Food and Agriculture Organization of the United Nations

Office of Evaluation

Agricultural Rehabilitation and Diversification of High Potential Irrigation Schemes in Southern Somalia (ARDOPIS III) - OSRO/SOM/810/EC

Final **Evaluation Report**

July 2011
Final

Food and Agriculture Organization of the United Nations

Office of Evaluation (OED)

This report is available in electronic format at: http://www.fao.org/evaluation

For further information, please contact:

Director, OED
Viale delle Terme di Caracalla 1, 00153
Rome, Italy
Email: evaluation@fao.org

Name of applicant:	Food and Agriculture Organization of the United Nations	
Title of the action:	**Agricultural Rehabilitation and Diversification of high Potential Irrigation Schemes in Southern Somalia (ARDOPIS) – III**	
Location(s) of the action:	**Somalia; Lower Shebelle; Marka District**	
Total eligible cost of the action (A)	**Amount requested from the Contracting Authority (B)**	**% of total eligible cost of action (B/Ax100)**
EUR **1,424,555.00**	EUR **1,280,000.00**	**89.9%**
Total duration of the action:	*24*	

Summary

Objectives of the action	*Overall objective:* ***Household livelihood of rural families increased through improved agricultural production and marketing*** • 1877 farmers have increased household assets • Household incomes increased by at least 15% *Specific objective:* ***Farming households in former banana growing regions benefit from increased production, assets and/or income through access to and use of irrigation infrastructure, technical assistance and improved market access***
Target group(s)	4,172 farm families; equivalent to 25,032 individuals
Final beneficiaries	Approximately 300,000 people in Merka District and neighbouring town centres
Estimated results	**1.** Irrigated agricultural production is improved and cropping patterns are diversified. • 7,230 ha opened for full irrigation • 31.5 km of canal rehabilitated • number of farmers (at least 30% representing either sex) trained **2.** Market access, product marketing & processing are improved • 35 km of market access road repaired • number of farmers (at least 30% representing either sex) trained in product marketing
Main activities	Canal and hydraulic structures rehabilitation Repair of farm to market access roads Construction of market sheds Farmer field school based farmer training Support to market linkages Explore possibilities of setting up farm produce processing facility Support to farmers market association set up

Submitted By:

Acacia Consultants Ltd.
P.O. Box 340, Sarit Centre
00606 Westlands, Nairobi, Kenya
Tel/fax: 3742855 Tel: 3746655 / 3747867
Mobile: 0733 780900 / 0722 203 444
Email: admin@acaciaconsultants.org
Website address: www.acaciaconsultants.org

Supporting Partners to Improve Livelihoods

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LIST OF THE ACRONYMS USED

ARDOPIS	Agricultural Rehabilitation and Diversification of High Potential Irrigation Scheme
CSP	Country Strategy Paper
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organization
FFS	Farmer Field School
FGDs	Focus Group Discussions
FSNAU	Food Security and Nutrition Analysis Unit
GDP	Gross Domestic Product
HH	Household
HA	Hectare
KII	Key Informant Interview
PCM	Project Cycle Management
RDF	Reconstruction and Development Framework for Somalia
RDP	Reconstruction and Development Programme
SHARP	Shebelle Agricultural Rehabilitation Programme
SISAS	Strategy for the Implementation of Special Aid to Somalia
SWALIM	Somalia Water and Land Information System
SMART	Simple, Measurable, Adequate, Rational and Time-bond
TFG	Transitional Federal Government
UN	United Nations

EXECUTIVE SUMMARY

FAO Somalia Office has been implementing a project on High Potential Irrigation Schemes in Southern Somalia (ARDOPIS III) since 15th March, 2009. The project intended to provide support to households by increasing incomes of rural families through rehabilitation of irrigation structures and repair of farm to market access roads, Farmer Field School (FFS) based training and construction of market sheds. The project budget was EUR **1,424,555** of which EUR **1,280,000 or 89.9%** of the budget was funded by the European Commission. The Government of Switzerland through Swiss Agency for Development and Cooperation (SDC) has contributed **CH 300,000.**

The project's (OSRO/SOM/810/EC) overall objective was to *improve rural livelihoods through improved agricultural production and marketing.* The specific objective was: Farming households in former banana growing regions benefit from increased production, assets and/or income through access to and use of irrigation infrastructure, technical assistance and improved market access**.** Two results were envisaged, namely:

(i) Irrigated agricultural production is improved and cropping patterns are diversified;

(ii) Market access, product marketing and processing are improved

The final evaluation was carried out at the end of the project. It was intended to provide an account on achievements of the project to relevant stakeholders in Somalia (FAO and amongst relevant donors) and provide recommendations on any further actions judged necessary to consolidate the achievement of objectives or complement them, in view of the strengths and shortcomings identified. The evaluation was contracted to Acacia Consultants Limited by the FAO Somalia Office. Acacia used participatory evaluation approach and used both qualitative and quantitative methods. Literature review, Focused group discussions, Key informants interviews, Household survey and field visits were the main tools applied for the evaluation. The exercised started in the beginning of May 2011and fieldwork was undertaken from 20th through 31st May, 2011 in Somalia. Security was the major limitation to this evaluation and was addressed by recruiting a Somali national to undertake field work and site visit in the project area.

Major Findings:

The project was found to be appropriately designed in that the diversified agricultural production implied restoration of irrigation infrastructure to support production of a variety of crops satisfying the needs of the farmer. The project's logical framework was clear and realistic in the choice and quality of inputs. The implementation assumptions, objectively verifiable indicators are realistic and achievable, while the source of verification was capable of providing sufficiently the information in details and in formats required. However, the project's target of having 30% of either sex benefiting from the project activities was not realistic, as traditional Somali women are disadvantaged in the society's decision-making or in participation in productive activities.
In the wake of increased insecurity, the project resorted to a completely new but innovative institutional arrangement by working through Letter of Agreement (LOA) with local

organizations instead of international partners. Internal controls for ensuring quality were built by recruiting a local NGO - SAREDO, to supervise and monitor the Cash for Works (CFWs) activities and training. The supervision of major infrastructure works was contracted out to COMORAD, a local engineering company based Mogadishu, Somalia. This management and institutional arrangement was effective in supporting timely implementation of scheduled activities since the implementation directly involved the local communities. It also enhanced quality due to improved control and surveillances and instilled sense of ownership and identity.

The ARDOPIS III project was found to be in line with European Commission Strategy for the Implementation of Special Aid in Somalia (SISAS) 2002 – 2007. Further, by its design, the project contributes towards realization of the Reconstruction and Development Programme (RDP) to Somalia Joint Strategy Paper for the period 2008 – 2013. The strategy is based on the ACP-EU Partnership Agreement, the European Consensus on Development, the EU Strategy for Africa, and the OECD/DAC Guidelines for International Engagement in Fragile States. The project is also in line with MDGs Goal 1.

The start of the project implementation was in accordance with the schedule as presented in the project document. Although there were observed delays occasioned by start-up logistics and the insecurity in the area of operation, the project recovered the time lost. Out of the 30 activities earmarked for implementation, the evaluation has established that only five were not achieved. These were mainly due to being disapproved/discouraged by the baseline survey, which was conducted over two months after project inception. Others were abandoned after the review of the activities by the project management.

Throughout the implementation phase, the project ensured the financial acquisition was as per the project budget. The interviews and the budget review demonstrated that the disbursement chain has been efficient. In order to ensure close link between the budget and actual cost of activity implementation, the management of the project funds was guided by an inbuilt monitoring system complying with the FAO internal budget monitoring system.

The evaluation established that the project was effective in reaching intended results. The project achieved a rating of 77.7% implementation performance. The rehabilitation of Shikhaal Canal and construction of Shalambood and Shikhaal water pans with a total capacity of 40,000 cubic metres enhanced the project's achievements. Indeed, the activities had not been included in the project logframe. The water pans were implemented through additional funds provided by Swiss Agency for Development and Cooperation.

Through rehabilitation of the four canals, namely: (i) Cesare Maria (primary canal); (ii) Bafow; (iii) Falestine; and (iv) Shalambood, the project opened up 7,230 hectares for irrigation. Information generated through this evaluation shows that a total of 6,300 hectares are under irrigation and served by the 38.5km of canal rehabilitated. The total irrigation command area was increased by 174% over the project target.

This evaluation has revealed the poor state of the irrigation infrastructure before the project intervention which has since improved significantly by the time of the study. All the parts identified and categorized as spoilt and non-functioning during the baseline assessment had been rehabilitated or replaced altogether. The extent of works comprised rehabilitation of the canals, intakes, crosses regulators and water conveyance structures. The field survey conducted during the review of the project shows that 79.3% of the households started irrigation agriculture after the intervention of this project. Moreover, the cropland per household had almost doubled (5.9 ha) by the end of the project implementation, signifying the importance of availability of irrigation water to the intensification of the crop production.

Mobilizing and organizing the farmers was a built-in activity, which had its roots from the demonstration plots, created by the previous ARDOPIS I and II programmes. In ARDOPIS III, the farmers who had already been working together in trying new crop farming skills and knowledge, joined together to form specific crop replication groups based on their interest and established Farmer Field Schools (FFS). Since, these replication groups had a long working experience using the demonstration plots as an avenue for undertaking farming technology trials and transfer of the same, the replication provided opportunity of consolidating and popularizing the gains achieved hitherto, to commercializing the farming activity. According to the household survey, 75.8% of the farmers interviewed confirmed to be members of FFS. From the *Farmers Field Schools (FFS) Final Training and Performance Evaluation Workshop Report (January 2011)*, 14 FFS groups had been formed with a total membership of 444 of which 393 or 88.5% were men and 51 or 11.5% were women. However, the proportion of the women trained fell short by as much as 30% of the target. The FFS farmers trained were 624. The farm yields have increased from 0.8-1.1 t/ha to 2.8-3.2 high t/ha largely attributable to the adoption of the good agronomic practices. Adoption rate was about 80% owing to intensification of the FFS training. The quality of the training was rated as from very good (52%) to good (40%) and to satisfactory (8%).

However, the FFS approach had its own challenges. Some of the challenges noted included:

- Location of the FFS demonstration plots: although some of the aspects considered in locating the FFS plot were distance and common interest of the members, in some cases distance was long and hindered participation of some of the farmers.
- Farmers took long time to come up with home-bred answers to problems observed during replication process.

The intended 35km of roads and rehabilitation and/or replacement of spoilt culverts were accomplished within the stipulated time. In addition, taking advantage of the presence of the Integrated Support to Rural Livelihoods (Food Facility) Project, the project could facilitate construction of 21 culverts and 78km of road sections was improved by bush clearing, gravelling and levelling. This means that the project achieved additional outputs than anticipated during the project planning. According to a rapid market appraisal done in Buufow, Jenale, Merka, Mushani, Shalambood markets, 80% of the 15 traders interviewed reported improved access to markets in the past 2 years. However, the traders still listed poor conditions of the roads as the main constraints as depicted in **Figure 5** but passable all year round.

According to a rapid market appraisal carried out during this review, Janale and Shalambood markets emerged as the main source of supplies of traders' market produce. This was as a result of their improved accessibility following the improvement of the access roads and the clean, hygienic and improved produce storage provided by the newly constructed market sheds. Moreover, farmers can deliver their produce to market either through middlemen or by taking their produce directly to the market.

Each of the four canals has a committee in place elected between 2009 and 2010. Shalaambod Committee was the first to be created in 2009 and all the other three followed in the subsequent year. On average, the committee was made up of nine members of which 76% are men and 24% are women. According to the project capacity assessment, it concluded that whereas farmers may have capacity to maintain secondary and tertiary canals, they lack capacity to rehabilitate the primary canal and therefore, they will continue to rely on external assistance. The project concedes to this shortfall and proposes to make arrangements for FAO to continue training farmers and canal management committees through other projects to effectively manage the smaller canals. According to the new approach adopted by FAO, canal rehabilitation activities implemented under ARDOPIS will in future be carried out by FAO's Agricultural Sector to ensure sustainability.

On integration of crosscutting issues, ARDOPIS activities were implemented with a deliberate intention of integrating gender needs and concern to address gender disparities. The project's objectives had a gender dimension. However, the 30% gender proportion was never realized mainly due to traditions that do not allow women to take up leadership at community level where men are involved. The project was noted not to have effectively dealt with environmental issues despite its substantial vegetation clearing and extensive movement of soils during the rehabilitation of the infrastructure. An environmental impact assessment should have been carried out to evaluate the likely adverse impacts associated with the intervention and suggest mitigation measures.

By the end of the project implementation phase, 11,180 households were being served with irrigation water from the project rehabilitated canals compared to number served in 2009 of 5,376 which translates to an increase of 208%. With the successful completion of 38.5 km of canals (comprising of 15.5 km of primary canal, Buffow secondary canal (7.3 km), Palestine secondary (4.5 km) canal and Shalambood secondary (4.2 km)) against the planned 31.1km, 6,300 hectares of land had regained productivity. The production of maize during the GU 2010 period was reported as equivalent to post war levels and this was attributable to the project activities in the area. This is an impressive result that could easily contribute positively not only towards food self sufficiency but by reinvigorating the near moribund irrigation agriculture that prevailed before the project intervention. By the time of this review, agriculture was estimated to contribute to slightly over 50% of the entire household incomes for 92.4% of all households in the project area.

The adoption rate of the FFS has steadily grown. The level of acceptability of the FFS methodology and approach was rated high by 73% of the 30 FFS trainees. Some 69% of farmers affirmed that their asset base had increased.

Other short terms impact associated with the project include:

1. Creation of short-term employment, thus generation of income to project beneficiaries and the targeted communities, through the cash for work activities. The support provided by the Swiss increased jobs by 716 (18% of them being women) and an injection of US$41,620 to the community through cash for work activities were realized. This exceeds the initial 400 beneficiaries and the 28,000 Swiss Francs (USD 35,848) foreseen in the proposal. The cash for work activities provided short term opportunities to those in high need for money for their livelihood needs.
2. Capacity building of the contractors and the community in watershed development through their involvement in the implementation of the project.
3. Improvement of the canals has enhanced the irrigation capacity in the area.

Owing to the capacity building in crop production and maintenance of the irrigation structures, there was a potential for continued realization of the increased agricultural production even after exit of the project assistance.

Conclusions:

a) ARDOPIS interventions are consistent with SISAS (2002 – 2007). The overall long-term objective of the Commission Strategy for Somalia is to contribute to the alleviation of poverty and to the promotion of a more peaceful, equitable and democratic society. It is also in line with Somalia Joint Strategy Paper for the period 2008 – 2013 and to the Reconstruction and Development Programme, among other global objectives over Somalia.

b) While the ARDOPIS III was largely well designed, several flaws have also been identified. These include the following:

    i. FAO has wide experience on the project area having previously implemented ARDOPIS I and II. Each of the project, including ARDOPIS III was preceded by detailed baseline surveys. Need assessments were also conducted before finalization of the project designs but the exercise was missed out in ARDOPIS III. Most likely, this omission was due to the presence of data previously collected and the detailed baseline conducted slightly before the implementation of ARDOPIS III. The baseline survey should not replace need assessment in project planning.

    ii. The project was designed to target 30% of either sex benefiting from the project activities. However, there are cultural intrinsic and dynamics values that oppress women to access resources in the project area and presented challenges in achieving the set target. These had been well documented in the baseline study. Moreover, FAO is not new in the project area and should have made an informed decision based on past experience and to the extent at which gender based issues could realistically be promoted. Being a patriarch society, Somali women were rarely given leadership positions at the community level. For instance, the FFS had total members of 444 of which about 88% were men and only 12% women. This was a design flaw.

iii. Unnecessary activities had been proposed for implementation and intended for realization of result II. These activities were eventually dropped after further reflection. While this study commends the FAO for dropping those activities early enough during the implementation phase, it was absolutely not necessary to have had them included in the proposal and all the way to the project designing stage as this impacted on the project budgeting, amongst other project planning. Given FAO had implemented ARDOPIS I and II, this experience should have informed the impracticability of such activities and the low impact that would have been realized from their implementation. Again, FAO use of lessons learned from phase I& II of the project should have informed on the objective of promoting diversification of crop which sought to enhance the crop mix and planting pattern with a view of maximizing the returns. However, it had been found that the diversification of crops through improvement of the husbandry practices on the crops that were well known to farmers and enhancing access to quality seeds.

c) It is evident that stakeholders participated in the design and played an active role in implementation and management of the project. In the wake of increased insecurity in the project area, ARDOPIS III resulted in an embryonic and innovative implementation arrangement of implementation under contracts and LOA issued to local private sector and NGOs. This implementation has been found to be working pretty well and in accordance with best practice of financial management where economy, efficiency and effectiveness principles have been observed, thus achieving value for money. This arrangement has worked so well compared to partnership arrangement which was riddled with heavy running cost. The results were so impressive that ARDOPIS management would wish to resort to the same style of project management in the future under emergency contexts. The steps taken toward awarding tenders are transparent and in conformance with FAO and EC guidelines.

d) The project is generally progressing well to achieve its overall objective. The sectoral approach FAO has undertaken as opposed to the project-wise intervention provides a good base for realization of the goal.

e) The investments in the rehabilitation of the irrigation system in Merka District were worthwhile on the medium and the long terms. The region was chief export region for bananas and earned substantial foreign exchange to the country. By the time of designing of the ARDOPIS III, farming activities were near moribund as a result of extensive siltation and breakages of the system. The once robust system has been reduced to be of subsistence importance and only to farmers whose farms had river frontage lying low to allow river water to be channelled into the farms. Alternative was using pumps, a costly undertaking to sustain farming enterprise.

f) Promotion and acceptance by farmers of the FFS participatory learning methodology on improved farming technics is considered an insurance that will roll out skills and knowledge gained by FFS members for adoption by other farmers who so far are resistant to change. The FFS, however, encountered some few challenges including members walking long distance and it took long time for farmers to come up with home-bred answers to problems observed during replication process.

g) With continued adoption of improved farming methods and maintenance of the irrigation system, the project stands a big chance of ultimately accomplishing its overall objective as the region fully recovers from the post violence agricultural stagnation. FFS is gradually taking the shape of a demand-driven service, where farmers are embracing it after witnessing its potential in transforming agricultural production.

Recommendations

a) ARDOPIS III implementation strategy was noted to be innovative and should be documented including the merits and the pre-conditions for ensuring its success of working with partner organizations. This would provide a package for emergency and development intervention for replication in similar conditions elsewhere.

b) Need assessment is an important component in the designing of the project. Although ARDOPIS has been working in the area in the previous projects and actually undertook detailed baselines before implementation of the projects, it was critical for ARDOPIS III to conduct a need assessment just as it did in ARDOPIS I & II. Need assessment is central values in project cycle management which require to be monitored repeatedly since frequently needs are not immediately clear or cannot be easily understood. The needs can also change immediately especially in the context of the project area where insecurity thrives. This critical omission should be avoided at all cost. In any case need assessment is carried out fairly fast.

c) Although it was important to identify the needs and interests of women so that they are integrated in the project at the earliest stages of the project design, the strategies and extent of the integration should have been guided by the realities on the ground. The 30% proposal of either of the gender was far-fetched and it should have been obvious at the planning level and adjust it accordingly. All the same, by having women in community structures where decisions on the management of the irrigation canals and FFS are made, was a great achievement going by the Somali traditions. This survey has revealed that about 10% to 12% of women inclusion had been attained. The next planning should build from this milestone achieved.

d) The project partnership with SDC enabled realization of additional outputs that have enhanced positive impact to the targeted benefit communities. It also contributed towards successful completion of the projects activities in that it mitigated possible conflicts that were likely to occur between the pastoral and farming communities. Rarely would projects work hand in hand as it was the case of ARDOPIS III. The identity and contribution of the parties in partnership was harmoniously maintained and made visible. Such partnership is worth replication and promotion in future undertakings.

e) One of the project strategies to promote crop production was through diversification of crops and enhancing crop mix. However, farmers appear to have maintained the cultivation of crops that they were used to but took on intensification through adopting improved farming methods introduced and quality seed verities. It is important that the project allowed farmers' space to do what they felt was good for them and they had skills and knowledge on. This flexibility was found to have worked quite well for the project and should be taken as part of project learning.

f) The FFS methodology gives assurance of continued skills and innovation development. The shift to sectoral approach adopted by FAO other than the project based approach should carefully be planned and implemented to avoid neglect or insufficient allocation of resources and attention. The Agriculture sector is too broad compared to a project approach which addresses a specific component within the entire agricultural productive sector. The initial phase of the FAO sector approach which runs up to 2015 has as its one of key objectives "Improved infrastructure for Flood control developed". The rehabilitation of the primary canal which the farming community admitted not having capacity to undertake should form part of the activities to be supported under this objective. Capacity building in canal committee including, introduction of and operationalization of user fee for maintenance of the irrigation system, which was yet to be implemented by the end of the project, is another key activity that can be implemented under this objective.

g) The project involved major de-vegetation and movement of soils during rehabilitation of the canals and construction of the water pans. Activity or development of this magnitude which are out of character with its surroundings should have been subjected to initial environmental impact assessment to inform the proponents on its likely adverse impact on the biophysical and social environments. ARDOPIS should integrate environmental considerations into its development planning and management.

h) The FFS should be mainstreamed in the FAO agricultural sector approach as the main participatory technology development methodology. In this project, it has demonstrated its ability to facilitate technology innovation and cost-effectiveness in dissemination of information to the consumers (farmers). The multiplier effect is high as the "researchers" are the farmers themselves who interact directly as they run their day to day endeavours. Nevertheless, the process needs to be monitored from time to time to ensure that innovations and adopted technologies are in line with the intended objectives of the FFS. During this monitoring period, putting up of additional FFS should be considered to curb the problem of long distance members have to walk. In addition, strategies to carefully hasten the process of solution development through FFS observations approach would help farmers to manage farming challenges more effectively.

1.0 INTRODUCTION

1.1 Evaluation Background

FAO Somalia Office has been implementing High Potential Irrigation Schemes in Southern Somalia since 15th March 2009. The project was intended to increase the income of rural households through the rehabilitation of irrigation structures and repair of access roads from farms to market; Farmer Field School (FFS) based training and construction of market sheds. The project budget was EUR 1,424,555 of which EUR 1,280,000or 89.9% was funded by the European Commission. The Government of Switzerland through Swiss Agency for Development and Cooperation (SDC) has contributed the remaining CH 300,000.

This final evaluation of the project supporting the Agricultural Rehabilitation and Diversification of High Potential Irrigation Schemes in Southern Somalia (ARDOPIS III) was commissioned to Acacia Consultants Limited by the FAO Somalia Office. The assignment started in the beginning of May. Inception report, including field tools was prepared and discussed with the client and approve in mid-may. The fieldwork was between 20th and 31st May, 2011 in Somalia. In Kenya, interviews with project management occurred on various dates as indicated in the field itinerary (**appendix 2**).

Martin Kamau Gitau and Engineer Ahmed Hussein carried out the evaluation.

1.2 The Purpose of the Evaluation

According to the ToR, the final evaluation was intended, as the project closes, to provide an account of achievements of the project to relevant stakeholders in Somalia, FAO and amongst relevant donors. The evaluation was to provide recommendations on any further actions judged necessary to consolidate the achievement of objectives or complement them, in view of the strengths and shortcomings identified so far. Any further need for external assistance was to be identified.

The main output of the assignment was the Final Evaluation Report on ARDOPIS. The evaluation report was intended to conform to the standards applied in the FAO Office of Evaluation. The evaluation mission described what the project achieved compared to the agreed plan and indicators and effectively responded to issues as underlined in the ToR (**see appendix 1**).

The main limitation of this evaluation was insecurity. The prevailing risky situation made it impossible for the team leader to travel to the field, the project area. The assisting consultant, a national Somali, travelled to the project area and facilitated the field data collection exercise, conducted key informant interviews and project site visits. The data collection was made interactive through communication by emails and phone conversations whenever possible. The brainstorming on the key findings was done in Nairobi. Through these measures, the effect of the absence of the team leader in the field was considerably minimized.

1.3 Evaluation Methodology

Qualitative and quantitative methodologies were used to collect information that would feed into the evaluation analysis. The tools used in the data collection were mainly:

- Secondary data/Literature Review,
- Administration of the household questionnaires,
- Key Informant Interviews (KIIs),
- Focused group Discussions (FGDs);
- Direct observation/field validation and photography

1.3.1 Literature Review

Literature review was a major source of secondary data through which the evaluation team gained important insight about the project. Review of the project documents was maintained throughout the evaluation period. Key documents reviewed included:

- The SISAS (EC Strategy for the implementation of special aid in Somalia) as quoted in the project document,
- The project proposals including the log frame and budget,
- The project reports (Inception, interim and financial reports),
- The draft project final report under preparation including annexes,
- The evaluation reports for the previous ARDOPIS projects I and II,
- The baseline/survey reports,
- FFS Final Training & Performance Evaluation Workshop Report,
- Project evaluation report outline draft September 09-2,
- ARDOPIS CEFA Mid Term Evaluation report 25 04 08,
- Report - Improvement of Irrigation Canals for Flood Regulation (3),
- Report -Farmers Field School Workshop in Hargeisa,
- September 2009 - February 2010 Report - FAO ARDOPIS III Narative1,
- SISAS - EU final version of the country strategy,
- Signed Project Agreement,
- SAREDO FFS report for October and November 2009 by SAREDO,
- ARDOPIS Report FFS Training in Mombasa, Kenya-Final,
- Main Report - FAO ARDOPIS III Narrative[1],
- Inception Report ARDOPIS III,
- Baseline Survey Final Report - ARDOPIS III,
- Financial expenditure data,

- Project Evaluation Report Format.

