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Report No:

IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF-A0646 and TF-A0684

ON A

SMALL GRANT

IN THE AMOUNT OF USD\$2 MILLION

TO THE

Government of Somaliland, Federal Government of Somalia

FOR

Water for Agropastoral Livelihoods Pilot Project (P152024)  
24 January 2018

Agriculture Global Practice  
Water Global Practice  
Africa Region

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## ABBREVIATIONS AND ACRONYMS

|        |  |
|--------|--|
| AFS    | Annual Financial Statements                                    |
| AMISOM | African Union mission in Somalia                               |
| ASALs  | Arid and Semi-arid Lands                                       |
| AU     | African Union  |
| CPF    | Country Partnership Framework                                  |
| DA     | Designated Account   |
| DP     | Development Partner  |
| EAFS   | External Assistance Fiduciary Section                          |
| ERP    | Economic Recovery Plan   |
| ESMF   | Environmental and social management framework                  |
| FAO    | Food and Agriculture Organization of the United Nations        |
| FCS    | Fragile and Conflict-affected States                           |
| FGS    | Federal Government of Somalia                                  |
| FMS    | Financial Management Specialist                                |
| GDP    | Growth Domestic Product  |
| GRS    | Grievance Redress Service                                      |
| HoA    | Horn of Africa   |
| IBRD   | International Bank for Reconstruction and Development          |
| ICB    | International Competitive Bidding                              |
| ICRR   | Implementation and Completion Results Report                   |
| IDA    | International Development Assistance                           |
| IDP    | Internally Displaced Person                                    |
| IDRSSI | IGAD Drought Resilience Strategy and Sustainability Initiative |
| IFC    | International Finance Corporation                              |
| IFR    | Interim Financial Report                                       |
| IGAD   | Intergovernmental Authority on Development                     |
| IMF    | International Monetary Fund                                    |
| IPSAS  | International Public-Sector Accounting Standards               |
| ISA    | International Standards on Auditing                            |
| ISN    | Interim Strategy Note  |
| JNA    | Joint Needs Assessment   |
| LCS    | Least Cost Selection   |
| LIB    | Limited International Bidding                                  |
| M&E    | Monitoring and Evaluation                                      |
| MDA    | Ministries, Departments, Agencies                              |
| MDG    | Millennium Development Goals                                   |
| MOA    | Ministry of Agriculture  |
| MOERD  | Ministry of Environment and Rural Development (Somaliland)     |
| MOEWT  | Ministry of Environment, Wildlife and Tourism (Puntland)       |
| MOF    | Ministry of Finance (FGS)                                      |
| MOL    | Ministry of Livestock (Somaliland)                             |
| MOLAH  | Ministry of Livestock and Animal Health                        |
| MOPIC  | Ministry of Planning and International Cooperation             |
| MOWR   | Ministry of Water Resources (Somaliland)                       |
| MPF    | Multi-Partner Fund (Somalia)                                   |

|        |  |
|--------|--|
| NCB    | National Competitive Bidding   |
| NGO    | Non-Governmental Organization  |
| NFP    | National Federal Parliament  |
| NRM    | Natural Resources Management   |
| PCU    | Project Coordination Unit  |
| PDO    | Project Development Objective  |
| PFM    | Public Financial Management  |
| PIM    | Project Implementation Manual  |
| PIU    | Project Implementation Unit  |
| PL     | Puntland   |
| PP     | Project Paper  |
| PPP    | Public-Private Partnership   |
| PSAWEN | Puntland State Agency for Water Energy and Natural Resources           |
| PSD    | Private Sector Development   |
| PSNP   | Ethiopian Productive Safety Nets Program                               |
| PU     | Procurement Unit   |
| QBS    | Quality Based Selection  |
| QCBS   | Quality and Cost Based Selection                                       |
| RPLRP  | Regional Pastoral Livelihoods Resilience Project                       |
| SC     | Steering Committee   |
| SDG    | Sustainable Development Goals  |
| SISR   | Strategic Initiative for Somalia Re-engagement                         |
| SL     | Somaliland   |
| So-CPP | Somalia Country Programming Paper                                      |
| SOE    | Statement of Expenditure   |
| SPARS  | Strengthening Pastoral and Agro-Pastoral Resilience in Somalia project |
| SPF    | State and Peace Building Fund  |
| SSA    | Sub-Saharan Africa   |
| SSS    | Single Source Selection  |
| SWALIM | Somalia Water and Land Information                                     |
| TA     | Technical Assistance   |
| TOR    | Terms of Reference   |
| TTL    | Task Team Leader (WB)  |
| WALP   | Water for Agro-pastoral Livelihoods Pilot Project                      |
| WASH   | Water, sanitation and hygiene  |
| WB     | World Bank   |
| WHO    | World Health Organization  |
| WSP    | Water and Sanitation Program   |

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**DATA SHEET**

**BASIC INFORMATION**

**Product Information**

|                      |  |
|----------------------|--|
| Project ID           | Project Name                                     |
| P152024              | Water for Agropastoral Livelihoods Pilot Project |
| Country              | Financing Instrument                             |
| Somalia              | Investment Project Financing                     |
| Original EA Category | Revised EA Category                              |

**Organizations**

|   |  |
|---|--|
| Borrower  | Implementing Agency  |
| Government of Somaliland, Federal Government of Somalia | Minister of Environment & Rural Development, Somaliland, Ministry of Environment, Wildlife and Tourism |

**Project Development Objective (PDO)**

Original PDO

To improve the pastoral and agro-pastoral communities' access to, and management of, small-scale water sources and to enhance the capacity of the government to implement small-scale water interventions in targeted arid lands of Somaliland and Puntland.



**FINANCING**

|                           | Original Amount (US\$) | Revised Amount (US\$) | Actual Disbursed (US\$) |
|---------------------------|------------------------|-----------------------|-------------------------|
| <b>Donor Financing</b>    |                        |                       |                         |
| TF-A0646                  | 1,000,000              | 996,249               | 996,249                 |
| TF-A0684                  | 1,000,000              | 991,479               | 991,479                 |
| <b>Total</b>              | <b>2,000,000</b>       | <b>1,987,728</b>      | <b>1,987,728</b>        |
| <b>Total Project Cost</b> | <b>2,000,000</b>       | <b>1,987,728</b>      | <b>1,987,728</b>        |

**KEY DATES**

| Approval    | Effectiveness | Original Closing | Actual Closing |
|-------------|---------------|------------------|----------------|
| 21-May-2015 | 07-Dec-2015   | 30-Jun-2017      | 31-Jul-2018    |

**RESTRUCTURING AND/OR ADDITIONAL FINANCING**

| Date(s)     | Amount Disbursed (US\$M) | Key Revisions  |
|-------------|--------------------------|--|
| 02-Jun-2017 | 0.69                     | Change in Loan Closing Date(s)<br>Change in Implementation Schedule                                |
| 21-Dec-2017 | 1.29                     | Change in Results Framework<br>Change in Loan Closing Date(s)<br>Change in Implementation Schedule |

**KEY RATINGS**

| Outcome      | Bank Performance    | M&E Quality |
|--------------|---------------------|-------------|
| Satisfactory | Highly Satisfactory | Modest      |

