AFRICAN DEVELOPMENT FUND

TANZANIA

MARKETING INFRASTRUCTURE, VALUE ADDITION AND RURAL FINANCE SUPPORT (MIVARF) PROGRAMME

PROJECT COMPLETION REPORT (PCR)

RDGE/COTZ

July 2019

TANZANIA: MARKETING INFRASTRUCTURE, VALUE ADDITION AND RURAL FINANCE SERVICES – PROJECT COMPLETION REPORT (PCR)

AFRICAN DEVELOPMENT BANK GROUP

I BASIC DATA

A Report data

Report date	Date of report:	27 December 2018	
	Mission date *(if field mission)*	**From:** 09 November 2018	**To:** 06 December 2018

B Responsible Bank Staff

Positions	At approval	At completion
Director General	Gabriel Negatu	Gabriel Negatu
Country Manager	Tonia Kandiero	Alex Mubiru
Sector Director	Adbirahman Beileh (Acting)	
Sector/Regional Manager	Alex Mend (OIC)	Joseph Coompson
Task Manager	Edson Mpyisi	Salum Ramadhani
Alternate Task Manager	Salum Ramadhani	-
PCR Team Leader		Salum Ramadhani
PCR Team Members		Salum Ramadhani, Emmanuel Maliti (Consultant)

C Project Data

Project name: Marketing Infrastructure, Value Addition and Rural Finance Support (MIVARF) Programme		
Project code: P-TZ-AA0-019	**Instrument number(s):** 2100150024993	
Project type: Investment	**Sector:** Agriculture & Agro-Industry	
Country: TANZANIA	**Environmental categorization (1-3):** 2	
Processing milestones – Bank approved financing only (add/delete rows depending on the number of financing sources)	**Key Events (Bank approved financing only)**	**Disbursement and closing dates (Bank approved financing only)**
Financing source/ instrument1: ADF Loan	**Financing source/ instrument1:**	**Financing source/ instrument1:**
Date approved: 29/06/2011	Cancelled amounts: NA	Original disbursement deadline: 30/03/2017
Date signed: 12/09/2011	Supplementary financing: NA	Original closing date: 31/03/2016
Date of entry into force: 23/01/2012	Restructuring (*specify date & amount involved*): NA	Revised (*if applicable*) disbursement deadline: 31/12/2018
Date effective for 1st disbursement: 23/03/2012	Extensions (*specify dates*): <31/12/2016 and 31/12/2017>	Revised (*if applicable*) closing date: 30/09/2018
Date of actual 1st disbursement: 21/05/2012		

Financing source/ instrument 4: IFAD Loan	**Financing source/ instrument2:**	**Financing source/ instrument2:**
Date approved: 31/12/2010	Cancelled amounts: NA	Original disbursement deadline: 30/03/2017
Date signed: 25/02/2011	Supplementary financing: NA	Original closing date: 31/03/2016
Date of entry into force: 23/01/2012	Restructuring (specify date & amount involved): NA	Revised (if applicable) disbursement deadline: 31/03/2020
Date effective for 1st disbursement: 23/03/2012	Extensions (specify dates): 31/03/2020	Revised (if applicable) closing date: 30/09/2020
Date of actual 1st disbursement: 21/05/2012		

Financing source/instrument (add/delete rows depending on the number of financing sources):	Disbursed amount (amount, UA):	Percentage disbursed (%):	Undisbursed amount (UA):	Percentage undisbursed (%):
Financing source/ instrument 1: ADF Loan <UA 40 million>	37,189,760.47	92.97	2,810,239.53	7.03
Financing source/ instrument 2: Government/Districts <2.08 million>	675,105.73	32.00	1,404,894.27	64.00
Financing source/ instrument 3: Recipient communities <UA 0.11 million>	110,000	100.00	0.00	0.00
Financing source/ instrument 4: IFAD: <UA 63.30 million>	89,580,140.23	85.00	15,909,859.77	15.00
TOTAL: UA 105.49 million	**127,555,006.43**	86.37	**20,124,993.57**	13.63
Financing source/instrument (add/delete rows depending on the number of financing sources):	**Committed amount (UA):**	**Percentage committed (%):**	**Uncommitted amount (UA):**	**Percentage uncommitted (%):**
Financing source/ instrument 1: ADF Loan <UA 40 million>	722,238.33	1.81	2,088,001.20	5.22
Financing source/ instrument 2: Government/Districts <2.08 million>	0	0.00	0	0.00
Financing source/ instrument 3: Recipient communities <UA 0.11 million>	0	0.00	0	0.00
Financing source/ instrument 4: IFAD: <UA 63.30 million>	10,369,507.00	94.00	661,414.50	6.00
TOTAL: UA 105.49 million	**11,091,745.33**	**80.14**	**2,749,415.7**	**19.86**

D Management Review and Comments

Report reviewed by	Name	Date reviewed	Comments
Country Manager	Alex Mubiru		
Regional Manager	Joseph Coompson		
Director General (as chair of Country Team)	Gabriel Negatu		
Sector Director			

II Project performance assessment

A: Relevance

1. Relevance of program development objective

Rating*	Narrative assessment *(max 250 words)*
4	The program's development objective was to contribute to poverty reduction and economic growth through enhancing rural incomes and food security. The objective was well aligned to the needs of the beneficiaries – where despite a declining trend, 28% of Mainland Tanzanians remain income poor, more so in rural areas (33%) than in urban areas (22%).[1.] The program's objective was the mirror image of the of the national strategies including the National Strategy for Growth and Reduction of Poverty II (NSGRP), and both the 2013 agricultural policy and the Agricultural Sector Development Program II (ASDP). At the regional level, the program's development objective aligned to several regional development strategies to which Tanzania engaged. The program activities of financing rural markets and storage facilities were for instance, the mirror image of the EAC's food security action plan which specifically advocates for the construction of agriculture market facilities, feeder roads and storage facilities as well as promotion of low-cost technologies on food processing. The program underwent two Country Strategic Papers (CSP) 2011-2015 and 2016-2020. It was embedded in the CSPs' infrastructure development pillar which considered rural feeder roads as among the key supports to local economic development. The program supported the Bank Group's Agricultural Sector Strategy 2010-2014, and the Bank's framework paper on Post-Harvest (PH) loss reduction. Such Bank's Group policies have prioritised reducing PH loss and investing in market structures, and agro-processing as among the important enablers for agricultural transformation. See annex 1 for further details on the relevance criteria.

** For all ratings in the Program Completion Report (PCR) use the following scale: 4 (Highly satisfactory), 3 (Satisfactory), 2 (Unsatisfactory), 1 (Highly unsatisfactory)*

2. Relevance of program design

Rating*	Narrative assessment ***(max 250 words)***
4	As a multi-sectorial focusing on local areas, the institutional design of the program was appropriately opted for the Prime Minister's Office (PMO) as the executing agency.[2] The program formulation was participatory[3], and identified geographical areas and clustered projects to maximize expected outcomes. Several lessons from the previous Agricultural Marketing Systems Development Program (AMSDP) informed the program formulation including better provision for the design of rural roads (civil, geodetic/geomatics and geotechnical engineering) and the need for putting in place a well-designed and robust Monitoring and Evaluation (M&E) system. The program activities were clustered such that investments in warehouses, roads and markets complemented each other. The program design allowed the district authorities[4] to compete for resources based on a set of eligibility criteria. To ensure full functioning of the market structures, the design financed service infrastructures such as cold-storage facilities located within the rehabilitated markets. To enhance sustainability of the program's investments, the design included capacity development sessions to Government staff and beneficiary communities to plan for, implement and manage market/storage facilities. The support to the rural economy was also a gender sensitive approach to rural development as it is estimated that 84% of Tanzanian women are employed in agriculture, against 80% for men.

[1] URT 2011/12
[2] Up to end of 2015, the PMO office was responsible for LGAs in Tanzania
[3] The preparation mission included a three-day workshop and field visits to Arusha and Zanzibar, while the identification mission made field visits to Arusha, Moshi, Morogoro, Dodoma, Mbeya and Zanzibar.
[4] Local Government Authorities.

3. Lessons learned related to relevance

Key issues *(max 5, add rows as needed)*	**Lessons learned**	**Target audience**
1. Institutional design of the program.	The support from the PMO, regional and district authorities (the latter two authorities were under the PMO during much of the program implementation time) helped to address challenges that risked delaying the delivery of the program's expected outputs. An example is the Government interventions when contractors abandoned sites – interventions that allowed completion of construction activities. ***Lessons:*** 1) Multi sectorial programs need to be hosted within authorities higher than sectorial ministries 2) It is even more important for program that devolve implementation to local levels to be hosted within an authority managing district and regional administrations.	The Bank, other Development Partners (DPs) and Government of Tanzania (GoT)
2. Continuity	For continuity purpose and transfer of good lessons to the new program, the program team was composed of experienced personnel from the previous two programs of AMSDP and RFSP. They joined the program with experiences in delivering infrastructure development in rural areas, capacity building and networking capacities with local authorities. ***Lessons:*** Succession of capacities needs to be prioritised for any potential successor to MIVARF.	The Bank, other DPs and GoT
3. Prerequisites for the matching grants	The program design introduced several prerequisites to be met by potential beneficiaries of the matching grants scheme. However, some of the matching grant beneficiaries struggled to meet the prerequisites (qualified buildings, electricity connection, working capital) and lacked experience on their planned business lines. ***Lessons:*** Design of agro-processing machinery support needs to include a well-resourced component on business support to beneficiaries (e.g. skills transfer, business advices, certifications etc.)	The Bank, other DPs and GoT
4. Geographical coverage.	Because of the widely scattered villages the Bank's resources were thinly spread with the program team covering vast distances during supervision. The 32 program's districts spread across 16 regions had a combined population of about 6.1 million (1.2 million households). Despite the challenge on the coverage, the program functioned successfully because of effective communication with program's liaison officers at the district/regional level and good liaising with the political and administrative structures at such levels. ***Lessons:*** Dispersion of resources across many projects, wide geographic areas and/or too many institutions/districts need to be avoided. Future Bank's rural development programs need to concentrate in fewer places for more impactful outcome.	The Bank, other DPs and GoT
5. Contract management	Limited contract management capacities by some districts resulted into incidences under-designing, and contract variations which increased cost to accommodate design components not included earlier on. Also, the quality for some of the complicated structures could have been improved if districts had requested additional technical support. Such challenges were mitigated by the Bank and the Government exercising flexibility to accommodate some of the additional costs. In addition, the program team backstopped districts lagging behind in implementation. ***Lessons:*** 1) to avoid delayed no-objection turnaround and contract variations, ensure that all factors affecting implementation are considered when establishing contract duration 2) backstopping and additional capacity building to weak districts is unavoidable 3) encourage local authorities to use own resources in seeking third party opinion on complex designs (e.g. bridges design etc); and 4) intensify supervision, and contractors should be made liable for faults before the defect liability period lapses.	The Bank, other DPs and GoT