Other sources of reference material included:

- Somalia Water and Land Information Management System (SWALIM) documents
- Food Security Analysis Unit (FSAU) documents
- Other relevant documents from institution implementing similar projects within the project area.

1.3.2 Household Survey

This was the main tool for collecting quantitative data at the farm level. In total, ninety (90) households were interviewed among the beneficiary households. Information sought through this tool included:

- Land size accessed by the household and land size under crop cultivation,
- Type of farming (cropping pattern, irrigated/ rainfed, type of crops and farming systems),
- Crop yields, storage and sales,
- Farmers Training,
- Marketing and income,
- Maintenance of the irrigation system etc.

The checklist was designed in such a way that changes could be measured before and after project intervention.

1.3.3 Focused Group Discussions

Focused Group Discussions (FGDs) were conducted with farmers, Famers Field Schools (FFS) and the canal committees. Information provided has been used to provide more insight in the interpretation of the quantitative data including:

- Farming activities - type of crop grown, farming system, type of farming (irrigated/ rainfed), farming challenges etc.,
- Farming skills acquisition through training and adoption status,
- Household contribution to irrigation system maintenance,
- Management of water resource,
- Roles of farmers, canal committee, etc.

1.3.4 Rapid Market Appraisal.

A checklist was administered at the markets to determine the importance of the ARDOPIS III supported agricultural area in feeding the markets with essential agricultural products. Some 15 market traders were interviewed.

1.3.5 Key Informant Interviews

This exercise involved project engineer, the project management team, community opinion leaders and others.

1.3.6 Field Visits

Information provided by various respondents was eventually verified through actual field visits, speaking to farmers met during the visits, direct observation and taking photographs.

1.4 Data Cleaning and Analysis

Household data and literature review provided the main sources of quantitative information. Data from the household survey were coded and keyed in the computer and eventually analysed using SPSS packages. Most frequencies contained in this report are from the household data.

2.0 CONTEXT OF INTERVENTION

2.1 National Context: Collapse of the Somalia Government and Impact on Irrigated Agriculture

Since the collapse of the government in 1991, violence has characterized Somalia in the past two decades. The Transitional Federal Government installed nearly five years ago has not functioned with broad based support. The collapse of the central government has not hindered the functionality of the private sector, particularly in the areas of trade, commerce, transport, remittance and infrastructure services. The remittances from the Somali Diaspora and the growing participation of women in income-earning activities are two other factors sustaining current economic growth.

The growth of this sector has, however, been pulled backward by insufficient investment capital, trained manpower and absence of a relevant legal and regulatory framework to enforce rules and regulations, common standards and quality control. The absence of any formal banking and financial services and regulatory bodies has made it virtually impossible to encourage and harness domestic savings. The long absence of a national government has further prevented access to international capital markets as well as establishment of economic management institutions and regulatory bodies.

The civil war in Somalia has also led to widespread human rights violations, very weak rule of law as well as worsening of the poverty situation. Levels of development vary widely between urban and rural and nomadic areas, between males and females, and in different regions of Somalia. According to the World Bank, Somalia ranks amongst the poorest countries in the world, with a per capita income of USD 226. About 43 per cent of the population lives on less than USD 1 a day (53.4 per cent in rural areas); 73.4 per cent live on less than USD 2 a day; 20 per cent live in makeshift housing. Somalia's economy traditionally depends on the exploitation of natural resources, mainly livestock and agriculture. Drought and a ban on livestock exports have severely affected income generation capacity of the majority of Somalis. Years of conflict have resulted in a protracted and complex emergency, eroded livelihoods and increased vulnerability to food insecurity. The last Food Security and Nutrition Analysis Unit (FSNAU) data on cereals balance reported a self sufficiency ratio of 35 per cent against an import dependency ratio of 65 per cent.

Remittances from the Somali Diaspora are the largest source of the capital supporting the economy, accounting for around 30 per cent of Somalia's GDP, and support the most significant growth sectors of the economy; including: house construction, small businesses, and services aimed at facilitating links between the diaspora and those remaining in Somalia. In addition to the large flow of remittances, the resilience of the economy is largely a result of the vibrancy of the private sector. Besides, insecurity, poor quality standards, crumbling road networks, lack of infrastructure, lack of international recognition for Somali passports and lack of state regulation remain serious constraints to private sector development.

In the agricultural sector, the vulnerability of households was considerably increased as the household asset base has become depleted during the years of conflict and civil unrest. The arable land represents 1.67 per cent, while permanent crops account for 0.04 per cent and the other land represents up to 98.29 per cent. It was estimated that, before the civil war, some 1,815,000 hectares of land were being cultivated with reasonable success. The areas under rain fed agriculture accounted to 1,445,000 ha and 250,000 ha under irrigated conditions. Irrigated land now accounts for 200,000 hectares, and practically, all of it is in Middle and Lower Shebelle and Lower Juba regions.

Before the collapse of the government, it was estimated that the banana industry in Somalia provided stable employment for some 10,000 to 13,000 people. In addition, a significant number of people, mostly from the marginalised minority Bantu groups, were employed as casual labourers. However, employment has been lost due to the following factors: 1) the collapse of the Somalia government, 2) withdrawal of the preferential trade agreement with the European Community for ACP suppliers of bananas. The ACP agreement enabled Somalia access to the European Community market, and 3) clan wars in Southern Somalia coupled with the impact of El-Niño related floods between October, 1997 and January, 1998. Since 1998, there has been no significant export of bananas from Somalia.

2.2 Origins of the Project

The once vibrant agricultural economy in the Shebelle flood plain has been subsistence economy based production largely due to: a).collapse of the government in 1991, b) the cessation of organised maintenance and repair of productive and supportive rural infrastructure; especially irrigation infrastructure, c) market access roads, as well as the loss of established farm produce markets and related institutional and marketing systems. Whilst donors have contributed significantly, especially in the Lower Shebelle to rehabilitate irrigation infrastructure, little account has been taken of the related need to rehabilitate the marketing infrastructure and market linkages. Much of this effort is as result of the sustained development of irrigated agriculture by the beneficiary communities. With unchecked erosion in the upper areas of the Shebelle, irrigation canals quickly accumulate soil deposition. And since farmers do not gain adequate levels of income from farming, their capacity to excavate these canals is limited to basic manual excavation. The inherent result is that the design capacity of the canals both in levels and size are never restored. Subsequently, canal capacity to deliver irrigation water diminishes with each passing year.

Farmers have over the years continued to depend on out dated skills and agricultural know-hows. This situation was mainly attributed to the scarcity of skilled agricultural technicians, since a high proportion of agricultural experts, like other skilled persons, were amongst those who left Somalia after the government collapse and the subsequent clan fighting. This formed the rationale of ARDOPIS intervention which sought to rehabilitate the irrigation system and reinvigorate farming enterprise to increase income for farming households. It was intended to increase opportunities for gainful employment creation within the irrigated agriculture sub sector. Prior to the project under evaluation, two other ARDOPIS projects (ARDOPIS I &II) had been implemented. ARDOPIS 1 was funded under SFA 2002 while ARDOPIS 2 was funded under SFA 2004

2.3 Project Objectives

Project OSRO/SOM/810/EC supporting the *Agricultural Rehabilitation and Diversification of High Potential Irrigation Schemes in Southern Somalia* (ARDOPIS III) sought to contribute to increasing income for farming households and create opportunities for gainful employment within the irrigated agriculture sub sector.

According to the project document, the **overall objective** was to "*improve rural livelihoods through improved agricultural production and marketing".* The project expected to increase agricultural productivity through the rehabilitation of irrigation infrastructure and to improve incomes through better and sustainable access to markets. The underlying assumption of this project was that farming households in former banana growing regions could increase their production. Increased asset base and/or income through access to and use of irrigation infrastructure and improved access to markets was anticipated. Specifically, the project aimed at reaching the following **targets** in the project implementation area of Merka District:

- 1000 farmers (at least 30 per cent of them representing either gender) practice market-oriented farming;
- At least 30 per cent of farmers (representing either gender) are linked with farm produce processing industries;
- At least 30 per cent of farmers (representing either gender) demonstrate increased agricultural production.
- To gauge whether the action has contributed to improved livelihoods, the following objectively verifiable indicators were agreed upon.
    - Household incomes of rural families increased by at least 15 per cent compared to incomes before action implementation and,
    - At least 45 per cent of the targeted households have increased their assets compared to the period before action implementation.

2.3.1 Expected Results

In order to achieve the above objectives, the following were expected results of the project:

i) Irrigated agricultural production is improved and cropping patterns are diversified[1]:

- 7,230ha opened for full irrigation.
- 31.5km of canal rehabilitated.
- At least 30 per cent of farmers (representing either gender) trained

ii) Market access, product marketing and processing are improved:

- 35km of market access road repaired.
- At least 30 per cent of farmers (representing either gender) trained in product marketing.

2.3.2 Project Activities and Targeted Beneficiaries

The project planned to directly benefit 4,172 farm families (equivalent to 25,032 individuals). Those targeted were groups of population whose main livelihood depends on the irrigation agriculture. The target area is located in the two main market centres namely Janale and Shalaambood. Indirectly, an estimated 300,000 people in Merka District and neighbouring town centres were to benefit in the long run. These are the people who depend on the crop production from the irrigation schemes drawing water from the Shebelle River. They also include segments of the Mogadishu population, who normally receive fresh vegetable from the Janale area. The Main Activities as per the project document included:

- Canal and hydraulic structures rehabilitation
- Rehabilitation of farm to market access roads
- Construction of market sheds
- Farmer field school based farmer training
- Support to market linkages
- Explore possibilities of setting up farm produce processing facility
- Support to farmers market association set up

2.4 FAO's Comparative Advantage

FAO has been collaborating with EC for over a decade in agricultural development of Southern Somalia. FAO has implemented various projects in partnership with CEFA and AGROSPHERE in this area on agriculture infrastructure, including irrigation canals, river embankment and farmers training in appropriate crop production. A series of actions funded by EC have gathered data which is kept under Somalia Water and Land Information Management System (SWALIM), bulletins and food security situation in Somalia produced by Food Security Analysis Unit (FSAU).

The ARDOPIS also built on works implemented by the EC funded Shebelle Agricultural Rehabilitation Programme (SHARP) that ended in the Lower Shebelle area in 2004. The

[1] This review has established that the diversification was not mainly about introduction of new crops but, as indicated in the findings, was mainly on intensification of the common crops planted.

project worked directly with benefiting communities as a strategic choice. Thus, ARDOPIS III is a culmination of experiences and lessons learnt by FAO from hands on implementation of agricultural related projects in Southern Somalia.

3.0 ASSESSMENT OF PROJECT RELEVANCE AND CONCEPT

3.1 Relevance of the Project

3.1.1 Relevance of the Project in Responding to Farm Families' Needs

Shebelle Region was a major crop production belt before the collapse of the Somalia government in 1991. Irrigation agriculture was practiced. The project documents indicated that when the crop production thrived in Shebelle region, the banana industry employed between 10,000 and 13,000 people permanently with a significant number hired on casual basis. The collapse of the government and the perpetual violence that has characterized Somalia has resulted in the collapse of essential infrastructure, including the extensive irrigation system of Shebelle. The destruction related to the 1997/98 El-Niño rains extended the dilapidation of the system as a result of floods that followed. This rendered the final blow to the once important banana export area. Consequently, household lost means of gaining income and their production capacity was reduced to subsistence importance.

Field observation revealed that rain-fed agriculture was virtually impossible as a result of harsh climatic conditions prevailing in the area. This observation was also captured in the evaluation report of ARDOPIS II. Only farmers with river frontage were able to irrigate in the low lying fringes. Those who were endowed with resources irrigated their farms by pumping the water, a strategy which was found to be quite expensive to sustain. With no extension services, farming practices remained traditional and unable to effectively use the available resources and maintain soil productivity.

Thus, the intervention of FAO in rehabilitation of the irrigation system was relevant as the agricultural production has been revitalized and farmers have resumed production which almost stalled close to two decades ago.

3.1.2 Coherence of the Project with other Development Programme

According to the European Commission Strategy for the Implementation of Special Aid in Somalia (SISAS) 2002 – 2007, the overall long-term objective of the Commission for Somalia is to contribute to the alleviation of poverty and the promotion of a more peaceful, equitable and democratic society. The intervention objective of this strategy is to support sustainable improvement of the livelihood of the Somali people – by enhancing food security and economic growth – and their improved access to basic public and social services as well as the establishment of good governance. To achieve this objective, SISAS underlines the need to tackle poverty-related aspects and address the political dilemma and the empowerment of civil society to build an active element in the process of national reconciliation. ARDOPIS were in line with SISAS objective, as it sought to improve rural livelihoods through improved agricultural production and marketing. By design, the project contributes towards realization of the Reconstruction and Development Programme (RDP) and the Country Strategy Paper (CPU) of EU members' states and Norway. RDP sought to deepen peace and reducing poverty. The RDP explicitly identifies rehabilitation projects in the productive Shebelle Valley as priority interventions for income and employment generation.

Further, ARDOPIS is in line with Somalia Joint Strategy Paper for the period 2008 – 2013, which is based on the ACP-EU Partnership Agreement, the European Consensus on Development, the EU Strategy for Africa and the OECD/DAC Guidelines for International Engagement in Fragile States. The Strategy overall objective is to help establish a peaceful and secure environment in Somalia, and to reduce poverty by providing basic social services and increasing economic activity. The project is also in tandem with the Millennium Development Goals specifically Goal 1 which targets, among other priorities, to halve the proportion of people who suffer from hunger.

The project's intervention in the rehabilitation of the irrigation system and on the improvement of crop farming was similarly found to be relevant as the region was a main producer and exporter of irrigated crops such as bananas. Moreover, Somalia is a food deficit country and as a failed state for now two decades, the country has no internal mechanism to respond to people's emergencies, including food needs. Largely, the country receive about 500mm spread over *Gu* (April, May and June) and *Deyr* (October, November to December) seasons (ARDOPIS, 2008) which is insufficient to support crop farming unless under irrigation. With collapse of the central government, support to farmers in accessing improved farming methods remain a mileage, thus for long traditional farming methods prevailed and were restricted to subsistence production. Food scarcity has been the norm. For instance, according to FSAU of Post Deyr Analysis (2009), there was in 2009 an on-going and sustained Humanitarian Crisis in Somalia, with 43% of the total population of the country, or around 3.2 million people, in need of emergency livelihood and life-saving assistance at least until June 2009. The rural crisis was more severe in that more than 340,000 people were in Humanitarian Emergency (HE), requiring emergency support and life-saving interventions while another 535,000 were in Acute Food and Livelihood Crisis (AFLC), requiring emergency livelihood support. In addition to the war situation, Somalia suffers from the effects of climate change with recurrent droughts and flooding of the low laying areas in the South Central, seriously undermining the populations' fragile sources of agro-pastoral livelihoods. A recent report by the Food Security and Nutrition Analysis Unit-Somalia (FSNAU) showed that 70% of the population of Somalia is reduced to such a poverty level that they all require assistance. Such a huge scale of livelihood deficits will thus be requiring an extraordinary response and in a coordinated and sustained manner to enable people diversify their coping mechanism and to begin rebuilding their lives [CESCR (11).

ARDOPIS intervention in rehabilitation of the irrigation system and improving farming methods through Farmers Field School (FFS) is therefore found relevant in that it allowed farmers to revitalize their farming activities and sell the surplus directly to market.

3.2 Project Theory, Objectives, Risks and Assumptions

The project's logical framework was clear and maintains realism in the choice and quality of inputs. The financial input of ARDOPIS III was €1,424,555.00. EU contributed € 1,280,000 or 89.9% of the entire project budget. The balance €144,555 or 10.1% was to be financed by the project from Swiss Government support. As presented in **Table 1**, the goal of the project of "Household livelihood of rural families increased through improved agricultural production and marketing" sought to regain the lost importance of irrigation agricultural production in Merka District. Before the collapse of the irrigation system, farming activities, in particular, banana production was the second foreign currency earner after livestock and an important sector of the economy. Up to 10,000 to 13,000 people were employed in the farming activities in the area and many more were on casual engagement. Due to war, the agricultural infrastructures were destroyed or poorly maintained. The agricultural production limiting factors included: poor and unreliable on-farm water supply, high cost of land preparation (expensive tractor hire), low quality of seeds, limited availability of agricultural inputs, inadequate and irregular supply of quality and alternative crop planting material, poor knowledge on use of inputs; and pest and disease infestations. The problems at the marketing level were: lack of market information, disorganised marketing structures and erratic access to markets and poor market prices of farming commodities.

Table 1: Overview of the Project Implementation Logic

Objectives of the action	*Overall objective:* ***Household livelihood of rural families increased through improved agricultural production and marketing*** • 1877 farmers have increased household assets • Household incomes increased by at least 15% *Specific objective:* ***Farming households in former banana growing regions benefit from increased production, assets and/or income through access to and use of irrigation infrastructure, technical assistance and improved market access*** • 1000 farmers (at least 30% representing either sex) practice market oriented farming • number of farmers (at least 30% representing either sex) linked with farm produce processing industries • number of farmers (at least 30% representing either sex) with increased agricultural production
Target group(s)[2]	4,172 farm families; equivalent to 25,032 individuals
Final beneficiaries[3]	Approximately 300,000 people in Merka District and neighbouring town centres
Estimated results	**1.** Irrigated agricultural production is improved and cropping patterns are diversified. • 7,230 ha opened for full irrigation • 31.5 km of canal rehabilitated • number of farmers (at least 30% representing either sex) trained **2.** Market access, product marketing & processing are improved • 35 km of market access road repaired • number of farmers (at least 30% representing either sex) trained in product marketing
Main activities	Canal and hydraulic structures rehabilitation Repair of farm to market access roads Construction of market sheds Farmer field school based farmer training Support to market linkages Explore possibilities of setting up farm produce processing facility Support to farmers market association set up

Against this background, the project goal neatly ties to the objectives of the project. The causal linkages as per the logical framework contained in **Appendix 3** presented an adequate logic model for the project with given objectives of: (i) improving irrigated agricultural production and diversified cropping patterns and (ii) improving market access, product marketing & processing are improved. Indeed, this survey found that the project was on course towards achieving these objectives. Even the project target of indirectly benefiting an estimated 300,000 people in Merka District and neighbouring town centres which appeared far-fetched was achieved. The rapid survey conducted to market centres, traders and consumers in the area showed that most of the farming commodities came from the project area.

[2] "Target groups" are the groups/entities who will directly positively be affected by the project at the Project Purpose level.
[3] "Final beneficiaries" are those who will benefit from the project in the long term at the level of the society or sector at large

At the activities level, the project identified a list of activities to address the production and market challenges that was encountered in the irrigated agricultural production system in Merka District. These activities were found adequate in addressing the problems identified. Further, the activities implementation plan was convincingly logical and consistent in tackling the identified problems hindering irrigated agriculture in the project area.

Insecurity has been the main challenge posed towards implementation of the project. Consequently, the project designers took a great deal of effort to analyze the volatile context of the project area in view of carrying out the implementation of the project without compromising the security of the staff and workers of the project. The chosen risk mitigation strategy was for FAO to work through the local organizations and private companies while FAO maintain stringent monitoring of the implementation process.

Other risks but of comparative lesser concerns included flooding and competition over resources, i.e. employment opportunities, award of tenders, etc. These were also adequately addressed by ensuring careful activity planning and execution to reduce risks from flooding; and to closely work with local elders as well as the canal committees to reduce resource based conflicts, among other mitigation measures.

Key assumptions made included: (i) that the security situation remains conducive for project implementation; (ii) that no major interruption of the project occurs during the implementation period; and (iii) that no adverse effect may have to be supported on cost of implementation due to soaring fuel cost (cost of implementation remains relatively the same as estimated). The risks mitigation measures and assumptions effectively guided the project implementation and incidentals encountered along the way were effectively addressed and contained. A case in point was the rehabilitation of the Shikhaal canal and the utilization of the water pans as flood management facilities. These activities were not part of the planned outputs; but were implemented to address drainage challenges noted along the way and to reduce water use competition between the farming community and the pastoralists.

Assumptions and objectively verifiable indicators are realistic and achievable while the source of verification was capable of providing sufficiently the information in details and in formats required. Thus, the evaluation team was convinced that the assumptions and risk assessments at all the levels of the logframe were adequate.

3.3 The Project Design

3.3.1 Management and Institutional Arrangement

The context within which ARDOPIS operated was and still remains hostile and inaccessible to international personnel. In this context, ARDOPIS III adopted an institutional arrangement that ensured effective management and control of the project implementation by the management team in Nairobi. The initial institutional plan as contained in the Project Proposal was to competitively employ a local agronomist and a local engineer each to be directly responsible to their respective activities on the ground. However, the prevailing insecurity on the ground could not allow their direct intervention; therefore, the project resorted to an innovative institutional arrangement whereby the project supported working with local organizations as opposed to partnering with international organizations. This seminal approach involved working with formally organized local community organizations through contracts and LOA issued to the private sector and NGOs to assist in the implementation of the project activities.

The NGO SAREDO was selected to facilitate the implementation process through the recruitment of the FFS staff including one Master Trainer, one Assistant Master Trainer, an Extension Officer, Supervisor/Coordinator and one Accountant/Secretary. SAREDO also facilitated identification of all villages, mobilizing and sensitizing farmers in the targeted area. In addition, SAREDO played key roles in managing and monitoring of rehabilitation of tertiary canals that were implemented through cash for work programme.

In the actual rehabilitation of the canals, ARDOPIS III directly engaged local companies in line with the tendering guidelines of EC and FAO and in agreement with the local communities/administration. Local companies and/or organisation with capacity - both human and equipment's for canal rehabilitation, undertook the work in line with the design provisions. Similar arrangement was followed in the rehabilitation of roads and of the market sheds. However, in the absence of direct monitoring by ARDOPIS III project's experts, COMORAD, which had a long working relation with the FAO Somalia, assumed the supervisory roles. COMORAD was found to possess requisite capacity to perform this role. COMORAD checked the quality and amounts of works done and prepared certificates of work done and completion certificates. The company was involved with the canal committee on a daily basis during the rehabilitation of the civil works.

It is important to note this implementation arrangement did not mean that ARDOPIS III relegated its mandates to the local organizations. Rather, this embryonic and innovative implementation arrangement reflected a new management paradigm. The delegation of responsibility allowed the manager to have adequate time to supervise the implementation thus enhancing conformance with the design and ultimately ensuring quality work and product. Progressive photos of the activity were taken and the project Engineer at FAO would review all the reports from the supervising NGO and Company, photos and certificates before payments. A fee of 5% of the contract value was withheld for at least 6 months for concrete works and for two months for other canal work as a way to ascertain quality of the works before the final payments was done.

Moreover, contractors for major civil works were paid directly from Nairobi after the works they were doing was certified by the engineers of the engineering company employed to undertake monitoring and supervision activities. Works undertaken through cash for work for improvement of roads through bush clearing and excavation of small canals were paid by a money vendor at the project location on a weekly basis. This was done after the works and payments requested were certified by supervising NGOs recruited to support the cash for work activities.

Through this institutional arrangement, the lean Nairobi team, made up of management (Project Manager, Project Assistant and Field Coordinator) and technical staff (Agronomist and Engineer), were able to delegate their implementation and monitoring duties through these organizations. This management and institutional arrangement was effective in the realization of timely implementation of scheduled activities as the work was being done by the people who were also the beneficiaries. This enhanced quality due to improved control and surveillances and moreover instilled sense of ownership and identification with the project by the beneficiary community.

The evaluation team has established that by using locally available resources in the implementation of the project and ensuring strict monitoring of works, the project efficiency was considerably enhanced as compared with the previous projects implemented under partnership arrangements. The first project progress report covering March to August 2009 showed that in spite of the delay caused by slow start-up pace and insecurity situation, some of the activities were running ahead of time. Some of the factors this review attributed to the efficient implementation of the activities included: (i) the implementing organizations were local and well known by the beneficiary communities, therefore, transaction cost and resulting trade-offs, were considerably low; (ii) the community directly benefitted from casual employments; and (iii) being part of the community, the implementing agencies understood the importance of the interventions in gaining peoples livelihoods and improving farmers income. As a result, the surveying and design of following canals: Cesare Maria (15.5km) primary canal, Buffow secondary canal (7.3 km), Falestine secondary (4.5 km) canal and Shalambood secondary (4.2 km) canal was hastened. The project specifically started with the rehabilitation of Buffow and first part of Cesare Maria canal as a priority so that farmers could take advantage of the *Deyr* season to grow their crops. It was also given priority in order to support setting up of the Farmers Field School (FFS), development of nurseries and demonstration plots. Most likely, such considerations could not have happened if the project was externally implemented by outsiders (NGOs) not understanding the seasonal trends and importance of cropping on time to minimize the vagaries associated with hunger.

3.3.2 Approach and Methodology

Unlike in ARDOPIS I and II, where implementation of the projects was done through international partners, in ARDOPIS III, FAO directly carried out technology transfer through the Farmer Field School approach. The FFS program was supervised by a local NGO. It was also note that direct implementation, which involved the project hiring personnel who implement the project other than through partnership with international partners- - was not absolutely a new approach as FAO Somalia as the same was done by FSAU and SWALIM projects. The FFS approach enabled farmers to learn and make decision together on the farming options which better suits them, was found to be effective in supporting farmers build working relation and enhancing their interactions. This approach encouraged farmers to find solutions to challenges encountered collectively under the FFS platform. The platform was also noted to allow farmers collectively discuss on preferences and choices pertaining to methods of production beneficial to them. Further, the approach was noted to put the information and knowledge at reach for the farmers, due to its local set up that enhanced accessibility.

