

FINAL EVALUATION REPORT
For
The State of Eritrea
Administration of Northern Red Sea

**Shebah-Demas Integrated Development
Programme (SDIDP)**



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Acknowledgement

It is our great pleasure and honor to share with you this important final evaluation report for Shebah-Demas Integrated Development Project (SDIDP) aimed to improve the living standards in five selected villages of the Shebah-Demas communities.

We are grateful to the Norwegian Church Aid (NCA) for giving us to consult on the outcomes and findings of SDIDP through the funds from the NCA. We also share to support the objectives of the Government of Eritrea and NCA that aims to offer to every grass root the possibility to contribute in achieving to securing food and reducing poverty in addition to the view that all citizens have equal rights and roles in the development of the country.

The study team is pleased to commend the NCA and State of Eritrea's sustained efforts in developing further the interventions being exercised. We hope this initiative will continue to receive support from concerned decision makers and users of the outcomes of this evaluation.

We hope the results of this study will help make a difference and will bring efficient and applicable measures in order to make contribution to our future activities and further recognition of the importance of developing farming areas of Eritrea.

We extend our thankfulness to the NCA for the financial contribution made to the program. Special thanks go also to NCA project staff, Zonal and sub-zonal administration, MOA Northern Red Sea staff at all levels, village administrators, FGD and women groups of all five villages for taking their valuable time in planning, arranging and providing the required inputs of this study to make it in order.

We assure you that the consulting firms will continue to work with you towards these achievements and ambitions.

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EQUIVALENTS AND ABBREVIATIONS
Currency Equivalents

<u>Project Closing date</u>		<u>Project starting</u>
<u>date</u>		
USD = Nakfa 15.0		Nakfa 15.0
1 NOK = Nakfa 2.2272		Nakfa 1.8587

WEIGHTS AND MEASURES

1 Metric Tonne (mt)	=	1000 kg
1 Kilograms (kg)	=	2.205 lbs
1 Quintal (Qt)	=	100 kg
1 Meter (mt)	=	3.281 ft
1 Foot (ft)	=	0.305 m
1 Kilometer	=	1000 mt
1 Kilometer (km)	=	0.621 mile
1 Square Kilometer (km ²)	=	0.386 square mile
1 Square Kilometer (km ²)	=	100 ha
1 Square Mile	=	259 ha
1 Square Mile	=	640 acres
1 Hectare (ha) = 0.01 km ²	=	2.471 acres
1 Hectare (ha)	=	10,000m ²

FISCAL YEAR

January 1 – December 31

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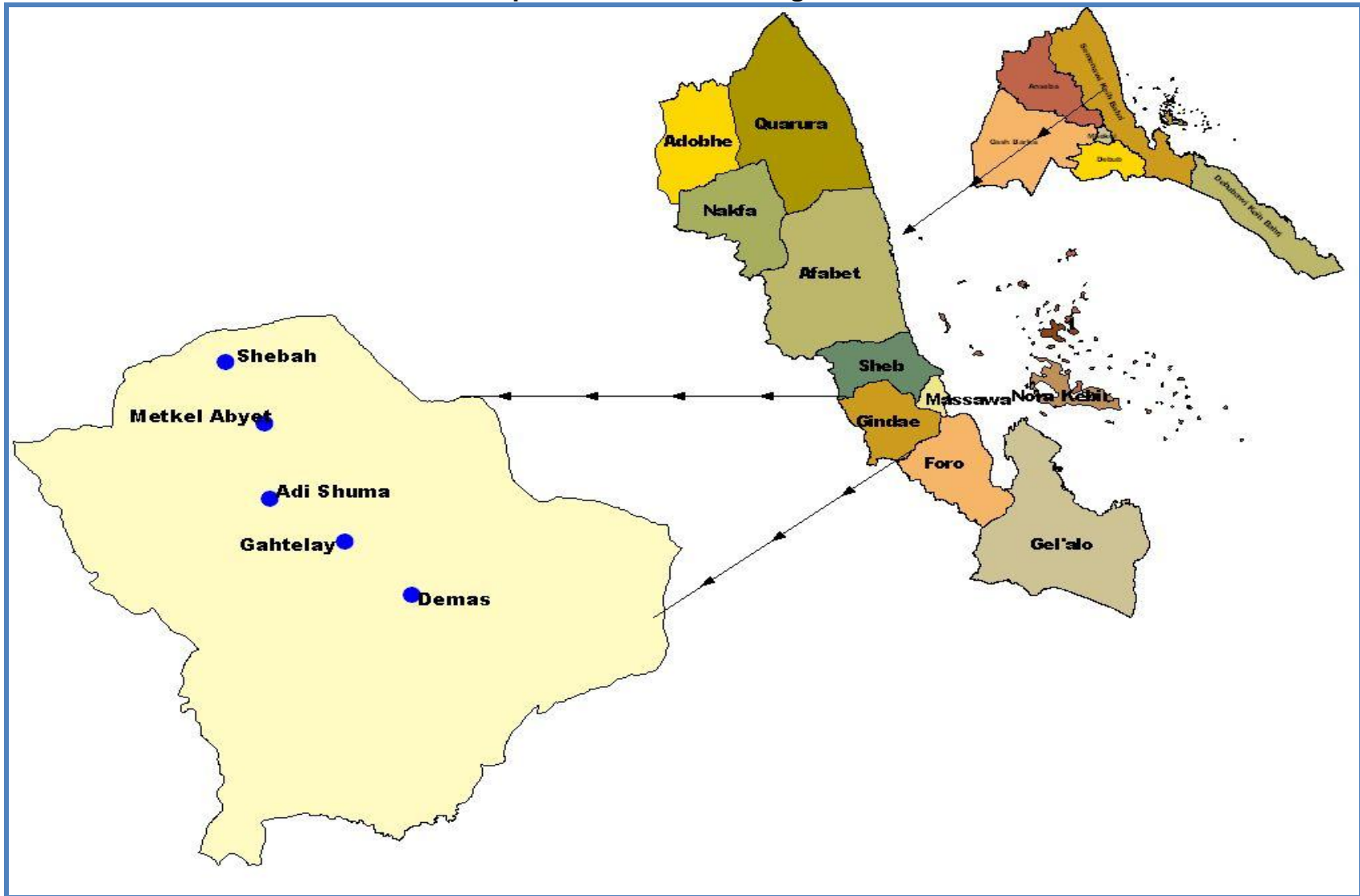
ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
APDD	Agricultural Promotion and Development Department
EIA	Environmental Impact Assessment
FGD	Focus Group Discussion
FGM	Female Genital Mutilation
GDP	Gross Domestic Product
GOSE	Government of the State of Eritrea
HH	Household
HIV	Human Immunodeficiency Virus
IFAD	International Fund for Agricultural Development
IP	Implementing Partners
LCC	Local Community Committee
MOA	Ministry of Agriculture
MOH	Ministry of Health
MOLG	Ministry of Local Government
MOU	Memorandum of Understanding
M&E	Monitoring and Evaluation
NCA	Norwegian Church Aid
NAKFA	Eritrean Currency
NOK	Norwegian Kroner
NRS	Northern Red Sea
NUEW	National Union of Eritrean Women
NUEYS	National Union of Eritrean Youth and Students
O&M	Operation and maintenance
PMU	Project management Unit
PRA	Participatory Rural Appraisal
PSC	Project Steering Committee
SDIDP	Shebah-Demas Integrated Development Programme
TA	Technical Assistance
TOR	Terms of Reference
UK	United Kingdom
USD	United States Dollars
WRD	Water Resources Department
ZIS	Zonal Infrastructural Services

GLOSSARY (Local Words)

Agim	Field embankment
Mogogo/Adhanet	Improved Energy saving stove
Tsmidi	0.25 hectare
Zoba	Region

**Fig. 1 PROJECT MAP: Shebah-Demas Integrated Development Programme (SDIDP)
Implemented in Five Villages of Ghindae Sub Zone**



BASIC DATA SHEET

1	Name of Project	Shebah Demas Integrated Development Project
2	Project ID Number	10006
3	Financing/Supervising	Norwegian Church Aid (NCA)/NORAD
4	Guarantor	The Government of the State of Eritrea
5	Main Cooperating Partner	Ministry of Agriculture
6	Beneficiaries	A total of 11265 people in 5 villages namely: Shebah, Metkel Abiet, Demas, Adi-Shuma and Gahtelay
7	Executing Agency	Implementing Partners (MOA-NRS, Zonal and Sub-zonal Administration and village communities
8	Zoba	Northern Red Sea
9	Total Budget	32.5 Million Nakfa
11	Starting Date	January 2002
12	closing date	30 December 2009

EXECUTIVE SUMMARY

Project brief: The overall goal of Shebah-Demas Integrated Development Programme (SDIDP) is to improve the living standards of the communities in the project area of Shebah-Demas through sustained food production, reduced food insecurity and higher farm incomes. The specific objectives of the project were maintain and improve infrastructural works (diversion structures) used in spate irrigation, improve water supply for domestic and animal consumption, capacity building to beneficiaries (women, men and project staff), sustained improvement in their health status, environmental protection, and gender mainstreaming.

In Year 2000, after the completion of Zula Project, SDIDP was initiated and identified by the Ministry of Agriculture (MOA) as a viable project for the Northern Red Sea Region. As per the request of MOA, a baseline study was carried out in September 2000 and came out with recommendations of issues of interventions. However, the recommended interventions were beyond the financial capability and mandates of NCA. With additional Reviews and agreements made between NCA and government, the emergence of SDIDP came into reality based on the communities' priorities and was ready for implementation at end of 2001. The project was implemented during 2002 through 2009. Initially, SDIDP's duration was proposed for six years (2001-2006). In September 2006 an evaluation was carried out to evaluate the outcomes and impacts of the project and recommended that the project needed a further extension of 3 years to close at end of 2009.

The project covers five villages of Ghindae Sub-Zoba namely: Shebah, Metkel-Abiet, Adi-Shuma, Gahtelai and Demas with a total population of 11,265. The number of households has been estimated at 2,357 with an average family size of 4.74. The project consisted four components (spate irrigation, water supply development and sanitation, capacity building and social services rendering facilities).

Achievements: In this section, achievements on spate irrigation, water supply development and sanitation, capacity building and social services rendering components are summarized.

Spate irrigation component: The level of achievement vis-à-vis the planned activities are more than satisfactory. Seventy one percent (71%) of the achievements were 100% or over, while the rest 29% of the activities performed in the range of 75% – 85% of the target. Key activities of this component include: embankment construction with oxen; embankment construction with heavy machinery; diversion structures with gabion; excavation work of main canals; stone collection; procurement of gabion wire/mesh and galvanized binding; and develop new irrigable areas.

Water supply development and sanitation component: Under this component, the project achieved almost the intended targets. The achievements ranged from 90% to 100% of the planned. Water supply schemes are

established in six sites (Shebah, Metkel-Abiet, Adi-Shuma, Asus, Gahtelai, and Demas. In addition, each scheme established a water committee. Women constitute 30% of those committees.

Capacity building Component: At project closing time, though the numbers of trained beneficiaries were limited, the achievements under this component were highly significant. The achievements ranged from 90% to 111% of the planned targets, except for staff training (short courses), which was only 33%. Two forms of approaches were followed, the first was training focused on women farmers aiming at strengthening their role regarding domestic responsibilities as functions as wives and mothers, and to economic and social contribution to the communities. Secondly, training staff and farmers (men and women) aiming at strengthening the capacity of both staff and beneficiaries to use the services provided by SDIDP and government in order to efficiently support the social and economic development of the project and that of the country in general.

Social services rendering component: under this component key activities were the renovations of two clinics (Gahtelai and Demas), one school at Demas village and a provision of an ambulance serving all villages. Accordingly, the school and the two clinics were renovated and one ambulance was purchased timely and handed over to Ghindae sub-zonal Health center. The provision of the ambulance was assisting pregnant women in transporting them to the health center for delivery. The two clinics assisted greatly on the health conditions of the communities' members at large. Similarly, the school has contributed to reduce dropouts and absentees.

Project cost and finance: the total project cost was Nakfa 32,478,841 financed by NCA. The actual grant at project closure was 100%. The GOSE and beneficiaries contributed in kind which has not been so far assessed. Out of the approved grant, Nakfa 32,487,932 had been paid out at project closure on 31/12/2009. Currently, there are no any receivables or accruals. SDIDP had paid fully for all of the tasks accomplished during implementation period. The remaining balance at Massawa account shows only Nakfa 9.12 (As at 31 December 2009). Spate Irrigation development utilized 66.1%, Water Supply development 11%, Nursery development 5.7%, Capacity building 4.9%, Support to social services (Health and education 4.0%) and project coordination (Project operation, and transport) used the remaining 8.3% of the total fund. It has to be commended that the progress of funding increased each year, from 7% in 2002 to 20% in 2009. It is important to note that 72% of the total expenditure had been utilized in the years 2005 through 2009 or 48% during its extension period (2007-2009).

Project Impact: The performance of project impact was rational. The areas discussed in this section include: impact on food security; physical and financial assets; human assets (capacity building); social capital and empowerment; environment and gender. Focus Groups (*men and women*) and Key informant Discussions which were qualitative in nature have been largely

utilized by asking respondents the attitudes and changes created by the project. The project's impact is expected to positively improve the productivity of agriculture (Crops and livestock).

Sustainability and viability: the activities of the project are likely to be sustained as they have responded communities' needs and wants. Committees administering spate irrigation and water supply schemes have been initiated by the project and are put in place. Organizational capacities of these committees are limited which are at infant stage. Support for strengthening water committees and further training is required.

Overall performance: The performance of SDIDP is satisfactory in accordance with the review of its relevance, efficiency, sustainability and impact. The project's objectives have been met to a greater extent.

Insight and recommendation

Strengthening Social Capital and Empowerment: Various committees have been initiated by the project to administer and follow-up the spate irrigation systems and water supply management. These committees are essential for sustainability of assets and water abstraction and irrigation operations. Further training is needed to administer and manage the structures and farm plots (collect fee, pay workers, and pay O&M).

Spate irrigation structures: The diversion structures constructed by oxen and machinery are highly relevant in the project sites. However, FGDs, key informants and individual interviewee informed that breaching is the key problem that repeatedly occurs every year. It demands frequent maintenance which is too much laborious, time taking and expensive. To alleviate this primary problem, a means of permanent diversion structures need to be established to reduce the efforts, gain more time for agriculture and avoid trees cutting.