B: Effectiveness

1. Progress towards the program's development objective (program purpose)

Comments
Provide a brief description of the Program (components) and the context in which it was designed and implemented. State the program development objective (usually the program purpose as set out in the RLF) and assess progress. Unanticipated outcomes should also be accounted for, as well as specific reference of gender equality in the program. The consistency of the assumptions that link the different levels of the results chain in the RLF should also be considered. Indicative max length: 400 words.
The overall development objective was to contribute to poverty reduction and accelerated economic growth through enhanced rural incomes and food security. The program planned to contribute to the Government efforts in raising rural incomes and food security through improved market access (feeder roads, market centres and linkages, and storage facilities), and increased value-added agricultural produce (through training and matching grants equipment). The program which was designed to upscale successful activities implemented under the former Bank's and IFAD's AMSDP and RFSP[5] was made up of three components 1) Marketing infrastructure and systems development 2) Rural finance; and 3) Program coordination. The implicit assumptions that linked different levels of the results chain were consistent and remained valid to date. For instance, the program's investments in rural infrastructures, in particular rural feeder roads, storage facilities and markets were expected to improve access to agricultural markets for small holders, reduce PH losses, all of which were expected to contribute to poverty reduction through enhanced rural income and food security. The program's 2017 outcome study confirmed the advances made towards the development objective of poverty reduction through enhancing rural income. About 78% of program's beneficiaries in the surveyed program's wards acknowledged increased monthly household income from TSh 95,194 in 2012 to TSh 307,696 in 2017. Surveyed beneficiaries attributed such positive income changes to the program interventions of market linkages, utilization of program's warehouses that had reduced PH losses, reduction in transport costs, capacity building and equipment support. The program's support to market linkages, for instance, has expanded markets for program's beneficiaries, as confirmed by 40% of the surveyed wards which reported to have experienced improved market linkages to local and out of region markets. The PCR mission also met producers who have experienced increased access to export markets for processed breadfruit (producers in Pemba), and onions to Kenya and Uganda (producers in Karatu). The advances made on the development objectives of the program were gender sensitive as demonstrated by data presented in section B.5. The program also had gender perspective. For instance, through PEML, the program's equally empowering men and women in group's leadership. In addition, the Program's infrastructures, such as the cold rooms' in the Mombasa market in Zanzibar largely benefited women (About 50% of traders in that market are women).

[5] Rural Finance Support Program.

2. Outcome reporting

Outcome indicators (as per RLF; add more rows as needed)	**Baseline value** (Year)	**Most recent value** (A)	**End target** (B) (expected value at program completion)	**Progress towards target** (% realized) (A/B)	**Narrative assessment** (indicative max length: 50 words per outcome)	**Core Sector Indicator** (Yes/No)
Outcome 1: Improved access to agricultural markets for smallholder producers and traders						
Indicator 1.1: Revenue from markets/ warehouses	US$ 3.0million p.a.	NA	US$ 6million p.a. by PY5.	NA	Deposit value of agricultural produce stored in 27 rehabilitated warehouses was TSh 3.2 billion (as of 30th June 2018). Revenue from selling 76.2% of the stored produce was TSh 4.5 billion. The gains from program's markets and warehouses also included safe and clean trading environment, employment, and expanded space for auctions.	
Indicator 1.2: Transport charges from farm to primary market.	US$ 6.4 per ton.	Reduced by 50%	Reduced by 25%	200%	Transport charges along all rehabilitated roads fell between 20 to 50% of the previous charges (annex 2). E.G. transport charge for one sack of onions along the program rehabilitated road to Mang'ola market in Karatu went down from TSh 3,000 to TSh 500. Crop transportation time fell by approximately 3 hrs from the previous overall mean of 3.5 hrs to 0.56 hrs.	
Outcome 2: Reduction of PH losses for key food crops						
Indicator 2.1: % of PH losses for maize and rice.	Maize: 22% Rice: 13%	NA	Maize: 14% Rice: 9%	NA	Use of program's warehouses reduced the overall PH losses (all crops) from 57% to as low as 15%. Beneficiaries such as Meru dairy company reduced PH loss by almost 85%. After the program's supported cold room, the daily processing capacity increased from 400 to 2,200 litres (see annex 3 for further details).	
Outcome 3: Increased income of producers and traders						
Indicator 3.1: Mean per capita households monthly agricultural income	TZS 11,324 (US$ 8.0)	Increase by 223%[6]	Increase by 25%.	892%	About 78% of the beneficiaries in the surveyed program's wards acknowledged to have experienced improved households income, from a monthly average of Tsh 95,194 in 2012 to Tsh 307,696 in 2017 (in nominal terms) (see annex 4). The income increase is attributed to selling value-added items, improved market access, improved productivity, use of improved technology including among others the use of System of Rice Intensification (SRI), improved seed and fertilizer use. and enhanced capacity to negotiate better prices (through farmer producer groups). In about 61% of the surveyed wards, capacity to negotiate better prices was rated as highly improved.	

[6] We used the reported figures from the outcome study (an increase from Tsh 95,194 in 2012 to Tsh 307,696 per month in 2017) rather than the baseline in the result framework.

Rating* (see IPR methodology)	Narrative assessment
4	The program's outcome study attributes most of the advances towards the program's development objectives to the program's interventions. Program's warehouses have improved the overall marketing of crops through improved quality management of the agricultural produce, which in turn has reduced PH losses and extended marketing period. Extended marketing periods, for instance, facilitated farmer's access to better prices and ultimately improved incomes (annex 5). The program's rehabilitated roads have largely improved market access to distanced farmers as well as the improved volumes of crops reaching the markets and warehouses. In addition, transport charges and time have been on the decline, an outcome of roads improvement. The rehabilitated rural roads have also improved the supply of agricultural inputs (annex 6) which in turn has raised farm productivity. In some of the improved program roads, the time to reach markets declined from 3hrs to just 1hr. Farmers along the rehabilitated Mapogolo-Mbalino road in Mbarali district, for example, used to sell a bucket of paddy for Tsh 5,000 before the road was rehabilitated. The same bucket now fetches Tsh 10,000 after road improvement – simply because farmers can now easily take their produce to the market rather than selling to buyers who used to collect directly from individual farmers. New farming fields have also emerged because of the improved access to markets. An example is the paddy field in one of the wards along the Mwapogolo-Mbalino road in Mbarali which has expanded from 2,300 acres to 3,700 acres. Trainings in value addition, and the matching grant equipment have enhanced value addition and ultimately reduced PH losses. The program's outcome study reports that the overall mean for the value-added produce in the surveyed program's wards per season was 849 tonnes ranging from a minimum of 6.25 tonnes (in Isandula ward) to a maximum of 4,750 tonnes (in Dakawa ward). Through PEML, farmer producer and marketing groups have expanded in numbers and membership. Working in groups has enhanced farmers negotiations for better prices, market search including links to potential traders and off-takers. Working in groups did also improved farmer enabling environment by advancing the use of weighing scales and other measuring facilities (confirmed by 60% of the surveyed farmers groups). Prior to program support farmers used to rely on volumes. The advances made on the program's development objectives are attributed to many factors. They included: 1) rigorous backstopping to district staff 2) reliability of Bank's financial resources 3) flexibility of the Bank, the Government, and the program to take into account field realities 4) close supervision and reporting the program, the Government and the Bank 5) capacity development efforts 6) participatory approaches e.g. when selecting program sites (that considered the dimensions of value chains, presence of complementing interventions such as rural markets) 7) agriculture potentiality of the program areas 8) reviews of scope, available resources, and timelines of program's activities to reflect actual situation 9) high level of awareness and relatively good sense of ownership of the program by local authorities and commmunities 10) close working relationship with partners including the private sector 11) competition for resources between districts has allowed the program to invest in best proposals thus ensuring value for money.