The lessons learnt from previous projects in Somalia, and in particular from the implementation of ARDOPIS I and II, allowed the project team to acquire positive experiences and avoid many pitfalls. Some of the lessons learnt from the previous implementation which appear to have informed the designing of ARDOPIS III include:

- The community is getting more organized as a result of the training received as well as the newly found motivation of ensuring proper utilization of the water resources.
- The state of access roads from the production area to the market will be critical in determining the success of commercial production.
- Without intervention in diversification and improvement of planting materials, access to water alone will not effectively improve the crop production as the traditional maize and beans seeds coupled with poor farming practice, only about a quarter of the area production potential will be achieved.
- The needs and interests of women should be considered at the earliest stages of the project design so that effective strategies for their integration are put in early enough.
- Improved farmers' organization will result into increased social capital building and positively impact on consolidation of the community.

Use of lessons learnt from the previous undertakings and strategically adopting management synergy from other FAO projects including FSAU, Seeds Project, Cash for Work Project and SWALIM did not only improve the performance of the project implementation but also contributed to its efficiency and effectiveness.

Moreover, the project design was subject to a verification process to assess its appropriateness in responding to farm families needs. This was achieved through undertaking of an inception workshop for stakeholders, including the communities and local authorities in Merka to interrogate the design proposed by the project.

3.3.3 Project Time Frame and Work plan

The project was designed for a two-year implementation period, and started mid-March, 2009. Information gathered from the four progress reports which were compiled on six months basis, indicate that the targets set in the logical framework were realized within the time allocated as confirmed by the Objectively Verifiable Indicators (OVIs). In the implementation plan, two phases are discernible: (i) Preparatory phase; and (ii) Implementation Phase.

3.3.3.1 Preparatory Phase

Within this phase, essential preparatory tasks took place. These included staff recruitment and general set up of the office managements and operations. Inception workshop, baseline studies and designs were completed. According to the implementation plan, the start-up activities were to take up 7 months or 29.2% of the entire available time. This was a significant proportion of time dedicated to this phase while considering the 2-year implementation timeframe. Nevertheless, its significance and contribution towards the overall project implementation performance laid a fundamental take-off platform. This phase encompassed disclosure of the project to the community, defining the implementation approach and roles of stakeholders, among others. Owing to the carefully thought through preparatory phase, the project could work and respond on the felt needs and priorities of the farmers; who got to understand the strategies adopted in pursuit of their needs, intervention opportunities and asset access status; and the context within which the target group operated in terms of economic, technological, social, culture and the livelihood shocks. This evaluation found these activities to have laid a good foundation for supporting the planned project outputs achievements.

3.3.3.2 Implementation Phase

3.3.4 Quality of Identification of the Stakeholders'

The stakeholders of the project are multiple and include: farmers within the target area, heavy equipment owners, business people, and organised service providers including Somali agricultural professionals, local leaders, construction technicians and engineers and traders involved in project implementation. The fact that the project never sought services or partnered with other players outside the stakeholders identified at the start of the project bear witness of the completeness of the stakeholders' list.

3.3.5 Project Beneficiaries

As for beneficiaries, the target area was defined as the area situated within reach of the two main market centres of Janale and Shalaambood. The area encompasses farms under the large scale farmers and about 12 minor villages among other large estate based village populations. While the immediate beneficiaries were farmers whose main livelihood depended on irrigated agriculture and small scale livestock rearing, the project was designed to have a wider scope of final beneficiaries covering the overall population in Merka District. The target was the population whose livelihoods was dependant on irrigated crop farming and used water from Shebelle River. They also included segments of the Mogadishu population supplied with fresh vegetables from the Janale area.

The beneficiaries fall within the once major agricultural production area of the Lower Shabelle which lost its farming importance due to years of neglect of the irrigation system. The intervention was designed to revitalize the agricultural productivity, thus increasing the household earning and creation of job opportunities.

There was no documented evidence showing that ARDOPIS III conducted any survey to specifically identify the beneficiaries. However, this project being a continuation of the previously implemented ARDOPIS projects, it could have been deemed unnecessary. This was a salient omission. Situation analysis presents a dynamic environment and therefore people's interest and priorities are likely to shift over time. This is a strong principle embraced in the project cycle management approach. Previously, stakeholders and beneficiaries had been determined through and during PRA/ PLA sessions which were held with the community members and other players in the project area. However, this evaluation has taken note of the detailed baseline survey which was carried out before the implementation of the project activities. The survey addressed farmers' needs of which need to rehabilitate the irrigation system was deemed as major concern. It further noted that, farmers attempted to rehabilitate some of the canals manually with little success. The survey established the status of the target group and established bench-mark against which project related outputs and impact were to be measured. The baseline survey findings were used to review the logframe and set out SMART indicators.

4.0 PROJECT IMPLEMENTATION

4.1 Project Budget and Expenditure

4.1.1 Efficiency in Financial Resource Planning and Utilization

Throughout the implementation phase, the project ensured that as much as possible financial acquisition was in line with the project budget. A close monitoring of actual implementation expenditures against the planned budget, which is in line with FAO internal budget monitoring system, was maintained. This guided the management of the project funds by tracking financial requisition and utilization alongside each vote head (e.g. human resource, travel, activity, other services, equipment and supplies). While a 15% deviation allowance from the budget was permissible, the financial managers raised red flags before surpassing this line. Unless the project managers made a request from and their request was accepted by the headquarters, no money beyond this threshold was released to the project to ensure it was within the donor budgetary conditions.

Once the funds were released by the donor (EU) to FAO headquarter, field offices made their requests in accordance with the activity implementation budgetary needs. The requests were authorized with no significant delay. The evaluation team found that the flow of the financial resources from the headquarters to the field offices was efficient, and as also confirmed by key informants.

The release of the project funds for each activity implemented depended on implementation progress reports or final narrative report and audit reports. Requisitions could be of up to USD 50,000 beyond which an audit was required for the requisition to be effected. These stringent financial measures were noted to be essential not only in ensuring financial utilization efficiency but also for organizing resources. The process secured best realization of results and value for money (on *quid pro quo* basis*)* for the beneficiaries and the entire chain that was targeted in the intervention and in services delivery. It is in this regards, the evaluation team concluded that the operational and financial management organs of the project justified their activities and accounted for the use of resources and their performance.

Table 2 below shows links between the budget and the actual expenses of the project. Although in some instances some budget lines have exceeded the allowed 15% variance, the two are more or less within the allowed variance status. Movement of funds from one activity line to the other is permitted. In addition, the interim reports to EC were found to be of vital importance in putting to perspective the status of implementation in terms of defining precisely what has been done and what need to be done. This allowed for timely budget revisions. Besides the EUR 1,280,000.00 EC support, the Government of Switzerland through Swiss Agency for Development and Cooperation (SDC) injected CH 300,000. Drawing from the table, it is clear that the budget was accurately projected such that the financial means at the disposal of ARDOPIS III were just sufficient to reach the results and the objectives. The consultants concluded that the funds were well managed and disbursements were timely.

Table 2: Budget and the Actual Expenses of the Project

		Prior Years			Cumulative Up To 2015-13			Project Total		
		Budgets	Expenses	Balance	Budgets	Expenses	Balance	Budgets	Expenses	Balance
	3015 TF Contributions Received (Child)		< 1,827.809>	1,827,809		<1,827,809>	1,827,809		<1,827,809	1,827,809
	3052 TF Interest Earned (Child)		< 1,859>	1,859		<1,859>	1,859		<1,859>	1,859
Funds Received	**Total Funds Received**		**<1,829,668 >**	**1,829,668**		**<1,829,668>**	**1,829,668**		**<1,829,668>**	**1,829,668**
	5011 Salaries Professional (Parent)	101,388	84,116	17,272	101,388	84,116	17,272	101,388	84,116	17,272
	5013 Consultants (Parent)	117,993	159,056	<41,063 >	117,993	159,056	<41,063>	117,993	159,056	<41,063>
	5014 contracts (parents)	1,319,341	1,260,400	58,942	1,319,341	1,260,400	58,942	1,319,341	1,260,400	58,942
	5020 locally Contracted Labour (Parent)	85,145	59,197	25,948	85,145	59,197	25,948	85,145	59,197	25,948
	5021 Travel (Parent)	29,899	43,505	<13,606	29,899	43,505	<13,606>	29,899	43,505	<13,606>
	5023 Training (parent)	0	6,556	<6,556>	0	6,556	6,556>	0	6,556	<6,556>
	5024 Expenditure Procurement (Parent)	33,474	25,912	7,562	33,474	25,912	7,562	33,474	25,912	7,562
	5025 Non Expenditure Procurement (Parent)	7,630	4,036	3,594	7,630	4,036	3,594	7,630	4,036	3,594
	5027 Technical Support Services (Parent)	21,299	4,375	16,924	21,299	4,375	16,924	21,299	4,375	16,924
	5028 General Operating Expenses (Parent)	132,249	104,490	27,759	132,249	104,490	27,759	132,249	104,490	27,759
	5029 Support Costs (Parent)	129,398	122,105	7,293	129,398	122,105	7,293	129,398	122,105	7,293
	5040 General Operating Expenses- external common services (Parent)	127	186	< 59 >	127	186	< 59 >	127	186	59 >
Expenditure	**Total Expenditure**	**1,977,943**	**1,873,933**	**104,010**	**1,977,943**	**1,873,933**	**104,010**	**1,977,943**	**1,873,933**	**104,010**
Balance			44,265			44,265			44,265	

Several budgetary challenges were encountered along the way, including:

- The financial administrators have to conform to two project formats, namely: (i) EU and (ii) FAO. Funding from the EC are presented in a format used by the donor which has to be converted to FAO format before implementation only to revert to the donor's format after spending for accounting. The mismatch in the budget lines was a challenge in presentation. For instance, EC has a component on training as a budget line, in the FAO case, training expenditure is under many budget lines, including consultancy, travel, procurement etc.
- Exchange rate: money is given in Euro but FAO spend in USD. Variance in exchange rate over implementation phase is likely to affect the budget depending on the currency fluctuations.
- Due to the context of south Somalia, delays in the submission of the report occurred although they were always eventually delivered just within the before drawing complained from the donor.

4.1.2 Project's Cost-efficiency

The type and cost of project inputs (US$) included:

Human Resources	276,610.00
Travel	10,350.00
Equipment and supplies	48,200.00
Local office/Action costs	67,200.00
Other costs, services	74,000.00
Other – Works	855,000.00
Subtotal direct costs	**1,331,360.00**
Administrative Costs	93,195.00
Total eligible costs	**1,424,550.00**

According to information received from the financial office, the project expenditure at the time of this review amounted to 1,873,933 USD. These expenditures are inclusive of all the budget line expenses incurred during the project implementation period. The absorption of the expenditures was directly related to their positive utilization towards implementation of the activities as planned in the logical framework. However, some of the activities were found to be unnecessary or their implementations hindered by the prevailing insecurity in the project area, and were dropped.

Generally the inputs have efficiently been converted into the desired outputs as per the project design logical framework. The results are logically related to the specific objective while activities contribute to the achievement of both results. At the implementation level, the project shifted from international-based partnership- approach to a locally-based organizations' partnership. The local based-partnership approach consisted of players who were stakeholders and beneficiaries. SAREDO NGO which facilitated FFS training and COMORAD, a professional engineering company which supervised major infrastructure works, are local organizations. The organizations had worked for long within the project area and are well known by the farming communities. In rehabilitation of tertiary canals and clearing of market access roads, farming communities consisting of the project beneficiaries, participated and benefited from cash for work project activities.

Through the locally-based partnership approach, the project management informed the review team that they managed to bring down the operational cost substantially, as costs associated with maintaining international partnership was completely eliminated. Moreover, the project has effectively and timely accomplished all the planned activities (those confirmed after the amendment to the logframe) thanks to working directly with the local organizations. This was quite good as compared to ARDOPIS II. The project evaluation report indicated that 25% of the outputs were yet to be realized. As such, the project requested and was accorded a three months no-cost extension period. The report went ahead to registered its doubts in the project finishing all the unaccomplished targets and suggested to double the requested extension period to six months. ARDOPIS II had been implemented through international-based organization partnership.

4.1.3 Timeliness

Inception of the project implementation on the 15th March 2009 was in accordance to the schedule as presented in the project document. Despite the delays occasioned by start-up logistics and to the insecurity in the project area, the quick implementation of the activities recovered the time lost. According to information gathered from the project progress reports which was confirmed through interviews with FAO project managers, all the activities planned in each of the six months implementation period, were carried within the time schedule as indicated in **Appendix 4**. The activities which, ultimately were not implemented, are those that were disapproved/discouraged as recommended by the baseline survey. As per the baseline recommendations, the project management reviewed the logframe and struck out five out of the 30 planned activities.

4.2 Project Management: Technical and Operational Backstopping

4.2.1 Technical and Operational Backstopping

Due to the harsh context, ARDOPIS III adopted enhanced monitoring mechanism using periodical project reports by the implementing agencies and the supervisory organization. Photograph denoting rehabilitation works were regularly taken and sent to Nairobi. The project engineer and the other experts were able to give feedback immediately based on these materials in relation to the project design.

In attempt to improve crop farming, the project trained participants drawn from SAREDO. The first training was held in Mombasa, Kenya and the second at Hargeisa, Somalia. The training workshop in Mombasa was a ten-day, from February 14th-24th, 2010. The training included a session on participants sharing of experiences in the implementation of FFS in their respective work stations in Somalia and exposure to FFS in Kenya. The group visited Jaribuni FFS, Najeza FFS, in Kikambala and Kilifi FFS Network, Jitegemee Livestock FFS, Boleni Fish farming FFS and Taita FFS Network all in Coastal region. The second training emphasized on: (i) FFS concept and approach; (ii) Sharing of FFS experiences and results; and (iii) Project sustainability. This was a five-day training held from 17th - Friday 21st January 2011. FAO hired a consultant to conduct FFS training.

The trained SAREDO participants were the ones involved in capacity building and supervision of the project amongst the beneficiaries in the project area.

4.2.2 Project Visibility

It was well known to the members that the organization behind the intervention was FAO although the project had been implemented through local organizations. Some 75.8% of farmers and members of FFS pointed out FAO although the training had been facilitated through SAREDO. Others were non-members of FFS, who had not gone through the training. It was well documented that the local organizations implementing the project on behalf of FAO and sensitized the community on this. Moreover, the project ensured availability of visibility materials and activities as part of the project implementation. Procurement and distribution of the visibility material was undertaken throughout the project period as depicted by Plate 5. These materials, which were distributed to the farmers and the Farmer Field Schools, included printed pens, clipboards, notebooks and bags bearing FAO logo, EU logo, the Title and the number of the project.

Plate 5: Conference bag

5.0 PROJECT CONTRIBUTION TO THE DEVELOPMENT OBJECTIVE

5.1 Project Outputs and Outcomes/Results

5.1.1 Overall Project Performance

The project implementation plan as contained in appendix 4 shows that the project carried out all the planned activities over a 24 months timeframe. The project even implemented activities that were not planned initially: the rehabilitation of Shikhaal Canal and construction of Shalambood and Shikhaal water pans with a total capacity of 40,000 cubic metres. The water pans were identified to be of necessity for mitigating conflict between the pastoralists and the farming communities. These project activities were added to be implemented between January, 2009 and March, 2010. The activities were supported by The Government of Switzerland through Swiss Agency for Development and Cooperation (SDC).

The project aimed to directly benefit about 4,172 farming households or 25,032 individuals and indirectly, 300,000 people from the larger Merka District and neighbouring town centres. By the end of the project, about 7,230 ha of land were to be fully exploited through irrigation by rehabilitating 31.5 km of the canal. Consequently, 1,877 farmers were expected to have increased their household assets (at least 30% representing either sex) and 1,000 farmers (at least 30% representing either sex) practiced market oriented farming. Two market shades were to be constructed and 35 km of market access road repaired.

Regarding the irrigation infrastructure rehabilitation, the intervention was found to be holistic in that it covered the production and marketing aspects of the irrigated agriculture. This has reinvigorated agricultural production owing to the repaired irrigation system previously rendered near moribund due to years of neglect. The road repairs also facilitated the delivery of the agricultural products to the market as some poor road sections have been installed with culverts. The Market sheds constructed through the project support has also ensured ideal and hygienic farm produce outlet.

The primary intended beneficiaries of this action are the farming households whose livelihoods and household income depended on irrigation agriculture in Lower Shebelle Region. Compared to the original logframe, 5 activities were not implemented. These activities were as follows:

- Undertake at least one agricultural trade fair in Janale where farmers bring and display farm produce to community members, traders, buyers, among others to strengthen linkages and networking between farmers and traders.
- Provide training to the local authorities in the running of the market sheds, and assist them establish systems such as setting of tariffs, collection of tariffs, cleaning of market sheds and associated facilities among others.

- Carry out a survey of existing private company and individuals undertaking farm produce processing; identify those willing to contract farmers to produce specific crops for them.
- Encourage private company farmer partnership by facilitating contact and production contract between farmers and private companies and/or individuals undertaking farm produce processing.
- Explore possibilities of setting up a processing plant within the target area.

The activities are recorded to have been dropped partly following recommendations of the baseline survey and as a result of frequent insecurity in the project area and the fragile administrative structures. Five of the activities were to contribute to the realization of the project Result II.

Assessment by the evaluation team established that the dropped activities did not in any way impact on the overall objective of the project or the specific objective. The amendments were in line with the Project Cycle Management (PCM) principles. The log-frame results have generally been achieved to the extent possible in the present institutional context and within the timeframe set in the Logframe. Costs involved for the implementation of the activities are minimal compared to the results achieved so far if this project was compared to other projects previously implemented through international partnership, although the context, may not be necessary the same. However, risks are higher through local arrangements, as the international partnership is better structured. Stringent monitoring system minimized occurrence of such risks.

5.1.2 Achievement of the Agricultural Production Improvement and Diversification of the Cropping Pattern

This Project result was achieved through implementation of the eleven out of the planned 12 activities. According to the assessment of this review, the implementation of the omitted activity would have added no value whatsoever, to this project result. Below are the presentations of the analytical review of the outputs of the action which contributed to the achievement of the results:

5.1.3 Area under Irrigation and Rehabilitation of the Canals

Through rehabilitation of the four canals, namely: (i) Cesare Maria (primary canal); (ii) Bufow; (iii) Falestine; and (iv) Shalambood, the project was to open up a total of 7,230 hectares for irrigation. Information generated through this review shows that a total of 6,300 ha were fully being exploited and served by the 38.5 km of canal rehabilitated.

5.1.3.1 Quality of the Rehabilitated Irrigation System

Since the wake of heightened conflict in Mogadishu mainly pitying the (Temporary Federal Government) TFG and the *Al Shabaab* militia, FAO delegated implementation arrangements down to "primary user area" consisting of target beneficiaries and stakeholders. However, through stringent monitoring system consisting of regular reporting by the implementing organization and strict certification of works, FAO maintained the control of the project through making critical project decisions. This management style enabled the management of and accountability for the use of resources and the successive implementation of strategies and action plans; despite the tight security conditions and subsequent limitation of movements in Somalia. In other words, the lean management was able to effectively undertake key duties of supervision in view of ensuring quality of the implementation of the project activities.

The performance of the project is brought into perspective when comparing the baseline situation with the project results with respect to the irrigation hardware. All the parts identified and categorized as spoilt and non-functioning were rehabilitated or replaced altogether. The extent of civil works comprised rehabilitation of the canals, intakes, crosses regulators and water conveyance structures. Similarly, selective rehabilitation of the road infrastructures was done ensuring the resources were directed towards servicing and repairing the bad section that hindered transportation of farm produce to the market. The extents of rehabilitation civil works are contained in Appendix 3.

Targeted farmers started to rip benefits about six months after inception of the project when the project's proponents made all efforts possible to make use of the *deyr* season as documented in the first project progress report. These benefits are being realized alongside all the canals targeted for rehabilitation as indicated in **Table 3**.

Table 3: Status of the Canals and Production

No	Canal	Length (m)	Irrigable area (Ha)	Productive area
1	Cesare Maria	15.5	6300	Fully exploited (It's the main canal that serves all the other secondary canals)
2	Buufow	7.3	2,200	Fully exploited
3	Falastine	6.8	1,200	Fully exploited
4	Shalambood	4.5	1,600	Fully exploited
5	Others	4.4	1,300	Fully exploited

This review has also taken note of the extension and rehabilitation of Shikhaal secondary canal measuring 4.4km which was not included in the project planned activities. The extension was considered as a strategy to manage flooding of canal water as well as providing water for livestock. This canal and the canals which convey water and feeding into Falastine and Shikhaal water pans were implemented through cash for work supervised and monitored by SAREDO.

The drainage which had been indicated as a problem during the baseline survey as it resulted in water logging and crop spoilage was effectively managed through:

- The tail end of Cesare Maria was opened as part of the Shikhaal canal
- The tail end of Buufow canal was opened and connected to Buufow water catchment
- The tail end of Falastine canal was opened and connected to Falastine water catchment
- Shikhaal canal was opened and connected to Shikhaal water catchment. The channel forms main drain for the Cesare Maria canal system

Since the opening of these canals, water logging has been cleared and no crop spoilage was evident at the time of this review.

5.1.4 Effectiveness of Canal Committee in Management of the Irrigation Canals

Each of the four canals has a committee in place elected between 2009 and 2010. Shalaambod committee was the first to be created in 2009 and all the other three followed in the subsequent year. On average, the committee was made up of nine members of which 76% or seven members are men and 24% or two members are women. According to the interview conducted with the committee members, their primary function was underlined as managing distribution of irrigation water and maintenance of the canals. In attempt to prepare the committee to take charge of their roles, the project undertook training on irrigation system management practices and maintenance of the canals. The committee confirmed to have been trained for two to four occasions where in total all the nine members per canal were involved. The information given by the canal committee was more or less congruent with that gathered from the project management, which gave committee members trained as 41 consisting of 31 men and 10 women.

Although members attribute the training to the project, the trainings on operations and maintenance of the canals were actually conducted by the Food Facility Project. Members cited capacity to regulate the water, especially during the time of scarcity and to maintain the system running as the key importance of the training acquired. However, they pointed out increasingly deposition of silt and growing of the trees alongside the canals as the key major challenges being encountered. According to the project management, the canal committee had also been trained on water costing and water user fee collection to carter for the rehabilitation and maintenance cost of structures such as water distribution structures and canals road crossings.

To address siltation of the primary canal, the management has no capacity but turn to external support. According to the project capacity assessment, it concluded that whereas farmers may have capacity to maintain secondary and tertiary canals, they lack capacity to desilt the primary canal and therefore, they will continue to rely on external assistance. The project concedes to this shortfall and proposes to make arrangements for FAO to continue training farmers and canal management committees through other projects to manage effectively the management of the smaller canals. But no arrangements of the project linking the canal committee to the other FAO project(s) were evident.

5.2 Improved Crop Production and Diversification in Planting Pattern

The field survey conducted during the evaluation shows that 79.3% of the households started irrigated agriculture after the intervention of this project. Those who were able to start irrigated farming in 2010 were 34.5%, close to one year after the project was conceived. Interesting was that, few months after launching of the project, 19% of farmers were able to produce using the rehabilitated system which was a good testimony of the speed with which the project took off. It also emerged that a proportion of the riverine households (20.7%) could still continue to run farming enterprise but in areas where the farms with farm frontage were low to allow direct channel from the river into the farm or by using pumps. The later irrigation method was not cost effective as the production costs were prohibitively high. Moreover, the cropland before the project intervention was 3hectares per household on average and by the end of the project implementation had almost doubled (5.9ha) signifying the importance of availability of irrigation water to the intensification of the farming enterprise. The main factors that inhibited crop production development were largely perceived to be related to the lack of water as the canals could not convey water due to deposition of silt. This was congruent with the findings of the Status Quo Report (March/April 2009) that revealed that not all the four targeted canal had been conveying water to their irrigable area. The report indicated that for the last four years (since 2004) Cesare Maria had not had flow past the canal Falastine off-take at section 4.77Km translating to 10.98km the canal section not conveying the water in the time. Further, Shalambood canal had just been partially opened through cash for work programme during the dyer of 2008/09 which allowed flow, otherwise, the canal, too, had no flow.

On type of crops grown, data collected from the household showed no difference in crop varieties planted before and after the project implementation. Maize, cowpeas and sorghum crops are the main cultivated crops. Maize emerged as the commonest crops grown over the two periods having been cultivated by 87.9% by the time of the review as compared to 86.4% before the project started. Sorghum was cultivated by 7.6% and cowpeas by 1.5% with project intervention as compared to 10.6% and 1.5% before launching of the project, respectfully. Other crops grown include fruits, (especially water melon), pepper, lettuce and other vegetables. These are same crops that appear to have been grown even before the project intervention. But the productivity had considerably increased. ARDOPIS Progress Report (April 2011) indicated that 10.5hectares of maize were cultivated and 33.6 tonnes of maize were harvested at the end of the season. This denoted a crop yield of 3.2 tonnes per hectare as compared to 2.5 tonnes per hectare realized previously, an indication of potential for expanding agricultural activities and enhanced food security. Owing to this finding, this evaluation team noted that, the diversification of crops by the project was therefore not obtained by introducing new crops but by improving crop husbandry practices that were known to farmers. The project intervention in crop production mainly focused its achievements on improving crop yield through enhancing access to quality seeds and capacity building in farming activities.

5.2.1 Enhancing Farmers Capacity in Crop Production

5.2.2.1 Effectiveness in Mobilizing and Organizing Farmers

Mobilizing and organizing farmers was a build in activity which had its roots from the demonstration plots created by the previous ARDOPIS I and II programs. Further, consolidation of the farmers groups was evident in ARDOPIS III seeing farmers work together not only in trying new farming skills and knowledge but also in forming specific crop replication groups based on their interests. These farmers' groups have set up Farmer Field Schools (FFS). The project built on the common interest of the innovative farmers influencing the farming methods through day to day interactions and direct observation of the technology in use by the neighbours. Indeed, 96% of farmers who confirmed to have received training in improved farming methods, indicated to have acquired it through the demonstration plots as compared to only 4% who were directly trained through the project. Farming replication activities provided opportunity for consolidating and popularizing the gains that had been achieved. The identified crop replication sites were project's focal areas priority areas to be served with irrigation water.