Initiate Monitoring and Evaluation Mechanism: SDIDP has done a lot of efforts in setting up an M&E system for data collection. However, records of the relevant data for monitoring project performance; assessing outcome and impact are lacking. Therefore, it is recommended in future (i) to imitate a Management Information System (MIS) so that data base is designed and developed since the inception of the project, and (ii) Pre-Project Baseline surveys should be conducted at project formulation to set Benchmarks

Increasing Women's Participation: Women's participation in the life of the project was positive. Their involvement in various trainings, income generating activities, energy saving stoves, FGM awareness raising campaigns had improved knowledge and skill of communities. However, the participation had been very low in ensuring ownership, land distribution and in the development of irrigation schemes. Hence, Government and interested parties have to support women in strengthening their capabilities and managerial skill in order to build confidence and sense of ownership.

1 INTRODUCTION

1 This is a final evaluation document prepared by independent consultants assisted by two members of partners and one NCA project responsible member staff, but with strong element of external evaluation (consultancy team). The main purpose of the evaluation were: to assess and examine the extent to which results correspond to objectives; to derive lessons from this experiences in order to improve future planning, implementation and monitoring of similar interventions; and to control the project implementation with the view to use of funds and project administration.

1.1 *Background of the Evaluation*

2 This report documents the findings of the final evaluation of Shebah-Demas Integrated Development Programme (SDIDP) over a period of five years (2005-2009) implemented in five villages of Ghindae Sub Zone, in Northern Red Sea Zone. SDIDP (ID Number 10006) funded by Norwegian Church Aid was created in the year 2001 to assist and improve communities that practice traditional spate irrigation and thereby upgrade the living standards of identified project beneficiaries. Since the start-up of the project, the Programme has accomplished remarkable achievements.

3 An evaluation had been conducted in July-August 2006 by WEKITA consulting Firm. The evaluation report recommended that the Programme need to continue for another three years (2007-2009) and make a final evaluation of the Programme by an independent consultant. Accordingly, The Programme was extended to close by the end of 2009.

4 in preparing this Final Evaluation report, the consultants assessed, incorporated and analyzed all available data and activities carried out by the project and implementing partners from 2005 up to 2009. A thorough investigation has also been carried out for the duration 2001-2004.

5 The field work for the evaluation took place from 22 to 26 December 2009 and was undertaken by independent consultants composed of agricultural economist, water/irrigation expert and a socio-economist (agricultural sociologist) assisted by two implementing partners and one from NCA office.

6 The scopes of the final evaluation undertaken were:

- i. to assess whether the project objectives have been met - by studying detailed activities or assess the achievements of the project components and their effects and impact on the target group;

- ii. to assess the overall Programme with the view to: effectiveness, performance of partners involved, participation of all stakeholders involved, gender equity and equality, and impact on women's and girls' role in society and on their livelihood; and
- iii. to derive lessons and recommendations on planning, implementation and monitoring from this experiences for future programmes and provide a basis for accountability to concerned funding and implementing partners and beneficiaries.

7 The approach and methodology used in this study was performed as per the terms-of reference's (TOR) requirements (Annex 1). The structure of the evaluation report starts with a discussion of the main features of the project (section 2). Section 3 discusses the performance of the project in terms of effectiveness, relevance, efficiency, sustainability and impact; the next Section 4 looks at the performance of the partners in implementing project deliveries. Section 5 discusses project cost and financing. The evaluation report concludes with an overall assessment (section 6) of the project with conclusions, lessons and recommendations.

1.2 Approach and Methodology

8 The Final Evaluation Report was developed and assessed based on the TOR provided by the NCA to the consultants. For proper data collection and analysis the evaluating team started its assignment with a desk review of the basic documents of SDIDP including project annual reports, Ghindae base line survey document, annual work plans and budgets, Consultants Report on the End Evaluation of the Shebah-Demas Integrated Development Programme (2002-2004/5), audits and financial statements, Memorandum of Understanding documents, NCA global and country strategy document and other status reports. In addition to own experiences other secondary data has also been utilized.

9 The study was an exploratory type of evaluation and had relied heavily on primary data. The qualitative data were collected by using ethnographic methods, which included individual interviews, key informant interviews, focus group discussions to men, and focus group discussions to women. These tools were undertaken in all five villages of the project area.

10 A total of 30 individual farmers (men and women) were interviewed from all of those five villages of the project area. Women constitute 23.3% of the total interviewee. The data were collected using both semi-structured and open ended questions. Interviewees were selected on purposive. The representation of the individual farmers' interview from each project site is as illustrated in the following table.

Table 1. Individual Interviews from each project area/village

S.No	Village (Project site)	Number of Interviewee		Total
		Men	Women	
1	Shebah	6	1	7
2	Metkel Abiet	4	2	6
3	Gahtelai	6	1	7
4	Adi Shuma	4	2	6
5	Demas	3	1	4
Total		23	7	30
Percentage (%)		76.7	23.3	100



Fig. 2. Interviews with individuals

11 The individual household interviews proved farmers perception and attitudes towards SDIDP intervention. One individual interview took about 30-40 minutes. Every interviewee was told about the purpose and objective of the subject matter, why and what we were doing the interviews and who we are. The general purpose of the interviews was to better understand more specific issues about the SDIDP intervention in their specific areas in a more personalized manner (Annex 5).

12 Fourteen Key informants were also contacted to extract as much information as possible regarding SDIDP (refer List of persons met in annex 13) intervention implemented in selected five villages of Ghindae sub zone. The data for the village study was collected in collaboration with various key informants: Zoba Ministry of Agriculture, Zoba infrastructural Services, Sub-Zoba Administration, Sub-Zoba Ministry of Agriculture, NCA office, and Village Administrative leaders. Discussions with the key informants generated the much needed data about key issues of the project. The representation of the key informants and position are also illustrated in the following table.

Table 2. Key informants

S.No	Organization	Number of key informants	Position
1	Zoba Infrastructure	1	Head, project mgt & engineering services
2	Zoba Ministry of Agriculture	2	Head MoA; planning & statistics expert
3	Sub Zoba Administration	1	Administrator, Ghindae, Sub-Zoba
4	Sub Zoba Ministry of Agriculture	3	Head of MoA; 2 experts
5	NCA project office	5	Programme manager, Programme officer, finance head, & SDIDP project manager, Accountant
6	MoH, Gahtelai	1	Gahtelai health center
7	City Administration	1	Governor, Gahtelay
	Total	14	



Fig 3. Discussions with key informants **MoA/Head, Zoba infrastructure head** **Sub Zoba administrator**

13 These key informants are knowledgeable about the deliveries, challenges and advantages of the programme. Lengthy discussions were held with the chosen key informants individually. Checklists of questions (such as implementation arrangements and organization, links among partners, performance of the project, impact brought by the project, etc) were used to guide the discussions. Most discussions were held at the informant’s offices and places at their convenience in relation to time.

14 Ten focus groups discussions (FGDs) were carried out (5 FGD women and 5 FGD men) separately in each project area (Shebah, Metkel Abiet, Gahtelai, Adi Shuma and Demas). Sample of people (six to twelve) were brought together with the help of SDIDP project management and village administration for a joint discussion (refer the list of FGD in annex 3 and 4). Each FGD discussions took about 1:30 to 2 hours. The representation of the farmers for FGD (men and women) from each project site is as illustrated in Table 3 below.

Table 3. Focus Group Discussions from each project area/village

S.No	Village (Project site)	Number of FGDs		Total
		Men	Women	
1	Shebah	9	6	15
2	Metkel Abiet	12	7	19
3	Gahtelai	12	6	18
4	Adi Shuma	10	5	15
5	Demas	9	6	15
Total		52	30	82
Percentage (%)		63	37	100

15 Check list of questions were prepared and the Focus groups were allowed to talk on issues of concern freely. By attending, listening and noting such discussions, the consultants were able to collect a lot of information that helped to supplement and countercheck the information gathered by individual interviews and discussions with key informants.



Fig. 4 Focus Group Discussions (men and women separately)

1.3 Limitation of the study

16 NCA, Implementing partners, experts at different levels, FGD and individual farmers were helpful and cooperative in providing the required information and facilitating this evaluation report. However, the following limitations were noted during the process of the evaluation but by no means will change the general outcome and scope of the evaluation.

- The evaluation was undertaken in the absence of consolidated benchmark data for measuring project impact including data on area, production, income and associated information. These were the main limiting factors prohibiting the analysis. Therefore, the consulting team was obliged to rely on qualitative data collection merely based on interviews with FGD, Key informants and individuals.
- It has been observed in the past three to four years that rainfall or flood was so minimal. Consequently farmers' responses were highly influenced or biased by the drought and minimized the overall production estimates.
- As usually happen, farmers were reluctant to provide the actual yield, production, price or other incomes and expenditures may be due to cultural reasons or with the fear that the government may impose higher taxation.

2, MAIN FEATURES OF THE PROJECT

2.1 Project Area and Target Group

17 Shebah-Demas Integrated Development Project is the second NCA assisted project in Eritrea after Zula Development Project in the Northern Red Sea region, Eritrea. The Shebah-Demas area is located in the Northern Red Sea Region under the Ghindae Sub-Zoba administration and has been designed and implemented covering an area that extends from Shebah to Demas. The area is within the “coastal plains zone” (CPZ): below sea level to 600 m; a hot desert-like climate with less than 200 mm of rainfall. Potential evapotranspiration in excess of 2,000 mm. Crop production is difficult without irrigation, the pasture resources are poor; but extensive pastoralism occurs.

18 The climate of the project area is characterized as hot and semi-arid zone with an annual temperature of 24 - 47°C. Rainfall situation varies from 50 mm - 200 mm. Precipitation is very low in the project area. The livelihood of the project area depends mainly on irrigation for agriculture from floods flowing from the highland areas between July and September; and from the relatively small run-off the escarpments, commonly known as the ‘green belt’ during October-March. In general, the Eastern Lowlands including the project area have been recognized as potential area for intensive arable production by virtue of seasonal flash floods from Eastern Escarpments of the Central Highlands. The low and erratic rainfall in the coastal area of the Red Sea is not successful for crop production without irrigation. Crop production in the areas has fluctuated with the availability of flooded land, timing of floods, quantity of floodwater and severity of pest infestation and crop variety used.

19 The livelihood system in the project area is agro-pastoralist and semi-nomadic. Families derive income from the spate irrigated agriculture, from livestock keeping and from other opportunities. During the months of June to September a large part of the population, mainly women and children, migrate to the highlands, to areas such as, Nefasit, Selomuna, Ghindae and Segheneiti (Demas area). They travel around 30-40 kilometers, along with much of the livestock, to escape the heat and temperature (40-50 °C). Many men stay behind to look after their farm land, and to repair the diversion structures (*Agim/embankment*) and field bunds. Single headed households also perform farm duties.

20 Prioritized constraints identified by Zoba officials and interviewed farmers in the project areas include unreliable water supply, poor water control, poor market prices, high labor requirements to repair and/or rebuild earth flood diversion structures, insects on sorghum (stalk borer), inadequate infrastructure, heavy harvesting of acacia. Unimproved spate irrigation (not strictly profitable) and the mean allocated farm size is too small (0.5-2 ha/HH) to provide family food security.

21 Total Population in the plain areas of Ghindae sub-Zoba which includes the communities of Shebah, Metkel-Abiet, Adi-Shuma, Gahtelai and Demas are the direct beneficiaries. However, neighboring districts of Ghindae Sub Zone are also indirect beneficiaries of the project.

22 At full development the total number of households proposed to participate in and benefit from the project's spate irrigation, Water supply, social services and training activities was estimated at 2357 households, or about 11,265 people.

Table 4 Population Size in the project Area:

Village	House hold	Family size	Male	Female	Population
Shebah	415	4.95	1080	975	2055
Metkel-Abiet	644	5.01	1564	1667	3231
Adi-Shuma	609	4.59	1350	1447	2797
Gahtelai	443	4.76	962	1150	2112
Demas	246	4.39	530	540	1070
Total	2357	4.74	5486	5779	11265

Source: SDIDP annual plans and reports

2.2 Project Formulation

23 In Year 2000, after the completion of Zula Project, Shebah-Demas Integrated Development Programme SDIDP was initiated and identified by MOA as a viable project for the Northern Red Sea Region. In turn, PRA assessment has been done to come out with a specific location, activities and time frame that NCA subsequently prepared a fundable project report at end 2000 to provide the basis for approval and financing. MOA requested to NCA for a baseline study of Ghindae sub-zone that was carried out in September 2000. Consequently, MOA Northern Red Sea Zone identified the area. A baseline study, carried out in September 2000 recommended important issues of interventions. However, the recommendations were beyond the financial capability and mandates of NCA. With additional Reviews and agreements made between NCA and government, the emergence of SDIDP came into reality based on the community's priorities and was ready for implementation at the end of 2001.

24 The SDIDP funded by Norwegian Church Aid (NCA) was created in the year 2001 to assist and improve those communities that practice traditional spate irrigation and thereby upgrade the living standards of project beneficiaries. Since the start-up of the project (2001), the Programme has accomplished remarkable achievements.

25 The positive outcome gained from the former Zula Development project was the main experience gained and was a factor to replicate and implement in

similar geographical area like that of Shebah – Demas. The communities of these areas are semi-nomadic type some of them mainly dependent on spate irrigation practices of traditional type.

26 Project implementation plan was developed on the basis of the baseline survey (2000). In developing the process of the project design SDIDP involved key stakeholders mainly the MOA and concerned communities. The baseline survey suggested that targeted and intensive intervention should be implemented in the Plains (with villages Shebah, Metkel-Abiet, Adi-Shuma, Gahtelai and Demas).

2.3. Project's Goals, Objectives and Components

27 The overall goal of the project is to improve the living standard in five selected villages of the Shebah-Demas communities over a period of five years (2005-2009).

28 The specific objectives are that poor households in the project area:

- have an improved household food security in the targeted community through sustained increased food production, reduced food insecurity and higher farm incomes from improvements in their livestock and crop production activities;
- environmental protection and improvement through raising, distribution and planting of tree seedlings;
- a sustained improvement in their health status by introducing energy saving stoves and improving the environment;
- improved water supply for domestic and animal consumption; and
- Improved capacity of farmers to use the services available from government and other sources to support their initiatives and priorities for social and economic development through various training programs both to men and women.