**RATINGS OF PROJECT PERFORMANCE IN ISRs**

| No. | Date ISR Archived | DO Rating               | IP Rating               | Actual Disbursements (US\$M) |
|-----|-------------------|-------------------------|-------------------------|------------------------------|
| 01  | 09-May-2017       | Moderately Satisfactory | Moderately Satisfactory | 0.66                         |



|    |             |                         |                         |      |
|----|-------------|-------------------------|-------------------------|------|
| 02 | 22-May-2017 | Moderately Satisfactory | Moderately Satisfactory | 0.66 |
| 03 | 02-Dec-2017 | Moderately Satisfactory | Moderately Satisfactory | 1.29 |

**ADM STAFF**

| Role                             | At Approval             | At ICR  |
|----------------------------------|-------------------------|---|
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| Senior Global Practice Director: | Juergen Voegele         | Martien Van Nieuwkoop                                 |
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## I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

### Country Context

1. The Federal Republic of Somalia is in a situation of protracted and complex crisis, which has eroded livelihoods and increased vulnerability, malnutrition and food insecurity. Lack of adequate investment in key productive sectors, combined with the effects of civil war and natural disasters, have severely degraded people's coping capacity. Over the past two decades, the country has experienced repeated food-security crises (in 1991-92, 2006, 2008, 2011, 2016-2017), making Somalia one of the most food-insecure countries in the world. It is also today among the poorest countries in the world with an estimated three in four Somalis living in poverty.
2. The country has a very dry climate, marked by high variability, low precipitation, very high temperatures and extreme weather events. Somalia has experienced at least 14 drought events since 1960. Rural Somalia remains acutely poor and subject to repeated cycles of devastating droughts averaging one every four years. By February 2017, over 6.2 million Somalis needed humanitarian assistance. While famine was averted, there were nearly 400,000 cases of acute child malnutrition and an additional one million people displaced to rapidly expanding urban settlements and camps for internally displaced people. Losses in the livestock sector from the 2016/17 drought were estimated at US\$2 billion with herd losses reported at between 40 and 60 percent. Between 2006 and 2018, Somalia has experienced five major flood events, impacting hundreds of thousands of people. The Center for Global Development placed Somalia at the top of the list of 167 countries for overall vulnerability to climate change adjusted for coping capacity.
3. Somalia lags across a range of human development indicators. Somalia's under-5 mortality rate is 137/1,000 births. Data on stunting of under-fives is limited, with estimates ranging widely from 12 to 38 percent. Three quarters of the population are under 30 and access to education is marred by gender inequality. The adult literacy rate is the lowest in the world, especially among women and girls. Primary school enrollment is below 50 percent and less than a tenth of school-age children attend secondary school. According to the ILO, 54% percent of the active population (age 15 to 64) in Somalia is unemployed. Jobless rates are considerably higher among women and Somalis under 30 years of age, who represent 70% of the population. Access to both improved water supply and adequate sanitation facilities, while very low in Somalia in the late 1990s, and has dropped further. Based on nationally representative surveys, it is estimated that only 16 percent of rural Somalis have access to improved water supply for drinking.
4. Environmental degradation and increasing competition for scarce water, rangeland and other natural resources are major drivers of fragility, displacement, extreme poverty, and food insecurity in Somalia. Water, particularly in rural Somalia, is a key input to economic production, and with sanitation, underpins multiple aspects of human development. Traditional water sources in rural areas often lack the capacity to sustain water supply during prolonged dry periods. These conditions make rural communities extremely vulnerable to climate stresses and shocks, as livelihoods depend on scarce water resources for domestic purposes, livestock and to access fodder. Water insecurity compounds and amplifies the fragility cycle (Sadoff et al. 2017) and is a major driver of conflict. Investing in water related infrastructure is therefore crucial to alleviate drought emergencies and extreme poverty, and in turn to tackle fragility (Sadoff et al. 2017).

### Context at Appraisal

5. Access to water and pasture is both a fundamental source of both conflict and co-operation between clans and civil authorities throughout the Somali region. As a source of conflict, extensive trans-boundary movements of livestock and limited access to the combination of water and pasture is one of the primary drivers of conflict across the Horn



of Africa. Following decades of low investment in Somaliland (SL) and Puntland (PL), water points with adequate surrounding pasture are especially scarce, claimed by clans, fiercely guarded and intrinsically linked to resource conflict.

6. Due to the overall state of fragility and instability and historic conflicts between clans, the respective governments' capacity to develop and manage water points in rural SL and PL remains limited. To prevent resource-based conflicts, especially between pastoral nomadic and settled communities, state intervention needs to better complement community-based measures. Enhancing the state's role in developing water sources – a highly visible service – is a desirable factor in signalling state functionality and can be a key component of a peace dividend by building citizen confidence in the state and improved state-citizen inter-relationships. The state's role is also important in ensuring adequate and equitable supply as well as in achieving economies of scale both in the roll-out of new infrastructure and in post-construction support.
7. To gain both economic and health benefits, rural water supply solutions need to address both the quantity and quality of water for people and the quantity needed by livestock. Progress towards meeting the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) for water and sanitation in Somalia has been aided by the progress in urban areas but greatly held back by the lack of progress in rural areas. To meet the likely SDG target of universal access to water and sanitation an estimated additional 8.3 million rural Somalis will need to gain access to improved water supply and 8.7 million to sanitation by 2030.
8. Finding solutions for rural water supply in Somalia is complicated significantly by: (i) continued and chronic low-level conflict, (ii) high levels of aridity characterized by low annual rainfall with a high inter-annual variability, and the very complex hydrogeology of the country, (iii) the centrality of highly mobile pastoralist livelihoods to the economy, and (iv) weak or absent local government institutions working through civil rather than traditional codes. The few investments in water for livestock (e.g. hafir dams) typically provide the quantity of water required for livestock but not the quality of water required for people. Finding solutions that meet both these aims means physically separating livestock at the water sources and protecting or treating water for people.
9. The first government managed rural water supply project in Somalia in over 20 years, the Recipient Executed (RE) Water for Agro-Pastoral Livelihoods Pilot (WALP) project was a US\$2 million State and Peace Building pilot project implemented in Somaliland and Puntland. Launched in 2015, the project financed the construction of low-cost infrastructure (sand and subsurface dams) and strengthened the capacity of government to scan for potential sites, procure and manage construction contracts, set up community management structures, and evaluate the results. A key purpose of the project was to generate via a learn-by-doing approach new understanding of the specific impacts of developing water sources and building capacity of government and communities to manage them, on cooperation and conflict in the fragile Somali context, and on pastoral and agro-pastoral livelihoods in arid lands more broadly.
10. The pilot project was also meant to demonstrate that water catchment and storage in Somalia's drylands can be increased and rural communities access to improved water resources enhanced through investment in small dams such as, sand dams<sup>1</sup>, sub-surface dams, infiltration galleries, etc. These technologies protect water from high evapotranspiration rates by holding the water in shallow sand aquifers that can be used to improve community water

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<sup>1</sup> Sand dams, in particular, are experiencing a renewed interest because of their relative simplicity and their potential in enhancing the resilience of marginal dryland environments. Studying the impacts of sand dams in Kenya on vegetation biomass, Ryan and Elsner (2016) concluded that sand dams hold strong scope to improve the adaptive capacity of drylands by helping to sustain vegetation biomass during drought periods.



supplies and drought resiliency throughout the year, while alleviating fragility, drought emergencies and extreme poverty.