3. Output reporting

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target (B) (expected value at completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator (Yes/No)
Component 1. Marketing infrastructure and systems development					
Subcomponent 1: Marketing infrastructure					
Output 1. Rural markets and warehouses storage constructed /rehabilitated					
Indicator 1.1 No. of new storage facilities	29	29	100%	Warehouses that have been handed over so far to district authorities are currently operational (see annex 7 and 8). Igurusi warehouse, for instance, was storing 2,600 bags of paddy at the time of PCR mission. District authorities are the owners of the infrastructures, with farmers groups engaged participatorily during program implementation manage the facilities.	
Indicator 1.2 No. of renovated storage facilities.	6	6	100%	Renovation included added facilities (e.g. cold rooms). The Mombasa market in Unguja was installed with two cold rooms, for storing fish and vegetables. The cold rooms at Mombasa market also serve individuals outside the market users (meat traders). The program infrastructures are also the reason behind the declining storage charges as highlighted in annex 9.	
Indicator 1.3 No. of rural markets constructed and maintained.	16	16	100%	The program's livestock market in Longido has an average daily sale of between 3,000 and 6,000 animals. A total of 5 program's markets (4 in Zanzibar and 1 in the Mainland) were equipped with cold storage facilities for to serve perishable products. The facilities will support sustainable food production, food security, nutrition, and competitive producers' prices.	
Indicator 1.4 No. of local market infrastructure	56	56	100%	Complementarity of the program's investment was prioritised by rehabilitating, for instance, rural roads that serve the program's markets and warehouses. The successful Longido livestock market serves southern highlands, central and lake zone regions of Tanzania, and has turned into a regional market flooded with traders from Kenya. The markets have also significantly raised revenue collected by the district.	
Output 2: Feeder roads upgraded to all weather condition					
Indicator 2.1: km of roads constructed/ rehabilitated.	1,079	1,000	108%	Rehabilitated roads included the ones linking production areas to markets and storage facilities, as well as to main roads which have improved access to input supplies, increased productivity and reduced imports. For example, the improved domestic food supplies to Tibirinzi market in Pemba (due to the program's road) has reduced dependency on imports from Tanga region.	
Output 3: Governmental staff trained to be able to sustainably manage food marketing					
Output 3.1: Government staff trained to be able to sustainably manage food marketing infrastructure	720	720 (40% women)	100%	Training themes ranged from planning, procurement to contract management of the Rural Markets Infrastructure (RMI). Regional and districts program personnel were also facilitated with working tools (motorcycles, computers and accessories etc.). The PCT also backstopped the program's local officials to accelerate	

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target (B) (expected value at completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator (Yes/No)
, of which are women (%).				planning, surveys, engineering designs, procurement and supervision of the construction contracts.[7]	
Indicator 3.2 No. and type of Local Market Infrastructure Committees (LMICs) trained and in operation	56 LMICs	53 LMICs	106%	LMIC were formally established after training their prospective members. Operation and maintenance, branding and packaging, warehouse receipt system were I mportant themes delivered at the trainings. The program went further by facilitating officials from important institutions such as TBS[8] to enhance important capacities necessary for producers to apply for standard certifications.	
Subcomponent 2: Value addition					
Output 4: Post-harvest centres rehabilitated and equipped					
Indicator 4.1 No of PH training centres rehabilitated and resourced.	13	13	100%	10 centres were rehabilitated and equipped, with the remaining 3 centres only needed equipment. The centres will support transfer of PH management and value addition know-how to regions and districts. SIDO's PH training centre in Moshi has already trained 60 Training of Trainers (ToT) who came from regional SIDO centres and from other organisations.	
Output 5: New technology disseminated for PH management					
Indicator 5.1 No. of new technologies for PH management disseminated	50	50	100%	The value addition component supported regional PH management training centres, and trained processor groups on PH technologies. The program established close working relationship with private sector to improve access to technologies that advanced processing activities and reduce PH losses.	
Output 6: Business and technological skills for producers and processors					
Indicator 6.1 No. of bankable value addition proposals	37	35	106%	Competition for program's resources between districts led to investment in best proposals thus ensuring value for money. Value addition activities included milling, draying, grading, packaging, labelling, sorting, etc. A matching grant beneficiary in Pemba composed of 8 women and 2 men expanded from producing 1 product type to 9 types and now exports breadfruit powder to the middle east.	
Output 7: On the job training for staff, farmers and processors groups					
Indicator 7.1 Regional and district officials training*	497	350	142%	In addition to training, the program personnel were facilitated with working tools (motorcycles, computers and accessories etc.). The PCT also backstopped the program's local officials to accelerate the planning, surveys, delivery of engineering designs, procurement and supervision of the construction contracts.[9]	
Indicator 7.2 Community and	2,394	2,262	106%	Infrastructure management committees were established and trained - to effectively and efficiently take the responsibility of managing the program's infrastructures. Tanzania Rural and Urban Roads Agency (TARURA) has	

[7] According to the Programme design, the District Councils are responsible for the overall management of the infrastructure development in the respective focal areas
[8] Tanzania Bureau of Standards.
[9] According to the Programme design, the District Councils are responsible for the overall management of the infrastructure development in the respective focal areas

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target (B) (expected value at completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator (Yes/No)
councillors training*				also delivered trainings to some of the program's communities on collective management of rehabilitated rural roads.	
Indicator 8.2 No. of producers and processor groups trained[10]	350 ToT 37,500 Trainees	350 ToT 37,500 Trainees	100% 100%	Trainings were delivered on crop storage, drying, grading, sorting, moisture control and milling. Producers groups went on study tours to familiarise with best practices in garlic, paddy and sunflower value chains. The visits covered Kenya and Uganda to acquire knowledge on market operations and also look for potential avenues to export their produce.	
Indicator 8.3 No. of producers and processors linked with services.	26,964	5,000	534%	End of program target was surpassed 5-fold. Processors were linked to technology and input suppliers (e.g. processing addictive and preservatives). Farmers organizations were facilitated to engage in formal contracts with buyers; to attend promotional events including Nane Nane, and SIDO's entrepreneurship exhibitions, World Food Day, and the Dar es Salaam International Trade Fair (DITF).	
Indicator 8.4 No. of groups receiving matching grants for agro-processing equipment.	35	25	140%	Beneficiary groups paid 25% of equipment cost. As of 2017, the percentage change in amount of value added produced has improved to for instance71% in Itunundu ward. Some equipment were advanced that beneficiaries successfully utilised to advance quality and output prices. An example is the rice milling equipment at Kisongoni in Unguja, which is one of its kind in Zanzibar.	
Component 3: Program coordination					
Program Steering Committee (PSC) meetings*	10	9	90%	PSC[11] membership included key public sector stakeholders from the Mainland and Zanzibar[12], and private sector The PCT was responsible for coordinating program activities and reported to the Permanent Secretary, PMO who was actively engaged and regularly briefed by the program and the Bank.	

4. Development Objective (DO) Rating[13]

DO rating (derived from updated IPR)*	Narrative assessment (indicative max length: 250 words)
4 (IPR is attached as annex 11)	The overall physical implementation of the program is highly satisfactory as the program's outputs were 136% achieved (36% above targets). With regards to poverty reduction and food security, significant achievements were made reported to have increased 8-fold (in nominal terms) from Tsh 95,194 in 2012 to Tsh 307,696 in 2017 (in nominal terms) (section B.2). Indirect benefits from the program's markets increased farmers increased awareness of prices, and increased productivity that has largely contributed to the increased household income. An example is the increased productivity of onions in Karatu from an average of 30 sacks to 50 and 70 sacks. Nevertheless, the markets have made it easier for traders to buy onions from the homes of individual farmers. The number of sellers and buyers have significantly increased after the commissioning of the new markets. At Kinyasini market (Unguja), the number of sellers increased from 150 (pre-program) to 350 (post-program). It is also worth mentioning that the structures of some of the program's markets have been constructed with excess capacity to cater for possible future expansion (e.g. additional storeys).

10 Disaggregated by type of beneficiary group and gender
11 Programme Steering Committee.
12 PMO-RALG, MAFC, MITM, MW&I, MLDF, MID, MFEA, MOF, MANR and MoRASD-Zanzibar.
13 For operations using the old supervision report and rating system in SAP, the DO rating for the PCR shall be calculated using the IPR methodology.

	Rehabilitated roads have contributed to the observed progress on the income side (see the discussion in section B.1 and B.2). For example, program beneficiaries testified that the roads have largely improved the volumes of crops reaching intended markets. Specifically, the volumes of crops reaching the crop markets as a result of improved rural roads increased from an overall mean of 230.5 tonnes to 808.6 tonnes per season.

5. Beneficiaries (add rows as needed)

Actual (A)	**Planned** (B)	**Progress towards target** (% realized) (A/B)	**% of women**	**Category** (e.g. farmers, students)
350	350	100	20	Government staff
2,500	2,500	100	35	Farmer producer groups
26,694	5,000	187	65	Processors linked to SPs

6. Unanticipated or additional outcomes (add rows as needed)

Description	Type (e.g. gender, climate change, social, other)	Positive or negative	Impact on program (High, Medium, Low)
Private sector has taken advantage of business opportunities created by the program's infrastructures. An example is the livestock market in Longido where a private investor is currently constructing an abattoir with a daily capacity of processing 2,000 goats. The investment will further raise the volume of animals being traded in the market.	Business	Positive	High
Ownership disputes of markets, e.g. the Longido livestock market where the ownership has moved from the district council to the Ministry of Livestock. There were also few incidences of ownership disputes of the matching grant equipment - between farmers groups who contributed the 25% and LGAs who claimed to own the facilities (claiming the 75% came from the Bank's loan as a public fund).	Governance	Negative	Low
Increased property values along the program's rehabilitated roads. For example, a 400 square meters piece of land along the rehabilitated Karansi Tanki la Maji road in Siha district now fetches Tsh 4 million from Tsh 1 million pre-rehabilitation. In rural Tanzania, land constitutes 70-80% of asset endowment; and it is key to household wealth. In addition to rising property prices, Government investment in securing property rights will be a step toward further reduction in rural poverty.	Business	Positive	Medium
Cooling chambers that were intended for fruit and vegetables have been utilised for other produce as well. An example is the use of the chambers to store 'Mbege', a traditional brew of the Chagga ethnic group in Kilimanjaro region. The brew is made up of ripe bananas and sprouted millet.	Business	Positive	Medium
Disputes on the user fees between district authorities and traders who have rented stalls inside the markets. The program advised the markets management committee and the district authorities to meet and reach an amicable solution.	Management	Negative	Medium