29 For the different project components objectives and activities were formulated for planning purposes. The project consists of the following five components namely:

- i. **Spate Irrigation Component:** The main objective of this component was to supplement the water requirements of various crops to irrigate low-lying lands where rainfall is insufficient for crop cultivation so that land area and productivity is improved. The result of this component was thus to strengthen the capacity of controlling the floods to a manageable degree causing less damage with the help of machinery and oxen power.

This component was to be implemented in all the villages of the project area. Construction of embankments and diversion structures (earthen structures and gabions) were the main features of this component to increase cultivable area and as well yield per unit of area. SDIDP, at completion stage was expected to control flooding for irrigation purposes, increased cultivable land, increased production and increased number of farmers (men and women) engaged in spate irrigation activities.

In this component construction works of Embankments (779,766 m³) by oxen and bulldozer, Gabion construction (10,700 mts), canal works (7478 mts), raising tree seedling (750,000) and land development were the main interventions in Gahtelay, Shebah, Metkel Abiet, Adi Shuma: and Demas villages.

- ii. **Water and Sanitation:** The objective of this component was to improve the health status of population, particularly those for women and children through improved access to safe and adequate water services (drilling boreholes, supply of motor pumps and solar panels, reservoirs and distribution centers), training on disease prevention, and better access to potable water. The component was to provide assistance in order to upgrade the services through provision of water, solar power, and fencing. Drinking water supplies were planned to be improved through the development of boreholes and wells, and training the communities on operation and maintenance of the facilities coupled with hygiene and sanitation. Establishment of pilot VIP latrines in two villages was also included under this component.

The main targets of this component included: Drilling of six water sources, Installation of seven electrical submersion pumps and solar panels, Provision of four motor pumps, Procurement of five fiber glass tankers, Construction of two reservoirs, Rehabilitation of one Hand dug well, the training of one hundred farmers on hygiene and sanitation, Training of 10 persons on operation and maintenance of pumps and establishment of six Water committees.

- iii. **Farmers and staff training:** Training on general agriculture and soil and water conservation was also another component of the SDIDP. As proposed, SDIDP aimed to train 100 farmers a year and improve their knowledge on various topics of interest. Both men and women were to be trained and provided by the MOA expertise staff. Short term training courses for project and IP staff to expose themselves with similar type of business elsewhere was also included under this component.

Some of the key targets in this component include: organize short term courses for government staff (3 persons), Farmers Training on agronomic

practices, crop protection, soil and water conservation and animal husbandry (300 farmers).

- iv. **Women training in home economics:** This component was aimed at empowerment of women participation at all levels to bring positive impacts on women's productive and reproductive roles. Major focus was given at the introduction of income generating activities, the availability of energy saving stoves and drinking water, Training on home economics, FGM, Gender and HIV AIDS, home management and upgrade the general awareness so that they could participate in community issues equally with men.

Main targets of this component were: Women training in home economics, income generating activities and handicrafts (535), conduct gender Workshop (180), carry out FGM Workshop (60), preparation of FGM documentary films in 10 villages, FGM awareness to leaders and administrators, conduct FGM Assessment study and the construction and training of energy saving stoves (350).

- v. **Strengthening and rehabilitation of schools and health Centers:** based on PRA assessments, strengthening the social sectors (schools and health institutions) were priorities given by the community and government to ensure social security. The intervention was to renovate Gahtelay Health station and the provision of an ambulance and rehabilitation of the Demas clinic and elementary school in order to minimize dropouts and assist especially pregnant women during delivery and mitigate unforeseen incidents.

- vi. **Others: Nursery Development in Ghindae and Maihabar::** The aim was to restore the environment (Watershed management and the reduction of soil erosion) through the production and planting of tree seedlings.

Around 750,000 Seedlings were to be raised at MOA's Ghindae and Maihabar Nursery Stations to assist the requirements of sub-Zoba to be planted in Dongollo Tahtai, Dongollo Laelay, Ghindae, Embatkalla, Nefasit and Maihabar.

2.4 Implementing partners and Arrangements

30 The Ministry of Agriculture (MoA): The MoA-NRS under the guidance of the PSC had the formal responsibility for planning, implementation, and reporting of the project activities, achievements and failures. It ensures full participation of target communities. This responsibility was exercised through the organizational line from the head office, via the regional branch in Massawa and the Ghindae sub-Zoba office. Agricultural Promotion and Development Department of MOA was also to provide technical and administrative support to assist in the implementation of project

Zoba Northern Red Sea Administration was the lead Executing Agency and was given responsibility to implement the SDIDP. In collaboration with MOA the ZIS was responsible for infrastructural developments and water supply services (Refer organizational Structure of PMU in annex 2).

31 Project Steering Committee: A PSC, accountable to the NRS governor, has been established at the Zonal level comprising representatives from the Ministry of Local Government (MoLG), MoA, NUEW, NUEYS and SDIDP shall conduct periodic review, provide policy guidance, oversight and technical support and provide essential findings as may be required. The group was to meet regularly to review progress of implementation and resolve any technical and administrative constraints.

32 Project Management Unit (PMU) - This unit had a separate office established in Ghindae. MoA was to coordinate the activities of the project. The coordination also included other elements besides those under the formal MoA responsibilities, including the required contracts with the local community structures. The PMU was headed by a project manager responsible to the MoA and other relevant support staff. The project manager was also responsible to the MoA/SDIDP for proper planning, documentation and reporting on the project. The PMU comprised of two men and three women (Refer project staff and training in annex 11).

33 Participatory Rural Appraisal Group (PRA Group) - was an informal group of men and women established at village level to discuss local community problems and the initial setting of priorities for future activities. They were the consultative body for determining the community's problems, identifying the causes and suggesting the most relevant solutions. PRA was a helpful tool in enabling the local people to conduct their own analysis, and often to plan and take action. It put the local people in the center of problem identification and priority setting. The use of PRA in the project area, therefore, was to ensure more share and ownership of relevant information by the target beneficiaries.

2.5 Implementation Schedule

34 The SDIDP was created based on the experiences gained from the Zula Development Programme. The project was identified by the MoA based on national and sector specific priorities set by the Ministry of Agriculture. Following the decision to implement the program in the current project site a baseline study was carried out to identify major problems, set strategies and define priorities; Most of the project activities were not delayed when compared with the Annual work plans and budgets. The project was implemented during 2002 through 2009. The baseline survey was conducted for Ghindae sub-zone in September 2000 followed by PRA assessments and came out with specific

action areas. Right after approval (April 2001) the PMU was formally established to base its location at sub-zonal administration (Ghindae).

35 Initially, SDIDP's duration was proposed for six years. It commenced its activities in 2001. In 2006 an evaluation was carried out to assess and analyze the outcomes and impacts of the project. The evaluation among others recommended a further extension of three years starting 2007 to close at end of 2009.

2.6 Reporting

36 A total of 32 reports, (24 quarterly reports and 8 annual reports) were produced and sent to NCA, and concerned government bodies. SDIDP had also forwarded 7 reports and financial statements (audit reports) prepared by private legalized auditors and accountants to NCA and concerned bodies. Other 15 documents (7 Annual Work Plan and Budgets and 8 annual reports covering the years 2002-2009 are also available with all concerned bodies (Refer documents produced by project in annex 12).

37 NCA on its part carried out important missions (refer list of supervision missions in annex 10). The progress reports show the problems and challenges encountered during the implementation stages, and propose possible solutions and recommendations. All the audit reports show detailed information of the project, financial records by sources and uses of funds; statements; balance sheet and special accounts statement associated to management letters. The audit reports adequately covered the necessary areas and are considered to be of acceptable quality and standard.

38 SDIDP's evaluation report of August 2006 stated necessary adjustments to the project design with the aim to complete implementation that will increase benefits to the target groups and speed up the attainment of the project objectives. The evaluation identified issues, problems and constraints of implementation and had recommended points including the increase of stand-pipes and water reservoirs, minimization of costs in the construction of latrines, distribution of improved varieties, continued investment on diversions, the establishment of contingency fund, provision of water for livestock, introduction of individual credit mechanisms, establishment of nurseries, introduction of solar and wind energy, the creation of income generating activities with a recommendation for an extension of SDIDP by 3 years (until 2009) and be replicated in upper escarpments.

2.7. Procurement of Goods, Works and Services

39 Procurement of works, goods, and services were carried-out in accordance with the government's rules and procedures. Accordingly, the available tenders were prepared, approved and procured. The bulk of the contracts were companies of Eritrean origin. Most of those procurement

methods used were: National/Local competitive bidding, short listing, Direct Contracting and Community Participatory Procurement. The major procurements applied include: the Construction of all diversion and maintenance schemes, water supply systems (borehole drilling, pipes, motor pumps, solar energy powers, reservoirs, cisterns, distribution points, pipes etc), schools and clinics rehabilitation, purchase of vehicles, energy saving stoves, and as well various training programmes were through the efforts of the zonal administration, MOA and the PMU. TAs were applied through Short listing in agreement made between the project and the MOA to deliver Basic agricultural training, FGM, baseline studies and evaluations. Consultancy services were applied in collaboration with ministries at headquarters and with the funding agency. In applying the consultancy and services, government bodies at all levels and community participation were very relevant (Annex 8).

40 Direct Contracting (Forced Account) was used for the supply of civil works related to soil and water conservation, rehabilitation of irrigation schemes and construction of various water systems that the Zonal administration decided and used to implement itself as a short term solution. The reasons are that i). The necessary equipment and labor capacity exists within the Government and is regarded as efficient and cost effective, and ii). There is a critical lack of private sector investors and operators at the Zoba and Country Level.

3. PERFORMANCE OF PROJECT COMPONENTS

41 This section discusses the performance and analysis of the project in relation to its objectives; the impact of the project on poverty alleviation and the assessment of project sustainability based on both quantitative and qualitative data collected during field work using ethnographic methods (*individual interviews, key informant interviews, focus group discussions with men and women*). The assessment has relied greatly on first hand fact findings in the field.

3.1. Relevance of Objectives

42. As indicated in section 2.3 the overall goal of SDIDP is to improve the living standard of the communities in the project area of Shebah-Demas communities through sustained increased food production, reduced food insecurity and higher farm incomes. Specific objectives of the project were capacity building to beneficiary (women, men and project staff), improve water supply for domestic and animal consumption, enjoy a sustained improvement in their health status, environmental protection, maintain and improve infrastructural works (diversion structures) used in spate irrigation and gender mainstreaming. These objectives are in line with the Norwegian Church Aid Global Strategic Plan (2005-2009 particularly on participation, empowerment and partnership). Some of the highlights emphasized include the support of major improvement in health, especially children through the control of waterborne and water-related diseases (p.24), access to clean water and safe sanitation for poor and marginal communities (p. 25), improved quality of life, integrating water, sanitation, education, health and food programmes and environment (p. 24), advocating against in kind food aid support that is hampering long-term food security development (p.18), support communities in the development of small-scale sustainable energy projects (p. 18), encourage and support the initiatives of parents who provide education to young women and men on gender relations and sexual/reproductive rights (p. 24), and the empowerment of local communities to ensure the right of access to safe water (p.26). Discussions with focus groups (men and women), key informants and individual interviews (87%) confirmed that the above stated objectives are in line with target beneficiaries needs. The direct joint observations, participatory learning and action techniques with stakeholders and FGD (both men and women) showed that the components particularly the spate irrigation, water supply development and sanitation were useful to the improvement of the communities, though there were some limitations because of budget constraints (e.g. sanitation part was an activity for piloting purposes like construction of VIP latrines which remained too expensive for the community to replicate).

43. Focus Group discussions, individual interviews and key informants expressed their view that the specific objectives of SDIDP still remain relevant.

The expansion of spate irrigation schemes (*embankment construction by oxen and heavy machinery, diversion canals construction through gabions*), nursery development for use of raising tree seedlings to restoring the environment, women promotion activities, domestic water supply initiatives, livestock and crop development efforts, ambulance services, and renovation of school and clinics are still the route to improving the livelihood of the beneficiaries in terms of income and production at household level in particular and of the project areas and in the country in general.

44. The objectives related to capacity building remains equally relevant. Around 70% women Focus Group discussions and Individual interviews who received training said that the SDIDP has played key role in strengthening the capacity and skill of the communities of the project area in attaining project objectives. Training on home economics and income generating activities such as nutrition, handicraft, mother and child care, home improvement and management, gender awareness, health and environmental sanitation; sewing and embroidery/needlework were highly recognized by the FGD particularly women. In addition, Farmers Training to both men and women on agronomic practices, crop protection, soil and water conservation and animal husbandry were evaluated by Individual interviewee and FGDs (both men and women) as relevant and has benefited to the contribution of the project objectives. Besides, key informants indicated that the gender, FGM workshops and awareness campaigns including the FGM documentary films that reached several villages were also highly relevant and useful to the contribution to the objectives of the project.

45 In sum, the SDIDP had increased the capacity of beneficiaries, experts to use the services available to support their initiatives and priorities for social and economic development of the communities. The Northern Red Sea Zone in collaboration with the MoA and NCA has already planned and is exercising to replicate similar project in Gedged village, sub-Zoba Shieb aiming at raising the livestock and agricultural productivity and conserving the natural base to ensure sustainability. The lessons learned from SDIDP will be useful for the success of the Gedged project to achieve the intended objectives.

3.2. Effectiveness

46 Effectiveness is defined as the extent to which the project's major component objectives (purpose)¹, outputs² and activities³ have been achieved.

¹ The immediate project objective, the overall observable changes in performance, behavior or resource status that should occur as a result of the project

² The products or results that must be delivered by the project for the component objectives (purpose) to be achieved

³ The actions taken by the project that are required for delivery of the outputs

3.2.1 Summary of Implementation by Components

47 This section discusses and summarizes the extent to which implementation outputs (results) of the Shebah-Demas Integrated Development Project are achieved. It indicates the direct tangible products or services delivered as the result of project activities. It also makes comparisons outputs delivered versus as planned targets. The Problems encountered in achieving the outputs and the recommendations obtained as the result of the evaluation are discussed briefly. The findings are the result of the reports (secondary data) of implementing partners, SDIDP office, consultants' observations and beneficiaries (FGDs, key informants and individuals) perceptions and opinions. It is arranged according to the main project components. *Issues like, what changes have occurred as a result of the outputs and to what extent these are likely to contribute towards project purpose and desired impact are discussed in section 3.4.*

3.2.1.1 Spate Irrigation Structures Component

48 **Objective and Approach:** The key objective of the component is to manage the available surface water that floods from the highlands efficiently for spate irrigation use in the project area. As well, it is expected to strengthen the capacity of controlling the spate water and reducing floods to a manageable scale in order to direct the flow efficiently without causing any damage. This component is very vital in the improvement of spate irrigation system of the project area. The approach followed is by constructing spate irrigation structures to water/irrigate available arable land in all selected five villages of the project area, which are quite large and not yet fully exploited. Heavy Machinery and oxen power are utilized to construct embankments. Heavy machineries were to be used where it was difficult to use oxen for the construction of embankments.