According to the household survey, 75.8% of the farmers interviewed confirmed to be members of FFS. According to the Farmers Field Schools (FFS) Final Training and Performance Evaluation Workshop Report (January 2011), 14 FFS groups had been formed with a total membership of 444 of which about 88% were men and 12% women. The proportion of the women trained thus falls short by far, with respect to the 30% of women target. The Final Narrative Report (April 2011) indicated that 624 farmers were trained through the FFS. The membership was found to have increased steadily reaching the climax (44.9% in 2010) in the second year of the project as shown in **Figure 1**. Interviews with FFS members confirmed the steady growth of the membership which they attributed to the good results farmers were realizing after adoption of farming methodologies promoted by the FFS. This evaluation found that farmers' production capacity continuously improved as their decision making on their farm was informed through findings from the FFS process.

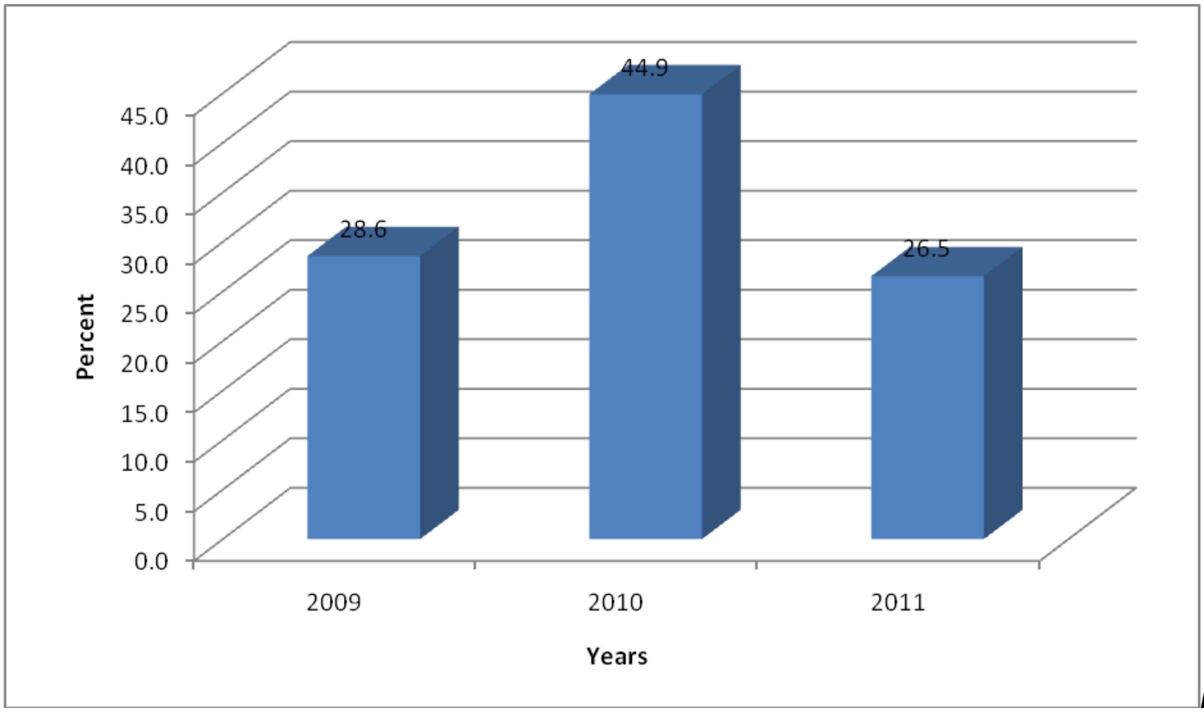


Figure 1: FFS Membership Growth

5.2.2.2 Scope and Quality of FFS Training

Under ARDOPIS III, the training in improved farming practices and diversification of crop production was designed to build on the lessons learnt and the rich experience gained under implementation of ARDOPIS I and II. In ARDOPIS II, the training materials that had been prepared during ARDOPIS 1 were revised in view of improving them. However, no evidence was encountered during this review to confirm that the intended translation of training modules for each major food crop and cash crop materials in local Somali language was achieved. This could have enhanced the transfer of information to the target group. Nevertheless, it is no doubt that the intended objective of the action was, ultimately achieved going by the results achieved from the FFS training. In any case, FFS depends on what is observable which forms the basis for engaging and farmers interacting with the trainers in view of finding ideal results that addresses issues emerging. The process of interaction take into account the experience gained along the way and present new information from outside the community resulting in collective decision making on what seem to work best for all. It is a dynamic process that is practiced and controlled by the farmers to transform their observations to create a more scientific understanding of the crop/livestock ecosystem.

The household survey showed that farmers acquired requisite knowledge to enable them engage in farming enterprise. Farmers reported to have gained knowledge to improve farming in general (55.8%) through FFS. Specifically, household members interviewed confirmed to have acquired knowledge in irrigation system (13.5%), preparation of the land (5.8%), rehabilitation of canals (3.8%), seed selection (7.7%) and storage of harvested produce (1.9%) among others as presented in **Figure 2**. In addition, members of the FFS interviewed included having gained knowledge in conducting and running FFS training and on the management of pests.

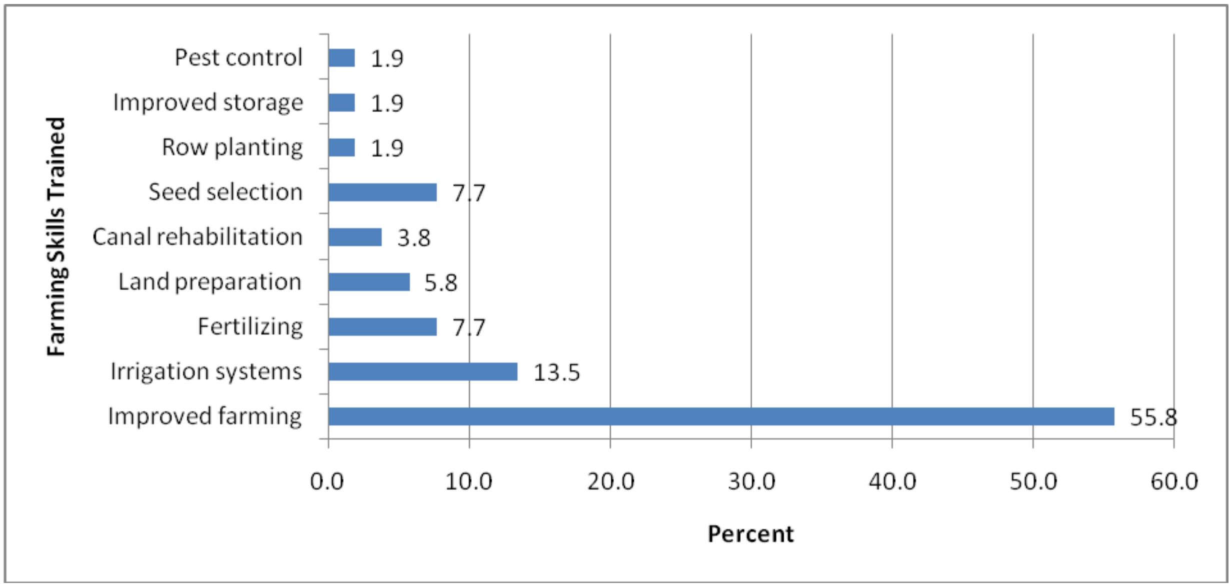


Figure 2: Farming Skills and Knowledge Trained to Farmers through FFS.

Of the farmers who reported to have benefited from the FFS training, 55.3% affirmed to have gained good farming knowledge, 36.2%, attributed increased yield productivity and household income to the training through FFS concept ; 6.4% enhanced capacity to select good seeds and 2.1% increased area under cultivation, as illustrated in **Figure 3**. Since the adoption of the methods FFS training, yields have increased from 0.8-1.1 t/ha to 2.8-3.2 high t/ha as indicated in the Final Narrative Report, April 2011. Increased in productivity was confirmed by Interview with four of the FFs groups as a result of adoption of the new farming methods. Further, to their assessment, the adoption rate was about 80% owing to intensification of FFS Training. On being asked whether there were some farmers who have tried the methods but eventually abandoned after frustrating results, members answered to the contrary. FGDs with farmers voted reduction of the marketing cost as one key resultant of the ARDOPIS III intervention. This opinion was supported by the 96% of the 25 members attending the farmers' focused discussions groups.

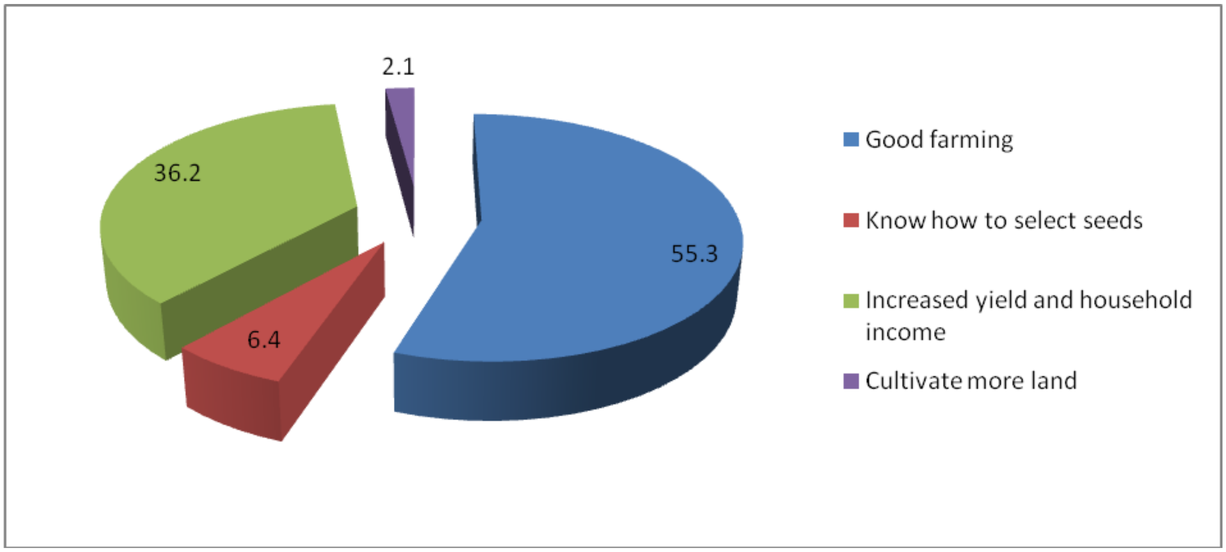
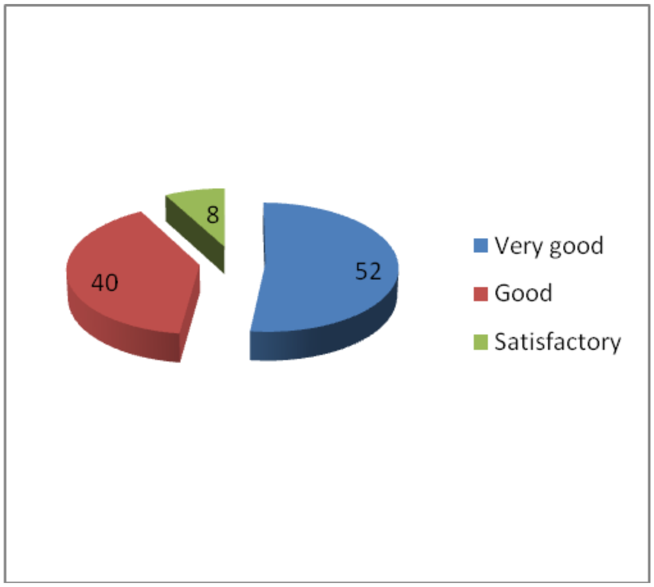


Figure 3: Household benefits from FFS Training

The quality of the training was rated as from very good (52%) to good (40%) and to satisfactory (8%) as presented in **Figure 4**. Overall it was noted there opportunities to improve some aspects of the FFS training. **Figure 5** contains farmers' views on areas of the training where efforts could be directed the most if there arose training opportunity in the future.

However, the FFS approach had its own challenges. Some of the challenges noted included:

- Location of the FFS demonstration plots: although some of the aspects considered in locating the FFS plot were distance and common interest of the members, in some case distance was long and hindered participation of some of the farmers.
- Time take for farmers to come up with home-bred answers to problems observed during replication process.
- Analysis and management of the data.
- High rate of illiteracy.
- Resistance to change by some of the farmers who continue to use traditional methods in their farming activities. However, FFS members were determined to overcome this challenge through intensification of training activities and awareness campaigns.



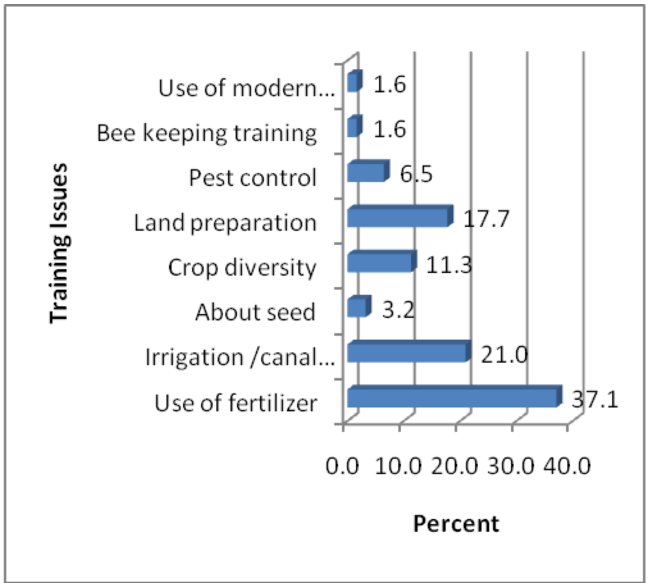


Figure 4: Quality of the FFS Training

Figure 5: Areas of the training that Ought to be improved on

5.2.3 Multiplier Effects

The FFS approach gives a very good show case of transfer of technology and knowledge from one farmer to the other. This channel of information pathway can be traced way back to ARDOPIS I with the creation of demonstration plots where good farming practices were demonstrated for farmers to copy. They were designed such that knowledge was passed through “doing” other than the classical training which is not suitable for a community like the residents of Shebelle where illiteracy is very high. In ARDOPIS III, the demonstration plots are combined with aspect of farmers’ identifying their priority problems in farming, development of possible options to solve the problems, setting up in the field those crops production options (treatment) so that through observations, they document environmental issues affecting growth either negatively or positively. This is a participatory technology development process enabling farmers to identify the appropriate options. The observations form the basis of dialogue and active interaction among the farmers in attempting to identify factors influencing the desired change. Organized in farmers’ groups, they replicate what they deemed best to produce. Replication of the farm plots by trained farmers in their own farms was expected to take place even after the action had come to an end, for the benefit of other farmers. With improved marketing systems – supported by the project - farmers would be able to get into more production since a financial return would be expected. With proper maintenance of the canal systems, the farmers would realise that major rehabilitations do not have to be undertaken regularly and that infrastructure can be used for much longer than four to five years. Other farmers who would realise that maintenance prolongs productive life of the irrigation infrastructure would replicate the aspect of regular maintenance. Overall, it was expected that specific activities in the project could be replicated without requiring external intervention.

5.2.4 Effectiveness in the Improvement of Market access, product marketing & processing

The objectively verifiable indicators for this result were realization of the following targets:

- At least 35 km of market access road sections improved
- Quantity and % of farm produce sold through newly established market sheds
- Number of linkages created between farmers and agro-processing industries

The projects attempt towards accomplishing the targets is described and critically analyzed below:

5.2.4.1 Improved Access to Market

At this level, the emphasis was on the physical rehabilitation of the access roads linking irrigated area to the local markets. The intervention logic was that improved access roads will allow farmers to transport fresh produce to markets without loss of quality. This enables timely marketing of higher value produce at lower delivery cost to market, particularly to farmers who had completely been cut off from local markets. According to the baseline study, the condition of Janale-Shalaambood Road and Shalaambood-Merka roads were classified as “bad”. The access road connecting Janale to Buufow was, however, classified as “good”, as it had been repaired by the farming communities. Therefore, the project directed its effort and resources towards improving the condition of the two access roads that were dilapidated. In addition, one new and redesign of two old culverts as well as rain water redirection through drains was done along the Merka–El Jaale Road. The roads rehabilitation works was supervised by COMORAD, a local company with wide experience and skills in engineering works.

Before the rehabilitation of the access roads, some of the areas were difficult to access and in rainy seasons, became complete impassable. Specifically, the state of the roads before intervention was described as follows:

- Only Janale-Buufow and the Shalaambood-Merka roads are passable during the rainy season while Janale-Shalaambood Road becomes impassable during the rainy season.
- Within Janale during the rainy season farm produce is transported using tractors, donkey carts and on human back.
- Within Shalaambood area and neighbouring farms during the rainy season, farm produce was transported using tractors.
- Vehicles are used to move farm produce to Merka during the rainy season.

The intended 35km of roads and rehabilitation and/or replacement of spoilt culverts were accomplished within the stipulated time. In addition, the project collaborated with the Integrated Support to Rural Livelihoods (Food Facility) Project and constructed 21 culverts and 78km road was improved by bush clearing, gravelling and leveling. This means that the project achieved additional outputs than anticipated during the project planning. **Appendix 4** shows detailed information of the extent of access road rehabilitation and the clearing of feeder roads in Merka District through the Food Facility Project.

The involvement of the community and the local leadership activities monitoring were important in ensuring the work quality. This evaluation has established that the tendering which involved local companies (for both the canal and road rehabilitation) conformed to the EU and FAO tendering process and conditions. Some 26 local based companies that undertake construction works were invited for rehabilitation of the various works.

The road sections improved have made transport within the project area easy and thus less expensive than before. According to a rapid market appraisal done in Buufow, Jenale, Merka, Mushani, Shalambood markets, 80% of the 15 traders interviewed reported improved access to markets in the past two years. However, the traders still listed poor conditions of the roads as the main constraint, as depicted in **Figure 6** but passable all year round.

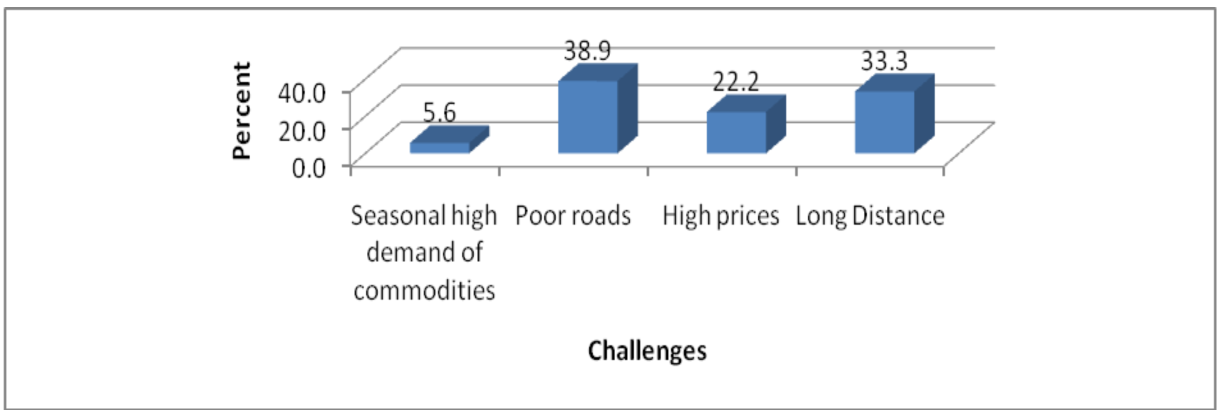


Figure 6: Main challenges encountered in sourcing for market supplies

5.2.4.2 Product Marketing and Processing

To enhance product marketing, an array of activities was foreseen as indicated in the implementation schedule appended (**Appendix 3**). Some of the key activities were the construction of the market sheds and training and farmer mobilisation to assist the set production schedules aimed at spreading harvesting period and ensuring availability of fresh produce for longer period. The construction of the access road discussed in the above sub section also contributed to enhanced product marketing.

Like other rehabilitation/construction works, the tender for construction of Shalambood and Janale market sheds were competitively awarded locally. It appears that the initial plan was to construct three market shades, including one in Merka market. However, one was not done and no explanation has been provided about this omission.

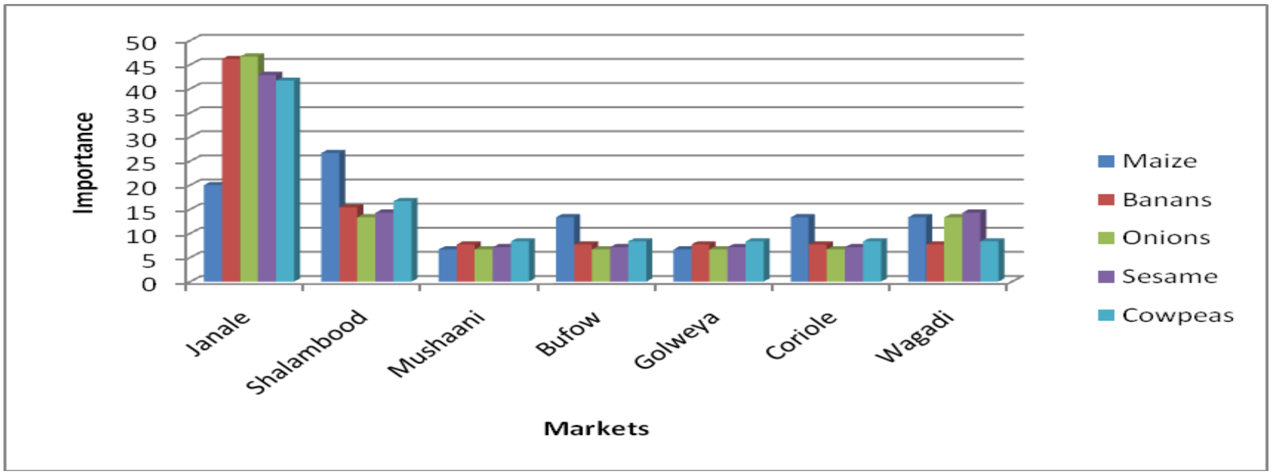


Figure 7: Main sources of Farm Produce to Market Traders

According to a rapid market appraisal carried out during this review, Janale and Shalambood markets emerged as the main source of supplies of traders' market produce (**Figure 7**). This could be as a result of their improved accessibility following the improvement of the access roads and the clean, hygienic and improved produce storage provided by the newly constructed market sheds.

Moreover, farmers can deliver their produce to market either through middlemen or they can take their produce direct to the market as indicated in **Figure 8**. Middlemen channel dominate the crop selling channel (maize, 93.3%; bananas, 53.8%; onions, 60%; sesame, 78.6%; and cowpeas, 83.3%). Information gathered through FGDs with farmers confirmed the middlemen and farmers selling directly to the market channels as the main marketing outlets. Before project intervention, the farming enterprise had grounded as a result of insecurity and disrepair of the irrigation system and market access infrastructures. Through ARDOPIS III interventions, farmers and traders can access farms and markets. This means that farm families are earning income this time round.

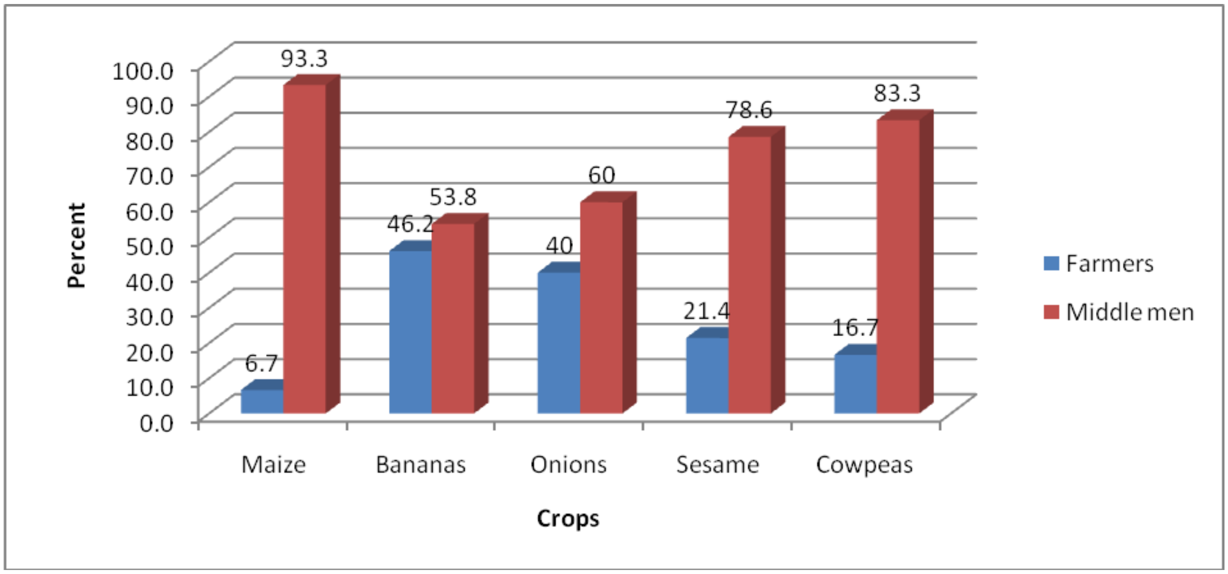


Figure 8: Farm Produce Market Channels

Consumers of farm produce reported to essentially obtain the commodities from the open market, save for the vegetables and other cereals whose source was predominantly from the shop (see **Figure 9**). The main market source was Janale Market which took 40% of the market share. The other remaining market potential was fairly shared between Shalambood, Mishaani and Wagadi markets.