11. The project was expected to contribute to a number of higher level objectives framed around addressing water scarcity among agro-pastoral communities to strengthen resilience, support economic recovery and expansion, and enhance governance in Somalia. Designed as a pilot, the project aimed to generate lessons in a learn-by-doing approach that would help inform the design and implementation of better quality downstream projects in Somalia. The project design and PDO responded directly to the development priorities of Somaliland and Puntland as outlined in a range of strategic documents, including the World Bank’s Interim Strategy Note (ISN FY14–16) and the Economic recovery plan (ERP); the “Somaliland Special Arrangement” and the “Puntland Five Year Development Plan”; and the World Bank’s State and Peace-Building Fund (SPF) Strategic Initiative for Somalia Re-engagement (SISR), with a core objective to generate public confidence in the Somali transition through activities that generate basic institutional capacity and accountability as well as increased economic activity and longer-term resilience; the Somalia Country Programming Paper (So-CPP); and the IGAD Drought Resilience Strategy and Sustainability Initiative (IDRSSI).
12. The project was originally meant to link up with the Regional Pastoral Livelihoods Resilience Project (RPLRP – P129408), a World Bank-funded initiative with an objective to enhance resilience of pastoral and agro-pastoral communities in drought-prone areas. As designed, project investments in Somaliland and Puntland would contribute especially to RPLRP’s Component 1, which aims at enhancing access by pastoral and agro-pastoral communities to sustainably managed natural resources, including water. However, before project effectiveness, Somalia was dropped from RPLRP due to its ineligibility to access IDA financing. WALP was also meant to lay the foundation for a follow on, larger scale project with national footprint, “Strengthening Pastoral and Agro-pastoral Resilience in Somalia” (SPARS – P148943).



*Debis sand dam in Somaliland; watering shoats; Meeleden camel trough in Puntland.*



### Project Development Objectives (PDOs)

13. The Project Development Objectives (PDOs) were to improve the pastoral and agro-pastoral communities' access to, and management of, small-scale water sources and to enhance the capacity of the government to implement small-scale water interventions in targeted arid lands of Somaliland and Puntland.

### Key Expected Results and Outcome Indicators

14. Expected results were measured by the following key PDO-level Results Indicators:

- a) People in rural areas provided with access to improved water sources under the project (number);
- b) Improved community water points constructed or rehabilitated under the project allowing livestock to access water for 10 months or more per year (number);
- c) Water sources rehabilitated or newly built by the Government under the project that are operational and sustainably managed (number);
- d) Community stakeholders attributing change to government (percentage);
- e) Direct project beneficiaries (number), of which percentage are female.

15. Project outputs were tracked by the following intermediate-level indicators:

#### *Access to improved water sources for target beneficiaries/communities and livestock increased*

- a) Improved community water points constructed or rehabilitated under the project (number);
- b) Operational water user associations created and/or strengthened;
- c) Livestock watered over longer period in the year in water sources rehabilitated or newly built under the project (number).

#### *Capacity of government staff strengthened and communities empowered*

- a) Technical, administrative and community mobilization skills strengthened among service providers (number);
- b) People trained on improved hygiene behavior or sanitation practices under the project (number);
- c) A monitoring system for localized resources-based conflicts that documents occurrence of conflict established and operational.

16. Target beneficiaries of the project were approximately 35,000 people in selected areas of Somaliland and Puntland whose livelihoods rely on pastoral and agro-pastoralism, including but not limited to livestock rearing, processing and/or marketing, and agro-pastoral activities including small-scale farming and fodder production. Secondary beneficiaries, mainly of capacity building, were service providers (both public and private), central and local government staff.

17. By improving access to and management of small-scale water harvesting and storage technology among rural communities in dryland areas of Puntland and Somaliland, the project was meant to further critical rural development outcomes. These include improved livelihood resilience, human and animal health, and nutrition and food security. By enhancing the capacity of government institutions to implement small-scale water supply interventions, the project would also strengthen the credibility of government among rural communities, and thus, support the state-building process. Although a Theory of Change was not included in the Project Document, an illustration of the result chain/logic behind the operation was developed *ex post* as part of this review and can be found in Annex 4. It depicts the links between the operation's interventions, outputs, intermediate results, and the

desired outcomes, along with underlying assumptions.

## Project Components

18. The project was framed around three primary components with indicated costs provided at appraisal stage (see Annex 2 for complete details of projects costs at appraisal and at project close out):

*Component 1: Developing under-utilized agro-pastoral water supply technologies (US\$1.02 million)* – This component financed the development of sand and/or subsurface dams along with the infrastructure needed to provide multiple-use water services (standpipes or shallow wells with hand pumps and water troughs). This was done at eight (8) sites across SL and PL (equally distributed) deploying standard designs and labor-intensive methods. Each site would involve a series of sand dams and river training structures and would include a means of extracting high quality water for domestic use as well as mechanisms to ensure sufficient quantity for livestock and agricultural uses. Actual costs for this component were US\$1.17 million)

*Component 2: Government capacity building and community empowerment (US\$0.51 million)*, which comprised two sub-components: 1) support central and local government capacity-building and 2) community-based management. Component 2.1 financed training for staff at all levels of government directly involved in the service delivery chain to strengthen capacity to deliver services to communities. This included training through workshops and seminars in wadi development approaches and water supply technologies and short courses in regional centers of excellence; exchange visits to sites that have successfully deployed these sand and sub-surface dam technologies (in-country as well as in neighboring countries such as the Somali regions of Ethiopia and/or Kenya). Component 2.2 financed the establishment and strengthening of community-based institutions (e.g., women’s groups, water user associations) to manage water and surrounding natural resources, including rangelands. This sub-component also supported peer-to-peer horizontal learning among communities directly involved in the project and where possible with communities that have benefitted from and are managing existing wadi developments. Actual costs for this component were US\$0.55 million)

*Component 3: Project Management and Monitoring and Evaluation (US\$0.15 million)* - This sub-component supported: (i) the incremental operating costs for ministry staff managing the project and for inputs from other technical Ministries, Departments, Agencies; (ii) the cost of procurement and financial management specialists, (iii) outreach and communications on the governments’ role and leadership on the project to the broader Somali community (part of the peace and state building agenda), (iv) key feasibility studies aimed at preparing project interventions (site specific EIAs, engineers surveys), and (v) project M&E including the monitoring of safeguards, conflict and gender. Actual costs for this component were US\$0.29 million.