49 **Key Activities:** Main activities under this component included: embankment construction with oxen; embankment construction with heavy machinery; diversion structures with gabion; excavation work of main canals; stone collection; procurement of gabion wire/mesh and galvanized binding; and mark out new area to be irrigated.

50 **Achievements:** Under this component, the level of achievement vis-à-vis the planned activities were more than satisfactory. As indicated in table 5 below the achievement for 71% of the activities were 100% or more, while the rest 29% of the activities performed in the range of 75% – 85%. A summary of the achievement in this component include: (i) a total of 218,000 m³ embankment construction with oxen (84% of the planed), (ii) Embankment construction with heavy machinery comprise about 560,587 m³ that is 108% of the target, similarly a total of 15,896 meter diversion structure with gabion were constructed (149% of the target), (iii) Canal construction at Ghatelai

comprise 5 km (100% as planned), similarly a total of 2,478 with back hoe loader were constructed at Metkel-Abiet/Asus (100% as planned), (iv) A total 4,483 ha extra land to be planted developed, and (v) 582,000 of seedling raised at Ghindae and Mai-Maihabar nursery stations (78% of the target).

Table 5 Key achievements of Embankments and Diversion construction

S. No	Activities	Unit	Project Target	Achievements			% Achieved
				2002-2004	2005-2009	Total 2002-2009	
1	Embankment construction (oxen)	M3	260,000	184,860	33,140	218,000	84
2	Embankment construction (bulldozer)	M3	519,766	70,860	489,727	560,587	108
3	Gabion construction	M3	10,700	924	14,972	15,896	149
4	Canal construction with back hoe loader Metkel Abiet/Asus	Mt	7,478	5000	2,478	7478	100
5	Soil Bund construction	Mt	NA	53,700	0	53,700	100
6	Extra area of land to be irrigated due to embankment construction	Ha	NA	2546	1,937	4,483	100
7	Seedling raising Ghindae and Maihabar	No	750,000	0	582000	582000	78

Source: SDIDP/PMU reports

51 The above physical structures constructed by SDIDP were to improve the traditional spate irrigation so that to maximize crop and livestock production by harvesting water in the command areas. During the evaluation, the consulting team perceived that the constructions of those structures particularly in the field plots (2002-2009) were still durable and intact. Besides, the team noticed that the internal embankments, field to field plots, were constructed with the help of oxen. Maize and sorghum plots observed in Adi-Shuma, Metkel Abiet and Shebah were grown consistently and were expected to give high production. It was also observed that the constructed infrastructures were the source of water and fertile soil.

52 At field visit, farmers expressed that before SDIDP's intervention, due to the inability to direct flooding water to their fields, the farmers were highly vulnerable to poverty and lived in a constant fear of food shortages. Various coping mechanisms such as selling of livestock, participating in cash for work activities and borrowing from neighboring and relatives were the mechanisms exercised to avert the food shortages. With the project's intervention, water runoff was being conserved through the introduction of flood diversion mechanisms that lead to improved spate irrigation practices in the project areas. Project beneficiaries have now acquired the capability both increased area and production.

53 Details of the construction works (embankment, diversion, canal and soil band construction) by project are summarized in table 6 below:

Table 6 Embankment and diversion construction by villages Actual Achievements

Project site	Embankment construction with oxen M3	Embankment construction with Bulldozer M3	Diversion structures with gabion (M3)	Canal Constructio n With back hoe loader (M3)	Soil band Construction (M3)	Added area (ha)
Shebah	49,000	132414	4242	0	0	982
Demas	24,000	55564	924	0	53,700	530
Metkel Abiet	83,000	200,340	6481	2478	0	1662
Adi-Shuma	32,000	102510	3613	0	0	386
Gahtelai	30,000	69,750	636	5000	0	923
Total	218,000	560,578	15,896	7,478	53,700	4,483

Source: SDIDP/PMU reports

54 Conclusions and Recommendations: The overall achievements and efforts noted in this component were highly successful. Nevertheless, individual interviews, key informants and FGDs noted the following limitations that need to be addressed.

- The diversion structures constructed by oxen and machinery are highly relevant in the project sites. However, FGDs, key informants and individual interviewee expressed that breaching is the key problem that repeatedly occurs every time. It demands frequent maintenance which is too much laborious, with little time left for other agricultural activities. To alleviate this primary problem, a means of permanent diversion structures need to be established to reduce the efforts, gain more time for agriculture and avoid trees cutting.
- Farmers and Implementing partners agree that oxen are extremely vital for the construction and rehabilitation of embankments of the farm plots. It was informed also that shortages of oxen are becoming key problems in the project sites. Key informants and FGDs expressed that oxen embankments are better and durable than that of machinery structures as they are more compacted. They recommended that government and interested partners to support them the provision of oxen (draught animals) through credit or other mechanisms. It was also suggested that heavy machinery may be stationed to serve all project sites to maintain and/or extend the diversions and embankment timely, which are beyond the capability of farmers.
- The project in collaboration with implementing partners and beneficiaries had initiated at every village putting in place committees that administer the spate irrigation structures. Nevertheless, the level of organizational frame and skills in management and planning of the committee members is still limited. It is advisable to empower the organizational set-up and capacity of committee members through government and partners support. Further

series training and follow-up is required if the committees are to properly administer and manage (collect fees, pay workers, and O&M) the establishments and command areas.

- Gully erosion was mentioned by FGDs as key problems in the project sites. Very huge gullies erosion was noticed in the area of Figret, in Metkel Abiet, which need to be urgently rehabilitated.
- Since 2008 the government has allocated land to solve equity problems in the project areas (Shebah, Metkel-Abiet, Adi-Shuma, Gahtelai, and Demas). Discussions with FGDs proved that holdings provided to target groups on average was 3 tsmdi (0.75Ha) per household. At present, shortage of land for cultivation is becoming a key problem in the project sites. A different scenario is also observed in Demas, that private concessionaires are more benefited than the community farmers. Land size is worse in Adi-Shuma (2 tsmdi (0.5ha)/HH). This needs more attention. In other words, additional cultivable land is demanded by the community to alleviate the existing food security crisis.
- A very large potential area is awaiting cultivation in Gahtelay village. Gahtelay farmers are demanding water to cultivate their lands particularly in Kerne area. This demand is being looked as a right of sharing water from Angere River (Angere flows to Degoli) which is the source of drinking water for Massawa city. Massawa has an alternative by using Yangus River for its domestic water supply. This is a legal issue to be studied and decided by higher government authorities.
- Gabions have multidimensional benefits in terms of flood diversions, erosion control and employment creation for all men and women in the project sites. Key informants discussion revealed that presently gabions are not available in the market. It is therefore, advisable to think on how to sustain and assist farmers in providing the required gabions.
- Individual interviewee, FGDs (men and women) and key informants during discussions and interviews revealed and listed key problems affecting crop production that they face in the project area. Among the many limitations were the poor amount and distribution of rainfall in the highlands that resulted poor flooding to irrigate project's cultivable areas; lack of improved seed; pest infestation such as Fesayit (*Sting bag*) and Gilib (*Ear Head Bag*) and other different types of grasses (used for animal feed). These problems have to be studied and addressed properly for successful crop production and protection.
- Women headed households particularly those who lack oxen are unable to manage their farms and are obliged to depend on neighboring farmers with unbearable cost (600 Nakfa/plot). Thus, a mechanism like micro-credit

schemes, provision of oxen, grant etc. should be introduced to assist women families by government bodies or interested groups.

- High efforts were exerted by implementing partners and SDIDP to achieve the desired goals. However, it was noted that lack of exposure (training) and inadequate allowances were among the key government staff problems encountered. This could be disincentive to work better and increase momentum. It is therefore, recommended that the GoSE and concerned bodies seek a motivation mechanism to create a conducive environment in the forthcoming projects if they are going to be effectively implemented and sustained.

3.2.1.2 Water Supply Development and Sanitation Component

55 **Objective and Approach:** This component aims to improve the health and living condition of the project area through the provision of safe and sustainable drinking water supply including sanitation and hygiene practices. The approach is that NCA-SDIDP will develop drinking water supplies in accordance to the demands of communities. Training for the community user groups in operation and maintenance and as well facilities will be provided. In sum, the schemes will be implemented under contracting procedures and the Zoba Infrastructure Services (ZIS) will be responsible for the implementation and supervision of the system.

56 **Key Activities:** Key activities carried out under drinking water supply development component included: (i) provision of technical and water management training to village water supply committees and caretakers; (ii) conducting assessment of water sources (iii) drilling water sources/bore holes, hand dug well; (iv) construction of reservoir; (v) procurement of fiber glass reservoir/500lt, solar power; motor pump (vi) construction of pilot VIP Latrines; and (vii) training beneficiaries in hygiene and sanitation.

57 **Achievements:** SDIDP accomplished a very significant result as shown in table 7. The water supply development and hygiene component covered all six sites of the selected villages (Shebah, Metkel-Abiet, Asus, Adi-Shuma, Gahtelai and Demas). Key achievements include: (i) a total of 6 water sources were drilled (100% as planned), (ii) a total of 6 solar panel, and 1 electrical submersion pump installed (100% as planned), (iii) two reservoir constructed and one hand dug well rehabilitated (100% as targeted), (iv) a total of 5 fiber glass tankers (each 5000 liters) and 4 motor pumps procured and handed over to beneficiaries (100% as planned), (v) six water committees established in each site (100% of the plan) still existing but weak, (vi) a total of 100 farmers trained in hygiene and sanitation (100% as planned), and nine farmers trained on operation and maintenance of solar pumps.

Table 7 Achievements in domestic water supply development and hygiene

S. No	Activities	Unit	Project Target	Achievements			% Achieved
				2002-2004	2005-2009	Total 2002-2009	
1	Drilling water sources	No	6	5	1	6	100
2	Electrical submersion pump installation	No	1	0	1	1	100
3	1Installation of solar panel	No	6	4	2	6	100
4	Provision of motor pump	No	4	4	0	4	100
5	Procurement of fiber glass tankers each 5000 liter	No	5	2	3	5	100
6	Construction of reservoir	No	2	2	0	2	100
7	Hand dug well rehabilitation.	No	1	1	0	1	100
8	Training of farmers in hygiene & sanitation	No	100				100
9	Water committee est.	No	6	5	1	6	100
10	Training on operation and maintenance of pump.	No	10	9	0	9	90

Source: SDIDP/PMU reports

58 Motor houses are constructed for all of the water pumps, and the solar pumps are fenced by galvanized fencing net. These protective structures contributed to the minimization of breakdowns and hence maintenance costs. Solar pumps are installed in all project sites except Gahtelai (electrical submersion pump) in order to minimize fuel costs. The boreholes are more than 40 meters deep except the one hand dug well in Demas which is only 12 meters deep. Direct observation by the consulting team and FGDs proved that the water discharging capacity of the hand dug well in Demas is gradually declining since the past four to five years. This is because the groundwater sources are excessively exploited for irrigation and that the well was dug shallow since the beginning. Therefore, concerned government institutions take some mitigation measures to regulate the use of the resource in order to meet the provision of adequate potable water to the community of Demas. During the assessment all the boreholes in all of the project sites were full and effective, discharging adequate water for the inhabitants. In most of these villages distribution sites constructed by the Project are located at the central position of the villages and have significantly reduced the distance traveled to fetch water. Water committees are also established in each village. These

committees are responsible to coordinate, manage and operate the water supply facilities in the respective sites. Women constitute 30% of the committee members.

59 Details of potable water supply distribution by project sites are shown in table 8 below.

Table 8 summary of water supply system distribution by project site

S. No	Project site	Drilled Bore hole	Distr. centers	Reservoir	Well rehab.	Pumps		
						Motor	Solar	Electrical
1	Shebah	1	2	2 fiber glass (each 5000lt)	-	1	1	-
2	Demas	-	2	Concrete (35,000lt)	1	1	2	-
3	Metkel Abiet	1	1	-	-	1	1	-
4	Asus	1	1	1 fiber glass (5,000lt)	-	-	1	-
5	Adi-Shuma	1	2	2 fiber glass (each 5000lt)	-	1	1	-
6	Gahtelai	1	5	Concrete (85,000lt)	-	-	-	1
Total		5	13	-	1	4	6	1

Source: SDIDP/PMU reports

60 As indicated in the table above, SDIDP drilled 5 boreholes, constructed reservoirs with 13 distribution centers and the distribution of 11 pumps. At evaluation time, it was noted that the diesel pumps in Metkel Abiet and Shebah villages were not functional that villages were using with the assistance of the alternate solar pumps they had which are not powerful and not conducive in cloudy days. FGD recommended and voiced to urgently maintain the pumps which are not functioning. In addition, the study team realized that in Metkel Abiet one solar pump and tanker were damaged (not NCA funded) by heavy winds which need to be acted upon.

61 Conclusions and Recommendations

- Each village has established water committees to coordinate manage and operate the water supply schemes. However, during the evaluation, the committees were at their infant stage. Follow-up systems established were not strong. Further strengthening is required on how to plan, manage and monitor the system. The existing environment should be empowered by the formation of legally bound committees. A workable system need to be established with a continuous follow-up by the government. The experience of Shieb farmers' organization can be adopted as a starting point.
- In Zoba Northern Red Sea, a number of national and international agencies are involved in the establishment of safe and clean water supply for human

and livestock consumption. Key informants during discussion indicated that coordination among these institutions is inadequate. It is therefore, advisable to integrate the available human and material resources to avoid duplication and waste of resources.

- Discussions with FGDs indicated that frequent breakages of Water supply schemes are key problems in their project sites. Besides there is a claim on the training provided to pump operators on O&M which was not adequate (only once and to 9 farmers). Currently, there are only two government technicians/staff for the whole Northern Red Sea zone working without rest. They are not obliged to work for maintenance works. Hence, recruitment of additional technicians and training on O&M to pump operators would guarantee the frequent breakages of those water supply schemes.
- There exist different types of motor pumps, solar panels and associated spare parts which made the after sales services (Availability of maintenance and spare parts) very difficult. Solar panel is just being conceptualized. Issues like spare parts, operation and maintenance require standardization. For proper maintenance and management of water supply facilities, WRD in collaboration with partners may need a national wide policy and assessment on what standards of power (hand, motor, electrical or solar) to use.