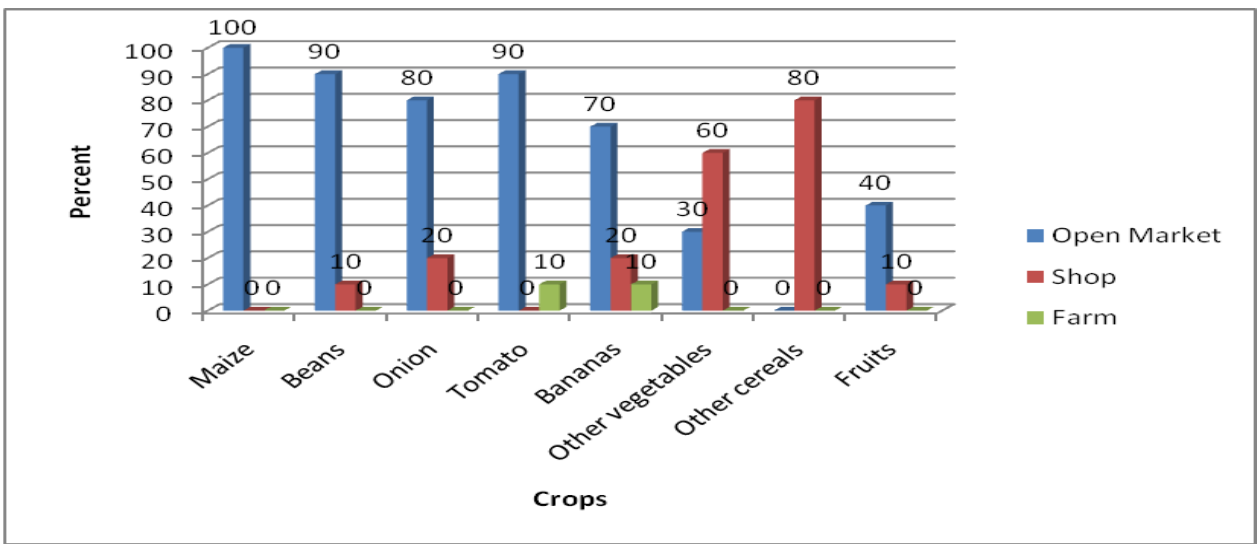


Figure 9: Farm Produce Consumer Source of Commodities

Despite the project's efforts towards promoting marketing of the farm produce so that farmers earn more income, several impediments were encountered. Infestation of the crops by pests and post harvest handling (mainly due to poor storage leading to cereal decay and attack by pests). **Figure 10** shows that 56% of the households loss about

15% of their farm produce while 44% loss between a quarter to about two-thirds of their yields to post harvest challenges. These are substantial amount of crop produce loss that future project intervention should address in order to avoid unnecessary losses. **Figure 11** provides the account of the prevailing challenges curtailing farmers' effort to produce more.

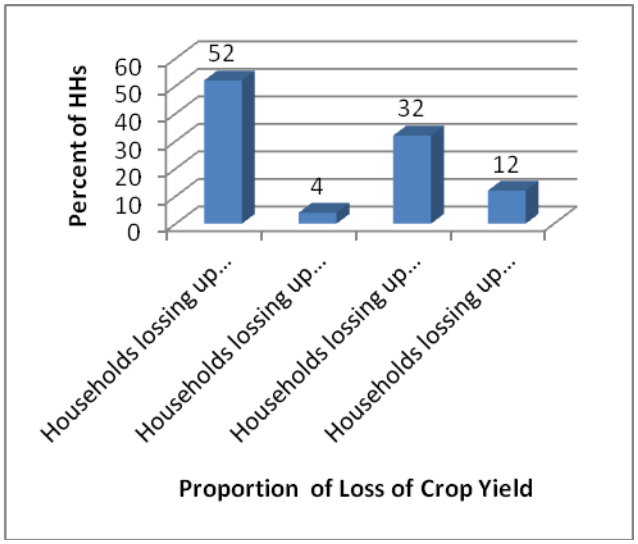


Figure 10: Percent of the Households and Farm Produce Lost After Harvest

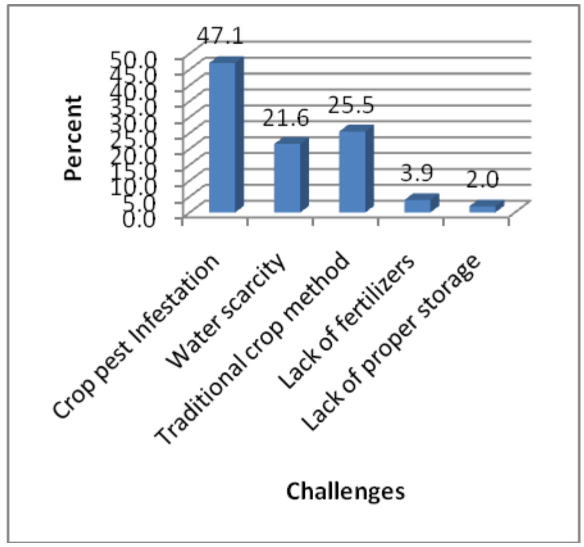


Figure 11: Challenges Encountered in Crop Production Activity

5.3 Gender Mainstreaming

ARDOPIS III action was implemented with a deliberate intent of integrating gender needs and concern in attempt to address gender disparities. The project's objectives targets had a gender dimension as indicated below:

- 1000 farmers (at least 30% representing either sex) practice market oriented farming.
- number of farmers (at least 30% representing either sex) linked with farm produce processing industries.
- number of farmers (at least 30% representing either sex) with increased agricultural production.

This target has not been achieved and there is no positive indication towards realizing it. While considering the Somalia context within which this project was being implemented, the target was somehow misdirected. For instance, of people trained through FFS, only 12% represented women. This is an outright design flaw that needs to be addressed in future project formulation.

5.4 Integrating Environmental Issues

ARDOPIS III has not explicitly addressed integration of the environmental concerns in its design. However, owing to the semi arid to arid environmental conditions of Somalia, environmental issues are inseparable with the kind of intervention the project implemented. The issues of frequent de-silting of the canals are no doubt about poor management of the resources in the upper areas of Shebelle. This problem could have been mitigated to some extent and its impact on the rehabilitated canals reduced. Natural resources based conflicts in Somalia, especially on water are common due to scarcity and fragile institutions.

SISAS warns that “even when considering that Somalia’s natural resources are rather limited, continuous destruction is still taking place. Riverine forests have been destroyed to gain more land for irrigation and the remaining forests have been cleared, particularly in the South, to produce charcoal for export”. The extensive canal rehabilitation works and construction of the water pans should have been subjected to Initial Environmental Impact Assessment to assess the intervention impact on the environment.

5.5 Sustainability: Institutional, Social, Technical and Economic

Assessment of the sustainability of the projects is about whether or not the positive outcomes of the project are likely to continue after external funding ends, and also whether longer term impact on the wider development process can be sustained by the target group members. The assessment put into account the institutional, social, technical and economic concerns.

5.5.1 Maintenance of the Irrigation System

The mobilization of the community to form a committee in each of the four canals had the objective of ensuring that farmers are organized and effectively managing the irrigation system for continued crop production. Maintenance of irrigation system is a major aspect if the efficiency of the system was to be achieved. The trainings on operations and maintenance of the canals were actually conducted by the Food Facility Project, while that on organization and management was facilitated by SAREDO to realize this objectivity. These skills are owned by the committee and are being put in use.

Further, the committees have by-laws to which they confirmed to be operational and being adhered to by members. Failure to conform to the rules, the committee reported that defaulters are punished using the rules and the traditional arrangements. These, too, they confirmed to be working. The formulation of the by-laws was facilitated by SAREDO and eventually reviewed together with farmers as a ratification process and legitimization. This was done to ensure awareness in order to enhance conformance.

Committees have also been sensitized on the need of charging user fee in order to build kitty for maintenance. This is yet to happen.

Consequently, committees have acquired skills and knowledge to handle operations and maintenance of the smaller canals but they will continue depending on external assistance to manage the primary canals and to some extent, the secondary canals. By design, Cesare Maria primary canal has a life span of over five years before major rehabilitation is required whereas the secondary and tertiary canals may demand for rehabilitation frequently - after 2 to 3 seasons. Through agriculture sector approach which FAO has adopted, canal committees will be trained in view of empowering them manage minor rehabilitation on continuously. Through sector-wise approach, the major rehabilitations, particularly on the primary canal, will be carried out. **Table 4** presents the planned activities up to 2015.

5.5.2 Improvement of the Crop Production System and Yields

The set up of the FFS can be referred to as "living" and "organic" since its foundation is inherently with the farmers. It is growing gradually with the farmers as they observe new things and dialogue together for solutions. The training of the farmers will certainly continue since the schools are already established and increased productivity will continue to play a major role of keeping members together for continued innovations.

These views of potentiality of the FFS were documented during the final training evaluation. According to the end of training evaluation, 40% of the farmers who participated in these groups agreed that norms (group rules and regulations) have kept them together as a group during group activities while 40% of the farmers agreed that it was input sharing and 20% said it was the activities themselves such as canal rehabilitation that has kept them together as a functioning group. All the participants in the group (100%) agree that the group's source of income was from crop farming, bee keeping and poultry keeping. **Figure 12** depicts these opinions.

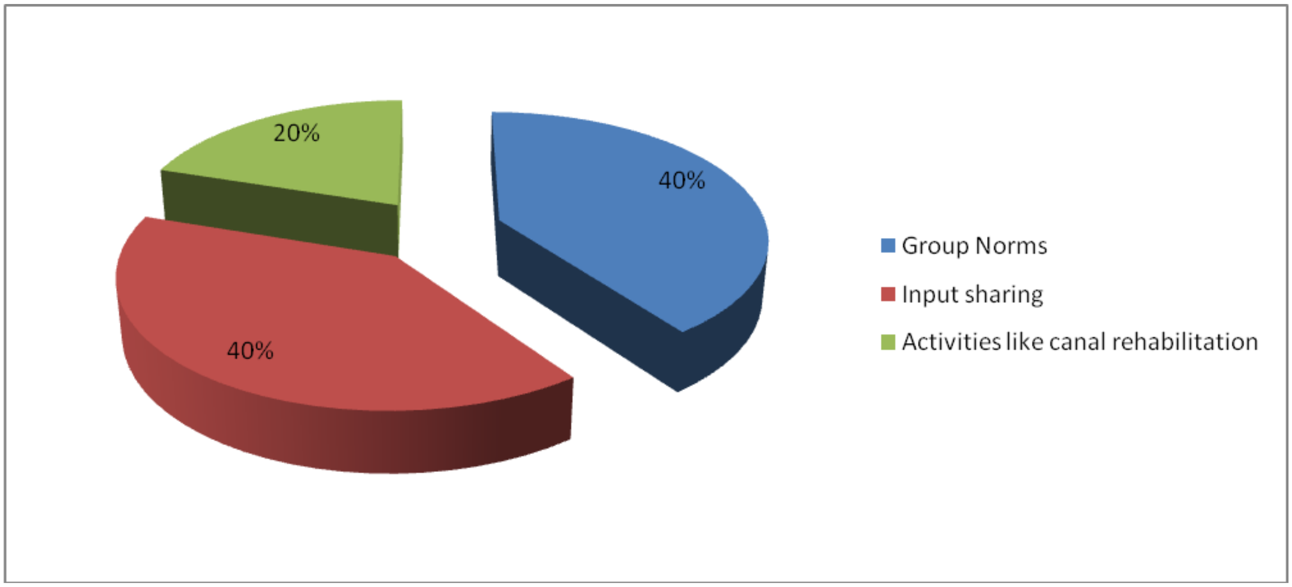


Figure 12: Attributes that Builds Cohesion in the FFS Groups
Source*: Baseline Survey (2009)*

The FFS workshop prepared the participants to become technical trainers of farmers as they were exposed to the FFS approach. The adoption of the FFS methodology will enhance the technology uptake of the farmers and it will go a long way in increasing household livelihood of rural families through agricultural production and marketing.

5.5.3 Projects Replication Potential

Potential for replicating the project positive results are very high. Effective documentation of the projects achievements as from ARDOPIS I laid a good foundation for supporting replication of the project. Indeed, replication of the FFS is ongoing and gathering importance day by day. The project has delivered tested best practices that combine emergency and development continuum. Integration of experience gained through ARDOPIS projects would provide a package in guiding such replication elsewhere.

Further, the community structures strengthened through the project - FFS and canal committee provide rich ground for project replication. Some of the motivation driving such community structures includes improved crop production, food security and household incomes. Strong community structures will immensely contribute to the project sustainability as well.

Table 4: Overall Objective: Increased Production and Productivity in Agriculture

Specific Objective	Sub- result	Activities	Implemented (2009/10)	Target 2011/2012	Available 2011/2012	2011/2015	Location for implementation
1. Improved agriculture infrastructures for production adopted	**1.1** Water delivery systems improved & operational	Rehabilitation and development of Main, Small primary/ Secondary/Tertiary canals (Km)	140 main canals 1185 Others	150 main canals 1500 Others	40 main canals 700 Others	350 main canals 3000 others	LS+MS+ Hiran+Gedo+Mudug + LJ+MJ + Somaliland
	1.2 Water intakes structures improved & operational	Rehabilitation/construction of Intake gates	73	100		200	LS+MS+LJ
	1.3 Water control structures improved & operational	Rehabilitation/construction of water control structures		25		50	LS+MS+LJ
	1.4 Shallow wells and springs developed and protected	Rehabilitation/ Development of Springs and shallow wells (No)	50	80	50	100	Somaliland + Puntland + Hiran+Gedo
2. Improved infrastructure for Flood control developed	**2.1** Broken river points rehabilitated	Closing of broken river points (No)		50		100	LS+MS+LJ+MJ
		Installation of water control gates		50		50	LS+MS+LJ
	2.2 Weak river banks strengthened and river trained	Training and deepening of river course (Km)		5		20	LS (Sablale)
		Improvement of Weak river banks (Km)		40		100	LS+MS+LJ+MJ
3. Effective water management for crop and fodder production	**3.1** Water harvesting structures and practices improved and adopted	Rehabilitation/ construction of dykes/ small dams/ Gabions (No)		6	6	16	Hiran+Gedo+ LJ+MJ + Somaliland + Puntland
		Construction/rehabilitation of terraces and water bunds (Ha)		500		3000	Somaliland + Puntland+ Hiran+ Gedo+Baidoa
		Small water harvesting basins (Ha)		500		1500	Somaliland + Puntland+ Hiran+ Gedo+Baidoa
	3.2 Improved technical and financial capacity of farmers	Training water committees on financial management, operations and maintenance of water systems (No)	122	150	92	300	S&C Somalia + Somaliland + Puntland
		Training of water users on	1250	2500	2500	5000	S&C Somalia +

		effective water use and management (No)					Somaliland + Puntland
4. Institutional capacity for water resources utilization developed	**4.1** Effective River Basin Management Authorities created	Create, staff and equip optimal water sub-catchments offices					S&C Somalia + Somaliland + Puntaland
		Establish linkages with neighbouring countries					
	4.2 Effective Research on salinization and impacts of irrigation development supported	Support research centre for resource utilization					S&C Somalia + Somaliland

Key: LS = Lower Shabelle, MS = Middle Shabelle, LJ = Lower Juba, MJ = Middle Juba and S*C Somalia = South and Central Somalia

5.6 Overall Effectiveness of Intervention

There is no doubt that investments aiming to revitalize the irrigation system in the project area are worthwhile in the medium and the long terms. ARDOPIS intervention in the project area sought to revive the former banana exportation region to its production potential. The project area had been reduced to a largely subsistence based production economy as a result of years of neglects especially of the irrigation system, access roads to markets, loss of established farm produce markets and related institutional and marketing systems. Low crop production and poor incomes are some of the challenges that characterized the farming communities.

The Logical framework matrix is clear, complete, consistent and logical and causally links from the inputs to the overall objective of the intervention. The objective addresses the identified problems and the needs of the farm families whereas the objectively verifiable indicators are in line with the project cycle management guidelines. The project's logframe sufficiently indicate the assumptions and risks at the time and provides overall project implantation framework for mitigation of risks. However, the target of achieving 30% of beneficiaries in all project intervention areas was a design flow as so far it remains unattainable.

No fundamental changes have occurred in the nature of the problems identified or in the overall social-political-economic context. The prevailing drought sweeping the entire Horn of Africa will not cause major havoc more than what the insecurity and fighting in Mogadishu have already triggered. The fighting resulted in major migration and settlement of IDPs in the project area. These have been a major source of farm labour. The time of fieldwork corresponded with the onset of the famine period and the field team did not observe any peculiar inflow of migrants.

The project has impressively realized set out outputs and it is posed to eventually attain the overall objective. Stakeholders participated in the design and played an active role in implementation and management of the programme. Sustainability of the results achieved is assured owing to the capacity building among farmers for improving crop production, management of the irrigation infrastructure and the current state of the rehabilitated irrigation system, access roads and the constructed market sheds. Through realignment of FAO intervention approach, rehabilitation and maintenance of the primary and secondary canals would be undertaken through the agriculture sector. This is a shift from the normal project focus, a strategy which is expected to ensure continuity of FAO interventions. However, this is a new institutional arrangement and its success is yet to be tested.

5.7 Project Current and Potential Impact

The impact here looks into the extent to which the benefits received by the target beneficiaries had a wider overall effect on larger numbers of people. “Household livelihood of rural families increased through improved agricultural production and marketing” was the overall goal of the project. Although this review found that the project activities were effectively implemented by the end of the project lifespan, it is too soon to measure the extent to which the goal has been achieved. However, there are key short term and likely effects that were observed.

The justification of the project was that the project area was once a major foreign earner deriving from sale of crop produced through irrigation agriculture. Mainly due to insecurity prevailing in the area for close to two decades, coupled with neglect of the irrigation system, this economic importance of the area was lost and so were the job opportunities. This review has gathered information that the production has begun with restoration of the irrigation system and improvement of the farming methods.

Findings by this review showed that by the end of the project, 11,180 households were being served by the rehabilitated canals against 5,376 or an increase of 208% of the households served as in 2009. The field investigation further showed that farming had been started in all areas served with water for irrigation.

In addition, with successful completion of 38.5km of canals comprising of 15.5km of primary canal against the planned 31.1km, 6,300ha of land is under active production. The project targeted opening 7,230ha. Increased farming skills and knowledge acquired from the FFS will likely result in improved productivity. So far, 14 FFS groups have been established. The yields recorded from the FFS fields increased from 0.8 t/ha to 4.2 t/ha. The production of maize during the GU 2010 period was reported as equivalent to post war levels and this was attributable to the project activities in the area. This was very impressive results that could easily contribute positively not only towards accomplishing food self sufficiency but also regaining the economic importance of the area. By the time of this review, agriculture was estimated to contribute to slightly over 50% of the entire household incomes for 92.4% of the entire households in the project area. Increased crop production and income signifies the project’s positive development towards attainment of the goal. This is further confirmed by the findings that showed that Janale and Shalambood markets mainly sourced their farm produce supply from the project area. The owners of the farm served by the canals would continue gaining directly from the agriculture produce as a result of the project intervention and the general population will benefit through reduced food prices following increased production. With farmers increasing adopting new farming methods from FFS, this is an assurance that the produce will increasingly continue to rise.

Formation of the farmers association which was in the offing will enhance marketability and bargaining power of the farmers. Farmers are already aware that by selling their produce when the supply is low, you stand to gain more profit. This was strategy reported to be in use as reported by all the FFS members interviewed.

Moreover, the intervention has resulted in preserving and developing productive and social assets through rehabilitation of canals and development of water pans. According to the perceptions of the farmers on the status of their assets in the past 2 years or so, 69% affirmed that their asset base has increased whereas 10.3% were of the opinion that they were on the decline and 20.7% had noticed no significant change.

Another key impact to have been realized, albeit not planned for during the designing of the project was the provision of livestock water to the pastoralists. This action was critical to the peaceful co-existence of the farmers and the pastoralists and to the life span of the irrigation system. Continued watering of the livestock directly from the canals could physically damage the canal lining while the loose soils trampled on would accelerate soil erosion, eventually leading to siltation of the system. Conflicts between the two incompatible land use systems were inevitable - undesirable result to the sustainability of the irrigation system. Each of the water pans has a section 70m by 50m for livestock. The development of the water pans has a guaranteed source of water for livestock use for the pastoralist community in the area. In addition, the construction of the water reservoirs offered protection from flooding and thus reduced risk of flooding to irrigation farms owned by close to 12,000 households.

Other short terms impact associated with the project include:

a) Creation of the short-term employment, thus generation of income to project beneficiaries and the targeted communities. Moreover, through Swiss fund support, additional 716 jobs (18% of them being women) and injection of US$41,620 to the community through cash for work activities were realized. This exceeds the initial 400 beneficiaries and the 28,000 Swiss Francs foreseen in the proposal. The cash for work activities provide short term opportunities to those in high need for money for their livelihood needs.
b) Capacity building to the contractors and the community through their involvement in the implementation of the project.
c) Improvement of the canals has ensured that the irrigation capacity in the area is maintained.

However, salient drawback associated with the project is its failure to realize the 30% targets of the number of farmers benefiting from the project representing either sex. Being a patriarch country, women were rarely given leadership positions at the community level. For instance, the FFS had total members of 444 of which about 88% were men and only 12% women. This was a design flaw.

6.0 CONCLUSIONS AND RECOMMENDATION

6.1 Conclusions

a) ARDOPIS interventions are consistent with SISAS (2002 – 2007). The overall long-term objective of the Commission Strategy for Somalia is to contribute to the alleviation of poverty and to the promotion of a more peaceful, equitable and democratic society. It is also in line with Somalia Joint Strategy Paper for the period 2008 – 2013 and to the Reconstruction and Development Programme, among other global objectives over Somalia.

b) While the ARDOPIS III was largely well designed, several flaws have also been identified. These include the following:

   i. FAO has wide experience on the project area having previously implemented ARDOPIS I and II. Each of the project, including ARDOPIS III was preceded by detailed baseline surveys. Need assessments were also conducted before finalization of the project designs but the exercise was missed out in ARDOPIS III. Most likely, this omission was due to the presence of data previously collected and the detailed baseline conducted slightly before the implementation of ARDOPIS III. The baseline survey should not replace need assessment in project planning.

   ii. The project was designed to target 30% of either sex benefiting from the project activities. However, there are cultural intrinsic and dynamics values that oppress women to access resources in the project area and presented challenges in achieving the set target. These had been well documented in the baseline study. Moreover, FAO is not new in the project area and should have made an informed decision based on past experience and to the extent at which gender based issues could realistically be promoted. Being a patriarch society, Somali women were rarely given leadership positions at the community level. For instance, the FFS had total members of 444 of which about 88% were men and only 12% women. This was a design flaw.

   iii. Unnecessary activities had been proposed for implementation and intended for realization of result II. These activities were eventually dropped after further reflection. While this study commends the FAO for dropping those activities early enough during the implementation phase, it was absolutely not necessary to have had them included in the proposal and all the way to the project designing stage as this impacted on the project budgeting, amongst other project planning. Given FAO had implemented ARDOPIS I and II, this experience should have informed the impracticability of such activities and the low impact that would have been realized from their implementation. Again, FAO use of lessons learned from phase I& II of the project should have informed on the objective of promoting diversification of crop which sought to enhance the crop mix and planting pattern with a view of maximizing the returns. However, it had been found that the diversification of crops through improvement of the husbandry practices on the crops that were well known to farmers and enhancing access to quality seeds.

c) It is evident that stakeholders participated in the design and played an active role in implementation and management of the project. In the wake of increased insecurity in the project area, ARDOPIS III resulted in an embryonic and innovative implementation arrangement of implementation under contracts and LOA issued to local private sector and NGOs. This implementation has been found to be working pretty well and in accordance with best practice of financial management where economy, efficiency and effectiveness principles have been observed, thus achieving value for money. This arrangement has worked so well compared to partnership arrangement which was riddled with heavy running cost. The results were so impressive that ARDOPIS management would wish to resort to the same style of project management in the future under emergency contexts. The steps taken toward awarding tenders are transparent and in conformance with FAO and EC guidelines.

d) The project is generally progressing well to achieve its overall objective. The sectoral approach FAO has undertaken as opposed to the project-wise intervention provides a good base for realization of the goal.

e) The investments in the rehabilitation of the irrigation system in Merka District were worthwhile on the medium and the long terms. The region was chief export region for bananas and earned substantial foreign exchange to the country. By the time of designing of the ARDOPIS III, farming activities were near moribund as a result of extensive siltation and breakages of the system. The once robust system has been reduced to be of subsistence importance and only to farmers whose farms had river frontage lying low to allow river water to be channelled into the farms. Alternative was using pumps, a costly undertaking to sustain farming enterprise.

f) Promotion and acceptance by farmers of the FFS participatory learning methodology on improved farming technics is considered an insurance that will roll out skills and knowledge gained by FFS members for adoption by other farmers who so far are resistant to change. The FFS, however, encountered some few challenges including members walking long distance and it took long time for farmers to come up with home-bred answers to problems observed during replication process.

g) With continued adoption of improved farming methods and maintenance of the irrigation system, the project stands a big chance of ultimately accomplishing its overall objective as the region fully recovers from the post violence agricultural stagnation. FFS is gradually taking the shape of a demand-driven service, where farmers are embracing it after witnessing its potential in transforming agricultural production.