7. Lessons learned related to effectiveness (add rows as needed)

Key issues (max 5, add rows as needed)	Lessons learned	Target audience
1. Matching grant scheme	Matching grant scheme was relatively new to both LGAs and potential beneficiaries. It took almost three years of awareness campaigns before credible applications could be received. Late implementation was an outcome of potential beneficiaries delayed application waiting to see what happens to early adopters. Also, most equipment had to be sourced from abroad. Despite being a learning platform, the intervention was a success as some of the cooperatives went as far as taking loans to finance their 25% contribution. ***Lessons:*** 1) Matching grants scheme is a time-consuming initiative requiring resources and time for awareness raising, capacity building and attitudinal change 2) Program coordination teams need to assist producers to identify appropriate technology and the scale of operation; and 3) Early adopters motivate others to join in and commit the 25% contribution.	The Bank, GoT, other DPs
2. Sequencing of the interventions	Few incidences of non-preparedness of communities to assume fully responsibility of the constructed infrastructure. One of the reasons behind such difficulties was the delayed efforts from the other donors in forming beneficiary groups at the time construction was well advanced. The program sustained its efforts to deliver training to the management committees – with an expectation that the district authorities will take over such responsibilities post program. ***Lessons:*** For effective operation of the infrastructure, awareness creation and capacity building of stakeholders need to precede construction and rehabilitation works.	The Bank, other DPs and GoT
3. Procurement rules	One of the reasons for varying procurement capacities across districts was the staff turnover. The program engaged the new staff to be conversant with the Bank's procurement rules through repeated trainings. Such interventions were inclusive and ensured that even if staff leaves the LGAs those remaining are well familiar with the program's guidelines. ***Lessons:*** Training on Bank's procurement rules to LGA is not a one-off activity. Continued effort is highly encouraged to get district staff well informed with guidelines.	The Bank, other DPs and GoT.
4. Communication	Quick proactive verbal and email interactions between the program and the Bank were very productive. The interactions were necessary to effect backstopping, guide, get buy-in and facilitate the Bank to be aware of the progress and timely resolve emerged hitches. ***Lessons:*** Informal interactions fast track decision making and minimise chances of Bank objections.	The Bank, other DPs, and GoT.

C: Efficiency

1.0 Timeliness

Planned program duration – years (A) (as per the Project Appraisal Report (PAR))	**Actual implementation time – years (B)** (from effectiveness for 1st disb.)	**Ratio of planned and actual implementation time (A/B)**	**Rating***
5	6.6	0.76	2

Narrative assessment (indicative max length: 250 words)

The loan agreement was signed in September 2011[14], with the program taking effects in March 2012. The program was initially expected to be conclude by December 2016 but was extended to 30th September 2018. The extension was necessary for a number of reasons - as follows. The program was a complex infrastructural based intervention with several construction contracts and demanding engineering designs, and procurement. Some of the projects were new at the local level (e.g. cold rooms whose design component had to be outsourced). Nevertheless, the identification of potential program's districts was a time-consuming exercise that could have been avoided if the districts were identified prior to loan application. Like in many other development programs, contract management at the lower level was a challenge which led to variations due to additional works that were left out at the design phase.

Other reasons for the time overruns included: el Niño rains, community indecision on site selections, disputes between contractors, communities on areas to extract construction materials, delayed legal opinion on the draft loan agreement, the delayed disbursement of 5% counterpart fund, and the prolonged consultations with authorities in Zanzibar on the choices of procurement methods for works contracts. To accelerate implementation, the program intensified follow ups; terminated grossly underperformed contracts; reviewed workplans to address implementation gaps; and, gave special attention on procurements for some infrastructural designs immediately after delays were noted. The PMO was also helpful in resolving delays in the release of the counterpart funds from the program's districts.

[14] Implementation of IFAD-funded components started in July, 2011, about 13 months earlier.

2.0 Resource use efficiency

Median % physical implementation of RLF outputs financed by all financiers (A) (see II.B.3)	Commitment rate (%) (B) (See table 1.C – Total commitment rate of all financiers)	Ratio of the median percentage physical implementation and commitment rate (A/B)	Rating*
100%	90%	1.1%	4
Narrative assessment (indicative max length: 250 words)			
The program was financed by the Bank, IFAD, counterpart funding from beneficiary districts and in-kind contribution from communities. The Bank and the counterpart contributions financed the marketing infrastructure development and value addition aspects of the program's Component 1 and part of Component 3; whereas IFAD resources financed the producer empowerment and market linkages activities of Component 1, all of Component 2 and part of Component 3 (see the description of the components in section B.1). By the time of mission visit, the disbursement rates were as follows: The Bank (91%); IFAD (72%); and the counterpart LGA funding (77.9%). In absolute numbers, as of 30th November 2018, the Bank had disbursed UA 36,635,956.25; counterpart LGA funding USD 1.12million (UA 0.80 million) and IFAD USD 65.0 Million (46.43 million). All making a total spending at UA 83.87 million. Taking into account ground realities and other factors (e.g. rising contraction costs), the program's targets in the result framework were revised at the MTR. For example, the target for rehabilitating rural roads was scaled down from the initial 1,550 km to 1,000 km due to escalating costs. Per unit cost of rehabilitation increased from US$ 19,500 estimated at the appraisal to about US$ 35,000. The construction target for the agricultural markets was also scaled down from 32 (at appraisal) to 16 because of 1) increased per unit cost of rehabilitation from US$ 200,000 estimated at appraisal to US$ 450,000; and 2) decreased demand from districts. Despite the program delivered less outputs set at the approval, at the program end, the targets set for the output indicators at the MTR were achieved by an average of 136%. The computation of the resource use efficiency was based on the targets revised at the MTR.			

3.0 Cost benefit analysis

Economic Rate of Return (ERR) (at appraisal)	Updated Economic Rate of Return (at completion)	Rating*
ERR: 22.4% Net Present Value (NPV): Tsh 215.8 billion	ERR: 31% NPV: Tsh 2.3 trillion	4
Narrative assessment (indicative max length: 250 words)		
The cost benefit analysis is rated highly satisfactory as the ERR at the program end is higher than the ERR at the appraisal stage (31% versus 22%). This is despite the downward revision of some of the output targets during the Mid-Term Review (MTR). The economic analysis has been undertaken over a 20-year span in line with the projected economic life of the program. The analysis is on an estimation of program-wide benefits from 1) investments in rural roads and market infrastructure 2) incremental incomes resulting from increases in value of commodity sales; and 3) equipment support for value addition (see the key assumptions in annex 10). The EIRR computation is provided in annex 10.1. Sensitivity analysis shows the program is more sensitive to changes in benefits than costs. For instance, a 20% increase in costs results into only 3.1%and 8% reduction in NPV and ERR respectively from the base scenario. A similar percentage decrease in benefits leads to 23.1% and 9% reduction in NPV and ERR respectively (annex 10.2). However, none of such changes has a dramatic impact on the NPV and ERR i.e. pushing the NPV towards zero. Given the consistent positive net benefits and ERR from the sensitivity analysis, and the difficulties in quantifying socio-economic benefits (e.g. from the newly constructed/rehabilitated roads), the program has more benefits than what the NPV and EIRR figures suggest.		

4.0 Implementation Progress (IP)[15]

IP Rating (derived from updated IPR) *	Narrative comments (commenting specifically on those IP items that were rated unsatisfactory or highly unsatisfactory, as per last IPR). (indicative max length: 500 words)
4	The latest IPR is dated May 2018. The IPR concluded that the overall physical implementation of the program was satisfactory bar intervention on bankable proposals for value addition which had physical implementation of only 74%. At the time of the IPR (May 2018), a total of 37 bankable proposals out of the planned 50 had been prepared, out of which, 19 proposals were funded by the program's matching grant scheme, 7 remained eligible for the matching grant, with 10 proposals forwarded to the rural finance component for funding by Microfinance Institutions (MFI). By the end of the program the number of bankable proposals for value addition surpassed the target by 6% (106% achievement rate). As discussed in section A.3, the challenge with the matching grant component was the overstretched and limited financial capacity of some beneficiaries, as well as the tendency of some of potential beneficiaries to wait and observe what the early adopters would

[15] For operations using the old supervision report and rating system in SAP, the IP ratings need to be converted from the 0-3 scale used in SAP to the 1-4 scale used in the IPR.

	experience. Despite such challenges, the matching grant scheme was a success, not only because it surpassed its targets but also because even financially constrained beneficiaries managed to borrow from financial institutions and meet the 25% criteria. As discussed in section B.7, the key lessons from delivering the matching grant scheme included the need for extensive awareness and capacity development of the processor groups in agro-processing technology to stimulate demand for such grants. Programs should also assist groups in identifying appropriate technology, as well as scale of their operations to enable the groups to afford 25% contribution.