3.2.1.3 Capacity Building Component

62 **Objective and Approach:** The key objective of the component is to strengthen the capacity of the project beneficiaries and implementing partners to plan, implement and to sustain the deliverables of the project in the long-run. The approach followed by SDIDP include: women training aiming at strengthening their role regarding domestic responsibilities on functions as wives and mothers, and to economic and social contribution to the communities. Staff and farmers (*men and women*) training was aiming at strengthening the capacity of both IP and communities to use the services provided by SDIDP and government in order to support the initiatives and priorities for social and economic development.

63 **Activities:** Main activities of this component include: (i) provision short courses to project staff; (ii) women training in home economics and income generating activities, (iii) Provision and training on improved energy stove (Adhanet), (iv) workshops on gender, FGM (awareness raising, documentary film and assessment study) and (v) farmers' training on various topics.

64 **Achievements:** The success of this component is rated as highly satisfactory. Key achievements include: (i) one (1) project staff trained in U.K in rural resources management (33% of the planned), (ii) a total of 483 women trained in home economics and income generating activities (90% of the target plan), and about 100 women trained in the usefulness and installation of

improved energy stove/adhanet (100% as planned). In addition, 350 improved stoves have been distributed and constructed for beneficiary households as stipulated (100% of target) (iii) a total of 178 participated in workshop on gender (111% of the plan), fifty seven (57) participated in FGM awareness raising (95% of the plan), and one assessment study was accomplished on FGM and (iv) a total of 273 farmers both men and women trained in general agriculture with various topics (91% of the plan).

Table 9 achievement in capacity building component

S.No	Activities	Unit	Project Target	Achievements			% Achieved
				2002-2004	2005-2009	Total 2002-2009	
	Capacity Building						
1	Staff Training						
-	Staff – short courses	No	3	1	0	1	33
2	Women training and promotion activities						
-	Women training in home economics + income generating activities + handicraft + Adhanet	No	535	187	296	483	90
-	Workshop on gender	No	180	178	0	178	111
-	FGM Workshop	No	60	57	0	57	95
-	FGM documentary film	No villages	10	10	0	10	100
-	FGM awareness to leaders and administrators "FGM & Islam (Massawa)	No				1070	
-	FGM Assessment study	No	1	0	1	1	100
-	Improved stove (Adhanet) construction	No	350	0	350	350	100
-	Training on Adhanet	No	100	0	100	100	100%
3	Farmers Training						
-	Farmers Training on agronomic practices, crop protection, soil and water conservation and animal husbandry	No	300	74	199	273	91

Source: SDIDP/PMU reports

65 Discussions with key informants disclosed that the project has done significant efforts towards mainstreaming gender within SDIDP's programmes, through women's focus training, awareness and campaigns. As indicated above, a total of 483 women were trained in home economics and income generating activities. The training sessions covered include: mother and childcare, nutrition, sewing and embroidery, handicraft practices and use. Besides, 100 women were trained in the installation of an improved modern energy stove and its importance to environmental protection and use. FGD with women have indicated that the investment made on capacity building was helpful that widened the knowledge in guiding women's livelihood. Similarly, a

total of 273 farmers were trained on modern agronomic practices, crop protection, soil and water conservation and animal husbandry. These trainings have helped farmers in feeling the gap of capacity in delivering project activities.

66 Moreover, water committees were established in all project areas (Shebah, Metkel-Abiet, Asus, Adi-Shuma, Gahtelai and Demas). Women are represented in those committees (comprising 30%-40%). This is a good indicator that the training component was assisting women to engage and initiate important elements of social and economic development in their respective villages.

67 Detailed summary of capacity building programs convened by SDIDP in project areas are shown in table 10 below:

Table 10 summaries of training programmes assisted by SDIDP

S.No	Project site	Home economics and income generating training (Number)	Farmers training in general agriculture (Number)	Basic training operation and maintenance of motor pumps and solar panel (Number)	Total
1	Shebah	98	55	2	155
2	Demas	104	51	1	156
3	Metkel Abiet	93	55	2	150
4	Adi-Shuma	92	53	2	147
5	Gahtelai	96	59	2	157
	Total	483	273	9	765

Source: SDIDP/PMU Reports

68 **Conclusions and Recommendations:**

- Beneficiaries responded that the outcome of the training Programme cannot be applied practically due to financial constraints. For a sustained result, any training Programme has to be fully packaged. For example training on an income generating activity should be associated with seed, and equipments. For embroidery along with sewing machines as those deprived farmers cannot apply what they acquired as they are not able to cover initial costs of investment.
- Usually venues of training programmes were in Ghindae or Gahtelay. Consequently, few mothers attended the training due to transport and family problems. It is recommended in future that any training Programme be convened at the respective villages, nearest site possible, so that more mothers can attend and benefit.

- Shortage of qualified manpower and lack of motivation (Perdiem and logistics) was believed to negatively affect the efficiency and effectiveness of the Implementing partners. The government/Zoba has to find means to solve the problems particularly through systematized incentive mechanisms to retain and sustain the general staff motives.
- The skills of the agricultural extension services should be enhanced and subsequently refresher courses need to be organized and provided adequately in the future.
- Additional training on income generating activities and promote an extended awareness raising programs and campaigns on agricultural development focused to women.

3.2.1.4 Social Services Rendering Facilities Component

69 **Objectives and Approach:** The approach followed here was that the inclusions of interventions in social sectors like that of schools and Health facilities were only financial assistance as they were crucial towards responding communities' emergency needs. However, depending on the availability of resources, extremely high priorities of basic Health centers and schools have been renovated to satisfy the demands and were implemented after the agreements made between NCA and partner institutions.

70 **Activities:** Key activities of this component were the renovation of two clinics (Gahtelay and Demas), Renovation of Demas Elementary School and the procurement of one ambulance (clinical services rendered for the whole project areas) to be stationed in Gahtelay.

71 **Achievements:** The Norwegian Church Aid Global Strategic Plan (2005-2009) emphasizes the support to improved quality of life through integrating water, sanitation, education, health and food programmes and environment. This strategy is in line with the support of project beneficiaries in renovating Gahtelai Clinic, Demas primary school and the provision of ambulance services for Shebah, Metkel-Abiet, Adi-Shuma, Gahtelai and Demas.

Table 11 Achievements in social services component

S.No	Activities	Unit	Project Target	Achievements			% Achieved
				2002-2004	2005-2009	Total 2002-2009	
1	Ghatelai Health Center						
	Provision of Ambulance	No	1	1	0	1	100
	Renovation Ghatelai clinic	No	1	0	1	1	100
2	Demas School						
	School renovation	No	1	0	1	1	100
	Clinic Renovation	No	1	0	1	1	100

Source: SDIDP/PMU Reports

72 Individuals and focus group discussants particularly women indicated that because of transport limitations many women were dying during home delivery. Hence, to fulfill communities demand, SDIDP purchased an ambulance to serve all the five beneficiary villages, stationed at Gahtelay Health Center. In addition, one school at Demas and two clinics (one for Demas and the other for Gahtelay) were renovated as per communities' demand. The evaluation team confirmed that the ambulance was assisting the communities' especially pregnant women in transporting them to the health centers for delivery. The consulting team assured also that Gahtelai and Demas clinics and Demas School were renovated and functioning (Table 11).

73 **Conclusion and Recommendation**

- There is only one ambulance serving all those five project villages, which cannot deliver the desired needs. There is also a problem where by pregnant mothers can attend antenatal care due to shortage of transport to reach Gahtelay or Metkel Abiet health centers. In year 2008 around 157 persons got ambulance services with a payment not less than 60 Nakfa per trip. After delivery mothers are forced to go back home on their own expenses which is risky for the mother and neonate. It is recommended therefore that SDIDP and NCA take note on the matter for further considerations.
- Most schools in project areas provide education up to 5th grade. Thus, parents do not allow particularly girls to continue their education outside their villages. Instead they are forced to marry early. Discussants need the construction of additional school or rooms and assign teachers at least up to the level of junior and 8th grade so that students can continue their education safer.
- Other points of areas to mention in the integration of activities are the participation and inclusion of women in the provision of economic and social activities like transport, roads, grinding mills and affordable latrines.

3.3. Efficiency

74 Efficiency was seen whether objectives could have been achieved at lower costs with less effort. The issue is that of alternative strategies or alternative spending purposes given the objective of increased crop production.

75 The implementation of project activities was rated as fairly efficient in achieving project outputs. Positives included the implementation of the activities under spate irrigation (Cultivable areas increased by 4,483 ha), water supply systems (6) and training practices. The Project also improved women's access to training on FGM outcomes and came with an attitude change and confidence on controlling themselves and the technical skills gained.

76 The way taken under SDIDP in spate irrigation improvement was comparatively fair. The costs for the establishment of the structures worked

out to be USD 319/ha. At this cost, given the reliability of irrigation, the system had met a reasonable economic feasibility. The cost per ha in permanent structures of Shieb sub-zone may also be compared (the engineering estimates are in the range of USD 1400-2200/ha). Smaller spate irrigation investment around Gash-Barka costs USD 120-480/ha.

Table 12 Escalation of investment costs (Nakfa)

Description	Year 2000	Year 2005	Year 2009	Remark
Oxen Embankment works	30	45	45	45 Nakfa is a piece rate to do 8 m3 embankment
Machinery cost/hour	475	900	2200	Performs around 70 m3/hour

Source: Consultants findings

77 Concerning drinking water supply, SDIDP had treated the components in different ways. Some of them were fully stand alone systems (relatively lower costs) and in others with the supply of motor pumps, drilling wells or installation of distribution centers or installation of pipes. The project's water supply component investment was USD 21/capita which can be concluded as cost efficient. World average for similar water supply investment costs between 40 and 50 USD per capita. In addition, the technologies applied are not sophisticated and are easily amendable by technicians in case of breakages.

78 By increasing the growth potential of the crop sector, the Project created the possibility that crop and livestock production and employment in project areas will increase.

79 The executing agencies gained sufficient knowledge and skills to design and implement further spate irrigation and water supply projects. Participating agencies (MOA, Zonal administration, NCA, and beneficiaries) exerted maximum efforts to accomplish the routine works with the limitations they had on price hikes, time and supplies constraints. Despite the shortcomings, the overall efficiency of the Project was satisfactory.

3.4 Impact Assessment

80 This section discusses briefly the changes achieved as a result of the outputs and the extent to which the outcomes have contributed towards project purpose and the desired impact.

81 *The evaluation was undertaken in the absence of consolidated benchmark data for measuring project impact (area, production, income, expenditure, and associated information). These were very important problems that limited the overall impact assessment. The evaluation therefore, relied heavily on first hand fact finding information in the field. To analyze and arrive appropriate conclusions on impact information, qualitative in nature, have been largely*

collected from a range of stakeholders through interviews, Focus Group discussions and key informants by asking respondents to describe the changes they assessed and created by the project and the changes that in their view did not happen.

82 The overall goal of SDIDP was to improve the livelihood of the targeted population in particular and the communities at large through sustained and increased food production, reduced food insecurity and higher farm incomes. The areas discussed in this section include: impact on food security; physical and financial assets; human asset (capacity building); social capital and empowerment; environment and gender.

3.4.1 Impact on food security

83 Though premature, the impact on food security in the spate diversions (diversion schemes, embankment construction, gabion works and soil band establishment) positive or negative) seems modest. The agricultural production of the country as a whole, including Zoba Northern Red Sea, was suffering from the poor rains as observed from 2008 cropping season. Respondents, (both FGD and key informants) noted that the production of 2008 was very low as most of the land was irrigated only once with most farmers having no harvest.

84 Individual beneficiaries, FGDs and key informants were asked to estimate crop yields per hectare for the year 2007, 2008 and 2009 and compare these with bad and good years. Tables 13 and 14 give a summary of the estimates.

Table 13 Average yield/ha – Sorghum

Project site	Yield per hectare in Qt				
	Bad Year	Good year	2007	2008	2009
Shebah	3	25	12	1	15
Metkel Abiet	2	28	10	1	18
Adi Shuma	-	-	-	-	-
Gahtelai	-	-	-	-	-
Demas	-	-	-	-	-

Table 14 Average yield/ha - Maize

Bad Year	Good year	Yield per hectare in Qt		
		2007	2008	2009
4	28	8	2	18
3	25	7	1	16
2	30	7	2	18
2	30	9	2	14
3	25	6	2	10

Source: Discussions with key informants, individual farmers and focus group discussions

85 Respondents, (both Focus Group Discussions and key informants) expressed that In Shebah, Metkel Abiet and Adi Shuma there is an expectation of yield increase in year 2009 could be close to a good year. Most of the floods in year 2009 were small to medium size and were fully controlled. Seventy percent (70%) of the respondents' income increased due the project's intervention that on average beneficiaries earned 750 Nakfa/month when compared to without project (450 Nakfa/month).

86 Individual beneficiaries and focus group discussants were also asked to compare crop yields per hectare after the intervention of SDIDP to the without project sites. Yield/Ha for Sorghum had increased by 60-67% in Shebah and Metkel Abiet. Maize yield had also increased from 17% in

Shebah and Adi-Shuma to 60% in Metkel Abiet. Details are summarized in tables 15 and 16.

Table 15 Sorghum grain yield before and after the project (Qt/ha) **Table 16 Maize grain yield before and after the project (Qt/ha)**

Project site	Before the project	After the project	% Change	Estimate Grain yield 2009
Shebah	10	16	60	15
Metkel Abiet	12	20	67	18
Adi Shuma	-	-	-	-
Ghatelai	-	-	-	-
Demas	-	-	-	-

Before the project	After the project	% Change	Estimated Grain yield 2009
12	14	17	18
10	16	60	16
12	14	17	18
12	18	50	14
8	12	50	10

Source: discussions with FGDs, Key informants and Individual interviews



Fig. 5 Maize plantation- Metkel-Abiet (2009)

Maize plantation at Shebah village (2007)

87 Higher grain yield means higher income from the sale of grain and also vegetables. In other words, it is an additional power to satisfying the food needs of the households in the project area.