6.2 Recommendations

a) ARDOPIS III implementation strategy was noted to be innovative and should be documented including the merits and the pre-conditions for ensuring its success of working with partner organizations. This would provide a package for emergency and development intervention for replication in similar conditions elsewhere.

b) Need assessment is an important component in the designing of the project. Although ARDOPIS has been working in the area in the previous projects and actually undertook detailed baselines before implementation of the projects, it was critical for ARDOPIS III to conduct a need assessment just as it did in ARDOPIS I & II. Need assessment is central values in project cycle management which require to be monitored repeatedly since frequently needs are not immediately clear or cannot be easily understood. The needs can also change immediately especially in the context of the project area where insecurity thrives. This critical omission should be avoided at all cost. In any case need assessment is carried out fairly fast.

c) Although it was important to identify the needs and interests of women so that they are integrated in the project at the earliest stages of the project design, the strategies and extent of the integration should have been guided by the realities on the ground. The 30% proposal of either of the gender was far-fetched and it should have been obvious at the planning level and adjust it accordingly. All the same, by having women in community structures where decisions on the management of the irrigation canals and FFS are made, was a great achievement going by the Somali traditions. This survey has revealed that about 10% to 12% of women inclusion had been attained. The next planning should build from this milestone achieved.

d) The project partnership with SDC enabled realization of additional outputs that have enhanced positive impact to the targeted benefit communities. It also contributed towards successful completion of the projects activities in that it mitigated possible conflicts that were likely to occur between the pastoral and farming communities. Rarely would projects work hand in hand as it was the case of ARDOPIS III. The identity and contribution of the parties in partnership was harmoniously maintained and made visible. Such partnership is worth replication and promotion in future undertakings.

e) One of the project strategies to promote crop production was through diversification of crops and enhancing crop mix. However, farmers appear to have maintained the cultivation of crops that they were used to but took on intensification through adopting improved farming methods introduced and quality seed verities. It is important that the project allowed farmers' space to do what they felt was good for them and they had skills and knowledge on. This flexibility was found to have worked quite well for the project and should be taken as part of project learning.

f) The FFS methodology gives assurance of continued skills and innovation development. The shift to sectoral approach adopted by FAO other than the project based approach should carefully be planned and implemented to avoid neglect or insufficient allocation of resources and attention. The Agriculture sector is too broad compared to a project approach which addresses a specific component within the entire agricultural productive sector. The initial phase of the FAO sector approach which runs up to 2015 has as its one of key objectives “Improved infrastructure for Flood control developed”. The rehabilitation of the primary canal which the farming community admitted not having capacity to undertake should form part of the activities to be supported under this objective. Capacity building in canal committee including, introduction of and operationalization of user fee for maintenance of the irrigation system, which was yet to be implemented by the end of the project, is another key activity that can be implemented under this objective.

g) The project involved major de-vegetation and movement of soils during rehabilitation of the canals and construction of the water pans. Activity or development of this magnitude which are out of character with its surroundings should have been subjected to initial environmental impact assessment to inform the proponents on its likely adverse impact on the biophysical and social environments. ARDOPIS should integrate environmental considerations into its development planning and management.

h) The FFS should be mainstreamed in the FAO agricultural sector approach as the main participatory technology development methodology. In this project, it has demonstrated its ability to facilitate technology innovation and cost-effectiveness in dissemination of information to the consumers (farmers). The multiplier effect is high as the “researchers” are the farmers themselves who interact directly as they run their day to day endeavours. Nevertheless, the process needs to be monitored from time to time to ensure that innovations and adopted technologies are in line with the intended objectives of the FFS. During this monitoring period, putting up of additional FFS should be considered to curb the problem of long distance members have to walk. In addition, strategies to carefully hasten the process of solution development through FFS observations approach would help farmers to manage farming challenges more effectively.

7.0 KEY LESSONS LEARNT

A lesson is a new idea, process, experience or understanding, which goes to improve the way the project is managed and contributes to greater effectiveness and wider impact of an activity. Several lessons have been learnt from the implementation of the ARDOPIS III as indicated below:

1) Direct project implementation has mitigated the usually time and budgetary consuming transaction costs which are evidently inevitable under partnership implementation set up. While risks are numerous under direct implementation, particularly in violence context as it is the case for Somalia, effective planning and maintaining of substantial degree of control by proxies considerably reduces risk probabilities.
2) Peace is prerequisite to development activities. Without it, development interventions are slow, and sometimes, just impossible. This new approach does not go against the grain on this important condition, but it provides innovations for interventions where peace is elusive.
3) Presence of credible and experienced local organizations has been a major drive towards successful completion of the project.
4) To establish and run an irrigation project effectively, a number of activities are required such as administration, technical operation, maintenance and governance. The farming communities require skills to undertake these activities effectively. If there are insufficient skills in any particular area, it can have disastrous effects on the entire project.
5) Collective development of rules and regulations bides together community and users of a common resource. In the case of the beneficiary farm families in the project area, it stand a great chance of promoting collective conformance and efficient management and maintenance of the irrigation system as it is a collective undertaking.
6) FFS participatory learning methodologies for farmers evoke interests and motivation, which are major drivers for continuity. In the long run, a self demand-driven needs appear to propel the process to the next height of innovation primarily by the farmers themselves.
7) Working with farmers calls for patience - farmers take long to adopt a new technology. Change is a process and it takes time.
8) If an intervention reflects the felt needs of the community, their mobilization and readiness to participate in the project is easy and self-motivating. For instance, FFS see opportunity in the creation of an umbrella association through which their common interest will be pursued. Even without the project having implemented this activity, they have found the need to push for it.

LIST OF APPENDICES

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2. List of places visited and people interviewed
3. Projects Logical Framework
4. Original Workplan
5. Status of the Irrigation and Road Systems in the Project Area
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Appendix 1: Terms of Reference

Project: OSRO/SOM/810/EC
FAO Somalia Office
Terms of Reference

1. Background

1.1 Country background

Somalia has been without a government almost for the last 20 years. Despite the absence of a Somali state and its financial, economic, and social institutions, the private sector has managed to grow impressively, particularly in the areas of trade, commerce, transport, remittance and infrastructure services. However, most of these sectors are now becoming either stagnant or their growth is hindered due to lack of investment, trained man power and absence of a relevant legal and regulatory framework to enforce rules and regulations, common standards and quality control. The scarcity of capital is mainly caused by the absence of any formal banking and financial services and regulatory bodies, making it impossible to encourage and harness domestic savings. The long absence of a national government has further prevented access to international capital markets as well as establishment of economic management institutions and regulatory bodies. The remittances from the Somali Diaspora and the growing participation of women in income-earning activities are two other factors sustaining current economic growth.

The civil war in Somalia has also led to widespread human rights violations, very weak rule of law as well as the worsening of the poverty situation. Levels of development vary widely between urban, rural and nomadic areas, between males and females, and between different regions of Somalia. According to the World Bank, Somalia ranks amongst the poorest countries in the world, with a per capita income of USD 226. About 43 percent of the population live on less than USD 1 a day (53.4 percent in rural areas); 73.4 percent live on less than USD 2 a day; 20 percent live in makeshift housing. Somalia's economy traditionally depends on the exploitation of natural resources, mainly livestock and agriculture. Drought and a ban on livestock exports have severely affected income generation capacity of the majority of Somalis. Years of conflict have resulted in a protracted and complex emergency, eroded livelihoods and increased vulnerability to food insecurity. The last Food Security and Nutrition Analysis Unit (FSNAU) data on cereals balance reported a self sufficiency ratio of 35 percent against an import dependency ratio of 65 percent.

Remittances from the Somali Diaspora are the largest source of the capital supporting the economy, accounting for around 30 percent of Somalia's GDP, and support the most significant growth sectors of the economy: house construction, small businesses, and services aimed at facilitating links between the Diaspora and those remaining in Somalia. In addition to the large flow of remittances, the resilience of the economy is largely a result of the vibrancy of the private sector. Besides, insecurity, poor quality standards, crumbling road networks, lack of infrastructure, lack of international recognition for Somali passports and lack of state regulation remain serious constraints to private sector development.

In the agricultural sector, the vulnerability of households is considerably increased as the household asset base has become depleted during the years of conflict and civil unrest. The arable land represents 1.67 percent, while permanent crops account for 0.04 percent and the other land represents up to 98.29 percent. It is estimated that, before the civil war, some 1,815,000 ha of land were being cultivated with reasonable success, 1,445,000 ha under rain fed conditions and 250,000 ha under irrigated conditions. It is worth to notice that irrigated land now accounts for 200,000 ha and practically all of it is in Middle and Lower Shabelle and Lower Juba regions.

1.2 FAO project for the Agricultural Rehabilitation and Diversification of High Potential Irrigation Schemes in Lower Shabelle (ARDOPIS III)

This action titled, “Agricultural Rehabilitation and Diversification of high Potential Irrigation Schemes in Southern Somalia (ARDOPIS)” was designed in line with: the call for action guidelines, the reference to the EC Project Cycle Management (PCM) guidelines, the EC Strategy for the Implementation of Special Aid to Somalia (SISAS), the Reconstruction and Development Programme (RDP) as well as the Country Strategy Paper (CSP) of the EU member states and Norway. The RDP explicitly identifies rehabilitation projects in the productive Shebelle valley as priority interventions for income and employment generation. The project’s overall objective seeks to contribute to increasing income for farming households and increasing opportunities for gainful employment creation within the irrigated agriculture sub sector. Prior to this project, two other ARDOPIS projects had already been implemented.

According to the project document, the project’s (OSRO/SOM/810/EC) overall objective was to “*improve rural livelihoods through improved agricultural production and marketing”.* Specifically, the project aimed at *increasing agricultural production, assets and incomes of farmers in former banana growing regions through improved access to and use of irrigation, infrastructure, technical assistance and market access*. With funding from the European Union of over EUR 1.4 million, the project was implemented in 2 years (starting in March 2009 and ending in January 2011). In order to facilitate the final evaluation of the project, a no-cost extension until 30 April 2010 was approved by the EU.

1.2.1 Rationale of the project

Subsistence agricultural production has continued to take place in Somalia to a limited extent, given that irrigation systems are not properly maintained; thus mainly utilizing seasonal flood waters from the Shabelle River. The subsistence production mainly composed of maize does not however provide farmers with adequate income from its sale, to reinvest in canal maintenance. This has gradually resulted in a situation where the target farmers’ livelihoods have continuously eroded, thus rendering the population economically dependent on the international community for regular maintenance of canals, roads, education or health infrastructures, among others, as well as for food, provided through relief food distributions. Setting-up systems to support farmers in cultivating high value crops, would increase farm produce marketability and market access, thereby potentially improving livelihoods through increased incomes. Improved earnings would help farmers invest in maintenance of irrigation infrastructure, thereby ensuring a sustained improvement in their livelihoods. By increasing incomes of targeted rural farmers through improved agricultural production and productivity, this project also aims at addressing related corporate goals relating to food security and poverty reduction, in line with the Millennium Development Goal number 1: “*Halve between 1990 and 2015, the proportion of people whose income is less than one dollar a day; halve, between 1990 and 2015, the proportion of people who suffer from hunger”*.

1.2.2 Specific objective

The project expected to increase agricultural productivity through the rehabilitation of irrigation infrastructure and to improve incomes through better and sustainable access to markets. The underlying assumption of this project was that farming households in former banana growing regions could increase their production, assets and/or income through access to and use of irrigation infrastructure and improved access to markets. Specifically, the project aimed at reaching the following targets:

- 1000 farmers or at least 30 percent of them (representing either gender) practise market-oriented farming; • at least 30 percent of farmers (representing either gender) are linked with farm produce processing industries; • at least 30 percent of farmers (representing either gender) demonstrate increased agricultural production.

- To gauge whether the action has contributed to improved livelihoods, the following objectively verifiable indicators were agreed upon.
- Household incomes of rural families increased by at least 15 percent compared to incomes before action implementation and,
- at least 45 percent of the targeted households have increased their assets compared to period before action implementation.

The above indicators necessitated the carrying out of a baseline survey and an action target farmer's satisfaction survey. The baseline survey focused on household income levels, sources, livelihood activities, and factors influencing these livelihood activities. Livelihoods approach adopted for the survey emphasized on livelihood assets (physical, natural, financial, social and human) and livelihood strategies (strategies of accessing food and income, coping strategies, expenditure patterns and coping with the dynamic environment). The satisfaction survey focused on gauging whether farmers were able to realize the intended benefits from the action. The available baseline survey report recommended removal of some of the specific objectives which were not feasible such as the number of farmers (at least 30 percent representing either sex) linked with farm produce processing industries.

1.2.3 Expected Results of the project

In order to achieve the above objectives, the following were expected results of the project:
i) Irrigated agricultural production is improved and cropping patterns are diversified:

- 7,230ha opened for full irrigation.
- 31.5 km of canal rehabilitated.
- At least 30 percent of farmers (representing either gender) trained

ii) Market access, product marketing & processing are improved:

- 35 km of market access road repaired.
- At least 30 percent of farmers (representing either gender) trained in product marketing.

1.2.4 Project activities and targeted beneficiaries

The project planned to directly benefit 4,172 farm families (equivalent to 25,032 individuals). Indirectly, an estimated 300,000 people in Merka District and neighbouring town centres were to benefit in the long run. The Main Activities as per the project document included:

- Canal and hydraulic structures rehabilitation
- Rehabilitation of farm to market access roads
- Construction of market sheds
- Farmer field school based farmer training
- Support to market linkages
- Explore possibilities of setting up farm produce processing facility
- Support to farmers market association set up

1.2.5 Multiplier effects

The action was set on the basis of a replication of the approach developed in a preceding project, ARDOPIS I, especially in relation to the irrigated agricultural production. Farmers trained through demonstration plots were to be mobilised to form replication groups where they would replicate what they deemed best to produce from the variety of crops introduced during the demonstration plot based training sessions. Replication of the farm plots by trained farmers was expected to take place even after the action had come to an end, for the benefit of other farmers. With improved marketing systems – supported by the project-, farmers would be able to get into more production since a financial return would be expected. With proper maintenance of the canal systems the farmers would realise that major rehabilitations do not have to be undertaken regularly and that infrastructure can be used for much longer than four to five years. Other farmers who would realise that maintenance prolongs productive life of the irrigation infrastructure would replicate the aspect of regular maintenance. Overall, it was expected that specific activities in the project could be replicated with no external intervention required.

2. Purpose of the evaluation

The final evaluation is intended, as the project closes, to provide an account on achievements of the project to relevant stakeholders of the project in Somalia, FAO and amongst relevant donors, and provide recommendations on any further actions judged necessary to consolidate the achievement of objectives or complement them, in view of the strengths and shortcomings identified so far. Any further need for external assistance will be identified. The main aim is to obtain an objective and independent analysis of the project in terms of relevance, efficiency, effectiveness and potentially expected impact and sustainability. A substantiated assessment should be made on the achievements of objectives and results with reference to the project proposal and logframe as well as the implementation methodologies and the projects internal procedures. The evaluation will also identify and document lessons learnt and make recommendations that the Project stakeholders may use to replicate in any other similar project.

3. The scope of the evaluation and the issues to be covered

The Evaluation mission shall describe what the project achieved compared to the agreed plan and indicators, and assess the following factors:

3.1 Relevance and quality of project design

- Assess whether objectives set for ARDOPIS III responded to identified needs, and adequately integrated in the context of Somalia's socio-economic development context.

- Assess the project's coherence with priorities established by the International Aid community, including the EU Strategy for Somalia (SISAS). Examine also the consistency of ARDOPIS III with activities taken elsewhere by International Aid providers.
- Assess the appropriateness of the programme design (approach, activities and inputs chosen) in relation to the problems to be resolved.
- Assess the quality of the logical framework and the clarity and internal consistency of the stated overall objectives, purpose and results. Includes reviewing the objectively-verifiable indicators of achievement (OVIs) and comment on their suitability.

3.2 Efficiency and adequacy of project implementation

• Examine the availability of funds as compared with project budget; use of funds and ventilation across activities as compared to the plan, cost per beneficiary.
• Assess the quality and timeliness of input and service delivery by FAO.
• Assess the quality of works implemented in relation to technical specifications and standards.
• Examine managerial and work efficiency; implementation difficulties; adequacy of monitoring and reporting;
• Measure the level of stakeholder participation in programme design, implementation and monitoring.
• Assess the extent of support and commitment and the quality and quantity of administrative and technical support by FAO

3.3 Effectiveness

• Examine the extent to which the programme's overall objective, purpose and expected results were achieved, from both quantitative and qualitative viewpoints.
• Comment on other external factors that may have influenced the success of the programme and how these might be mitigated in future.
• Assess both positive and negative unintended consequences of ARDOPIS III activities.
• The Project visibility is also to be considered in terms of the sign boards and material in circulation within the community area.
• Examine the extent of integration of cross cutting issues such as gender and environment consideration in implementation of the project and their effectiveness.

3.4 Impact

• Assess to what extent the project made a contribution or an attribute to the overall objectives of the project, including possible unexpected outcomes or results.
• Assess the degree of satisfaction of stakeholders with the programme's quality and delivery of services.
• Assess the impact of the project on various beneficiaries of ARDOPIS III according to their socio-economic profiles which should include their main characteristics (age, gender, income, education level, assets etc.).

3.5 Sustainability

• To what extent are the project achieved results likely to be operated and maintained in the long term?
• Assess the beneficiaries' level of commitment to maintaining the achieved results.
• Assess the level of the programme's sustainability in economic, social and environmental terms.
• Replication – analysis of replication potential of project positive results and link identified potential areas with the FAO's strategy in Somalia.

Based on the above analysis the consultants will draw specific conclusions and make proposals for any necessary further action by FAO/donor to ensure sustainable development, including any need for additional assistance. The consultants will also draw attention to any lessons of general interest. Any proposal for further assistance should include precise specification of objectives and the major suggested outputs and inputs.

4. Approach and Methodology

The evaluation approach is developed in consideration of particular security situation in Somalia, and specifically of the limitations it entails in terms of movements in country. The assessment will be based on international evaluation norms and standards. The approach should be impartial, independent, and credible. It is expected that the different project stakeholders will have the opportunity to express their views and that recommendations will be useful and applicable by the project management. The consultants are expected to conduct a thorough assessment of all relevant project documentation and products as well as internal management practices. Interviews with key project personnel and collaborators should be conducted as well as with key stakeholders and beneficiaries.

A local Consultancy Firm will be contracted by FAO (Contracting Authority) in order to carry out the final evaluation of the ARDOPIS III project. The methodology to be used in conducting the evaluations and tools for the same, taking account of the above considerations, should be included in the technical proposal presented by the Consultants. This document should also explain how the work will be carried out and propose a tentative schedule for the evaluation process, including the mission, reflecting prior consultation with relevant stakeholders in situ.

The technical proposal will also present the tools to be used as a basis for interviews and group discussions to be undertaken in the field, as well as the method to be used in administering them and aggregating the results. The evaluation work will be based on both a review of documents and field visits. The primary data collection process will be based on group discussions, in-depth interviews and observation. Secondary data collected through documentary review will allow complementing the team's information base to undertake a thorough analysis of the completed project activities.

The analysis will be based on consultation of beneficiaries at community level, project implementers, Partners in the project and donors present in Somalia, as relevant. The selected consultants will be provided with the following documents for reference:

• The SISAS (EC Strategy for the implementation of special aid in Somalia) as quoted in the project document.
• The project proposals including the log frame and budget
• The project reports (Inception, interim and financial reports).
• The draft project final report under preparation including annexes.
• The evaluation reports for the previous ARDOPIS projects I and II.
• The baseline/survey reports.
• Financial expenditure data
• Project Evaluation Report Format

5. Composition of the team and FAO support to the evaluation

The Consultancy Firms responding to the tender will be evaluated on the content of their proposal, their experience with evaluations, knowledge of the Somalia context and FAO and the quality of the individual candidates proposed. The team should be composed of two experts, one Team Leader and one Technical Specialist. To the extent possible, they will work and travel as a team to cover project activities. At least one of the experts must be able to travel in the project area.

The Team Leader should have at least 10 years experience of rural development project management with a good knowledge of project cycle management, monitoring and evaluation. The technical Specialist should have a degree in civil engineering, irrigation or related field, and demonstrable experience in designing, monitoring and/or evaluating irrigation structures, systems and projects. Some experience of similar EU funded project evaluation is required, especially for the Team Leader. Fluency (writing, speaking and reading) in English is compulsory for both evaluators, whereas fluency in Somali is required for at least one member, preferably being the Technical specialist. Significant field experience in Somalia would be a strong asset. The consultants should be independent and thus have no previous direct involvement with the project either with regard to its formulation, implementation or backstopping. They should preferably have experience of evaluation.

The evaluation process will be steered and the quality of the product assured by the project budget holder in FAO Headquarters (TCE) assisted by the Evaluation Service (OED). These are responsible for the present TORs and will provide comments on the draft report, before its circulation to a wider audience.

6. Reporting requirements and Deliverables

The following documents will be produced as intermediary or final products of the evaluation:

• A technical proposal of approximately 5-10 pages expressing the consultants' understanding of the assignment that will guide the evaluation.
• An end-of-mission debriefing presentation to EC and FAO stakeholders detailing the key findings and recommendations. The date and venue of the presentation is to be arranged with FAO and the EC delegation.
• A draft final report to be submitted to FAO and EC Delegation for comments.
• A final Report not later than 14 calendar days after receiving FAO and donor comments on the draft report.

FAO will ensure all relevant stakeholders are given the possibility to comment on the draft report and receive the report's final version. The consultancy firm is fully responsible for its independent report which may not necessarily reflect the views of the donor or FAO. The report shall be written in conformity with the Project Evaluation Report Format mentioned in Art. 4 above. The report should be completed, to the extent possible, in the country and the findings and recommendations fully discussed with all concerned parties in a or several team debriefing(s), whereby to the extent possible, consensus should be reached. The final report should be submitted, electronically as well as printed and should include: • An executive summary (no more than 5 pages) focusing on critical points of the analysis with the main conclusions and recommendations

• A main text, including description of the project and analysis according to the evaluation criteria.
• Conclusions and Recommendations
• Annexes of the report should include:
o Terms of references of the evaluation
o Name of the evaluators and their company (this should NOT include substantial information on company activities)
o Methodology applied
o Logical framework (original and updated)
o Map of the project intervention area.
o List of documents consulted
o List of persons and institutions met during the missions

7. Work plan and time table

The proposal should present a detailed work plan for the evaluation which should set out the team's tentative schedule for the following activities:

• Preparation in Nairobi: Meetings in Nairobi with FAO and EU Somalia Unit; review of secondary data (approx 3 days)
• Meetings with key informants in Somalia, field work, data collection in the field and meetings with community-level beneficiaries and stakeholders (approx 12 days)
• Presentation of findings and preliminary recommendations to the project management and donor in Nairobi. (1/2 day)
• Preparation of draft report (approx 10 days)
• Integration of comments submitted by project stakeholders in view of submitting final evaluation report (1 day).
The whole assignment is not envisaged to exceed 30 days.