**Table 1 – Project Budget at Startup vs. Actual Expenditure**

| Component  | Project cost (US\$ '000) |                   |                 |                 |                           |                     |
|--|--------------------------|-------------------|-----------------|-----------------|---------------------------|---------------------|
|  | Somaliland Budget        | Somaliland Actual | Puntland Budget | Puntland Actual | Total Budget at Appraisal | Total Spend at ICRR |
| 1. Developing under-utilized agro-pastoral water supply technologies | 466,420                  | 583,133           | 551,000         | 589,910         | 1,017,420                 | 1,173,042           |
| 2. Government capacity building and community empowerment            | 295,100                  | 293,179           | 210,873         | 258,235         | 505,973                   | 551,414             |



|  |           |           |           |           |           |           |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| 3. Project Management, Monitoring and Evaluation | 78,480    | 78,480    | 71,460    | 141,256   | 149,940   | 219,736   |
| TOTAL BASELINE COSTS                             | 840,000   | 954,792   | 833,333   | 989,401   | 1,673,333 | 1,944,192 |
| TOTAL PROJECT COST                               | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 2,000,000 | 2,000,000 |

19. The three components pivoted around the construction of sand dams and complementary auxiliary works – public water points, reservoirs, cattle troughs, latrines and washing basins. The project selected eight (8) sites across SL and PL (equally distributed) deploying standard designs and labor-intensive methods. Each site involved the construction of a sand or sub-surface dam and ancillary structures as a means of extracting high quality water for domestic use as well as mechanisms to ensure sufficient quantity for livestock and agricultural uses.
20. Sand dams are made of concrete and similar in structure to low-lying, impermeable weirs. They are built across Wadis or other identified red soils, retaining sediments and water flowing downstream during and after rainfall events. This empowers the accumulated and existing natural alluvial sediments to hold moisture, infiltrate and re-charge the water table for domestic and pastoral uses. Similarly, sub-surface dams, prevent seepage into loose sediments, retaining the water underground and further preventing evaporation. Behind the retaining wall of the sand or subsurface dam, shallow wells sunk with cession rings serve as reservoirs from which water is distributed to standpipes for domestic water supply and livestock, which separates human and livestock water use to enhance water quality and health.
21. The project was complemented by a separate Bank-executed activity (Somali Resilient Multiple Use Water Services (P156289), under the Technical Assistance (TA) activity Delivering water supply and sanitation in fragile states: the transition from emergency to development – P131964) that supported additional research and surveys required to rigorously monitor the project’s wadi developments. These activities included continuous monitoring of: (i) water quality, quantity, downstream effects, flooding; (ii) integration of the water resources into the “landscape” approach; and (iii) uptake of sanitation and hygiene behaviors A final independent survey-based evaluation was conducted in June/July 2018. This assessed how service delivery was being managed and what the early socio-economic impacts of the project have been. The assessment included a beneficiary survey that asked about the impact of the project and perspectives of citizen confidence in government institutions. Although the survey came soon after the completion of the dams and it was still too early to determine the project’s full impacts, the resulting end-line report findings suggest that the impacts of project investments are substantial.

**Changes During Implementation**

22. There were no changes to the PDOs and no components were revised through restructuring during the 2.5 year-period of the project’s implementation. The project underwent a level two restructuring on two occasions. Both restructurings extended the project closing date, with no changes to the project PDO or scope. The first was a six months project closing date extension (from 30 June 2017 to 31 December 2017) and the second was a seven months project closing date extension (from 31 December 2017 to 31 July 2018). The 2nd Level 2 restructuring (in December 2017) also entailed a target reduction in sub-indicator #3 (i.e., “number of livestock watered over longer period in the year in water resources rehabilitated or newly built under the project”) from 914,000 to 414,000. The main rationale for the restructuring in both cases was additional time needed: a) to complete the remaining construction works; b) for post-construction hydrological monitoring, and: c) to carry out the beneficiary impact assessment end-line.



## II. OUTCOME

### Assessment of Achievement of Objectives/Outcomes

23. As the first World Bank financed infrastructure project in Somalia for over twenty years, WALP was intended to be a first step in a longer journey of World Bank reengagement in rural livelihoods support in Somalia. The task team had to solve basic issues from how to move money into Somalia using regulated commercial banks to reestablishing public-sector capacity for all the basic project planning, financial management, procurement, contract management functions that are required for service delivery. As a pilot project, the focus of WALP was on learning-by-doing: learning how best to intervene on a local level in water resource management; learning how interventions impact local communities; and learning how to equip government implementation agencies (ministries, departments and agencies) with the tools and knowledge to lead the process in the future. The project was also relatively short (2.5 years) and modest (US\$2 million), meant to tread lightly in the intervention of a precious resource subject both to cooperation and, on occasion, conflict.
24. Somalia presents a uniquely challenging and extremely high-risk and fragile operational environment. This is especially true in the context of a rural water project delivering vital water services to water-scarce, and often remote marginalized communities. Among key factors threatening project implementation and the achievement of project outcomes are: i) ongoing political contestation and uncertainty at both the Federal and state levels; ii) threats related to ongoing insurgency and risk of further deterioration in the security environment; iii) fiduciary risks, including corruption and misallocation of funds; iv) heightened tensions and/or conflict among various stakeholder/beneficiary groups at community level; and v) weak government institutions.
25. Against this backdrop, the project's achievements are notable, and in some case, exceeded expectations. An impressive amount of work was achieved, not only in terms of institutional strengthening and the provision of a vital resource to beneficiaries and their livestock, but also in the form of analytical work and tools that were tested and are now available to support future scale-up. Though not all outcomes were achieved by project close, there is strong recognition that WALP constitutes a leap forward in the Bank's experience and knowledge base about how to implement sustainable, small-scale water interventions in an FCV context.
26. Based on a review of the results framework, and evidence collected from interviews with and surveys of beneficiaries, and the results of the end-line survey, the ICRR finds that WALP was largely successful, albeit not fully, in delivering on the PDO. In assessing the project's achievements against the PDO, this ICRR highlights the project's delivery of 8 water points in Somaliland and Puntland, including seven dams and one berkad, against a target of eight "improved community water points constructed or rehabilitated." Also, the infrastructure delivered by the project has already reached an estimated 42,327 people with "improved water sources," against a target of 20,000. Based on end-line estimates, at least half of beneficiaries were women, against a target of 60%, which was based on an understanding that women are traditionally responsible for fetching water for the household and so would benefit more than men. At the time of project completion, all eight water sources (including the berkad) newly built by the Government under the project were operational. Further, the "capacity of the government to implement small-scale water interventions" was substantially enhanced via PIU staff's participation in knowledge exchange visits and oversight of the engineering



design reviews, socio-economic analysis, hydrological monitoring at dam sites, and monitoring and evaluation of service delivery models.

27. A full and complete assessment of the project’s success in achieving other aspects of the PDO, including: i) “improved community water points constructed or rehabilitated allowing livestock to access water for 10 months or more per year (number); ii) the sustainable management of the newly built water points; iii) and the share of project beneficiaries attributing positive change to the government was not possible either due to data collection constraints or the fact that project close came only a few short months after the arrival of the first rainfall season following the completion of the dams. A comprehensive impact assessment is planned in FY20 as part of a scale up operation currently in pipeline to assess sustainability of investments and the socio-economic impacts on communities and citizen-state relations. It is anticipated that the WALP pilot project and lessons learned will help to inform and guide a more coordinated and systematic approach to groundwater exploration in drylands and in similar FCV contexts elsewhere in the region.