88 Over the last four years, the assessment in the project area (Shebah, Metkel Abiet, Adi Shuma, Ghatelai and Demas) showed that, 17% of the interviewee faced food shortage every year, 60% faced food shortage once, and 23% didn't face any food shortage. It was also discovered from focus group discussions during bad season (like that of 2008), the average period of food difficulty situation ranges from 8 to 10 months. When asked how they adjust food shortage, they listed a number of coping mechanism combinations. Sixty three percent (63%) said through sale of livestock, 53% through credit, 30% wage labor, 27% participating in cash for work activities, and 20% by the assistance from relatives and neighbors.

89 Discussions with focus groups and individual interviews provided information how big the sizes of their irrigation plots were and the land allocation mechanisms practiced in the project area. Sixty percent (60%) of the interviewee said that they own land which is less or equal to 2 *tsimdi*, 30% said that they own in the range of 2 to 4 *tsimdi*, while 10% said the size of their plots is 4 *tsimdi* or above (4 to 6 *tsimdi*). FGDs and individual interviews noted that land allocation has been done in 2008 physical year at

the same period to all project area (Shebah, Metkel Abiet, Adi-Shuma, Gahtelai, and Demas). It was proved that holdings provided to target groups were 3 tsmdi averagely. Before 2008 physical year the discussions with FGDs and individual interviewees, indicated that their holdings were 6 *tsimdi* to 8 *tsimdi*. During the discussions with individual interviewee shortage of land holdings was mentioned as a main problem to food security in their respective project sites. Individual interviewee were asked to list key problems to increasing crop production (reduce food insecurity) in order of priority after SDIDP intervention. Accordingly, shortage of water and breaching of embankments and diversion structures were ranked as number one, following shortage of arable land holdings since 2008, shortage of draught animals and tractors for ploughing, insect infestation (sorghum/sting bag and ear head bag/; maize (stalk borer), land degradation, shortage of improved seed, limitation on capacities, and shortage of labor force respectively.

3.4.2 Impact on Physical and Financial Assets:

90 The impact of the productivity of the various physical assets (*spate irrigation structures, water supply systems, renovation of clinics and school*) constructed and rehabilitated in various sites provided to beneficiaries through SDIDP is difficult to quantify in terms of household consumables (houses, radios etc) or financial asset, but interviews with farmers, FGDs and key informants have confirmed that their contribution to the project performance were significantly useful. Individual interviewee and FGDs were asked if they were aware of SDIDP contribution to the establishment of physical infrastructures and to list the impact brought by them. Eighty percent (80%) of the interviewed individuals and discussions with focus groups witnessed that they were aware of SDIDP intervention on physical infrastructure establishment.

91 The construction of *spate irrigation infrastructures* (Embankment with oxen and heavy machinery, gabions, canals, and soil bands) allowed better control of water within the farm plots of the sites compared before intervention.



Fig. 6 Canal construction

Gabion Construction

Embankment Construction

92 Individual interviewees and focus group discussions were asked to explain on the benefits received from the *spate irrigation*, whether cultivable

area had increased, and if the total production and income has changed. Respondents' views are briefly discussed as follows:

93 Eighty three percent (83%) of respondents pointed out that they have benefited from the spate irrigation structures developed by the project. Due to this development fifty percent (50%) of beneficiaries have increased their total cultivable lands. As a result, Eighty seven percent (87%) and seventy percent (70%) of those communities and farmers have benefited from the increment of production and income (table 17). Farmers revealed that the risk of large floods creating damage to land and flood channels are reduced and better control of water allowed within their command area. Furthermore, soil and water conservation and fertility increased. In general, cultivable areas yield and production increased (Table 5, 15 and 16).

Table 17 Benefits gained as a result of spate irrigation structures

Description	Did you benefit from the spate irrigation		Did the total area increased?			Did your production increase?			Did your income increase?		
	Yes	No	increased	Same as b/r	I am not sure	Yes	No	I am not sure	Yes	No	I am not sure
Number	25	5	15	9	6	26	0	4	21	9	0
%	83	17	50	30	20	87	0	13	70	30	0

94 The Six potable water supply facilities constructed to all project sites (Shebah, Metkel Abiet, Asus, Adi-Shuma, Gahtelai and Demas) by SDIDP were significantly helpful in solving the shortage of safe and clean water of targeted groups.



Fig.7 fiber glass tankers

Distribution center

solar panel

95 Focus group discussions, key informants and individual interviewee expressed that before the SDIDP intervention the water sources they used were not well protected often exposing them to contamination and health complications. They said that frequent illnesses due to waterborne diseases, were key problems to mothers, and children. As a result respondents confirmed that the water provided to them is 100% safe. Seventy seven percent (77%) of beneficiaries evaluated that they are very

satisfied with the solution of shortages in drinking water, while the remaining twenty three percent (23%) are moderately satisfied. Furthermore, the project has solved the time taken to fetch water and gained additional time for mothers and children for productive purposes. Before project 53% of families were traveling daily more than 2 hours to fetch water. The establishments of the potable water schemes have solved the problems that now 97% of the communities are fetching water within they reach (only 10-30 minutes). Additionally, respondents witnessed also that the waterborne diseases in the past four to five years have been significantly decreased (further assessment might be required in future) than before intervention, which enabled them to do their living smoothly.

96 The renovated of Gahtelay and Demas Clinics, Demas primary school and the purchase of ambulance to the project sites (Shebah, Metkel-Abiet, Adi-Shuma, Ghatelai and Demas) have greatly contributed to the improvement of the livelihood of the villagers. .



Fig. 8 Demas school

Provision of Ambulance

Ghatelai Clinic

97 NCA-SDIDP purchased an ambulance as per the demands of the communities to support especially pregnant women in transporting to the health centers during delivery. Beneficiaries noted that before the SDIDP intervention, women were using home delivery or using traditional birth attendants with complications and deaths. At risky times women were carried and reach health centers after long hours travels. After the provision of the ambulance, they are arriving to the health center on time, normal delivery with healthy children. However, the ambulance can not at any means solve the transportation services required to meet the demands of those five villages. Still pregnant mothers cannot attend antenatal care due to shortage of transport (e.g. only 157 women got services in 2008) to reach Gahtelay health center or Metkel Abiet. However, with the prevailing situation the ambulance is solving very critical problems, though not adequate for all project areas.

98 The project renovated Gahtelai and Demas clinics as per the demand of the community. These two clinics have not been repaired or maintained for a long time. Accordingly, SDIDP renovated these two clinics and handed over to the communities. Discussion with Key informants proved that these health support schemes have helped greatly to improve the health condition of the community members at large. At present, these

two clinics have become more hospitable and convenient for patients to stay in after their renovation. This is a positive impact contributed by the project.

99 SDIDP has also renovated Demas School as it was damaged severely by a windstorm leaving students to stop attending classes. It was difficult for students and teachers to properly attend classes. Consequently, considering the need and urgency of the service the project fully rehabilitated the school. This had created a better environment for teachers and students to continue a normal education. In line to this, focus group in Demas expressed their satisfaction of the renovation of the school and confirmed that this has contributed to reduced dropouts with increased attendances.

100 In addition, there are government machineries assigned in the Zoba. The farmers in the irrigation schemes are having access to hire and use them particularly tractors during ploughing and planting period. Beneficiaries confirmed that spate irrigation areas are given priority to access these tractors the irrigation schemes. The interviewee individuals expressed that they are very useful to expedite the critical planting and crop development time.

3.4.3 Impact on Human Asset (capacity building):

101 The training programs set by the SDIDP in collaboration with implementing partners (MoA, MoH, Zoba Infrastructure) given to beneficiary farmers (women and men), leaders, and implementing partners have fulfilled a significant need.

102 Various trainings, awareness raising and workshops that have been provided by SDIDP to farmers (both men and women) and experts, though limited, have developed valuable skills in various topics.

103 Individual interviewees and focus group discussants were asked if they had participated in any SDIDP training sessions and were requested to list the topics learned, whether they received handouts and leaflets for further references and what their perception regarding the trainings would be.

104 Seventy percent (70%) of the interviewed individuals' responded that they have received training programmes tailored by the project. Out of those beneficiaries 86% evaluated that the training on Nutrition, handicraft, mother and child care, home improvement and management, gender awareness, health and environmental sanitation; sewing and embroidery/needlework, agronomic practices, crop protection, soil and water conservation, animal husbandry, and motor pump operation and maintenance were satisfactory.

105 Both individual interviewees and FGDs had a positive attitude towards the training topics. Interviewed farmers (both men and women) recognized that their livelihood and the management of their farm fields have been improved as the result of the training programmes. Interviewed farmers informed that the training on the general agriculture (agronomic practices, crop protection, soil and water conservation and animal husbandry) had resulted in enabling them to work independently to implementation the skill at their farming plots on their own. Farmers who acquired training on motor pumps on O&M (only 9 persons), informed that the training program was useful and helped them to identifying simpler problems and make elementary repair. Heavy casualties are reported to ZIS and NCA for technical and financial assistance. Farmers also proved that their understanding on crop production and crop pests (particularly that of sorghum, maize, vegetables) had improved and now they are more aware of their importance. They also expressed that they can identify and inform to MoA office whenever prevalence of pests and/or diseases occur before it is epidemic.



Fig.9. Women training sewing general agriculture training pump operation & maintenance

106 FGDs with Women proved that the training in home economics and income generating activities have enabled them to widen their horizons and have shown noticeable improvement in their lives. These trainings increased the knowledge of women to select and prepare available nutritious food for the family. Training on handicraft, sewing and embroidery/needlework were ranked as high priority by the interviewed women. Trained women are now able to manually sew clothes for their children and worn-out adult clothes and even for sale though difficult in marketing. The project has also helped women to use the improved (*Adhanet*) stove that tremendously improve the health of mothers and energy efficiency. Hence the project has enabled community members particularly women to have a better life as compared to before the project. In general, the interventions assisted women to carry out their productive, reproductive and community management roles easily.

107 Awareness raising program and campaigns on FGM was very effective in improving women's attitude. Key informants and FGDs (men and women) disclosed that they do not support the practice of FGM and hence do not want to circumcise their young girls. These results indicate to the

positive impact the SDIDP has created on the beneficiaries. Overall, the project was rightly directed to the most outstanding problems of women. The cumulative impact of the activities; by and large of the program in widening women's attitude, improving their quality of life, and above all echoing their voices in decisions that directly affect their lives are evidences that attest the positive impact of the program. Moreover the training has helped women to break the conservative tradition that was dominated by men for a long time. Currently, all villages confirmed that FGM is no more practiced (The biggest achievement that women observed in their whole life). However, further scientific investigation is required.

108 Regarding handouts, leaflets (Tigrigna, Arabic, Tigre version) interviews with individuals, key informants and discussions with focus groups witnessed that most of them did not received any handouts or leaflets during training sessions. They said that they had notes taken from the blackboard during training sessions and are very useful. In future, they recommended that they handouts or leaflets be provided during the training session for future references

3.4.4 Impact on Social Capital and empowerment

109 In the project area there are important social capitals established in various forms such as committees administering spate irrigation activities and other committees for water and land allocation consisting of members and leaders selected by the community. These committees, though weak, are highly encouraging and must be strengthened through by-laws, regulations and provide further training on how to manage, plan and follow-up the system..

110 FGDs and key informants notified that these associations are the main bridges between the government and the farming community. They have reported that these social capitals have developed efficient sense of management and ownership. There were no such significant associations or committees before SDIDP. This is positive impact observed that should be strengthened and encouraged by concerned government institutions.

111 When asked what are the roles and responsibilities of these established associations and committees and what have they contributed so far. Focus groups and key informants discussions proved that the water committees established in each project site so far have taken the responsibility to preserve and regulate the utilization of the water facilities efficiently. User fee arrangements in each project site have been established by the committees. They said that the money collected from this are used to pay salary for watermen and fuel for the motor pumps.

112 The committee administrating spate irrigation activities have taken the responsibility of controlling the allocation and distributions of water in the farm fields, resolving any conflicts arising among the beneficiaries, and follow up and report to MoA regarding the structures constructed by SDIDP.

Key informants and focus group discussions expressed their view that the establishment of these committees in their areas were significant important and helped them in controlling possible resource conflicts arising among the beneficiary communities in their respective villages. Besides, managing any breaching over the structures was simplified by the committees.

113 Focus group and key informants discussions have also expressed their view that the land allocation committee established in their respective project sites, which has taken the responsibilities to allocate farm plots based on government policy, was significantly useful. In 2008 physical year these committees have been involved in allocating farm plots to their respective sites. The involvements of these committees were important in managing and controlling the smooth allocation practices done in the project sites (Shebah, Metkel Abiet, Adi-Shuma, Gahtelai, and Demas). It was proved that holdings provided to target groups was too small (*tsmidi/HH*).

3.4.5 Impact on Environment and Communal Resource Base:

114 The main impact on environment relates to the minimization of the destruction of trees and protecting environmental degradation (*soil bund construction, spate irrigation structures, seedling raising, latrine construction, and building of energy saving stoves*) in the project area.

115 The building of model latrine in Shebah and Demas (each 3) by SDIDP has received wide acceptance and villagers are keen to replicate similar latrines in their respective homesteads. This is a positive impact of SDIDP. Individual women beneficiaries expressed that most illness in their areas were the result of poor sanitation. They said that particularly the disposal of excrement is often more difficult for the children, mothers and the elderly.



Fig.10 Pilot Latrine constructed by SDIDP

The latrine which has been handed over to women head households said that these latrines are useful in protecting their surrounding environment and had made easy for themselves and children by using them. They said that the neighboring near by want to replicate if they are financially supported. According to them, the building of such latrine is too expensive (2000 Nakfa each), which they can not afford it

. 116 The introduction of the energy saving stoves (Improved Mogogo-Adhanet) in the project sites have saved women from going long distance to collect firewood for cooking their food and minimization of destruction of trees and bushes for firewood utilization.



Fig. 11 Building energy saving stove (Mogogo) Demas Completed Mogogo (Gahtelai)

117 Three hundred fifty (350) women have been benefited in the project sites by energy saving stoves (Adhanet) provided by SDIDP. Interviewed beneficiaries and evaluators observation note that the introduction of the energy saving stoves (Adhanet) have saved their time from traveling long distances (2 to 4 hours) to collect firewood for cooking food (SDIDP distributed all stoves and installation was ongoing during evaluation time). They said that this modern stove consumes limited firewood compared to without the introduction of the modern stove (Adhanet). Furthermore, FGDs with women proved that the energy saving stove (Adhanet) is convenient to work and is much healthier than the traditional one. It is a multi functional; women can bake *injera* and traditional bread (*kicha*) and cook food at the same time. The interviewed women beneficiaries confirmed that the loss of bushes and trees for firewood would significantly be minimized.