5.0 Lessons learned related to efficiency

Key issues (max 5, add rows as needed)	**Lessons learned**	**Target audience**
1. Maintenance of equipment supplied under the matching grants	Most of the matching grant beneficiaries experienced positive outcomes (e.g. increased productivity) with the support they received from the program. Experiences gained from supporting processors to secure equipment included the risks for beneficiaries to order equipment that are too advanced to their environment; and the need for rigorous after-sale maintenance support from suppliers. ***Lesson:*** Programs need to be well resourced to support verification and selection of delivered equipment (such capacities are lacking at the local level).	The Bank, other DPs, and GoT
2. Beneficiary contributions.	The 5% beneficiary contribution for infrastructure programs (markets and warehouse) and 25% beneficiary contribution for the matching grant equipment was a challenging experience to some communities and local authorities. Delays in contributions from some of the program's districts was among the main reasons for the delayed implementation of planned infrastructures. Rather than waiting for the districts to advance the 5% contribution, the program proceeded with procuring works contracts with districts allowed to advance partial payments. ***Lessons:*** 1) Capacity to meet counterpart contribution differed between local authorities because of differences in endowments 2) Context and nature of the interventions (or technologies to be acquired) should guide the choice of cash or in-kind contribution 3) Continuous follow up on districts to ensure that they meet their financial obligations including seeking support from higher authorities 4) mandatory contribution (matching grants) risks to deflect interventions from the targeted poor to the better-off.	The Bank, other DPs, and GoT
3. Group size	The program experience shows that the small sized farmers groups are performing relatively better than large groups. Among the areas that separate the two groups, is the fact that the large groups are characterised by large sized committees which raises group management costs. Differences in members objectives, free riding and opportunistic behaviours is more prevalent with large groups. ***Lessons:*** Encourage and advocate for small sized farmer organisations as operators of program infrastructures.	The Bank, other DPs, and GoT.
4. Technology	Some of the program's storage facilities were installed with advanced technology (e.g. cold rooms, processing machineries) that were very new to most local authorities. As such, some local authorities struggled not only to be actively involvement in engineering designs but also on best practices when it comes to management and operation of such facilities. The latter challenge (engineering designs) was addressed by outsourcing designs to experienced entities. ***Lesson:*** Complementary TA is necessary to support and guide district authorities to establish ideal management and operationalisation models for the infrastructures. Overall, the infrastructure interventions need to be accompanied by intensive business support taking into account all aspects that would, for instance, advances the facilities as profitable business ventures.	The Bank, other DPs, and GoT
5. Co-financing arrangements and risks.	The PAR identified IFAD and AGRA as co-financers of the program. However, only the Bank and IFAD proceeded with its co-financing commitment. Commonly to most co-financing arrangements, co-financers have their own procedures and ways of doing business which at times affect the pace of implementation, timelines for supervision missions and synchronization of components from different financers. A case in point was the mismatch in pace between the Bank's infrastructure component ('the hardware') and IFAD's capacity building component ('the software') component. Consultations between co-financers helped in avoiding serious misalignments. ***Lessons:*** 1) Flexibility by the Government and/or the Bank in stepping in when potential co-financers do not fulfil their commitment 2) regular consultations to avoid serious misalignment between components being targeted by co-financers 3) Government is an important mediator when delays from one co-financer affects the delivery of components of the other co-financers.	The Bank, other DPs and GoT

D:	Sustainability

1.0 Financial sustainability

Rating*	Narrative assessment (indicative max length: 250 words)
4	To enhance sustainability, one of the key criteria to initiate program activities was the commercial prospects of projects to be financed by the program. To complement such efforts, the program linked the agro-processing to the marketing dimensions and access to financial services as well as investing in rehabilitating roads that linked beneficiary communities to the pre-existing and program's rehabilitated markets and warehouses. Of recent, the Government has established TARURA, an agency that is tasked to oversee O&M of all rural roads including the ones rehabilitated by the program. Such institutional reform raises the likelihood that the program investments in rural roads will be sustained. Strong evidences of potential financial sustainability of the program investment are emerging. The revenue collected by the Longido district rose by 300% after the the launch of the program's livestock market. In fact, the district was able to meet its 5% counterpart contribution from the revenue collected from the market. One of the program's market in Zanzibar (Kinyasini market) which used to collect Tsh 1.5million pre-program, now collects an average of Tsh 7million – after the new market structure was launched. The milk processor in Zanzibar which obtained processing equipment from the program matching scheme used to sell a 175ml cup of yogurt for Tsh 500. They are currently fetching Tsh 1,000 for the same due to improved quality.[16] The business is now able to price compete with larger processors. Financial sustainability is also highly likely as some of the program's markets have introduced additional revenue opportunities. The onion market in Karatu, for example, is collecting Tsh 5,000 from each truck collecting onions from the villages. Between July-November 2018, more than 1,950 trucks have paid the fee. The number of buyers and trucks coming to the market are on the rise due to the program's rehabilitated roads going to the mentioned market. Serve the need for continuous support in strengthening business practices in managing the program's markets and warehouses, revenues being generated from these infrastructures currently cover the operating costs.

2.0 Institutional sustainability and strengthening of capacities

Rating*	Narrative assessment (indicative max length: 250 words)
4	The program's effort in training management committees that foresaw the developed infrastructures was an important step to reinforce sustainability of the program interventions and ensuring continued use of the program's roads, markets and warehouses. Other training beneficiaries included regional and district personnel from program's region and districts (engineers, procurement, to environmental officers). In addition to the provision of training to the beneficiaries and staff the program was well integrated into government institutional structure to ensure ownership and sustainability (e.g. implemented by the PMO office with the infrastructural assets owned by the local authorities). The field interview shows that 66.7% of the surveyed wards have committees in place to ensure continued maintenance of the infrastructures. Moreover, about 70.4%of the wards confirmed that the committees have a role to set penalties for improper use of the program's infrastructures. Other roles given to the committees included security for the facilities, budgeting, records and controlling income from the facilities. In some wards, the committees were given the role of training other community members on the proper use of the program's infrastructures. The good experiences on maintaining and managing program's infrastructures from the exemplary districts (e.g. Siha district from Kilimanjaro region) have been shared to other districts through workshops and documentation for future guidance. Through PEML, the number of farmer producer groups and farmer marketing groups have expanded including membership with the groups equally empowering men and women in group's leadership. Working in groups has enhanced producers' empowerment in price negotiations, market search and linkages to potential traders and off-takers. The program also released more than six instruction manuals on PH handling of perishables.[17]

[16] We cannot ignore the inflation factor as well.
[17] They included 1) horticultural, roots and tubers crop 2) small milling operations for cereals 3) rice grain PH management 4) spice and condiments processing 5) sunflower oil processing 6) packaging and labelling.

3.0 Ownership and sustainability of partnerships

Rating*	Narrative assessment (indicative max length: 250 words)
4	To raise the sense of ownership, groups the received matching grants for agro-processing equipment contributed 25% of the cost of buying equipment. Beneficiary districts also remitted 5% cash contributions for the market and warehouse facilities. Sustainability of these facilities is also highly likely as the maintenance and repairing of some of the equipment are currently fully financed by the beneficiary groups. The same with the roads. For example, the Government has invested in upgrading the program's constructed Mkanyageni-Kangagani (4.5km) feeder road in Pemba by adding one more layer of gravel. Beneficiaries districts have invested additional facilities after taking over the program's infrastructures. For example, the district authority managing the Tibirinzi market in Pemba has installed 100 additional stalls in addition to 82 program's installed stalls. To optimise benefits from the program financed markets, district authorities, Longido for example, is consulting the Ministry of Livestock to connect the market to the ministry's livestock marketing information system. District authorities in collaboration with beneficiary communities have also enacted bylaws to enforce sustainable use of the rehabilitated roads. In Siha district, for instance, a fine of Tsh 200,000 is imposed on livestock crossing the newly rehabilitated roads. Despite the district authorities owning the infrastructures, it is the beneficiaries' committees which are tasked to operate the markets and storage facilities. The sustainability of such partnerships is highly likely given the management training that the program delivered to both parties. However, further clarification is necessary with regards to ownership, operational costs and revenue for some of the facilities.

4.0 Environmental and social sustainability

Rating*	Narrative assessment (indicative max length: 250 words)
4	**Environmental sustainability:** The program developed the Environmental and Social Management Plans (ESMP) describing measures to mitigate impacts during the construction works. In addition, training was delivered to all district environmental officers focusing on EMSP planning, monitoring and reporting. In collaboration with the National Environmental Management Council (NEMC), an environmental checklist for monitoring rural marketing infrastructure programs was developed and shared to all participating districts. Other efforts which have positive impacts on environmental sustainability included: 1) sensitized communities to undertake responsible farming along the road alignments as a way of minimising damage to the constructed roads 2) provision of adequate drainage; mitre drains and cross drainages structures 3) enhanced capacities of communities close to constructed roads in enforcing bylaws **Social sustainability:** The program ensured that alignments of the new roads limit any involuntary resettlement of communities. Safety signs have been erected along the program's rehabilitated roads (e.g. speed limit signs) – with the police force training motor cyclists to observe rules. The program team and district personnel were also sensitised on gender mainstreaming. By February 2015, 25% of the 1,094 community members who attended training on operation and maintenance of rural infrastructure were women. Moreover, some of the cooperatives that benefited from the matching grant scheme are largely dominated by women. The Muwanda cooperative creameries, for example, is composed of 8 female members and 4 male members. These benefits will positively impact the lives of women who account for a significant proportion of the rural population engaging in agriculture.

5.0 Lessons learned related to sustainability

Key issues (max 5, add rows as needed)	**Lessons learned**	**Target audience**
1. Utilization of storage structures	Some of the community-operated warehouses were not utilized to the same extent as the privately-owned warehouses. The private owned warehouses have incorporated broader agricultural value chain activities e.g. paddy and sunflower processing etc. ***Lessons:*** 1) Need for increased awareness to the beneficiary communities that the program support (e.g. warehouse) is just a motivation to trigger their own efforts to invest in broader agricultural value chain activities (e.g. agro-processing) 2) capacity of stakeholders to implement additional agricultural value chain activities needs to be enhanced and synchronised with infrastructure development.	The Bank, other DPs and GoT
2. Access to standards and quality certifications	Access to standards certification has been a time-consuming exercise for small processors – and of a high transaction cost given their small-scale operations. To address this challenge, the program established important contacts with the authorities to provide advisory services to processors in addition to inspection, and testing towards supporting their applications for certificates. ***Lessons:*** Support to processors to access standards and quality certification needs to be highly prioritised and be considered that is resource demanding similar to other program activities.	The Bank, other DPs and GoT
3. Access to standards certifications	As part of their contractual obligations, equipment suppliers delivered trainings to the matching grant beneficiaries. However, few processors enrolled only a single member in such trainings, limiting the spread of knowledge on expertise to maintain the equipment in case of breakdown. ***Lessons:*** Encourage beneficiary groups to enrol more than one group member in the O&M training sessions.	The Bank, beneficiaries.
4. Market disruptions	In some of the areas that the program invested new markets, traders and middlemen are exploiting farmers by directly collecting agricultural produce from homes. Efforts from district authorities are well acknowledged to have restored order to some extent. Nevertheless, the markets were new experiences in some of the program areas, and as a result some farmers tended to 'wait and see' before engaging with the markets. ***Lesson:*** Government intervention is necessary to ensure that the operations of the markets are not interrupted by opportunistic behaviours of traders and middlemen.	The Bank, GoT, beneficiaries.