### **Overall Outcome Rating**

28. The project was designed as a pilot through which lessons learned were expected to contribute to designing and implementing better quality pastoral projects by bringing multi-sectoral approaches to water supply for pastoral populations in fragile and conflict affected states and situations. The design of the project, the institutional arrangements, and the use of trust fund resources to pilot a small-scale community-based infrastructure were appropriate to the specific country situation and context. The project was directly and successfully implemented by government civil servants from participating ministries responsible for water, livestock, and the environment. These civil servants managed all fiduciary, procurement and M&E aspects. With the construction of four sand dams in Somaliland and three sand dams and one berkhad in Puntland, the project has delivered seven (7) of the eight (8) dams as planned. To compensate for dams that did not perform according to the design, the project delivered one berkhad in Reydeble and constructed a 2<sup>nd</sup> dam in Xamxama. At the ICRR stage these structures supplied 42,327 people with improved access for human consumption, livestock watering, startup and/or expansion of small-scale vegetable gardening, agroforestry, and other associated uses. The new water points are also, based on initial end-line estimates, capable of providing water to 200,000 livestock.
29. As the first World Bank financed community-level infrastructure delivered directly by the government in over twenty years, building the technical, administrative, and community mobilization skills of state governments for carrying out small-scale, community-based water infrastructure sub-projects was a key achievement of the WALP project. An impressively wide range of subjects were taught to more than two dozen governmental staff during the project. The subjects can be grouped into four broad categories: 1) Reporting and Documentation; 2) Project Mobilization; 3) Financial Management; and 4) Communication and Coordination (see Annex 6 for more details).
30. The Bank made a strategic choice in getting government ministries, rather than the UN system or NGOs, to lead all aspects of the project, including: planning, budgeting, expenditure management, procurement and decentralized service delivery. This learning-by-doing approach underpinned capacity building and promises to significantly contribute to government capacity for both state building and post-conflict reconstruction going forward. For a country that is only recently emerging from years of protracted conflict, undergoing a process of nation-building, with nascent public structures and a private sector that operates largely in the informal sector, the project provided critical

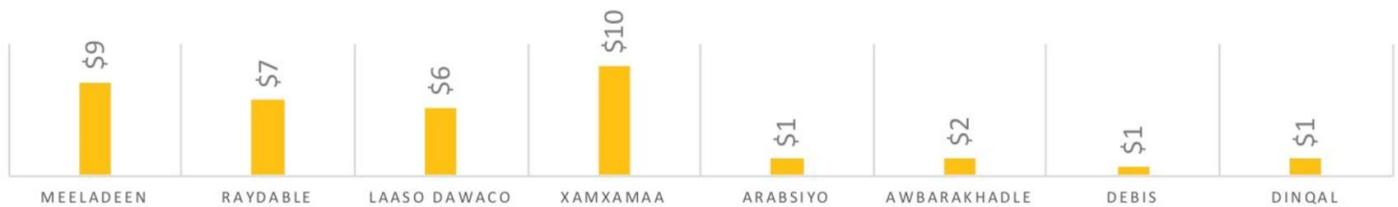




lessons both for the government of Somalia and its development partners. Key among these is that nascent government agencies in northern Somalia can be effectively capacitated to deliver water services to rural communities.

- 31. The principal economic benefits associated with sand dams are: (i) enhanced quality and quantity of water for human consumption and livestock; (ii) improved human health and reduced under-five mortality; (iii) increased water for small-scale agriculture; and (iv) improvements in localized vegetation biomass. Separating water for human consumption from water for livestock means that the quality of the water improves for people. This reduces cases of diarrhea and other infections, which, in turn, generates savings in health care, improves productivity, and enhances the cognitive development of children. Additionally, more water for livestock can increase the area of pasture available for grazing, reducing stress and improving the fitness of livestock. Finally, depending on the quantity of water stored in the sand or sub-surface dams, there may also be opportunities for small-scale irrigated agriculture. In areas where sand dams have been built (e.g. at Dhubato, in Hargeisa District) communities have invested in small-scale irrigated horticulture (tomatoes, onions, cabbage, lemon, papaya, guava, sesame etc.), mainly for the Hargeisa market.
- 32. Conducted a part of the end-line surveying, a simplified cost-benefit analysis showed that WALP has provided a return that is *five times higher* than the initial investment (Figure 1). This analysis only factored the cost of building and maintaining the dam and the benefit people would gain by not having to purchase water from commercial suppliers. The analysis did not factor in the additional benefits that communities could also achieve through expansion of irrigated agriculture and livestock production and through sanitation improvements. Notably, returns were higher at the more technically challenging dam sites with more limited storage capacity in Puntland than at the larger storage capacity dam sites in Somaliland. This is in part because communities in Puntland comparatively suffer greater water-stress than those in Somaliland and purchasing water is 5 to 10 times more expensive than in Somaliland. Annex 3 provides some details of the economic analysis of project costs vs returns.

Figure 1 – Rate of Return on every US\$ Invested



Source: End-line Survey

- 33. Based on an evaluation as described below of the relevancy of project objectives, the project’s efficacy in achieving its stated objectives, and its operational efficiency, the project’s overall outcome is rated “Satisfactory”. Notable deficiencies with regard to minor project delays, the implementation of the M&E framework, and achieving key objectives as they relate to community-level water management could support a lower rating, as would the project’s historical ISR ratings. However, this ICRR substantiates the higher rating based on the following considerations:
  - i) the project was designed as a learn-by-doing “pilot” to test approaches and generate new knowledge and understanding about how to intervene in rural water supply in an FCV context, an objective on which it has surpassed expectations.



- ii) the project’s “Moderately Unsatisfactory” ISR ratings during project implementation were based on the team’s conservative judgement that the project’s key objectives could not be achieved until the water infrastructure had been completed and communities were able to benefit from improved water access. The project succeeded in fully delivering the water assets in all of the 8 project sites during the final 6-months of the project, with transformative impacts on beneficiary communities. While there were some delays, these were all within accepted margins given the risks of the extremely challenging operating environment.
- iii) at project close, the project had successfully delivered on its core objectives of enhancing access to water among marginalized communities facing acute water fragility and capacitating public sector service delivery, all within Somalia’s challenging operational environment and unique FCV context. This project, which was fully executed by the government, stands out compared to the majority of sector interventions, which are planned and carried out by third parties on behalf of the government. The project delivered an important demonstration across the portfolio of the client’s ability to provide services.
- iv) resourced via a modest grant of US\$2 million, the project affected a meaningful impact on the well-being and livelihoods of target beneficiaries and on furthering attainment of the WBG twin goals.
- v) the project has been widely recognized as a best-practice example of cross-GP collaboration with a multi-disciplinary team that was able to seamlessly merge discussions on water, livestock, agriculture and institutions.

34. The following provides details of each of the ICRR’s ratings for PDO relevancy, efficacy and operational efficiency:

- (a) *PDO Relevancy – Rating: High.* No shortcomings in the relevance to the Bank CPF/CPS were noted either at entry or at project close. As noted above, the project objectives at start were directly aligned with World Bank’s Interim Strategy Note (ISN FY14–16) and the Economic recovery plan (ERP). The latter envisions supporting resilience-building through knowledge generation on water management and water-point mapping. The project’s objectives were no less relevant at project closing in July 2018 when the new Country Partnership Framework (2019-2023) was undergoing final review ahead of Board approval. Informed in part by the WALP project experience, investing in water infrastructure, environmental management and agricultural innovation with an objective to diversify and strengthen resilience of dryland rural communities was specifically integrated into the CPF (objective 2.4) under its second area of focus, which aims at restoring economic resilience and opportunities to mitigate drivers of fragility and conflict.
- (b) *Project Efficacy – Rating: Substantial.* This rating is based on a best judgment assessment of the project’s achievements in meeting the core PDO-level objectives. These are: i) enhanced access to improved water sources (for humans and livestock); ii) improved management of small-scale water sources by communities; and iii) strengthened capacity of the government to implement small-scale water interventions. While the project did fully achieve its objectives as outlined by the Results Framework, this assessment recognizes the project’s achievements that in many respects have exceeded expectations, especially considering Somalia’s challenging operational context. Table 2 presents some evidence of the objectives achieved on which the overall rating was based.