118 Physical structures constructed by SDIDP that include soil bunds, embankments, diversion canals and seedlings raising for tree plantation have been made satisfactorily all in excess of the target and they played a major part in restoring and protecting the environment and minimizing run off and preventing soil and water loss. It has helped in water harvesting in the command area for crop, animal feed, and regeneration of grasses and growth of tree species. This is a positive impact on environment protection brought by the project.

119 Interviewed individuals (men and women), key informants and group discussions (men & women separately) confirmed that before the project, farmers in the project area were using trees (acacia) and bushes to

build the diversion structures. They said that the impact was very high. A large amount of acacia trees were cut each season. After the project intervention the loss of acacia trees is being minimized. Therefore, the project made a modest contribution to solve an important problem. In addition discussions with FGDs and key informants proved that the construction of soil bunds and embankments that has been initiated by the project in the spate irrigation plots helped conserve water and soil. They said that they contributed to the production of browse for use as animal feed and to the increase of crop yields for use of home consumption and sale.



Fig. 12 Adi-Shuma Embankments & soil bunds



Shebah Embankments

120 Various seedling trees were raised since 2007 in Ghindae and Mai-Habar nursery stations funded by the project SDIDP, which has been transplanted in different sites, have significantly contributed in restoring and protecting the environment.

121 Key informants from the Ministry of Agriculture reported that a total of more than 140 thousand seedlings have been raised since 2007, to cover a total land area of 155 hectares. These seedlings were distributed to government institutions such as hospitals, clinics and schools, individuals and communities and community closures. It was also informed that in physical year 2007 eighty five percent (85%) of seedlings had been transplanted, out of which only 40% survived; In year 2008, eighty percent (80%) had been transplanted out of which only 35% survived; and in 2009 ninety five percent (95%) were transplanted

and around 80% survived. This is a modest impact contributed by SDIDP



Fig. 13 Ghindae Nursery Station

122 Another environmental concern is the safety and quality of drinking water (biological and chemical). The team had been informed that all sites carried out the required pumping and laboratory tests and are certified by Water Resources Department to be free of any chemical or biological matters. All water sources are nitrate free. In addition, FGDs and individuals have confirmed also that water borne and related diseases have significantly been decreased after the construction of the potable water supply systems (A broader scientific assessment might be required in future).

3.4.6 Impact on Gender

123 The focus on gender is one of the strongest features of the SDIDP. The impact on gender brought by the project was reasonable or modest. Important progress was noted with respect to an enhanced women's participation in the benefits generated by SDIDP development interventions.

124 Discussions with women focus groups verified that the SDIDP intervention was significantly important in improving the livelihood compared to without project. They said that they got training in home economics and income generating activities with various topics (Nutrition, handicraft, mother and child care, home improvement and management, gender awareness, health and environmental sanitation; modern energy stove/adhanet, sewing and embroidery/needlework) that have helped them to widen their scope and to break the cultural tradition that was dominated by men for a long time in their respective project sites. They witnessed that skill on nutrition, health and education has been improved. Key informants expressed their view that the trainings provided to women have substantially changed women's position in their project sites; they said that they are now able to re-sound their voice and participate in any development programmes easily.

125 Awareness creation program on Female Genital Mutilation (FGM) was also effective in improving men and women's attitude. FGDs (men and women) proved that the FGM documentary film, workshops and awareness raising programmes provided to the project sites were very useful and have extended their knowledge and attitude regarding the practices they were using. FGDs with women and men separately also expressed their view that they do not support the practice of FGM and hence do not want to circumcise their young girls. Hence, the project has played great role in FGM abandonment and this is a positive contribute to women empowerment positively.

126 Moreover, Women participation in all beneficiary organizations and committees were effectively implemented. It was noted that, almost 30% of

communities constitute women as committee members. This momentum and increase of women participation should be strengthened and increased in future. FGDs confirmed that at least two women are included in the water committees in each project site. These examples are tangible evidences that the project was effective in creating a positive impact on the communities to promote women's decision-making power.

127 The cumulative impact of the activities; by and large of the program in widening women's attitude, improving their quality of life, and above all echoing their voices in decisions that directly affect their lives are evidences that show the positive impact of the program on mainstreaming gender to project activities in the villages..

3.5. Assessment of Project Sustainability

128 It might be pre-mature to conclude regarding sustainability simultaneously right after project ceases. However, the consultancy team has noticed the following important aspects of sustainability (after the phasing out of the SDIDP).

- Activities and initiatives undertaken under the project are likely to be sustained and even expanded as they have responded to the needs of the communities of the project sites (Shebah, Metkel-Abiet, Adi-Shuma, Gahtelai, and Demas), who have been involved and participating and delivering their inputs during implementation. FGDs (men and women), key informants, and individual interviewee have already confirmed during evaluation that their capacities have been improved and are ready to take responsibility to sustain the activities after phasing out of the project. Though weak, committees established to administer and manage the spate irrigation and water supply systems are already put in place, but it is too soon to judge. These committees require support by the government and concerned partners. Further training and follow-up is required to properly manage the structures and command areas (collect fee, pay workers, and pay O&M).
- It has been also noticed that the various forms of associations that have been established with satisfaction are being trained to improve their technical and management capabilities. It was also observed that these groups have established contribution systems/savings to finance operation and maintenance of facilities developed by the project e.g. water supply services in the project sites, though weak have already established Water committees and have set affordable fee and took responsibility to preserve and regulate the utilization the water facilities efficiently in their respective areas.

- The construction and maintenances of *agims* (embankments) before SDIDP required substantial human and animal labor, large numbers of trees and considerable time. Particularly, the loss of trees (acacia) to environment protection was significantly high. After intervention of SDIDP utilization of heavy machinery has reduced the loss of trees, human and animal labor and time. To sustain these momentums the support and stand by of heavy machinery in the project sites is very important.
- Threat to sustainability noticed is the shortage of draught animals in the project sites. FGDs, key informants and individual interviewee noted that the capacity to restore the diversion canals and embankments in the command area has been reduced significantly due to shortage of draught animals. They expressed that the availability of draught animals in their respective areas, though laborious have significant importance in rehabilitating the canals and embankment of their farm fields. During the evaluation FGDs informed that there is a need of draught animals support to project sites by government or other interested partners urgently.
- Another threat to sustainability in the project sites noticed is that the contribution of SDIDP to crop and livestock diversification was limited or non existent. Instead the project constructed spate irrigation structures and embankment only to maximize crop and livestock production. FGDs and key informants informed that the sustainability of the spate irrigation component can be obtained also by including the introduction of sorghum, maize, and forage varieties, secure adequate seed by multiplying on farmers field, introduction of cash crops, input supply, and weed & pest control demonstrations. They said that water and diversification of crop and livestock should be integrated together for future intervention of similar projects. The FGDs and key informants claimed that shortage of improved seed, infestation of weeds & pests and shortage of agricultural input supply are the main constraints to the improvement to agriculture and livestock production.

3.6 Quality of Monitoring and Evaluation

129 The overall performance of the M&E system was rational. SDIDP has done a lot of efforts in setting up a system for data collection. Key informants discussions proved that a monitoring and reporting procedures were put in place. Follow-up of activities were frequent by both implementing parties and the responsible field staff of SDIDP. This regular follow-up helped both parties to take correction actions before any discrepancy are seen. So far, SDIDP has produced 24 quarterly and 8 annual reports and sent to NCA and concerned bodies, financial report for the 7 years prepared by private

legalized auditors and accountants were forwarded to NCA. NCA-SDIDP has also conducted an evaluation report for SDIDP in fiscal year 2006.

130 Though, NCA-SDIDP has done a lot of efforts to improve the M&E system there were some limitations noted during this evaluation report. Records of the relevant data for monitoring project performance; assessing outcome and impact were not kept systematically. Data on cropped area, output, yield and prices of crops in the project areas were insufficient. Data on services rendered to the beneficiaries were inadequate or not regular. During evaluation, benchmark data for measuring project impact and logical framework were not in place. More importantly, in discussions with the target groups (Shebah, Metkel-Abiet, Adi-Shuma, Ghahtelai and Demas), it is confirmed that they are receiving benefits in terms of improved productivity of livestock and crops, and improved assurance of family food security.

131 More to the point, bench mark data for measuring project impact (performance indicators); standard report format (monthly, quarterly and annually) to monitor and evaluate the status of project's target, achievement, activities and other required measurements need to be designed and developed since the inception of the project implementation.

4 PERFORMANCE OF PARTNERS

4.1. Performance of implementing Agencies

132 Achievements were effective as stipulated. The aim was to enable the rural poor to overcome or reduce poverty.

133 The spate irrigation and agriculture development activities were implemented by the Ministry of Agriculture (Zoba and Sub-Zoba Ghindae) in collaboration with the Zoba administration, using technical assistance services as required. The MOA and Zonal contribution in terms of technical and material support was commendable. Embankment, canal structures, gabion construction, soil bund establishment and seedling raising both at Ghindae and Maihabar were effectively completed as planned. Shortage of budget was visible to satisfy the demands to meeting the construction of diversions, embankments and water supplies. The scarcity and high renting prices of machinery over the last three years had a negative impact in consuming efforts and time. However, implementing partners made considerable achievements regardless of those encountered problems. Overall, the performance of Zoba administration and MoA was significant satisfactory.

134 The water supply and sanitation activities were implemented by the coordination of zonal infrastructure (ZIS) of Northern Red Sea. Zonal infrastructure and collaboration with SDIDP accomplished a very significant

result. The water supply development and hygiene component covered all six sites of the selected villages (Shebah, Metkel-Abiet, Asus, Adi-Shuma, Ghatelai and Demas).

135 The Monitoring and evaluation system was rational. Yet, record keeping on data base was insufficient. During evaluation, benchmark data for measuring project impact and logical framework for the project were not in place/established. Data on cropped area, output, yield and prices of crops in the project areas were not kept on regular basis. Data on ambulance services were not kept systematically. However, Regular follow-up of implementing partners was in place. Quarterly, semi-annual and yearly reports were sent to NCA timely. In general the linkages between SDIDP, NCA, MOA (Head quarters, Zoba and sub-Zoba), Zonal, sub-zonal and village administration, and beneficiaries were smooth in mitigating all existing problems and attaining the desired outputs.

136 The performance of the Executing agencies was rated satisfactory. Decisions were generally made on time. Political commitment was in place and support staff was provided though not as required considering the time and efforts it consumed.

4.2. Performance of NCA

137 Since the project setting up, NCA-SDIDP has provided a continued support and assistance for ensuring timely and effective project implementation. The management staff of the SDIDP along with the implementing partners (MoA, Zoba Infrastructure) visited the site bi-weekly on a regular basis. The fellow up visits undertook extensive field visits interacted with beneficiaries on key implementation issue and provided suggestions for improving project implementation and adjective achievements. Besides, NCA-SDIDP responded on time regarding request such as procurement contract approval and training programmes and steadily ensured timely funds disbursement. NCA mounted 7 supervision missions during 2007 through 2009. The skills mixes of the missions were adequate and the project benefited from the interactions which resulted in provision of solutions to pending problems that needed attention. Overall, NCA-SDIDP performance was very satisfactory.

4.3. Performances of Contractors and Consultants

138 Studies carried out by local consultants were very important to the project and beneficiaries to acquire the status and future measures. The Technical Assistances made on project baseline study (2000), evaluation (2006), assessment study on FGM (2005) were high quality products delivered timely and with great satisfaction. In general consultancy relationship with Project Management of SDIDP was good. Person's deployments in executing

the tasks were good enough. Overall the quality of outputs of consultancy can be concluded as satisfactory.

139 Contractors' performance in performing works was satisfactory. Water supply schemes, borehole drilling, diversion schemes and embankment construction, and the rehabilitation of two clinics and one school were effectively completed, except that they were expensive. The contracts awarded to suppliers were executed without any disputes. Effective accomplishment of the constructors reflects the contractors' substantive support to the project. However executions of the works were not timely. Shortage of civil works materials and heavy machinery were the reasons for delays. These were the conditions which made SDIDP to be extended by three years. Overall the quality of design works and outputs regarding consultancy can be concluded as satisfactory

4.4. Beneficiaries' Participation

140 Implementation could have been impossible without the full participation of all the beneficiaries of project areas (Men and women). Currently it is difficult to quantify the amount of beneficiaries' contribution to the project. In real terms beneficiaries contributed much more than expectation of anyone which needs further study and analysis. During the implementation phase communities were encouraged to increase their free labor in all areas of outputs and activities. Furthermore, the established farmers associations in form of Water committees, PRA Groups and Women groups are always contributing to the project. The establishments and outputs delivered by the project (Diversions, Gabions, Water supply systems, SWC structures, schools, clinics, etc) are being sustained by all the users. Hence, the performance of beneficiaries' participation is rated as satisfactory.

5 PROJECT COST AND FINANCING

5.1 Sources of Finance:

141 Initially at concept phase, the total project cost was estimated at Nakfa 32,478,841 which was to be financed by NCA as indicated in Table 17 below. NCA was to provide the entire amount. The actual grant at project closure was 100%. The GOSE and beneficiaries contribute in kind which has not been so far assessed.

Table 18 Project Financing (Nakfa)

Year	Donated income from NCA (Nakfa)	NOK Equivalent
2002	2,350,000	1,800,000
2003	3,568,728	1,920,000
2004	3,329,355	1,800,000
2005	3,979,087	1,850,000
2006	3,773,645	1,800,000
2007	4,256,601	1,750,000
2008	6,610,929	2,372,300
2009	4,610,496	2,070,000
Total	32,478,841	15,362,300

Source: Summarized from Project plans reports and Audits January 2010.

142 The approved amount which was reviewed and agreed by implementing partners has been fully transferred to cover foreign exchange and local currency costs.

5.2 Financial Utilization:

143 Out of the approved grant Nakfa 32,487,932 had been disbursed at project closure on 31/12/2009. Currently there are no any receivables or accruals. It means that SDIDP had paid fully for all of the tasks made during project's implementation. The remaining balance at Massawa account shows only Nakfa 9.12 (As at 31 December 2009). Spate Irrigation development used 66.1%, Water Supply development 11%, Nursery development 5.7%, Capacity building 4.9%, Support to social services (Health and education 4.0%) and project coordination (Project operation, and transport) used the remaining 8.3% of the funds. It has to be commended that the progress of funding increased each year between the years from 7% in 2002 to 20% in 2009. However, 72% of the total expenditure had been utilized in the years 2005 through 2009 and 48% during its extension period (2007-2009).