III: Performance of stakeholders

1.0 Bank performance

Rating*	Narrative assessment by the Borrower on the Bank's performance, as well as any other aspects of the program (both quantitative and qualitative). See guidance note on issues to cover. (indicative max length: 250 words)
4	The program was supervised bi-annually making a total of 14 supervision missions between 2012 and 2018. The Bank's missions were diversified in expertise by including financial, procurement and disbursement personnel as well as agricultural specialists. Keeping in view the infrastructures involved in the program, the Bank's supervision team was also supported by an engineer. The supervision missions assisted the program and the executive agency to address managerial and technical aspects that impeded implementation. With more decision-making power devolved to field offices, the COTZ[18], using both formal and informal means, closely monitored implementation and took prompt actions to resolve challenges. An example is the Bank's interventions to restore the program's coordinator in Zanzibar and the Bank's procurement rules for works contracts. The Bank's country office was involved, either through the supervision missions or outside such missions, to actively engage with the Government and co-financers in discussing progress and resolve implementation challenges. The MTR[19] was carried out in June 2015 and helped to identify challenges and way forward including revising some of the program end-targets. The Bank also encouraged the program to undertake an internal PCR, a document that offered inputs to the Bank's own PCR. The Bank also encouraged and motivated the program team to intensify monitoring, supervision and follow-up to ensure that all infrastructures were completed on time and are fully utilised by the intended beneficiaries.

[18] Tanzania Field Office.
[19] Mid-Term Review.

Comments to be inserted by the Bank on its own performance (both quantitative and qualitative). See guidance note on issues to cover. (indicative max length: 250 words)	
The Bank provided close and extensive program review missions throughout the period of the programme. Since inception, the Bank supervised the program 14 times including the MTR. All the Bank's missions aided the programme to address managerial and technical aspects that greatly helped to expedite implementation. In all the supervision missions, field supervisions were conducted followed by an analysis and discussion of observations including debriefing sessions held with the GoT officials and selected members of the steering committee, whose details and strategies for improving the program were presented in the aide memoirs of the missions. Where necessary, the Bank supported and aided re-allocations of funds to GoT's preferred areas of greater interests. The intensified Bank supervision towards the final stages of the program accelerated implementation and helping in the improvement of revised work schedules and activities which turned around the slow pace of implementation experienced initially.	
Key issues (related to Bank performance, max 5, add rows as needed)	**Lessons learned**
1. Future Bank's supervision missions should maintain diversified personnel as appropriate with the aim of facilitating effective interactions and advices on various aspects related to program implementation.	Maintain a team of diversified Bank experts in supervision missions as appropriate.
2. In-kind contribution from beneficiaries were not monetised. To avoid understating counterpart contribution, the Bank can introduce a model were supervision and other costs incurred by beneficiary Governments are quantified, documented and ultimately included as part of the counterpart contributions.	Introduce a model were counterpart in-kind contributions are monetised and acknowledged.
3. Programs that support access to productive assets (equipment and infrastructures) need to invest heavily on business coaching to reinforce business mindsets and acumen on beneficiaries.	Upgrade support to business coaching in programs that support access to productive assets.

2.0 Borrower performance

Rating*	Narrative assessment on the Borrower performance to be inserted by the Bank (both quantitative and qualitative, depending on available information). See guidance note. (indicative max length: 250 words)
4	Both the central and local authorities worked closely with the program during implementation. Senior officials from the relevant Government ministries constituted the PSC providing an enabling environment in terms of policy guidelines and staff. The same with the regional secretariat and LGAs (regional engineers, district engineers, agriculture and irrigation and cooperative officer etc) who facilitated implementation in terms of designing, procurement, supervision and management. The Ministry of Finance (MoF) was very active in negotiating the loan and also in meeting the covenants for the effectiveness of the loan. With regards to counterpart contributions, the Government provided the required cash contribution in meeting the payroll requirements of the staff serving the program. Despite the delays, the Government supported the program in ensuring that districts honoured their counterpart funding obligations as well as ensuring that periodic roads maintenance are carried out adequately. A vivid example for the latter is the financing of additional culverts along the program's Mwapogolo-Mbarino road. The culverts protected the road from being washed away by water streams, while the culverts also allowed farmers to tap the water flow for irrigation. District authorities also closely enforced bylaws that aimed at efficient use of the market infrastructures. An example is the introduction of permits for trucks collecting onions in Karatu, a move that advanced the use of the program's market, and district's awareness of the number of traders operating in the area.

Key issues (related to Borrower performance, max 5, add rows as needed)	Lessons learned
The central Government assisted in following up and reminding districts to remit counterpart funds. The efforts paid off as of April 2018, the program had collected Tsh 1.8 billion (76.1% out of the total planned counterpart contributions from the program districts).	Timely submission of counterpart funds necessitates close follow up from local and central Government, and the program team.
The program's objectives and logical flow from outputs to outcomes and impact remain relevant. It is high likely that the program's benefits will be sustained provided that the Government continue to capacitate communities and committing resources to maintain the rehabilitated roads and other program's infrastructures.	Continuous post-program Government follow up and support is necessary to sustain the program's investments and benefits.
Overall, the program team was found to prepare good quality progress reports and was up to date on the submission of periodic plans and annual external audit reports. Most program staff received relevant training in their respective fields such as program management; procurement; contract management; monitoring and evaluation, and Training of Trainers (ToT).	A strong and well-resourced program team is necessary particularly for a complex and geographically wide spread program.

3.0 Performance of other stakeholders

Rating*	Narrative assessment on the performance of other stakeholders, including co-financiers, contractors and service providers. See guidance note on issues to cover. (indicative max length: 250 words)
3	Generally, the performance of contractors was good, serve for some isolated cases of low quality of works and engineering designs. To enhance quality delivery of infrastructure assets, the program team in collaboration with beneficiary districts and communities intensified supervision, and whenever faults were noted, the responsible contractors were made liable before the defect liability period lapses. Continued developing the capacity of the district teams, as well as possibility of seeking third party opinion for complex design issues e.g. designing of the bridges, is a lesson for future programs. Other institutions such as SIDO and the Tanzania Electrical, Mechanical and Electronics Services Agency (TAMESA) had good collaborations with the program's districts, especially when they were requested to repair processing equipment that were financed by the program.

Key issues (related to performance of other stakeholders, max 5, add rows as needed)	Lessons learned (max 5)	Target audience (for lessons learned)
Service providers were capacitated and rendered services that impacted on overall productivity of rural producers. They assisted in supplying the required inputs like seeds, fertilizers and pesticides intended for use by individual farmers, farmer producer groups, processors etc.	Complementary services, e.g. input supplies are important targets for programs to reach their goals.	GoT, the Bank, other DPs.
Beneficiary communities were actively involved in the entire business cycle from the planning to the implementation stages. This reduced the risks of resentment by communities and simplified ways to address disagreements on the selection of program sites.	Community participation is necessary at all stages of the program cycle.	GoT, the Bank, other DPs.
Increasing bargaining power and better prices for farmers as a result of the market and storage facilities were well acknowledged by the interviewed beneficiaries. However, traders continue to exploit farmers through monopolised structures (e.g. onion market in Karatu).	Government interventions and market promotion to break the monopolistic structure	GoT, the Bank, other DPs.

IV: Summary of key lessons learned and recommendations

1.0 Key lessons learned

Key issues (max 5, add rows as needed)	**Lessons learned**	**Target audience**
Management of equipment and infrastructures	Rural beneficiaries have limited business acumen to ensure profitable utilisation of equipment and infrastructures. As such, the design of the equipment and infrastructure support needs to embed a well-resourced component supporting business development services to further guarantee sustainable use of the equipment.	The Bank, other DPs and GoT
Matching grant scheme	Matching grant scheme is a time-consuming initiative requiring significant resources and time for awareness building, attitude change, and support to beneficiaries in identifying appropriate technology and the scale of operation.	The Bank, and other DPs
Standard and quality certification	Access to standard and quality certification is necessary for expanding market penetration but also a time and resource costly activity to most small processors. Program component on supporting access to such certifications needs to be highly prioritised in program planning.	The Bank, other DPs and GoT
Opportunistic behaviours of some of the traders and middlemen.	The new markets offered improved prices and motivate farmers to bring their produce to the markets. However, Government intervention is necessary to ensure that operations of the markets are not interrupted by the opportunistic behaviours of some of the traders and middlemen.	GoT

2.0 Key recommendations **(with particular emphasis on ensuring sustainability of program benefits)**

Key issue (max 10, add rows as needed)	Key recommendation	Responsible
1.	Market and warehouse infrastructures have generated several benefits as discussed in preceding sections. However, further interventions by the district, regional and central Governments are necessary to optimise benefits accruing to farmers. There is a need to break buyers' monopoly; promote and attract increasing number of buyers to advance the competitiveness of the market; and, strengthen the existing efforts to enforce the established marketing rules.	Central, regional and district authorities.
2.	The implementation of the IFAD's components has been extended to March 2020. It is recommended for the extended IFAD component of the program to further strengthen the utilisation of the market and storage infrastructures by supporting marketing, financial services and business acumen in managing rural infrastructures.	IFAD, and GoT.
3.	Beneficiaries need to be closely supported to develop transparent and well elaborated business, and O&M plans for the program infrastructures and equipment. They need to have a clear understanding that the facilities need to be operated in a manner that maintenance and replacement costs are well covered.	GoT and district authorities.
4.	The preparation phase of infrastructure program needs to consider planning for an implementation time of the program from 5 to 7 years. The first two to three years of the program are spent on program identification, engineering designs and procurement processes. Another possibility is for the Government to have in place engineering and feasibility studies well in advance of loan application.	The Bank, GoT.
5.	Fully integrate program's investments in the district annual plans and budget for maintenance for prolonged use of the infrastructures. Capacitate and sensitize local authorities to enforce by-laws (e.g. axel load limits on roads).	GoT and district authorities
6.	Ensure clear understanding for all parties when it comes to ownership and operational modalities of the infrastructure. Though local authorities own the markets and warehouses, they need to be encouraged or provided with complementary TA to establish formal agreements with respect to the role of owners and operators of the facilities.	The Bank, GoT and district authorities
7.	Ensure that all stakeholders are familiar with the Bank's rules and program's plans. Reference is made, for instance. Implementation delays are minimised if the Bank's procurement rules are well understood. Procurement rules are among the rules that the Bank cannot change.	GoT and district authorities
8.	The initial ERR model (at the PAR stage) needs to be well documented at the PAR stage with the program's M&E made responsible to regularly collect data necessary to update the ERR at the program closure stage.	The Bank.
9.	Intensify support to processors in quality and standards certification. Small processors cannot afford the high transaction costs and the time-consuming activity of following up certifications. The program approach in facilitating the standards organisations in assisting producers is one of the means to address the issue.	The Bank
10.	Government needs to intervene and clarify the few ownership disputes of some of the program's markets and warehouses. Reference is made to the Longido livestock market, and the warehouses in Chato and Njombe.	GoT