**Table 2 – PDO Achievements**

| Objective  | Details on outputs/outcomes   | Rating |
|--|---|--------|
| <i>Objective # 1 – Enhancing access to improved water source for humans and livestock.</i>               | <ul style="list-style-type: none"> <li>- The project successfully delivered the target number (8) of rehabilitated or newly built water points, though only 7 of these were improved water sources.</li> <li>- A total of seven sand and/or sub-surface dams constructed, with an estimated extractable volume of water between 1,800 and 27,000 m3.</li> <li>- At 5 of the 8 sites, the total amount of extractable water from the dams is estimated to be higher than the minimum amount of water needed by the local population, their livestock and irrigated farms for a 6-month period following a rain event. It covers more than 85% at a sixth site.</li> <li>- An estimated 43,500 people, including 3,800 nomadic pastoralists, and more than 200,000 livestock now have cleaner, more sanitary water supply for improved health, nutrition, livelihood and food security outcomes.</li> </ul>   | S      |
| <i>Objective # 2 - Improving management of small-scale water sources by communities</i>                  | <ul style="list-style-type: none"> <li>- WALP communities received training on: i) operation and management of water facilities; ii) Good water, sanitation and hygiene (WASH) practices; development of water management by-laws; and how to conduct community development and sustainable water-use planning.</li> <li>- 8 Community Development Plans (CDPs) were developed to help communities identify their resources, needs and priorities.</li> <li>- At ICRR stage, it was not possible to assess the capacity of communities to manage the water assets as insufficient time had lapsed since the completion of the infrastructure and project end.</li> <li>- Water User Associations (WUA) were established and/or reconstituted at all 8 WALP sites. However, delays in dam construction inhibited planned hydrological monitoring and M&amp;O capacity-building activities.</li> <li>- Improved hygiene behavior and sanitation practices were achieved via WASH training of 4,300 people (of 6,000 targeted). Analysis of data gathered from baseline and end-line household surveys showed that, as a result of these trainings, people now pay more attention to the protection of water points, particularly during the dry season, than at project start up. The practice of disposing baby stool has improved with more people now disposing of their baby’s stool into a toilet or latrine.</li> </ul> | M      |
| <i>Objective #3 – Enhancing the capacity of government to implement small-scale water interventions.</i> | <ul style="list-style-type: none"> <li>- Members of the PIU staff in PL and SL comprising civil servants from participating ministries (water, environment, agriculture and livestock) received extensive training in: 1) Reporting and Documentation; 2) Project Mobilization and Management; 3) Financial Management; and 4) Communication and Coordination (see Annex 7 for more details).</li> <li>- 14 PIU staff participated in a week-long training course in Addis Ababa on Capacity Development in Leadership &amp; Project Management.</li> <li>- 2 PIU staff from PL and SL traveled to Ghana for a 1-week training on procurement at the Ghana Institute of Management and Public Administration.</li> <li>- As the first Recipient-Executed operation in Somalia in more than 20 years, the project was delivered successfully by government agencies handling all fiduciary, procurement, and other processes.</li> </ul>   | S      |

(c) **Operational Efficiency - Rating: Modest.** Originally, project implementation was expected to be completed within 18 months. However, the project closing date was extended via a Level 2 restructuring in June 2017 and December 2017 to allow more time for the civil works, delayed primarily due to weather and procurement processing challenges, to be completed. At the same time, strong collaboration between the project team and the PIUs ensured that challenges and delays were addressed in a timely and constructive fashion. In terms of budget expenditures, though actual costs of all three components exceeded their respective budget allocations (see Table 1), strong project oversight and administration ensured that the project was delivered within the total envelope of US\$2 million.



### Other Outcomes and Impacts

35. The project was the first recipient executed rural infrastructure project in over twenty years in Somalia. It not only piloted technologies but it also implicated directly fledgling government institutions that were involved in its implementation. The project also provided an infrastructure management focus from which to gain experience for the suite of WB governance projects (PFM & CIP) supporting the development of core government systems. Demonstrating the combination of core PFM improvements that could enable line ministries to carry out small-scale, community-based water infrastructure sub-projects was a major achievement of the WALP project.
36. The above ratings of project outcomes are decidedly conservative in that they do not take into consideration the full range of potential downstream benefits target communities can achieve by leveraging the newly available water resources to expand irrigation and livestock; nor do they consider benefits regarding resulting enhancements in sanitary conditions and related health outcomes. Additional benefits include reduced walking distance to fetch drinking water for women and for livestock, with meaningful contributions to improving health, food and nutrition security, and natural resource sustainability at the community level.

### III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

37. This section provides an analysis of key factors and events that influenced the project's achievements and shortcomings during preparation and implementation. It also outlines actions taken by the Bank and implementing agencies to address issues that arose that impacted project performance.

#### Key Factors during Preparation

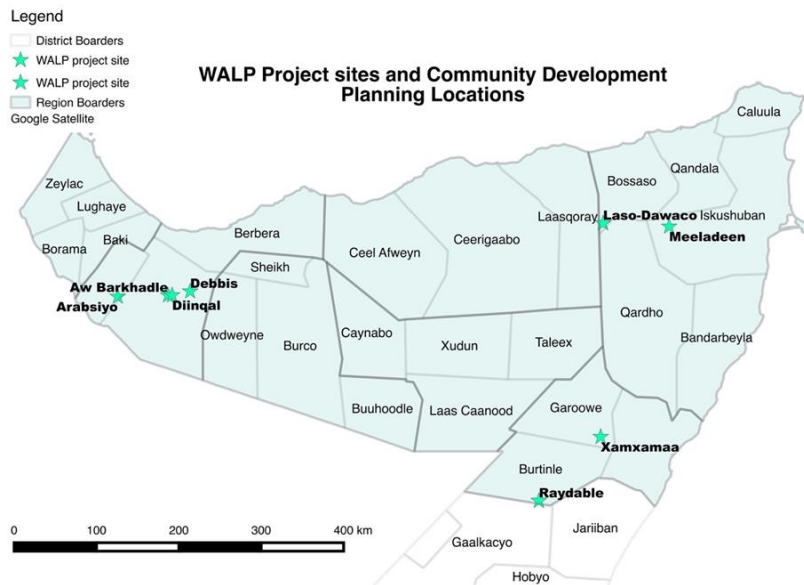
38. **Simple Design and Realistic Project Objectives.** WALP was designed as a pilot project, with an approach meant to accommodate a maximum level of flexibility and adaptability for generating experience and learning. Recognizing the challenging operational environment in northern Somalia and Somaliland, the project team tried to set realistic targets at the outset that emphasized a learning-by-doing approach to gain and to document a better understanding on how best to intervene on a local level in water resource management in a fragile environment; how interventions impact local communities; and how to equip governmental agencies with the tools and knowledge to lead the process in the future. By design, the project was also relatively brief in terms of its lifecycle, modest in scope, and meant to tread lightly with a limited number of communities and set of interventions, all anchored around the delivery of community-based water infrastructure and associated capacity-building of implementing agencies. The project's unique learning-by-doing approach and scope that avoided overstretch were key to achieving impactful project outcomes.
39. **Quality at Entry.** Somalia is one of the poorest countries in the world, in which the consequences of conflict are clear and devastating. However, in contrast to the war torn south, Somalia's northern regions are relatively stable, having put in place functioning institutions and having already set out on the long journey of restoring basic government functions and services. The project was processed in accordance with the State and Peace Building Funds' (SPF) small Recipient Executed grant guidelines and aligned with the SPF Results Framework. The Project Paper reflected the nascent institutional environment in Northern Somalia and articulated clearly based on the Bank's global experience in similar environments the challenges in providing rural water services to target agro-pastoral communities in rural Somalia.
40. Recognizing the rural development orientation and multi-sector nature of the pilot activities, the World Bank team felt that strong participation and collaboration would be needed from across the line Ministries, including the