Appendix 2: List of Places visited and People Interviewed

FAO Contacted Persons:

Renato Marai	Programme Manager
George Mulatya	Agricultural Field Programme Manager
Paul Githumbi	Project Local Engineer
Titus	Project Local Agronomist
Geraldine Ochieng	Project Assistant
Emmah Muthanji	Administration Finance Officer

List of Farmers Interviewed

	Respondent Name	Gender	Village	Canal
1	Mohamed Kudow Ali	Male	Aadan Cade	Cesra Maria
2	Joylan Osman Geedi	Male	Abiikrow	Shalanbo
3	Ahmed Yusuf Ali	Male	Abiikrow	Shalanbo
4	Hassan Ibrahim Nur	Male	Abiikrow	Shalanbo
5	Margan Ibrahim Omar	Female	Abiikrow	Shalanbo
6	Mohammed Ismael Omar	Male	Abiikrow	Shalanbo
7	Yusuf Abdi Osman	Male	Abiikrow	Shalanbo
8	Jaamal Yusuf Ahmed	Male	Abiikrow	Shalanbo
9	Caasho Ibrow Nur	Female	Abiikrow	Shalanbo
10	Batulo Mudei	Female	Abikizo	Terso
11	Aw Mad Yarow	Male	Adan Ade	Cesra Maria
12	Ahmed Abraham Durrow	Male	Adan Ade	Cesra Maria
13	Nadijo mohamed hassa	Female	Adan Ade	Cesra Maria
14	Faaduma Ali Caddow	Female	Adan Ade	Cesra Maria
15	Ibrahim Ali Mohammed		Bullow Dhurow	Bufow Primary Canal
16	Ibrahim Ali Mohammed		Bullow Dhurow	Bufow Primary Canal
17	Fadumo Mohamed	Female	Bulo Dhurow	Bufow
18	Siidow Aweys Ali	Male	Bulo Dhurow	Bufow
19	Nur Omar Geddi	Male	Bulo Dhurow	Bufow
20	Mohamed Sufi	Male	Bulo Duro	Istoli
21	Amow Fayle Dorow	Female	Bulow Dhurow	Bufow
22	Faadumo Sheeth Cabdi		Buullo Dhurow	Bufow Primary School

23	Buulle Cusmaan Isaac		Buullo Dhurow	Bufow Primary Canal
24	Maximed Sufi Abdi		Buullo Dhurow	Bufow Primary Canal
25	Faadumo Sheeth Cabdi		Buullo Dhurow	Bufow Primary School
26	Buulle Cusmaan Isaac		Buullo Dhurow	Bufow Primary Canal
27	Maximed Sufi Abdi		Buullo Dhurow	Bufow Primary Canal
28	Maxomed Xuseen Cusmaan		Buulo Dhurow	Bufow Primary Canal
29	Maxomed Xuseen Cusmaan		Buulo Dhurow	Bufow Primary Canal
30	Saguy Ibrahim		Daobis	Bufow primary Canal
31	Saguy Ibrahim		Daobis	Bufow primary Canal
32	Xasan Maximed Cali		Dobis	Bufow Primary Canal
33	Xasan Maximed Cali		Dobis	Bufow primary Canal
34	Macallin Mustaf Macalin		Dobis	Bufow Primary Canal
35	Xasan Maximed Cali		Dobis	Bufow Primary Canal
36	Xasan Maximed Cali		Dobis	Bufow primary Canal
37	Macallin Mustaf Macalin		Dobis	Bufow Primary Canal
38	Xuseen Maxamed Nuur		Doobis	Bufow Primary Canal
39	Xuseen Maxamed Nuur		Doobis	Bufow Primary Canal
40	Moalin Mustaf	Male	Doris	Istoli
41	Batulo Yusee Isak	Female	Falastiin	Falastiin
42	Nur Dasland Aliyow	Male	Falastiin	Falastiin
43	iisho Gabdow nur	Female	Falastiin	Falastiin
44	Kulow Dgadir	Male	Falastiin	Falastiin
45	Shamso Holowle Gabow	Female	Falastiin	Falastiin
46	Mukhatar macalin	Male	Faranko	Bufow
47	Mohamed Cabdi yazoma	Male	Faranko	Bunfow
48	Binti Omar Ali	Female	Franco	Istoli
49	Isha Isaaq Cusman	Female	Franko	Bufow
50	Shackh Abduyo Xazam	Male	Franko	Bufow
51	Amran Issaq Ossob	Female	Franko	Bufow
52	Ali Baris Mohammed		Gailow	Falestin Secondary Canal
53	Ali Baris Mohammed		Gailow	Falestin Secondary Canal
54	Halimo Mursai Sebdo	Female	Gandawe	Falastin
55	Nurto Cusman Adan	Female	Garasiani	Bufow
56	Addey Moalim Hassan	Female	Garasiini	Bufow

57 58	Khadijo Alow Mareer Amina Omar Ali	Female Female	Garasiini Garasiini	Bufow Bufow
59	Omar Olow Barre	Male	Garasiini	Bufow
60	Musamil Shekh Mohame		Garilow	Felestine Secondary Canal
61	Hidaayo Mohammed Ibrahim		Garilow	Felestin Secondary Canal
62	Mulki Mohammed Ibrahim		Garilow	Felisdtin Secondary Canal
63	Habad Xuseen Osman		Garilow	Felistin Secondary School
64	Musamil Shekh Mohame		Garilow	Felestine Secondary Canal
65	Hidaayo Mohammed Ibrahim		Garilow	Felestin Secondary Canal
66	Mulki Mohammed Ibrahim		Garilow	Felisdtin Secondary Canal
67	Habad Xuseen Osman		Garilow	Felistin Secondary School
68	Kadir Sharif Luubi		Janaale	Buufow Primary Canal
69	Ali Yuusuf Abdi		Janaale	Bufow Primary Canal
70	Kadir Sharif Luubi		Janaale	Buufow Primary Canal
71	Ali Yuusuf Abdi		Janaale	Bufow Primary Canal
72	Faay Ali Abdi		Janaele	Bufow Primary Canal
73	Faay Ali Abdi		Janaele	Bufow Primary Canal
74	Hawo Ali Yussuf		Janale	Bufow Primary Canal
75	Ali Abdi Ibrahim		Janale	Bufow Primary School
76	Hawo Ali Yussuf		Janale	Bufow Primary Canal
77	Ali Abdi Ibrahim		Janale	Bufow Primary School
78	Khadijo Abuka yusee	Female	Kabile	Cesra Maria
79	Mohammed Ali Nor	Male	Kabile	Cesra Maria
80	Asha OSman Mohamed	Female	Kabile	Cesra Maria
81	Ali Osman Yusuf	Male	Kabili	Cesra Maria
82	Aamire Dahir Ali	Female	Kabili	Cesra Maria
83	Omar Adan	Male	Kamiro	Falastin
84	Omar Nunow Sidow	Male	Laba Garal	Falastiin
85	Raxma Adan Kerow	Female	Laba Garal	Falastiin
86	Jamiilo Abdi Echow	Female	Laba Garal	Falastiin
87	Mahammed Isak Osman	Male	Laba Garal	Falastiin
88	Shukii Abdi Yarow	Female	Laba Garal	Falastiin
89	Faduno Omar Jelle	Female	Labo Garas	Falastin
90	Mohamed Sebdo	Male	Shalambol	Terso

91 92	Tisho Abdi Ali Geedow Madow Siidi	Female Male	Shalanbol Shalanbol	Shalanbol Shalanbol
93	Abdi Berre	Male	Shalanbol	Shalanbol
94	Mohammed Hassan Ali	Male	Shalanbol	Shalanbol
95	Mohamed Abdi Ali	Male	Shalanbol	Shalanbol
96	Kheli Ahmed	Male	Shalanbol	Shalanbol
97	Macow Ali Divile	Male	Shalanbol	Shalanbol
98	Saynab Ali Omar	Male	Shalanbol	Shalanbol
99	Muslimo Muse Ali	Female	Shalanbol	Shalanbol
100	Malino Gaedow ali	Male	Shalanbol	Shalanbol
101	Abdi ali Abdi	Male	Shalanbol	Shalanbol
102	Asli Hussein Rooble	Male	Shalanbood	Shalanbood
103	Hussein Abdi Muse	Male	Shalanbood	Shalanbood
104	Maryan Abdor Ali	Male	Shilubood	Shalubood
105	Mugtar Xaji Nur		Tusanariyo	Shalanbad Secondary Canal
106	Mugtar Xaji Nur		Tusanariyo	Shalanbad Secondary Canal
107	Ali Abdi nur	Male	Tusinar	Terso
108	Shekh Ahmed Mataan		Tusunaariyo	Shalanbad Secondary school
109	Xaawo Maximed Weynow		Tusunaariyo	Shalanbod Secondary Canal
110	Shekh Ahmed Mataan		Tusunaariyo	Shalanbad Secondary school
111	Xaawo Maximed Weynow		Tusunaariyo	Shalanbod Secondary Canal
112	Mohammed Ibrahim Ahmed		Tusunariyo	Shalanbod Secondary Canal
113	Mohammed Axmed Abukar		Tusunariyo	Shalanbod Secondary Canal
114	Mohammed Ibrahim Ahmed		Tusunariyo	Shalanbod Secondary Canal
115	Mohammed Axmed Abukar		Tusunariyo	Shalanbod Secondary Canal

List of Farm Produce Consumers Interviewed		List of Traders Interviewed	
Name	Market		
Fahmo Sufi Jeylam	Shalambot	Name	Market
Hussein Madet Muftax	Jannale	Osman Sharif	Frange
Omar Said Abdi	Janale	Moalin Mustaf	Dobis

Muse Hayle Abdi Abdulahi Madei Nur	Mushani Mushani	Mohammed Sufi Numino Sheck Ali	Bulo Dhuro Majablo
Maryin Ado	Wagadi	Haji Maki Nur	Janale
Nur Yusuf Ali	Wagadi	Abukar Omar Ali	Salamobot
Ali Mohammed Ali	Shalambot	Haji Ibrahim Madei	Shalambood
Muse Sufi Koyte	Janale	Yahya Mustaf Nur	Janale
Abukar Ali Lali	Janale	Omar Awalo	Labo garas
		Nurto Jeylami Haji	Mushani

Appendix 3: Project's Logical Framework

Intervention Logic		Objectively Verifiable Indicators of Achievement		Sources and Means of Verification	Assumptions
Overall Objectives					
	Household livelihood of rural families increased through improved agricultural production and marketing.		Household incomes of rural families increased by at least 15% compared to incomes before action implementation.	Baseline survey report, FSAU and FEWSNET reports.	Commodity prices do not increase beyond farmers/community capacity to pay
			At least 45% of the target household have increased their assets compared to period before action implementation	Project reports, FSAU reports	
Specific Objective					**Conditions outside beneficiary control**
	Farming households in former banana growing regions benefit from increased production, assets and/or income through access to and use of irrigation infrastructure, technical assistance and improved market access.	1	Number of farmers both male and female with increased agricultural production from diversified cropping patterns	Quarterly Progress reports, final project report, Mid term and final evaluation reports	Market prices for farm surplus and cash crops remain stable Soaring fuel prices do not destabilize market prices for inputs
		2	Number of farmers both male and female with increased assets	Quarterly Progress reports, final project report, Mid term and final evaluation reports	
		3	At least 1,000 households practice market-oriented farming by end of action period.	Quarterly Progress reports, final project report, Mid term and	

Intervention Logic		Objectively Verifiable Indicators of Achievement		Sources and Means of Verification	Assumptions
				final evaluation reports	
Expected Results					**External conditions to that must be met**
1.0	Irrigated agricultural production is improved and cropping patterns are diversified.	1.1	Cesare Maria primary canal, Buufow, 3rd and 4th secondary canals with a total of 7,230 ha rehabilitated during the action period.	Quarterly Progress reports	Favourable climatic conditions (no extraordinary floods) Security prevails Accessibility to action sites is not hindered
		1.2	Cropping area in ha under improved cropping patterns supported by the action	Quarterly Progress reports	
		1.3	Crop types adopted under diversified cropping patterns	Quarterly Progress reports	
2.0	Market access, product marketing & processing are improved	2.1	At least 35 km of market access road sections improved	Quarterly Progress reports	
		2.2	Quantity and % of farm produce sold through newly established market sheds	Quarterly Progress reports	
		2.3	Number of linkages created between farmers and agro-processing industries	Quarterly Progress reports	
Activities					**Preconditions**
1.1	Undertake an inception workshop for stakeholders including the communities and local authorities in Marka and review the appropriateness of the proposed interventions, an inception report endorsing proposed action and making necessary adjustments where necessary is expected.		**Means** / **Cost** Human Resources 276,610.00 Travel 10,350.00 Equipment and supplies 48,200.00 Local office/Action costs 67,200.00 Other costs, services 74,000.00 Other – Works 855,000.00	Inception report	Security situation remains conducive for project implementation. No major interruptions occur during implementation period
1.2	Undertake a status quo survey for Cesare Maria irrigation system, farm produce market status, road network status, and			Status quo report	

Intervention Logic		Objectively Verifiable Indicators of Achievement		Sources and Means of Verification	Assumptions
	farm input status, among others.		**Subtotal direct costs** **1,331,360.00** Administrative Costs 93,195.00 **Total eligible costs** **1,424,550.00**		No adverse effect on cost of implementation due to souring fuel cost (cost of implementation remains relatively the same as estimated)
1.3	Carry out a baseline survey on representative sample of the target population.			Baseline survey report, financial report	
1.4	Undertake appropriate survey e.g. cross-sections and profiles for canals and drains.			Survey report	
1.5	Undertake appropriate design to allow Cesare Maria (15.5km) primary canal, (7.3km) secondary canal, 3rd (4.5 km) Secondary canal and 4th (4.2 km) secondary canal and associated drains and hydraulic structures rehabilitation for a total irrigable area of 7,230 ha.			Design report	
1.6	Present proposed designs and discuss with community members schedules to be adopted during rehabilitation of canals, drains and hydraulic structures.			Implementation schedule	
1.7	Tender for canals, hydraulic structures and drains rehabilitation, contract local companies and supervise implementation.			Contracts, financial reports	
1.8	Mobilise farmers to form specific crop replication groups based on their interest and set up Farmer Field School and relevant demonstration plots/farms for such groups.			Training reports	
1.9	Provide training through the Farmer Field Schools on improved farm practices on major cash and food crops grown by the target farmers.			Training reports	
1.10	Provide training through the Farmer Field Schools on diversification of cropping			Training reports	

Intervention Logic		Objectively Verifiable Indicators of Achievement		Sources and Means of Verification	Assumptions
	patterns.				
1.11	Provide training through Farmer Field Schools on improved post harvest handling, operations and on-farm storage facilities.			Training reports	
2.1	Sensitize and mobilise farmers to setup a Farm Produce Marketing Association incorporating interested action target area farmers.			Project report	
2.2	Together with the community and local authorities identify section of road networks to the local markets that inhibit farm produce movement to the market, contract local companies to undertake repairs of such sections.			Project report	
2.3	Together with the community identify and survey appropriate sites for market sheds in Marka, Shalaambood, and Janale.			Survey report	
2.4	Undertake appropriate design for desired market sheds, discuss and agree with local authorities and hire contractors for their implementation.			Design report	
2.9	Through training and farmer mobilisation assist farmers to set production schedules aimed at spreading harvesting period and ensuring availability of fresh produce for longer period.			Training report	

Appendix 4: Original Workplan (With all Project Activities including those dropped after Project Activity Review)

Activities *(activity numbering as in the project logical framework)*		**Implementation Timeline**																							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
0	Start up activities (staff recruitment, office etc)																								
1.1	Undertake an inception workshop for stakeholders including the communities and local authorities in Merka and review the appropriateness of the proposed interventions, an inception report endorsing proposed action and making necessary adjustments where necessary is expected.																								
1.2	Undertake a status quo survey for Cesare Maria irrigation system, farm produce market status, road network status, and farm input status, among others.																								
1.3	Carry out a baseline survey on representative sample of the target population																								
1.4	Undertake appropriate survey e.g. cross-sections and profiles for canals and drains.																								

Activities *(activity numbering as in the project logical framework)*		**Implementation Timeline**																							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
1.5	Undertake appropriate design to allow Cesare Maria (15.5km) primary canal, Buufow (7.3km) secondary canal 3rd (4.5 km) Secondary canal and 4th (4.2 km) secondary canal and associated drains and hydraulic structures rehabilitation for a total irrigable area of 7,230 ha.																								
1.6	Present proposed designs and discuss with community members schedules to be adopted during rehabilitation of canals, drains and hydraulic structures.																								
1.7	Tender for canals, hydraulic structures and drains rehabilitation, contract local companies and supervise implementation.																								
1.8	Mobilise farmers to form specific crop replication groups based on their interest and set up Farmer Field School and relevant demonstration plots/farms for such groups.																								
1.9	Provide training through the Farmer Field Schools on																								

Activities (*activity numbering as in the project logical framework*)		Implementation Timeline																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	improved farm practices on major cash and food crops grown by the target farmers.																								
1.10	Provide training through the Farmer Field Schools on diversification of cropping patterns.																								
1.11	Provide training through Farmer Field Schools on improved post harvest handling, operations and on-farm storage facilities.																								
1.12	Undertake at least one agricultural trade fair in Janale where farmers bring and display farm produce to community members, traders, buyers, among others to strengthen linkages and networking between farmers and traders																								
2.1	Sensitize and mobilise farmers to setup a Farm Produce Marketing Association incorporating interested action target area farmers.																								
2.2	Together with the community and local authorities identify section of																								

Activities *(activity numbering as in the project logical framework)*		**Implementation Timeline**																							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
	road networks to the local markets that inhibit farm produce movement to the market, contract local companies to undertake repairs of such sections.																								
2.3	Together with the community identify and survey appropriate sites for market sheds in Merka, Shalambood, Janale.																								
2.4	Undertake appropriate design for desired market sheds, discuss and agree with local authorities and hire contractors for their implementation.																								
2.5	Provide training to the local authorities in the running of the market sheds, and assist them establish systems such as setting of tariffs, collection of tariffs, cleaning of market sheds and associated facilities among others.																								
2.6	Carry out a survey of existing private company and individuals undertaking farm produce processing; identify those willing to																								

Activities (activity numbering as in the project logical framework)		Implementation Timeline																							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
	contract farmers to produce specific crops for them.																								
2.7	Encourage private company farmer partnership by facilitating contact and production contract between farmers and private companies and/or individuals undertaking farm produce processing.																								
2.8	Explore possibilities of setting up a processing plant within the target area.																								
2.9	Through training and farmer mobilisation assist farmers to set production schedules aimed at spreading harvesting period and ensuring availability of fresh produce for longer period.																								
2.10	Undertake a targeted farmer satisfactory survey covering a representative section of the target farming households of not more than 50 farmers																								

Key:

Green Highlighted Activities: *Activities Implemented within the 24 months project life span*

Not Highlighted Activities: *Activities dropped after the project Baseline Survey Report recommendations and/ or review of the project activities*

Appendix 5: Status of the Irrigation and Road Systems in the Project Area

1. Canal Status

No	Canal	Length (m)	Status 2009	What has been done	Status 2011
1	Cesare Maria	15.5	Bad	Canal rehabilitated through excavation by machinery	Operational
2	Buufow	7.3	Functional	Canal rehabilitated through excavation by machinery	Operational
3	Falastine	6.8	Partially functional	Canal rehabilitated through excavation by machinery	Operational
4	Shalambood	4.5	Not functional	Canal rehabilitated through excavation by machinery	Operational
5	Shikhaal drain	4.4	Not functional	Canal rehabilitated through manual excavation (CFW)	Operational

2. Irrigation structures and access roads

Intakes	**Name of Structure**	**Canal name**	**Number of gates**	**Condition**	**What has been done?**
1	Intake (Janale)	Cesare Maria	4 gates	Bad	Planned for rehabilitation by SWALIM – design in progress. Construction to start in January 2011
Cross-Regulators					
1	Baratoyo Dobis	Cesare Maria	9 gates	Bad	Rehabilitated
2	Baratoyo Libax	Cesare Maria	5 gates	Bad	Rehabilitated
3	Baratoyo Sadex Bundo	Cesare Maria	3 gates	Bad	Rehabilitated
4	Baratoyo Shiqal (tail end)	Cesare Maria	1 gates	Bad	Rehabilitated
5	Baratoyo Saddex	Buufow	3 gates	Good	Not targeted
6	Baratoyo Franco	Buufow	2 gates	Major repairs required	Rehabilitated
7	Baratoyo Garassini	Buufow	2 gates	Very bad	Rehabilitated
8	Baratoyo Qumbale	Buufow	2 gates	Good	Not targeted
9	Baratoyo Bollo	Falastine	2 gates	Requires one new	Not targeted

				screw and minor repairs	
10	Baratoyo Habibo Afqoof (tail end)	Falastine	2 gates	Requires one new screw and minor repairs	Not targeted
11	Baratoyo Cesare & 4th	Shalambood (4th)	1 gate	Bad gate	Rehabilitated
12	Baratoyo Bnaratoyo Gadud	Shalambood (4th)	2 gates	Good	Not targeted
13	Baratoyo Xashi Dinle	Shalambood (4th)	2 gates	Requires replacement of 1 gate and some minor repairs	Not targeted

3 Water conveyance structures

	Name of Structure	Canal name	Condition	What has been done
1	Bundo Mushani	Cesare Maria	Good requires minor repairs	Rehabilitated
2	Bundo Kibili	Cesare Maria	Bad head walls, requires repairs	Rehabilitated
3	Bundo Muki Nin Reb	Cesare Maria	Bad head walls	Rehabilitated
4	Bundo Barwaqo	Cesare Maria	Bad head	
5	Bundo Falastin	Falastine	Bad head walls, requires repairs	Rehabilitated
6	Bundo Reylka (1 box)	Shalambood(4th)	Good	Not targeted
7	Bundo Yariis (1 box)	Shalambood(4th)	Good	Not targeted
8	Bundo Abdiaziz (2 pipe)	Buffow	Good	Not targeted
9	Bundo Mamuti (2 pipe)	Buffow	Good	Not targeted
10	Bundo Franco (2 pipe)	Buffow	Very bad	Rehabilitated
13	Bundo Dallayo	Buffow	Very bad	Rehabilitated

4 Feeder Roads

	Feeder road	From – to	Condition	What has been done
1	Janale	Janale-Buufow	Good (repaired by Agriculture community)	- Not targeted
2	Shalaambood	Janale-Shalaambood	Bad	Rehabilitated
3	Merka	Shalaambood-Merka	Bad	Rehabilitated

Appendix 6: FFS Groups, Membership and Enterprise

Name of FFS Group	Host Team	Number of Participants		Enterprise	Remarks
		Male	Female		
1) Dobis	Horseed, Midnimo, Duferl , Bolis	25	5	Maize	Established farmer run FFS which needs technical support
2) Janale	Keynan, Hegan, Skis	20	8	Maize	Established farmer run FFS which needs technical support
3) Shalambo d	Hearsare, Horseed, Hoiwodog, Towfiig	57	3	Sesame	Successfully held graduation in their respective FFS
4) Gandawe	Tawakal, Midrimo Halgan, Horimond	30	0	Maize	
5) Bulo Hamali	Barwauqo, Hormwid, Horseed, Hodoiw	20	10		
6) Buufow	, Howlwadaag,Horsee d Bishaare and Towfig	30	0	Maize and Sesame	Identified problems with regards to soil fertility and spacing and decided to adopt a PTD layout.
7) Buulo Dhurow	Barwaago, Walaalaha, Horyaal, Xi digala	23	7	Maize	Solved pending issues with spacing
8) Garshiin	Barwaago, Walaalaha, Horyaal, Xi digala	28	2	Maize	
9) Frung	Horseed, Dondheere, Barwaago, Frung and Halgan	30	0	Maize	Priorotized enterprise through voting and identified problems related to the enterprise.
10) Abanana	Horseed, Wadajir,Beyxaaw, Hegan	26	0		
11) Tusnar	Tusnar, Horseed, Mustaqbal, Hormuud, Barako.	20	10	Maize	Identified problems with the enterprise crop and resolved through the PTD
12) Adam Ade	Barwago, Howlwadag, Wadajir and Muruqmaal	25	5		
13) Labogaras	Labogaras, Wadajir, Dariwadaeg, Muruqmael, Kamiro,	30	0	Sesame	Identified problems with the sesame enterprise and obtained solutions through PTD.
14) Kamiro	Horseed, Daacad, Wadajir and Hogaa	29	1		

Appendix 7: Details of Access Road Rehabilitation Activities

Road Improvement Structures constructed/rehabilitated

No	Item
1	Construction of Culvert at Falastine canal on Gandawe - Mushane Road, Merka
2	Construction of Culvert at Unle canal on Gandawe - Mushane Road Merka
3	Construction of Culvert at Gandawe on Gandawe - Mushane Road, Merka
4	Construction of Culvert at Adan Ade canal on Gandawe - Mushane Road, Merka
5	Construction of Culvert at Qaanso on Janalle – Awdegle road, Merka
6	Construction of Culvert at Hassan Gab on Janalle – Awdegle road, Merka
7	Construction of Culvert at Jadid on Janalle – Awdegle road, Merka
8	Construction of Culvert at Dalooliyo on Janalle – Awdegle road
9	Construction of Culvert at Sharifaada on Janalle – Awdegle road, Merka
10	Construction of Culvert at Falastine canal on Shalambood – Elwaregow road, Merka
11	Construction of Culvert at Shalambood canal on Shalambood – Elwaregow road, Merka
12	Construction of Culvert at Km 6 on Elwaregow – Bulo Jessey road, Merka
13	Construction of Culvert at Km 10 on Elwaregow – Bulo Jessey road, Merka
14	Construction of Culvert at Km 14 on Elwaregow – Bulo Jessey road, Merka
15	Construction of Culvert at Km 4 on Falconi -Elwaregow road, Merka
16	Construction of Culvert at Km 10 on Falconi -Elwaregow road, Merka
17	Construction of Culvert at Km 15 on Falconi -Elwaregow road, Merka
18	Construction of Culvert at Ali Buufow canal on Fedlebi – Lantan Bilal road, Merka
19	Construction of Culvert at Hussein Madobe canal on Fedlebi – Lantan Bilal road, Merka
20	Construction /rehabilitation of canal –road crossing at Kibili on Cesare Maria Canal, Merka

Road sections improved through bush clearing, filling and leveling activities in – Merka District by GCP Project

Road Start	Road End	Road Length (Km)
Jannale	Awdegle	30
Shalambood	Elwaregow	23
Elwaregow	Bulo Jessey	15
Gandawe	Mushani	10
Total		**78**

Appendix 8: Data Collection Tools Used

IDENTIFICATION

Agricultural Rehabilitation and Diversification of High Potential Irrigation Schemes in Southern Somalia
ARDOPIS

Household Number

HHID________________

3.3.3.1.1.1

Household Name;
HHNAME____
____

Respondent(s) Name; **RNAM**
____**ID**
____

Enumerator Name: ____________
ENNUM __________

Name of Village: ____________
VILNAME __________
Name of the Canal ____________
ENNUM __________

Date of Interview ________________
DATE______________

Consultant sign__________________________

1. HOUSEHOLD TYPOLOGY: DEMOGRAPHIC CHARACTERISTICS OF HOUSEHOLD MEMBERS

HHros01.sav *(Key variables: country,hhid, mem)* **Reference Period: the last 12 months**

Member ID	Name	1.1 Age	1.2 What is the **sex** of name? 1=male 2=female	**1.3** What is the relationship between name and Household head ***See codes below***	1.4 **Marital status** ***See codes below***	1.5 What is the **highest** GRADE of education attained by name? ***999=don't know***	1.6 Can name read a sentence in official language? 1 = Yes 2 = No	1.7Major Occupation	1.8: Status of Land ownership
MEM	**NAME**	**AGE**	**SEX**	**RHEAD**	**MSTAT**	**HEDU**	**LITERACY**	**MAOCC**	**LANDOWN**
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

Relation to head
1=HH head
2= spouse
3= son/daughter
4= parent
5= other blood relative
6=Non blood
7=worker

Marital Status
1=single
2 = monogamously married
3 = polygamously married
4 = divorced
5 = widowed
6 = separated
7 = other, specify______

Education levels
0=No education
1=pre school
2=primary
3=basic/JHS
4=secondary/SHS
5=tertiary college
6=polytechnic
7=university
8=non-formal