V: Overall PCR rating

Dimensions and criteria	Rating
Dimension A: relevance	4
Relevance of program development objective (II.A.1)	4
Relevance of program design (II.A.2)	4
Dimension B: effectiveness	4
Development Objective (DO) (II.B.4)	4
Dimension C: efficiency	3.5
Timeliness (II.C.1)	2
Resource use efficiency (II.C.2)	4
Cost-benefit analysis (II.C.3)	4
Implementation Progress (IP) (II.C.4)	4
Dimension D: sustainability	4
Financial sustainability (II.D.1)	4
Institutional sustainability and strengthening of capacities (II.D.2)	4
Ownership and sustainability of partnerships (II.D.3)	4
Environmental and social sustainability (II.D.4)	4
Overall program completion rating	3.9
	Highly satisfactory

VI: Acronyms and Abbreviations

AMSDP	-	Agricultural Marketing Systems Development Programme
ASDP II	-	Agricultural Sector Development Program
CAADP	-	Comprehensive Africa Agriculture Development Program
CSPs	-	Country Strategic Plan
DPs	-	Development Partners
DITF	-	Dar es Salaam International Trade Fair
EAC	-	East African Community
ERR	-	Economic Rate of Return
ESMP	-	Environmental and Social Management Plan
GoT	-	Government of Tanzania
IFAD	-	International Fund for Agricultural Development
LMIC	-	Local Market Infrastructure Committees
MTR	-	Mid-Term Review
MoF	-	Ministry of Finance
MFI	-	Microfinance Institutions
MIVARF	-	Market Infrastructure, Value Addition and Rural Finance
M&E	-	Monitoring and Evaluation
NPV	-	Net Present Value
NSGRP II	-	National Strategy for Growth and Reduction of Poverty
O&M	-	Operation and Maintenance
PMO	-	Prime Minister's Office
PY	-	Program Year
PH	-	Post-Harvest
PHTC	-	Post-Harvest Training Centre
PAR	-	Project Appraisal Report
PCR	-	Program Completion Report
RFSP	-	Rural Financial Services Program
RMI	-	Rural Markets Infrastructure

SADC	-	Southern African Development Community
SRI	-	System of Rice Intensification
SIDO	-	Small Industry Development Organisation
TNA	-	Training Needs Assessment
ToT	-	Training of Trainers
TAMESA	-	Tanzania Electrical, Mechanical and Electronics Services Agency
TARURA	-	Tanzania Rural Roads Agency

Annexes

Annex 1: Further elaboration of the relevance criteria

Policies and strategies	Areas of consistence
NSGRP II	Specifically, the first cluster of NSGRP II focused on growth for reduction of income poverty. Priority outcomes that were in line with this program included improved food and nutritional security and reduced income poverty with improved marketing facilities (supportive) featured as among several priority interventions advocated by the strategy. Specifically, the program was in line with the strategy's priority intervention that advocated the need to "introduce and strength investments in agriculture, including mechanization, firm level irrigation facilities, and farm level agro-processing, physical market infrastructure (market places), and large scale agricultural and fisheries storage facilities".
National Agriculture Policy 2013	Food security and nutrition and agriculture markets are among the 24 focal areas of the policy. Under the food security and nutrition component, the policy prioritised advancing the capacities of agricultural marketing actors as well as promotion of the establishment and utilization of designated buying posts and centres for agro-products. Other priority areas of the policy that the program contributed to include strengthen and expand food storage structures to enhance food stability.
ASDP II	The development objective of ASDP II was to transform the agricultural sector (crops, livestock & fisheries) towards higher productivity, commercialization level and smallholder farmer income for improved livelihood, food security and nutrition. The program supports the ASDP's component 3 (rural commercialization and value addition) which advocated for stakeholder empowerment, value addition & agro-processing, rural marketing; and access to rural finance. The program also contributed to ASDP's targets that included inclusive and sustainable agricultural growth; reduced rural poverty; and; enhanced food security and nutrition.
EAC's food security action plan (2011-2015)	In line with some of the program's activities, the plan action areas include construction/rehabilitation of market facilities for crop, livestock and fisheries products; construct of target feeder roads in high potential producer areas and end market areas and establish/strengthen storage facilities, facilitate development of community-based storage facilities in target areas. Other areas include: promote and support development and availability/use of appropriate technologies and efficient provision of training & extension services on food production, processing, post harvesting handling and marketing.
Africa Agenda 2063	The agenda aspires for the continent to have by 2063 modern and profitable agriculture sector using science, technology, innovation for increased production, productivity and value addition, the sector that contributes to farmer and national prosperity and Africa's collective food security.
SADC food and nutrition security strategy 2015 - 2025	Promoting availability of food through improved production, productivity and competitiveness is among the strategic objectives of the said strategy. Specific priority actions to, for instance reduce PH losses included: promote low cost technologies on food processing, handling, preservation and storage; encourage agro-processing and value addition of safe and diverse foods; and promote the establishment of postharvest handling facilities particularly for horticultural crops.

Annex 2: Reduction in crop transportation costs per bag per trip

District	Ward	Change in Tsh			
		Before	After	Difference	% Change
Msalala	Segese	2000	1000	1000	50
Msalala	Kashishi	5500	2500	3000	45.5
Chato	Nyamirembe	2500	500	2000	20
	Kigongo	3000	1000	2000	33.3
Sengerema	Katunguru	1500	750	750	50
Magu	Isandula	2000	500	1500	25
Shinyanga rural	Nsalala	1000	500	500	50
	Masengwa	4000	3000	1000	75
	Nyida	4500	2250	2250	50
Singida rural	Ngimu	6000	3000	3000	50
Mbulu	Bashay	2250	1000	1250	44.4
Meru	King'ori	3500	1250	2250	35.7
Mvomero	Dakawa	5000	2000	3000	40
Iringa rural	Itunundu	1400	600	800	42.9
Songea rural	Kilagano	7000	4000	3000	57.1
	Magagura	2400	1800	600	75
Njombe rural	Ninga	6000	2000	4000	33.3
	Ihahi	2500	1500	1000	60
Unguja kusini	Paje	2000	1000	1000	50
	Bwejuu	700	400	300	57.1
Unguja kaskazini	Mejenzi	1750	1000	750	57.1
	Donge Pwani	1700	1000	700	58.8
Wete	Kinyikani	3500	2000	1500	57.1
	Gando	8000	5000	3000	62.5
Chakechake	Kibokoni	4000	2000	2000	50
	Ng'alambwa	1500	1000	500	66.7
	Mean	**3276.9**	**1636.5**	**1640.4**	**49.9**

Source: Program's outcome study August 2017

Annex 3: Reduction in crop PH losses by districts and wards

District	Wards		Reduction in crop postharvest losses (in %)		
			From	To	Change
Msalala	Segese		67.5	17.5	50.0
Chato	Nyamirembe		50.0	0.0	50.0
Chato	Kigongo		85.0	21.0	64.0
Mbulu	Bashay		55.0	9.0	46.0
Meru	King'ori		32.5	6.1	26.4
Iringa Rural	Itunundu		16.0	0.0	16.0
Songea rural	Kilagano		40.0	0.0	40.0
Njombe	Ninga		70.0	0.0	70.0
Mbalali	Igurusi		100.0	85.0	15.0
		Mean	**57.3**	**15.4**	**41.9**

Source: Program's outcome study August 2017

Annex 4: Changes in monthly household income by wards and districts

District	Ward	Change in monthly households income in Tsh		
		From	**To**	**Difference**
Msalala	Segese	20,800.0	187,500.0	166,700.0
Chato	Nyamirembe	30,000.0	700,000.0	670,000.0
Chato	Kigongo	30,000.0	197,900.0	167,900.0
Sengerema	Kishinda	125,000.0	698,000.0	573,000.0
Magu	Isandula	75,000.0	550,000.0	475,000.0
Shinyanga rural	Nsalala	75,000.0	160,000.0	85,000.0
Mbulu	Bashay	105,000.0	390,000.0	285,000.0
Meru	King'ori	315,000.0	810,000.0	495,000.0
Iringa rural	Itunundu	50,000.0	80,000.0	30,000.0
Songea rural	Kilagano	141,333.3	265,000.0	282,054.5
Njombe rural	Ninga	30,000.0	85,000.0	55,000.0
Mbalali	Igurusi	50,000.0	150,000.0	100,000.0
	Mean	**95,193.94**	**388,490.90**	**307,695.86**

Source: Program's outcome study August 2017

Annex 5: Improvement in crop marketing prices (Tsh/Kg)