ministries of environment, water, agriculture and livestock. To this end, the team approached the Ministry of Planning in Puntland and Somaliland, both of which appointed their respective Ministries of Environment as lead ministries and Project Coordination Units (PCU/PIU) were set up in each Ministry. A relatively lengthy project preparation process (18 months) allowed ample time for the Bank and the client to develop an understanding of the fundamentals of working with state agencies, to develop relationships and undertake relevant analytical work

- 41. A significant amount of preparatory work was done before any on-site construction activities commenced. This ensured that the project’s design, objectives, and results framework were well informed by evidence and realistic. Upstream preparatory work included three, Bank-Executed, critical pieces of analytical work. A “mICRRo-level” study examined the dynamics and inequalities surrounding rural water resource utilization and management at the level of the community in Puntland and Somaliland. A second “macro level” study: i) assessed water resource challenges and defined the hydrological principles that should be followed for improved planning, development, operation, maintenance and management of water resources in arid and semi-arid lands; ii) provided the critical baseline information for informed decision-making; and iii) developed a methodology for water resources assessments for wadi development. In addition, the Wadi Evaluation Tool (WET), which allows for fast and broad spatial analysis of wadi water harvesting potential in a selected area through yielding a weighted ranking between the potential sites, was developed. The soft and hard data generated from these studies provided the analytical underpinnings, critical foundational knowledge, and tools needed to inform a realistic project design.

Figure 2: Communities Targeted by the WALP Project in Puntland and Somaliland



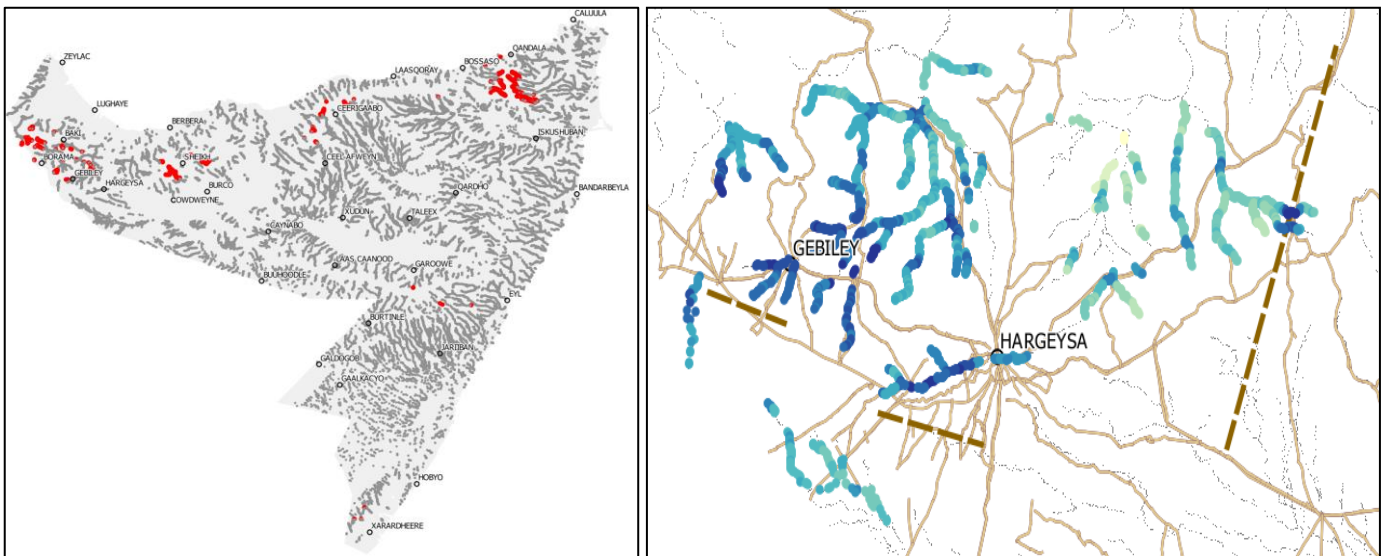
- 42. Preparation was supported by strong cross-GP collaboration. The Governance GP ensured the setup of External Assistance Fiduciary Section (EAFS) units, while the Water GP worked with the PIUs to procure an engineering consulting firm (TZero) to provide high quality technical input and guidance to the PIUs. The Agriculture GP hired a consultant to support the development of the PIM and accompanying PIM action plan. Effectiveness was confirmed for Puntland and Somaliland on 7 December 2015.

Key Factors during Implementation



43. **Site Selection.** The project planned for the construction of water works at eight sites: four in Somaliland and four in Puntland. The site selection criteria and governmental priorities between the two states differed, resulting in very different experiences with the project. Puntland chose to spread the sites equitably across the entire state while Somaliland chose sites close to its capital, Hargeisa. There were pros and cons to both approaches. Sites far from Garowe, Puntland, were challenging both to identify and then to monitor (2 sites were not accessible at all due to security concerns and accessing 1 site necessitated a 17-hour round-trip) but citizens were happy with the seemingly fair distribution of dam locations. The four sites in Somaliland were all situated in close-proximity to the capital city of Hargeisa. While this supported more robust project monitoring and a relatively high standard of civil works, communities in other districts complained that they did not benefit from the project. In Somaliland the topography in Woqoyi Galeeb district was well suited to sand dam technology with river banks, bedrock and porous sands. However, in Puntland, with its topography that is generally flatter, it was more challenging to find wadis that could accommodate the water harvesting technology.
44. The poor performance of 2 of the dams constructed under the project was due predominantly to sub-optimal site selection that did not benefit from sufficient ground-truthing to evaluate more stringently local conditions such as the content and quality of sediment in the wadi beds. Additional time and resources should have been expended in the site selection process to identify the most suitable locations. Additionally, in Puntland, socio-economic considerations and political equity seemingly eclipsed environmental and hydrogeological data on where the pilot sites should be located. The poor dam performance had multiple ramifications beyond the unrealized ROI (per dam construction costs were an estimated US\$100k) and the failure to provide an improved water source for the two communities concerned. It also affected the communities' view of the government's ability to provide this service, of the soundness of the sand dam technology overall and the communities' willingness to help maintain the site. Multiple dam failures could be catastrophic in terms of the community's confidence in state systems to provide this service.

**Figure 3 - The Wadi Evaluation Tool; examples of the initial results showing possible potential sites**



45. **Coordination, Engagement, and Governance.** Working with fragile states clients, most of whom had no experience of either Bank or other project implementation, required daily support. Guidance had to be provided at every step of the project cycle, close day to day follow up and hand holding was very demanding in terms of time and resources.