144 As a normal practice, the GOSE and beneficiaries were expected to contribute Nakfa 3.24 million or 10% of the total project costs in kind. However, there is more government contribution that has not been valued like

staff and farmers' mobilization, Planning, monitoring and follow-up work activities, participation and provision of training to farmers and government staff to carry out all projects infrastructural work areas.

145 The status of the grant at end December 2009 stood at Nakfa 32,487,932 or 100% of the total planned budget that the project used.

146 The absorption and utilization capacity was very high due to the reason that diversion structures and embankments are highly demanded and expensive in addition to the dedication and commitments of the PMU and implementing partners,

147 Therefore, the actual grant expended until 31 December 2009 is Nakfa 32,487,932 equivalent to (NOK 15.4 Million) or 100% of the total grant.

5.2.1 Expenditure by Categories

148 Out of the approved grant amount, Nakfa 32.5 million, (100%) had been utilized at the project completion date on 31/12/2009. In the course of the implementation period there has been a very big increase on prices of almost all required inputs but the project faced to comply due to the favorable foreign exchange movements between the Euro, NOK and Nakfa. There is no any remaining or committed works left for payments.

149 As indicated in table 18, 100% has been expended at project completion date. The highest percentage utilization among the categories was Diversion construction and infrastructure that accounts for 66% of the total cost followed by Potable water supply 11%. Refer annex 6 for a detailed expenditure by category.

Table: 19 Expenditure by categories (2002-2009)

Description/Categories	Amount	% of Total
Diversion construction	21,458,819.30	0.66
Potable Water Supply	3,568,183.00	0.11
Training	1,199,371.00	0.04
Education (Building material)	500,161.00	0.02
Office rent	136,493.00	0.00
Perdiem	456,118.00	0.01
Staff salary	605,534.00	0.02
Stationery	41,837.00	0.00
Office supply	238,643.00	0.01
Vehicle repair	284,719.00	0.01
Bank service charge	55,707.00	0.00
Fuel & running cost	884,282.00	0.03
Professional fee	30,000.00	0.00
Vehicle Ambulance	774,282.00	0.02
Nursery station	1,856,395.07	0.06
Women Development	397,387.50	0.01
Total	32,487,931.87	1.00

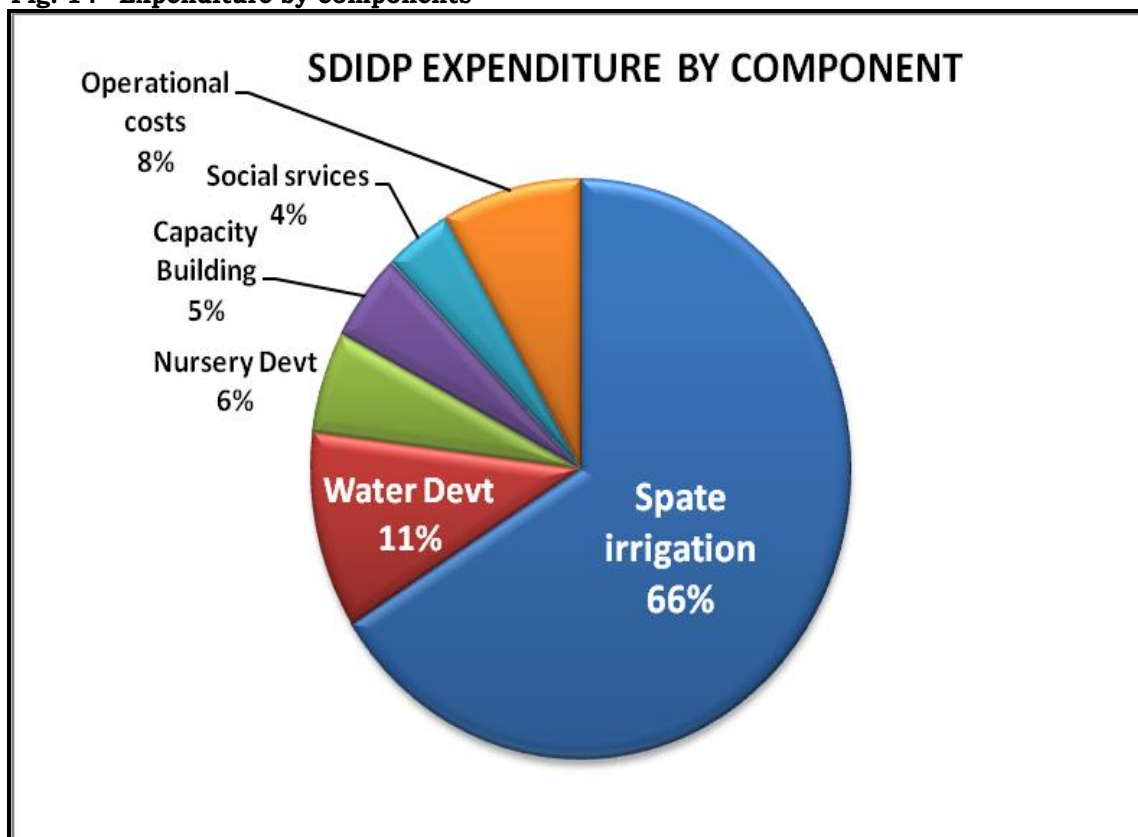
Source: SDIDP Financial reports

150 The yearly updates and modifications made by the PMU in collaboration with Zonal and sub-zonal administration and MOA offices at all levels had assisted a lot in the arrangements of the categories even though the balance of expenditure of the civil works, Infrastructure and Diversion show a negative balance.

5.2.2 Expenditure by Components

151 In the yearly approved plans, It was planned to cost the Spate irrigation component amounting Nakfa 20.1 million (61.8% of total grant) and Nakfa 3.6 million for Water Development. The main component of the project (Spate Irrigation) constitutes 66% of both the total expenditure and of the total grant. Nursery and capacity building development (including women) components constitute 5.7% and 4.9 of the total grant respectively.

Fig. 14 Expenditure by components



152 As can be analyzed from table 18 and figure 14, the pace of implementation through out the years was between 10-14% of total. The lowest rate was observed in year 2002, reasonably fair as it is the start-up phase and familiarization aspects of the programme at all levels by all partners

Table 19 shows a summary of expenditures by components over the life of the project. The total expenditure was Nakfa 32.5 Million (as at 31 December

2009), that the whole amount 100% was covered by NCA. For detailed expenditure by components refer annex 7.

Table 20 Project expenditure by Components – 2002-2009 ('000 Nakfa)

EXPENDITURE BY Components	Expenditure		% of Total
	Plan	Actual	
SPATE IRRIGATION	20065	21459	66.1
Infrastructure & Diversion	15951	17356	
Gabion Construction/Water	484	471	
Soil & Water conservation	3630	3632	
WATER DEVELOPMENT	3698	3568	11
Water Development & Sanitation	3698	3568	
NURSERY DEVELOPMENT	2129	1856	5.7
CAPACITY BUILDING	1971	1596	4.9
Women development	381	397	
Gender issues & HIV (AIDS)	180	163	
Training	1410	1036	
SUPPORT TO SOCIAL SECTORS	791	1307	4.0
Health	470	807	
Education (Building material)	321	500	
OPERATIONAL COST	3824	2701	8.3
Project Operation	3258	2175	
Transport	566	526	
Total	32479	32487	100

Source: SDIDP Financial Reports

153 Budget adjustments and flexibility: SDIDP had been flexible enough in adjusting with prevailing conditions to satisfy the demand project clients. In year 2003 additional budget was donated for water development and the project decided to divert the fund for infrastructure development. In 2004 a direct payment has been made by NCA to UK for a total sum of Nakfa 195000. Likewise in 2005 the project shifted 40% from the budget line of Water Development to health component in order to adjust the price hike of building materials. The shifting of budgets continued in year 2006 that the project was obliged to divert some money from training budget line and to compensate the high prices of building materials, fuel, lubricants and equipments. In this year NCA had paid also directly for consultancy assignment on project evaluation.

154 **Audits:** The Project had been audited each year. There are seven (2002-2009) Reports and financial statements carried out by independent external legalized auditors and accountants. These auditors have been selected by both NCA-ER and the government and the audit reports have been submitted to NCA and concerned bodies in the specified time. The audit reports have been

found acceptable. The issues raised by the auditors in the management letters have been responded to and acted upon.

155 Reports and financial statements of project accounts for each fiscal year (2002-2008) have satisfied both NCA and GSE. The remaining activity in this matter is only to carry out the final report and financial statement for the year ended 31 December 2009.

156` The consulting team confirms that the audits have been carried out in accordance with general accepted standards and are compliant with the Eritrean financial regulations.

157 In general, the financial system of the Shebah-Demas Integrated Development Programme has been satisfactory during its implementation period. The Project has consistently maintained good rankings from implementing partners and auditors regarding financial management and accounts. The accounting system through its NAVISION software generated the required financial reports in category, component wise and financiers' terms. Therefore, the overall performance of the financing system can be evaluated as satisfactory.

6 OVERALL ASSESSMENT, LESSONS AND RECOMMENDATIONS

6.1 Overall Assessment

158 The overall performance of SDIDP is satisfactory, in accordance to the review of its relevance, effectiveness, efficiency, sustainability, and impact on institutional development. The project objectives have largely been met. The Project was generally implemented as considered, with very high effort and smooth collaboration of the implementing parties and NCA-SDIDP. The implementation period accomplishment was exactly as proposed or targeted by both parties (implementing parties and NCA). The project's impact is expected to positively improve productivity of livestock and agriculture, income, social empowerment of poor households and women, and preservation of the natural environment. Over the last six to seven years (2002-2009) the capacity of implementing technical staff (Zoba and Sub-Zoba level) and beneficiaries to implement development programs have been increased considerably. The impact of the project on rural inhabitants' livelihoods would be much higher in future, as incremental benefits from investment made in those necessary infrastructures and capacity building at local levels are greater in the medium and longer-term.

6.2 Lessons Learned and Recommendations

In section 3.2, under effectiveness in achieving project accomplishments, all components are discussed and came out with the required and corresponding conclusions and recommendations. The following lessons and recommendations are the main issues selected from the overall outlook summarized during project implementation that need to be focused in future for similar project interventions.

159 **Limit the Number of project components and present a clear focus:** During implementation, it was noticed that the synergy among the different components were modest. Instead budgets of one component became a contingency for another. The most capital intensive components, the spate irrigation and the water supply components received the major share of the budget, compared to others, particularly the social rendering facilities component (*provision of ambulance and rehabilitation of clinics and school*). This situation resulted shift of budget allocation from one component to the other. For instance, around 40% of the water supply and spate irrigation component budget were shifted in year 2005 to the rehabilitation of the health clinics due to price escalation of building materials. It is therefore, recommended that, in future projects of similar nature, NCA to have a prioritized but integrated focus. In this case construction of spate irrigation structures and water supply systems were better priorities.

160 **Strengthening Social Capital and Empowerment:** Various social capital committees have been initiated by the project, like water committees to

manage and administer spate irrigation systems. These committees are essential for sustainability of assets, water abstraction and irrigation operations. Currently, they are infants and may be difficult to properly take over ownership and management of the establishments. Further training is needed to administer and manage (Collect fees, monitor works, and O&M) the structures and farm plots.

161 **Increasing Women's Participation:** Women's participation in the life of the project was positive. Their involvement in various trainings, income generating activities, energy saving ovens (adhanet) and FGM awareness was an advantage in acquiring knowledge and skills. Involvement in all established committees was higher (30% to 40%). However, their participation had been very low particularly in ensuring ownership, land distribution and in the development of irrigation schemes. Hence, Government and interested parties have to support women in strengthening their capabilities and managerial skill in order to build confidence and sense of ownership.

162 **Initiate Monitoring and Evaluation Mechanism:** SDIDP has done a lot of efforts in setting up an M&E system for data collection. Follow-up of activities were frequent by both implementing parties and the responsible field staff of SDIDP. However, Bench mark data for measuring project impact are not yet established. Data on cropped area, output, yield and prices of crops in the project areas are lacking. In sum, records of the relevant data for monitoring project performance; assessing outcome and impact are not kept systematically. Therefore, it is recommended (i) to initiate and design a Management Information System (MIS) or data base. The development of data base should be thought just from the inception of the project, and (ii) Pre-Project Baseline surveys should be conducted at project formulation to set the required benchmarks and indicators.

163 **Enhancing coordination in building water supply schemes:** in Zoba Northern Red See a number of national and international agencies are involved towards providing water supplies for human and livestock use. Key informants indicated that coordination among these institutions is inadequate. It is therefore, advisable to integrate and coordinate those institutions and key stakeholders to avoid duplication and wastage of resources.

164 **Motivation and Incentives:** The Project was generally implemented as considered, with very high effort and collaboration of the implementing partners and SDIDP. However, key informants from implementing parties noted that lack of exposure (training) to other countries of similar intervention was among the key problems. In addition, the daily subsistence allowances are only 45 Nakfa/day which can never suffice, were key problems through out the project life. So far the lack of motivation and incentives experienced is one of the main factors that contributed to delays and worsening the quality of work. It also destructs staff morale and motivation to do work. It is therefore,

recommended that the GoSE and concerned bodies seek a range of motivation mechanisms (incentives, training, allowances etc)for forthcoming projects if they are going to be implemented and sustained effectively.

165 **Enhancing appropriate integration mechanisms:** The construction of spate irrigation structures had contributed significantly to the overall goal of attaining food security objectives. Beside water shortages, key problems listed in the development of crop production as indicated by FGDs, key informants and individual interviewees include shortage of improved seed, pest and weed infestation; and lack of draught animals. It was also noticed by the consultancy team and farmers that SDIDP contribution to crop and livestock diversification in the spate irrigation schemes was partial. It is therefore important to diversify crop and livestock technology transfer (introduction of sorghum, maize, and forage varieties, secure adequate seed by multiplying on farmers' field, introduction of cash crops, input supply, and weed and pest control demonstrations) along with the construction of physical structures in forthcoming projects.

166 **Spate irrigation structures:** The diversion structures constructed by oxen and machinery are highly relevant in the project areas. However, breaching is the key problem that repeatedly occurs every year. It also demands frequent maintenance which is too much laborious, with little time left for other agricultural activities. To alleviate this primary problem, a means of permanent diversion structures need to be established to reduce the efforts and gain more time for agriculture and avoid trees cutting.