Districts	Ward	Type of crop/ value chain	Crop price change Tsh/Kg		
			From	**To**	**Difference**
Msalala	Segese	Paddy	400.0	1150.0	750.0
Chato	Nyamirembe	Paddy	600.0	1900.0	1300.0
Chato	Kigongo	Paddy	800.0	1900.0	1100.0
Mbulu	Bashay	Garlic	1126.0	2750.0	1624.0
Meru	King'ori	Maize	400.0	1350.0	950.0
Iringa rural	Itunundu	Paddy	500.0	800.0	300.0
Songea rural	Kilagano	Maize	125.0	1000.0	875.0
Njombe	Ninga	Maize	300.0	510.0	210.0
Mbalali	Igurusi	Paddy	700.0	1500.0	800.0
		Mean	**550.1**	**1428.9**	**878.8**

Source: Program's outcome study August 2017

Annex 6: Growth in number of beneficiaries and volume of traded inputs (selected wards)

Ward	Male beneficiaries trained on input use		Female beneficiaries trained on input use		Volume of traded inputs		No. of input use beneficiaries	
	From	To	From	To	From	To	From	To
Bashay	450	1050	160	470	1200	7000	300	1500
King'ori	620	1060	343	789	2423	8227	1849	2280
Ninga	20	25	5	10	300	1000	25	110
Dakawa	1200	3240	1780	1460	90	144	210	300
Gangilonga	30	150	40	110	2500	3000	720	2500
Kishinda	97	256	126	326	0	938	223	582
Katunguru	47	119	64	119	0	2157	111	336

Source: Program's outcome study August 2017

Annex 7: Changes in the amount of crops stored (tons) in warehouses by districts and wards

District	Wards	Volumes of crops stored in warehouses in tones per season		
		From	**To**	**Difference**
Chato	Nyamirembe	1000	2000	1000
Chato	Kigongo	0	27.5	27.5
Mbulu	Bashay	0	156	156
Meru	King'ori	90	154	64
Iringa Rural	Itunundu	0	64.2	64.2
Songea rural	Kilagano	628	1000	372
Njombe	Ninga	103.5	224	120.5
	Mean	**260.2**	**517.9**	**260.2**

Source: Program's outcome study August 2017

Annex 8: Volumes of crops reaching warehouses tonnes/season by district and wards

District	Ward	Before	After	Difference
Msalala	Segese	0	1500	1500
Msalala	Kashishi	0	900	900
Chato	Nyamirembe	0	1000	1000
Chato	Kigongo	0	300	300
Mbulu	Bashay	0	1200	1200
Meru	King'ori	0	800	800
Songea rural	Kilagano	620	1000	380
	Mean	**88.6**	**957.14**	**868.6**

Source: Program's outcome study August 2017

Annex 9: Reduction in crop storage charges by districts and wards

		Reduction in crop storage charges/100 kg bag in Tsh		
District	Ward	**From**	**To**	**% Reduction**
Msalala	Segese	1500	1500	0
Chato	Nyamirembe	1000	1000	0
Chato	Kigongo	1500	700	53
Mbulu	Bashay	2100	325	84.5
Meru	King'ori	5000	2500	50
Iringa Rural	Itunundu	2000	1000	50
Songea rural	Kilagano	1300	500	61.5
Njombe	Ninga	2000	1000	50
Mbalali	Igurusi	7000	4500	35.7
	Mean	**2600.0**	**1447.2**	**42.7**

Source: Program's outcome study August 2017

Annex 10: Cost benefit analysis and sensitivity analysis

The following assumptions were made: traffic increase along the program's rural roads by annual rate of 10%; annual reduction of Vehicle Operating Cost (VoC) after road rehabilitation by 40%; annual growth rate of 15% of individuals using the road; PH loss reduction during the first 6 years of the program (2013-2018) at 25% and thereafter at 50%; annual growth rates in rice and maize production at 12%; annual growth rate of at 15% of sales from enterprises that received equipment support.

Investment cost includes all financers (the Bank, IFAD and GoT), with no further investment costs after PY6. The following annual costs were included from Year 6 to 20: 1) 30% of total program recurrent costs in PY5; and 2) 10% of total civil works (primarily road and market infrastructures) investment costs to cover expected annual operation and maintenance (O&M) costs. The assumption is that these costs will have to be incurred if future benefits of the program are to be sustained.

Annex 10.1: Cost benefit analysis (in Tsh million)

	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Discount factor @ 10% DFt=1/1.10t	1.00	0.91	0.83	0.75	0.68	0.62	0.56	0.51	0.47	0.42	0.39	0.35
Discounted benefits Bt*DFt	18670	8791	7992	7265	6605	6356	5832	30628	51162	72992	96225	120976
Discounted cost Ct*DFt	72244	65676	59706	54278	49344	44858	5945	5405	4914	4467	4061	3692
Discounted net benefit (Bt-Ct)/DFt	-53574	-56886	-51714	-47013	-42739	-38502	-113	25223	46249	68526	92164	117285
Net benefit Bt-Ct	-53574	-62574	-62574	-62574	-62574	-62007	-201	49152	99138	161580	239050	334627

	2024	2025	2026	2027	2028	2029	2030	2031	2032
Discount factor @ 10% DFt=1/1.10t	0.32	0.29	0.26	0.24	0.22	0.20	0.18	0.16	0.15
Discounted benefits Bt*DFt	147373	175553	205665	237872	272348	309286	348890	391386	437014
Discounted cost Ct*DFt	3356	3051	2774	2521	2292	2084	1894	1722	1566
Discounted net benefit (Bt-Ct)/DFt	144017	172502	202892	235350	270056	307202	346996	389663	435448
Net benefit Bt-Ct	451988	595524	770480	983116	1240900	1552742	1929268	2383146	2929478
Present value of benefits (PVB)	**1,997,996**								
Present value of costs (PVC)	**333,369**								
NPV at 10%	**2,330,029**								
IRR	**31%**								

Annex 10.2: Sensitivity analysis

Original costs and benefits

	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Program costs	72244	72244	72244	72244	72244	72244	10533	10533	10533	10533	10533	10533	10533	10533	10533	10533	10533
Program benefits	18670	9670	9670	9670	9670	10237	10332	59685	109671	172112	249583	345160	462521	606057	781013	993649	1251433
Net benefits	-53574	-62574	-62574	-62574	-62574	-62007	-201	49152	99138	161580	239050	334627	451988	595524	770480	983116	1240900

	2029	2030	2031	2032
Program costs	10533	10533	10533	10533
Program benefits	1563275	1939800	2393678	2940011
Net benefits	1552742	1929268	2383146	2929478
NPV at 10%	**1,664,627**			
EIRR	**31%**			

10% increase in program costs

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Program costs	79468	79468	79468	79468	79468	79468	11586	11586	11586	11586	11586	11586	11586	11586	11586	11586	11586
Program benefits	18670	9670	9670	9670	9670	10237	10332	59685	109671	172112	249583	345160	462521	606057	781013	993649	1251433
Net benefits	-60798	-69798	-69798	-69798	-69798	-69232	-1254	48099	98085	160526	237997	333574	450935	594471	769427	982063	1239847

	2029	2030	2031	2032
Program costs	11586	11586	11586	11586
Program benefits	1563275	1939800	2393678	2940011
Net benefits	1551689	1928214	2382092	2928425
NPV at 10%	**2,294,042**			
EIRR	**30%**			

20% increase in program costs

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Program costs	86693	86693	86693	86693	86693	86693	12639	12639	12639	12639	12639	12639	12639	12639	12639	12639	12639
Program benefits	18670	9670	9670	9670	9670	10237	10332	59685	109671	172112	249583	345160	462521	606057	781013	993649	1251433
Net benefits	-68023	-77023	-77023	-77023	-77023	-76456	-2308	47045	97032	159473	236944	332521	449881	593418	768374	981009	1238794

	2029	2030	2031	2032
Program costs	12639	12639	12639	12639

Program benefits	1563275	1939800	2393678	2940011
Net benefits	1550636	1927161	2381039	2927372
NPV at 10%	**2,258,056**			
EIRR	**29%**			

10% decrease in program benefits

	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Program costs	72244	72244	72244	72244	72244	72244	10533	10533	10533	10533	10533	10533	10533	10533	10533	10533	10533
Program benefits	16803	8703	8703	8703	8703	9213	9299	53716	98704	154901	224625	310644	416269	545451	702912	894284	1126290
Net benefits	-55441	-63541	-63541	-63541	-63541	-63031	-1234	43184	88171	144368	214092	300111	405736	534918	692379	883751	1115757

	2029	**2030**	**2031**	**2032**
Program costs	10533	10533	10533	10533
Program benefits	1406947	1745820	2154310	2646010
Net benefits	1396415	1735288	2143778	2635477
NPV at 10%	**2,061,040**			
EIRR	**30%**			

20% decrease in program benefits

	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Program costs	72244	72244	72244	72244	72244	72244	10533	10533	10533	10533	10533	10533	10533	10533	10533	10533	10533
Program benefits	14936	7736	7736	7736	7736	8189	8265	47748	87737	137690	199666	276128	370016	484845	624810	794919	1001146
Net benefits	-57308	-64508	-64508	-64508	-64508	-64055	-2267	37215	77204	127157	189134	265595	359484	474313	614278	784386	990614

	2029	**2030**	**2031**	**2032**
Program costs	10533	10533	10533	10533

Program benefits	1250620	1551840	1914943	2352009
Net benefits	1240087	1541308	1904410	2341476
NPV at 10%	**1,792,050**			
EIRR	**28%**			

Sensitivity analysis

	NPV (in Tsh million)	Changes from the base	EIRR	Changes from the base
10% increase in program costs	2,294,042	-2%	30%	-4%
20% increase in program costs	2,258,056	-3%	29%	-8%
10% decrease in program benefits	2,061,040	-12%	30%	-5%
20% decrease in program benefits	1,792,050	-23%	28%	-9%
Base scenario	**2,330,029**		**31%**	