnaires, making it difficult to compare results. Moreover, production of results of the two surveys took two years for the NPS and three years for the NSCA to complete. A new Agricultural Routine Data Collection

System was completed and rolled out toward the end of the programme, and wasn't available for use during the programme.

4.1. Lessons learned

34. The following are key lessons learned from ASDP implementation:

- In adopting a SWAp approach to implementing a national programme of such nature, a thorough initial assessment, at the outset, of public financial management system is essential.

- In a national Programme of such magnitude, a strong M&E system with adequate staffing, equipment and tools is critical to achieving development outcomes.

- Strengthening and empowering the Programme Secretariat to maintain updated data base for the Programme, at the outset, is essential for Programme results monitoring and evaluation.

- Options for a better way of bringing all donors on board to support government development agenda should be explored in future for the SWAp approach to work.

- Prior capacity building interventions, particularly procurement, for Programme staff as well as staff of ASMLs is essential for smooth implementation of Programme activities.

- The link between policy and politics which required the Programme to spread its resources and scope to all districts regardless of their readiness to receive and implement the Programme was a real challenge.

- Establishment of effective and efficient market linkages is critical to reducing poverty and sustaining development outcomes.

- Districts and Agricultural Development Plans enabled LGAs to plan and implement priority agricultural investments that addressed the need of the beneficiaries through participatory planning and implementation.

Annex 6: List of Supporting Documents
TANZANIA: Agriculture Sector Development Project

1. Project Appraisal Document, Agricultural Sector Development, The World Bank, May 19, 2006.
2. Aide-Memoires for the annual Joint Implementation Reviews, 2007-20013; Aide-Memoires for Implementation Support Missions, 2013 – 2014.
3. Impact Evaluation of the Irrigation Investments of the Agricultural Sector Development Programme (ASDP), Dar es Salaam, Tanzania, 10 April, 2013.
4. Assessment of Achievements of the Agricultural Sector Development Program (ASDP): Returns to Local Infrastructure Report, July 2014.
5. An Assessment of the Performance of Extension Services under the Agriculture Sector Development Programme (ASDP) in Tanzania, 25 March, 2013.
6. Environmental and Social Audit of Selected ASDP Sub-Projects, 13 December 2014.
7. Implementation Status and Results Reports, Sequence Nos. 1 – 19, 2006-2016
8. Investing in Agricultural Water Management to Benefit Smallholder Farmers in Tanzania, AgWater Solutions Project Country Synthesis Report 146, International Water Management Institute Working Paper, edited by Alexandra E. V. Evans, Meredith Giordano, and Terry Clayton, 2012.

Map of Tanzania