1= crop farming
2= Schooling
3=livestock farming
4=fishing (fish and seafood)
5= Trader (crop)
6=livestock marketing
7=petty trading
8=salaried worker
9=tradesman (None crop, i.e. shop, hotel, Tea
10= Blacksmith)
11= Others, specify

Status of Land Ownership
1=Large scale, Owned
2=Large Scale Rented All
3=Large, Rented a piece
4=Large scale, given a piece
5=Small scale, Own
6=Small scale, rented
7=Small scale. Squatter
8=Large Scale, Squatter

2. HOUSEHOLD CROP PRODUCTION INFORMATION FOR 2010 SEASON (Including irrigation)

2.1 to 2.13: Fill in the Table below

Plot No.	2.1 Crop code	2.2 Plot size in Acres	2.3 How is this plot watered? 1=Irrigated 2=Rainfed 3=Both 4=other (specify)	2.4 What type of seed did you Plant? 1=Purchased / improved 2=Recycled improved 3=local 4= Other, specify	What quantity did you harvest last season, what did you consume, how much did you sell, amount stored, when stored crop run out, price per unit and market place?								2.13. In what Month did you harvest? 1= Jan, 2= Feb. …….. 12= Dec
					2.5 Quantity Harvested	2.6 Unit (in KG)	2.7 Amount Consumed	2.8 Amount sold	2.9 Price per Unit	2.10 Market sold? (i) On farm (ii) Middle men (iii) Deliver to Janale (iv) Deliver to Shalambood (v) Deliver to Mushaani (vi) Deliver to Merka (vii) Others, specify	2.11 Amount Stored?	2.12 When the stored cereals run out?	
Plot	**Crop**	**Acres**	**Water**	**Sdtype 1**	**Hvt**	**hunit**	**Amcons**	**Price**	**Market**				**Month**
1													
2													
3													
4													
5													

Crop Codes			
1= Maize 2= Bananas 3= Onions 5= Sesame 6= Cowpeas	**7= Lettuce 8= Hot Pepper 9= Sweet pepper) 10= Carrotri 11= Soybeans 12= Pigeon pea 13= Potatoes)**	**14= sorghum 15= Lemon 16= Water melon 17= Mango 18= Pumpkin**	**19= Grape fruits 20= Groundnut 25= other crops, (specify)**

2.14-2.17 Which of these crops do you plant during dyer and Gu seasons; what cropping pattern do you use? (fill in the table below)

Dyer Season		Gu Season	
2.14 Stand Alone crops (Use crop codes above)	2.15 mixed crop? (show the mix)-Use crop codes above	2.16 Stand Alone crops (Use crop codes above)	2.17 mixed crop? (show the mix)-Use crop codes above
1			
2			
3			
4			
5			

2.18 to 2.19 Which crops do you grow for market and which ones do you grow for home consumption? Use crop codes above to fill in the below table

Market Oriented Crops	Subsistence Crops
1	
2	
3	
4	
5	
6	
7	
8	

2.20 to 2.21 Do you use fertilizer? If yes on which crops do you apply and the fertilizer used? (Use the crop codes to the table below)

2.20 Crops (FERTUSE)	2.21 Type of fertilizer used (FERTTYPE) Use codes in the next column	Fertilizer Codes		
1		1=DAP	9=NPK(20:10:10)	17=SA(21:0:0)
2		2=MAP	10=NPK(18:14:12)	19=manure
3		3=TSP	11= NPK(15:15:15)	20=Liquid fertilizer (Foliar feeds)
4		4=SSP	12=NPK(23:23:0)	21=compost
5		5=NPK (20:20:0)	13=NPK(17:17:17)	22=Lime
6		6=NPK (17:17:0)	14=CAN(26:0:0)	23=DSP
7		7=NPK(25:5:+5S)	15=ASN(26:0:0)	
8		8=NPK(23:23:23)	16=UREA(46:0:0)	

2.22 to 2.23 Which crops are you growing now that you were not planting before the rehabilitation of the canal? Why were you not planting them? Fill the table below.

2.22 Crops growing now (2011) and not planted Before (2009)	2.23 Reasons
1	
2	
3	
4	
5	
6	
7	
8	

2.24 When did you start irrigated farming?

2.25 How much area did you irrigate then and how much is irrigated today (2011).

2.26 If any variation, please indicate the reasons?
(i) Water was insufficient
(ii) The canal water did not reach this area
(iii) Was using pump which was very expensive to operate
(iv) There were no sufficient inputs
(v) There was no market for farm produce
(vi) Others, specify

2.27 Does your access to water limit the area that you cultivate in any season of the year? (i. YES; ii. NO)

2.28 If your answer is yes, indicate the reasons

Reason 1 ____

Reason 2 ____

Reason 3 ____

2.29 Does irrigation water availability affect your decision on the type of crop you grow? (i. YES; ii. NO)

2.30 If yes, which crop do you give the priority?

Priority 1 ____

Priority 2 ____

Priority 3 ____

2.31 How many times per year do you cultivate the following crops? Fill in the table below

Crop	Tomato	Onion	Sesame	Maize	Cowpeas
Number of times					

3. FARMING HUSBANDRY TRAINING

3.1 Have you or any member of your family been trained in improved farming practices?

3.2 to 3.4 If yes, who trained you and how has the skills and knowledge received impacted on your crop production? Fill in the table below.

	3.2 Who trained you	3.3 What were you trained on?	3.4 How has the training helped in improving your farming activities?
1	FAO		
2			
3			

3.5 How was the training delivered?

1=Demonstration plot 2=Training 3=Field day 4=Local administration meeting
5=Promotional campaigns 6=Seminar/meetings 7= Others, specify

3.6 If more training were to be conducted which areas would prefer the training to focus?

3.7 What challenges do you encounter in farming activities? Have these activities been addressed- by who and how? How are you coping with the problems? Fill in the table below:

Type of farming, transport and marketing challenges	Challenges ever addressed? YES; NO	BY Who	Kind of intervention	How family is coping

4. OPERATION AND MAINTENANCE OF THE IRRIGATION STRUCTURES

4.1 to 4.3 How do you irrigate your crop field? What is the method used for water conveyance? Sources of irrigation water? Fill in the table below.

4.1 Irrigation method	4.2 Water conveyance method	4.3 Source of the water (i. River; (ii) Dam; and (iii) Borehole
(i) Flooding	(i) Gravity	
(ii) Basin	(ii) Pumped	
(iii) Furrow	(iii) Fetching	
(iv) Other, specify the method and explain why it is used		

4.4 Do you have canal committee in this area?

4.5 How many members does it have (how many are men_______ and how many are women_________?

4.6 Who elected them?
(i) Farmers (ii) Project implementers (iii) Village elders (iv) Local Gov leaders (v) Others

4.7 What are the key roles of the committee?

4.8 Do you make any payment for having used the water for irrigation? (1. YES 2. NO)

4.9 If yes, in what form, how much do you pay and on what interval

4.9 What form	4.10 Amount/ What?	4.11 Interval	4.12 What is your perception on the cost?
(i) Cash			(ii) Too high (iii) Reasonable/ fair (iv) Low
(v) In kind			

4.10 How else do you contribute towards maintenance of the canal?

4.11 If de-silting is part of the role that your household plays when do you undertake the de-silting activities?
(i) Before the season starts (ii) After the season (iii) Other times, specify when.

5. HOUSEHOLD LIVESTOCK PRODUCTION AND MANAGEMENT

5.1 Did the household **own** any **livestock** in the past year? (1=Yes 2=No)
ownlstock____________________

5.2 Provide the following information about your livestock over the **past 12 months**.

Livestock	5.2How many (name of livestock) does the household currently own?	5.3 What is the current market value per average livestock?	5.4 How many did the household own in 2009	5.5 How many have you purchased over the past 12 months?	5.6 On average, at what price did you purchase each animal?	5.7 How many livestock has the household sold over the past 12 months?	5.8 On average, at what price did the household sell one livestock?
	Number 2011	**Mktvalue**	**Number 2010**	**Numpur**	**purprice**	**Numsold**	**Unitprice**
Cow							
Bull							
Calves							
Donkey							
Sheep							
Goats							
Chicken							
Hives							
Other livestock							

6. HOUSEHOLD INCOME

6.1 to 6.4 What are the main sources of income? How much (estimate) money does the household earn from the sources in a year? What are the main sources of the household expenses? What is the estimate amount spent per each expenditure stream? Fill in the table below.

6.1 Means of household gaining income	6.2 Annual Income Estimates	6.3 Household Expenditures sources	6.4 Annual Expenditure Estimates
Farming		Food stuff	
Livestock		Medical	
Employment (off farm)		Clothing	
Employment (on farm)		Education	
Business (crop trade)		Farm preparations and inputs	
Business (one farm commodities)		Transport	
Others, specify		Others, specify	

7. HOUSEHOLD ASSETS

12.1 At present, how much/many of the following does this household own that are usable/repairable? (For value per unit, ask for the current value of the asset **as it is**). **(**PROMPT for each item as listed in the table)

Agricultural asset		Quantity /number	Value per Unit	If Value per Unit not known Ask for Total Value	Agricultural asset		Quantity/number	Value per Unit	If Value/Unit not known Ask for Total Value
Asset		**qty**	**Value**	**Totval**	**Asset**		**qty**	**Value**	**Totval**
1	houses (residential)				**12**	weighing			
2	Stores				**13**	water tanks			
3	poultry houses				**14**	Beehive			
4	piggery houses				**15**	water pump			
5	wheel barrow				**16**	water pump			
6	Radio				**17**	Bicycle			
7	solar panels				**18**	animal traction			
8	mobile phone				**19**	business			
9	Hole				**20**	Market shed			
10	Axe				**21**	cart			
11	Panga				**22**	**other (specify)**			

END OF THE SURVEY

ANY QUESTIONS TO US?

THANK YOU

PROJECT ENGINEER: TOOLS USED FOR TECHNICAL SPECIFICATION ASSESSMENT FOR EFFECTIVENESS

Cesare Maria Canal

Irrigable area (ha)	
Flow (l/s)	
Canal bed slope (%)	
Canal side slope	
Canal bed width (m)	
Canal depth (m)	
Canal top width (m)	

Bafow Canal

Irrigable area (ha)	
Flow (l/s)	
Canal bed slope (%)	
Canal side slope	
Canal bed width (m)	
Canal depth (m)	
Canal top width (m)	

Falastine Canal

Irrigable area (ha)	
Flow (m^3/s)	
Canal bed slope (%)	
Canal side slope	
Canal bed width (m)	
Canal depth (m)	
Canal free board (m)	
Canal top width (m)	

Shalambood Canal

Irrigable area (ha)	
Flow (m^3/s)	
Canal bed slope (%)	
Canal side slope	
Canal bed width (m)	
Canal depth (m)	
Canal free board (m)	
Canal top width (m)	

Equipment and works per the Project Plan	Design Specifications	Achieved Specifications of equipment and works.	Comment on variance
Scheme design			
Irrigation water demand			
Water resources planning			
Water rights			
River basin study			
Seepage losses			
Irrigation efficiency			
Construction equipment			
Main canal			
Secondary canals rehabilitated			
KM of market access roads rehabilitated			
Bed slope			
Embankment slope			
Spatial data collected and shared with SWALIM			
Flow measurement			

Intake Works			
Note that there are no diversion works into the canal			
Control works			
Water quality			
Ha irrigated after rehabilitation works			
Water availability at farm level			
Water scheduling/distribution/ operation			
Water handling at plot level			
Land slope			
Drainage			
Night storage			
Compaction control			
Pump house and equipment			
Type of embankment			
Water losses			
Foundation treatment			
Training provided			
Handing over			

Erosion and sedimentation			
Environmental impact assessment			
Health and Sanitation			
Water related diseases			
Food availability			
Gender distribution			
Progress reports			
Monitoring and evaluation			
Water users association			
Productivity (yields)			
Crop choice			
Canal maintenance			
No of gates rehabilitated			
Access to agro-inputs			
Crop marketing			
Extension services			
Land tenure			
Labour availability			
Credit			

FARM PRODUCE CONSUMERS QUESTIONNAIRE

1. General Information

1.1 Date of interview: ____

1.2 Enumerator's name: ____

1.3 Name of respondent ____

1.4 Town / Centre of residence ____

1.5 Respondent's sex

Male	Female

1.6 Respondent's age

20 to 35 year	36 to 55 years	56 to 65 year	More than 66 years

2. Household composition

2.1 Number of members of household ______________________________

2.2 Number of male members of household __________________________

2.3 Number of female members of household ________________________

3. Household food items

3.1 What quantities of the following are consumed by your household?

Food item (Local Farm Produce)	Amount used per month (in KG. Other units, specify)	Where bought (i. Open air market; ii. Farm; iii. Shop	Where are commodities grown/ produced? (Janale, Shalambood, Mushaani, Merka, Other areas-specify
Maize			
Beans			
Onion			
Tomato			
Lettuce			
Potato			
Sorghum			
Meat (chicken)			
Meat (fish)			
Ripe banana			
Cooking banana			
Mangoes			
Oranges			
Pawpaw			
Water melon			
Grape fruit			
Hot pepper (**Chilli; basi basi**)			
Sweet pepper (**Capsicum anuum)**			
Sesame			
Sesame oil			

4. In which period are the following items cheap to buy?

Food item	**Period** (from month to month)
Maize	
Beans	
Onion	
Tomato	
Lettuce	
Hot pepper (**Chilli; basi basi**)	
Sweet pepper (**Capsicum anuum)**	
Sesame	

GUIDING QUESTIONS TO FARMERS GROUPS AND FARM FAMILIES FGDS

1. General Information

1.7 Date of interview: ____

1.8 Facilitators' Name/s: ____

1.9 List of participants and name of Farmers Group____

1.10 Village Name ____

1.11 Name and Type of the Canal____

1. Name of the crops grown in the area
2. Type of land ownership
3. Average area of crop land (irrigated area)
4. When did the canal become functional and who assisted in its rehabilitation
5. Percent of irrigable area not cultivated/ served by the canal
6. What new farming skills and knowledge have you acquired on farming for the last 2 to 3 years ago?
7. Who is associated with and how was the skills and knowledge acquired?
8. How has the skills and knowledge acquired assisted in improving your farming activities?
9. How much crop do you loss after harvesting?
10. What challenges do you encounter in crop farming and in post harvest handling?
11. Have you been trained on how to tackle such problems? Explain by who and how help the training is in addressing the challenges
12. When do you market your farm produce (immediately on harvest, when the supply becomes scarce etc)? WHY?
13. How do you market your crop? (directly on the farm, through middle men, own delivery to the market etc)
14. What challenges do you encounter in marketing of the farm produce
15. Have you been trained on how to tackle such problems? Explain by who and how help the training is in addressing the challenges.
16. What is done to prevent the canal from getting destroyed? Who does what to protect it?
17. Do farmers pay from the water they use for irrigation? What is the cost and how frequent is the payment done?
18. Do the money that you contribute to maintaining the irrigation put into good use? Please explain
19. Is the water available throughout the year in terms of access to the irrigated field and in amount desired?
20. If not, what strategies do you employ to manage water scarcity (i.e., reduce cultivated area, avoid planting crops that require a lot of water- state which ones are they; ration the water distribution; only farms that are near to the canal are served, etc. ?

21. What difference do you find in (i) irrigated area, (ii) crops grown; (iii) farming husbandry; (iv) Yield; (v) Stored crop loss; and (iv) in marketing before and after project intervention?

22. Who else have supported farming activities and infrastructure development in the area? What role have the organizations played?

23. If the project was to continue next year, which areas would like the project to put more effort on?

GUIDING QUESTIONS TO MANAGEMENT

1. ARDOPIS project had to "*improve rural livelihoods through improved agricultural production and marketing"* as its overall objective. This action is expected to bring the following results: (i) Irrigated agricultural production is improved and cropping patterns are diversified; and (ii) Market access, product marketing & processing are improved. According to your opinion, how relevant are the project objectives and results towards addressing beneficiaries' needs?
2. Before the break up of war in Somalia, Middle and Lower Shabelle was a major producer of crops for subsistence as well as for export. With the implementation of the ARDOPIS project, is the area regaining this lost glory? Please explain.
3. How effective were risks management during the implementation period?
4. Did there occur the need for redesigning during the implementation period? What prompted the redesigning and how did these affect on the project performance?
5. What difficulties did you encounter during the implementation phase of the projects? How the problems tackled and how did these problems affect the performance of the project? What technical and administrative support does the implementing team receive from FAO Nairobi office?
6. Explain about the tendering / contracting process of the irrigation infrastructure rehabilitation activities? How was good practices maintained? Were the community involved in the process and how?
7. Explain how work quality by the contractors and other project implementers (trainers, suppliers etc) was ensured? What tools did the project use for M&E? How was M&E undertaken and by who? What role did community play in M&E? Explain about project implementation reporting system?
8. Explain on organization and management of project activities implementation.
9. Explain how financial resources and other project inputs were dispatched to the point at which the activities were being undertaken. Were there any delayed experienced/ were inputs provided as requested?
10. Explain about decision making process between FAO Nairobi office and at the project implementation level?
11. To what extent have the project objectives achieved? What has influenced realization/ hindrance of the project objectives and results?
12. If the project was to be implemented again, what would you do differently this time?
13. To what extent were issues of gender integrated in the project implementation? What effects has this brought about to the management/ maintenance?
14. Were issues on environment considered in the project implementation? Please, explain.
15. What impact has the project made on (i) increasing farmers' farm yield? (ii) on the households income? (iii) enhancing households' food security?
16. What are farmers doing to ensure that the irrigation system does not breakdown again?
17. Are farmers able to undertake O&M of the project? Are spare parts locally available?
18. What lessons can be drawn from(i) Organization of the project implementation; (ii) project administration; (iii) Rehabilitation of the irrigation system; (iv) Rehabilitation of the access roads to market; (v) Improvement of crop production activity; (vi) Intervention in marketing.

GUIDING QUESTIONS TO WATER COMMITTEE FOCUS GROUP DISCUSSIONS

1. Name of the water committee, number and gender composition
2. Type of the canal (primary, secondary, tertiary) that the committee manage and its length
3. When was the committee elected
4. Who and how was the committee elected?
5. How many farm families are served by the section of the canal?
6. What are the mandate/ functions of the committee?
7. Have you received any training on management and operations of the canal? If yes, indicate number of trainings conducted, which institutions organized the trainings, who was trained and how the training is assisting in performing your day to day O&M functions of the irrigation structure. Fill in the table below

Type of training	Number of times	Number trained	Importance of the training	Which Organization

8. What are the main problems (managerial and operations) that affect the irrigation system and how regularly does this occur?
9. How is the problem tackled and by who?
10. What are responsibilities of the farm families in the management of the irrigation system
11. Do you encounter problems in mobilizing the farm families to take charge of the roles they are supposed to play? How do you resolve such problems?
12. When was the last committee election conducted?
13. When is the next one due?
14. Do you have by-laws?
15. Do canal members adhere to these by-laws? What happen if a member violates the by-laws?

RAPID MARKET INVENTORY-FARM BASED PRODUCTS

Name of the Market________________________________

Farm Produce	Cost		Source	
	Unit	Cost per Unit	Source of Supply (Janale, Shalambood, Mushaani, Merka, others- Specify)	Method (i: by farmer; ii. Middle men; iii Own sourced; iv Others, specify
1= Maize				
2= Bananas				
3= Onions				
5= Sesame				
6= Cowpeas				
7= Lettuce				
8= Hot Pepper				
9= Sweet pepper)				
10= Carrotri				
11= Soybeans				
12= Pigeon pea				
13= Potatoes)				
14= sorghum				
15= Lemon				
16= Water melon				
17= Mango				
18= Pumpkin				
19= Grape fruits				
20= Groundnut				
25= other crops, (specify)				

What problems do you encounter in sourcing for your market supplies?

TRADERS CHECKLIST:

1. Name of the trader
2. Gender and estimated age
3. Residence of the trader
4. Location of business
5. Sources of business supply and supply method?

	Produce sold by trader	Source of produce *(e.g. Janale, Shalambood, Mushaani, etc)*	Supply Delivery (buy from farm, delivered by farmer, delivered by middlemen etc)	Supply Delivery Constraints
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

6. Availability of farm produce in the year

	Produce sold by trader	Supplies Availability status		
		Months when available	Source	Supply Delivery Constraints
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Appendix 9: Some of the Project Photos


Kibili Bridge


Garshini

Appendix 10: Brief professional profile of the team members

Team Leader: Martin Kamau Gitau

Mr. is a holder of a Master of Public Administration (MPA) from Knightsbridge University, Denmark. Mr. Gitau is a highly experienced socio-economist and community development practitioner. He has a wide experience in facilitating community to manage their natural resources using Community Based Natural Resource Management (CBNRM) and Sustainable Land Management Guidelines for Impact Monitoring (SLM-IM). He has worked for over 15 years with communities in Kenya, Uganda, Somali and Sudan. He has just concluded Phase 1 of the Thematic Studies and Policy Instruments for Cross-Cutting Issues on Road Sub Sector based on Roads 2000 Nyanza experience. He is currently undertaking Comprehensive Baseline Survey in Puntland, Gedo and Mogadishu for Norwegian Church Aid. The baseline encompasses Watsan, education, environment, livelihoods and enterprise sectors. He is also working on formulating a framework for NRM and strategy for District level institutional capacity building for ILO supported Sustainable Employment and Economic Development (SEED).

Mr. Gitau led a team of experts in the preparation of Participatory Forest Management Plan for Gathiuru, Ndaragwa and Olbolosat forests funded by the European Union through Community Environmental Facilities (CEF). Mr. Gitau is also part of a 12 national and international team of consultants undertaking a feasibility study on the establishment of central abattoir in Northern Kenya. He has just concluded carrying out an evaluation for European Commission and GoK funded Community Development for Environmental Management Programme (CDEMP) in a multidisciplinary team composed of two international and two national consultants. Mr. Gitau was handling participatory approaches and poverty alleviation aspects of the Mid-term evaluation. Recently, he lead a team of tourism enterprise development, biodiversity experts and engineers to conduct a feasibility study for SORALO (the South Rift Association of Land Owners), on Potential Community Based Tourism Sites in South Rift Region. He led a team of engineers in evaluating FAO and CARE Agricultural and water & sanitation projects in Somalia. Mr. Gitau has conducted numerous Organizational Development and Institutional Strengthening (ODIS) to numerous CBOs and meso-level organizations supported by SNV/ SARDEP in Laikipia and Kajiado Districts. Marketing, value addition and business development plans formed part of the assignment.

Other direct experience of Mr. Gitau include: Lead socio-economist for End of Project External Evaluation for COOPI's Pastoralist Livelihood Emergency Assistance in Sool, Sanaag (Somaliland) and Bari (Puntland) regions; applying Community Based Natural Resource Management (CBNRM), he facilitated sustainable utilization of wetland ecosystem of Lake Victoria in Jinja Municipality, organized and strengthened peri-urban community of Jinja under the auspices of Agenda 21st Model Cities; principal socio-economist for the Evaluation of Plan International's Family and Basic Community Services Programme. He was one of the facilitating trainer/ consultants in NETWAS organized international training workshop in, "Gender in Water and Environmental

Sanitation (WES) and presenter of two papers on Communication Skills- Techniques and Method Application and, A Case Study for Jinja Urban Wetland Women Project. Mr. Gitau facilitated a strategic planning workshop for Samburu pastoral community in Wamba organized under Samburu Integrated Development Project (SIDEP) in collaboration with Netherlands Development Organization (SNV); was contracted by International Institute of Environment and Development (IIED), London, to carry out evaluations of Agenda 21 programmes of Jinja Municipality.

He has been the principal consultant in numerous EIAs and EAs undertaken by the Company; contracted by Horn Relief to carry out Environmental Impact Assessment on Alternative Livelihoods Area Economic Recovery Programme, in Somaliland. Team Leader for a Norwegian People's Aid funded Community Resource Mapping Project (COREMAP), using Participatory Land Use Planning, (PLUP tool) in Aluakluak and Ngop Payams, Yirol County, South Sudan; Lead consultant in land tenure (and use) change scenario study for P&D Ranch; the principal socio-economist for local (national) Market Survey for the Aloe Trade in Kenya commissioned by Laikipia Wildlife Forum 2002; Rural Livelihoods, Food Security and Poverty Reduction survey in Suba and Bomet Districts for International Crops Research Institute for the Semi Arid Tropics (ICRISAT) in conjunction with the Ministry of Labour and Human Resource Development and UNDP Nairobi; and Sustainable Livelihoods Study in Kianjuki and Githumu Communities, Embu District, contracted by LIRI System- Wide Livestock Programme, funded by DFID, among others.

Assisting Consultant: Mr. Ahmed Hussein

Mr. Ahmed Hussein holds a bachelor of Technology degree in civil structural Engineering. He has over 8 years experience in both water and roads engineering as he has been engaged in consultancies to provide expert services in the field. Further to his experience, he has received training in security handling, leadership, in senior first aid, project cycle management tools and skills and engineering software in Auto CAD. Some of the hands on experience include;

- Prepare technical drawings and design water structures such as Toilets, wells, tanks and earth pans (bullies)
- Environmental conservation and land reclamation by control of erosion and land protection.
- Prepare technical reports and general reports on monthly and annually.
- Prepare bill of quantities, material selection, financial estimates and request.
- Monitoring of projects at field level.
- Capacity building in water and sanitation for community health promoters.
- Conduct water quality assessment periodically at source and household level.
- Training water suppliers on methods of water treatment, use of chlorine and dosage as per world health organization.
- Construction and rehabilitation of roads.
- Design of roads, implementation of designs.
- Supervision of construction work.
- Registration of designs.