The project grant agreement included three effectiveness conditions: a) government should establish an External Assistance Fiduciary Section (EAFS) unit in the MOF and appoint consultant civil engineers, consultant financial management and procurement specialists; b) the ministry establishes an inter-ministerial steering committee with representation across the Water, Agriculture and Livestock ministries; and c) development of a Project Implementation Manual (PIM). The Government seconded ministerial staff and set up PCU's and the Bank team worked closely with the PCU's to provide support. Development of the infrastructure was subcontracted to local contractors and supervised by line ministries. Support started with making sure the effectiveness conditions were met on time and continued right through the project to the preparation of this ICRR. Another crucial means of support was provided through the contracting of a consultant engineering firm (T-Zero) who helped, both the Bank and the clients, throughout the site selection process and with ongoing monitoring of the service delivery model. The STC Consultant was the interlocutor between PIUs, the Bank team and international engineering firm, T-Zero.

46. **Logistics and Security.** Logistical and security challenges were underestimated and inhibited supervision and M&E functions. Moving the heavy equipment during excavation and construction revealed to be harder than originally anticipated, particularly in Puntland. The equipment needed to be moved hundreds of kilometers and over a terrain that is usually accessible only by 4x4 vehicles. During project implementation no specific security incidences disrupted implementation. Access for water for construction also turned out to be more challenging than expected and forced the contractor to import water to the site via trucks. Additionally, manual labor was not always available at the site and sometimes had to be provided by villages that were located far away, which also caused an increase in construction costs. Also, the procurement of materials not readily available in the local market (e.g., HDPE liners, water monitoring equipment) was challenging and resulted in construction and M&E delays. Access for water for construction also turned out to be more challenging than expected and forced the contractor to import water to the site via trucks. These and other challenges led to higher construction costs than originally anticipated.
47. Security concerns restricted access to two sites in Puntland (Meledeen and Laasa Dawaco) and inhibited direct site supervision. To compensate, site engineers shared photographs with the Project Coordinator on an ongoing basis. More generally, the PRS logistics and security platform provided by the Bank enabled reasonable access to the other sites to enable sufficient project monitoring and oversight. **Monitoring and Evaluation.** The design, implementation, and use of the monitoring and evaluation system for the project on the balance is rated as "Modest." Effective M&E requires a level of data collection that is often difficult to achieve in insecure, fragile environments such as Somalia. The challenges were amplified by a sub-optimal Results Framework and selection of indicators that inhibited the effective tracking of intermediate outcomes and outcomes. While the M&E Framework was developed through a collaborative process with communities, clients and consultants, it was poorly designed and implemented and broadly inadequate for monitoring progress towards the achievement of the PDO. Implementation of the M&E framework was hindered by misalignment between the baseline and end-line surveying and related data collection challenges. In addition, a hydrological monitoring framework was developed and implanted but not nearly to the extent that was envisioned in the M&E Plan, and for some of the sites, was not implemented at all. Impediments included: i) construction delays that left insufficient time for monitoring once the dams were completed; ii) logistical challenges in procuring the monitoring equipment; and iii) difficulties in accessing some of the more remote sites in PL. Lastly, the plan for monitoring some indicators, such as how many animals were using the water points, was never adequately prepared. As a result, the PIU was not able to accurately monitor or ascertain the how many animals were benefitting.
48. **Project Management/Supervision.** During project implementation regular site monitoring was undertaken by World Bank project implementation support missions. Site visits were generally done with T-Zero who then provided comprehensive dam construction reports. These reports served in flagging problems and proposing solutions as well



as teaching the PCU's what an engineering report should cover. In addition to these six monthly (and more recently quarterly) implementation support missions, regular ongoing construction monitoring was done by PCU engineers. A practical tool for missions was the PIM Action Plan; the Project Coordinator in each supervision mission meeting provided an update which helped to keep the project on track. Going through the PIM action plan and getting budget updates proved a most effective way to provide implementation support, and more useful than workplans. An Aide Memoire was produced within two weeks of each mission, cleared and provided to clients.



Fetching water at Diinqal Sand Dam

49. **Coordination and Engagement.** The Governments of Puntland and Somaliland were fully committed to the project and enthusiastic to be implementing the first infrastructure projects in years in Somalia. Adequate implementation arrangements were put in place to manage project implementation, this included setting up the Inter-Ministerial Steering Committee and PIUs. The effectiveness of the Inter-Ministerial Steering Committees differed notably between Somaliland and Puntland. Although fractious at Minister level, cross-ministerial staff in Somaliland worked satisfactorily at the technical level, while in Puntland it was much more limited. PIUs were made up of a Project Coordinator, Finance Management Specialist, Procurement Specialist, Engineer, Livestock Specialist and Agriculture Specialist. Future projects should include an M&E/Safeguards Specialist. The PIU's initially comprised seconded civil servants and Finance, Procurement and Engineer Consultants. As the project progressed the financial and procurement consultants were replaced by seconded ministry staff.
50. **Construction.** As expected, the construction phase faced myriad challenges , many of which might be anticipated when considered within the context of implementing civil works projects in fragile and conflict affected states. These challenges primarily related to site selection, geophysical studies, real time changes, and contractor capacity. Procuring geo-physical studies proved challenging. For example, in Somaliland, the first round of international competitive bidding failed to attract bids. When a local firm was single sourced, significant support was needed to ensure high quality of feasibility studies and tendering documentation. This proved on balance to be optimal due to the level of local knowledge that was needed and their demonstrated keenness to learn. In Puntland a Kenyan-based





firm was hired. In this case, sites were improperly surveyed, which contributed to poor site selection and the need for constant real-time adjustments to be made during construction, with sub-optimal outcomes.

51. The capacity of construction contractors also varied notably between Somaliland and Puntland, although both projects experienced difficulties in attracting highly qualified contractors. Clients chose to procure different contractors for different sites instead of tendering lots due to logistical and capacity constraints. This presented some procurement challenges, and as few contractors had experience in sand dam technology, all had to be constantly monitored. This was easier in Somaliland than in Puntland due to the close-proximity of the sites to the capital city of Hargeisa. The Puntland team benefited from peer review visits to the Somaliland sites and from exchanging experiences with their Somaliland counterparts.
52. Other factors that affected implementation were weather-related or seasonal in nature. On three occasions sudden flash floods in Puntland destroyed excavations which then needed to be redone, resulting in project delays and rising costs. Winter high seas also caused delays in the arrival, from Dubai, of the HDPE for the Meledeen site in Puntland. Finally, the holy month of Ramadan coincided with the final month of the project and substantially disrupted project workflows including the implementation of end line surveys and last-minute procurements.



A farmer at the Arabsiyo Site in Somaliland

53. **Environmental and Social Safeguards Compliance.** The team’s rating of the client’s compliance to safeguards is “Satisfactory.” WALP is the first project building water infrastructure in rural communities in Somalia. Given access constraints relating to security and logistics, the drafting of the Environmental and Social Management Framework (ESMF) was led by the World Bank and sensitized with the PCUs and local ministries. The ESMF adhered to OP 4.01 Environmental Assessment in terms of identifying potential impacts and accompanying mitigation measures. The project would be implemented at various water points, mostly in valleys or depressions, along pastoralist corridors, in generally arid, sparsely populated and vegetated rangelands. The innovative technologies were meant to be used in seasonal sand rivers. Although, OP 4.37 on Dam Safety should have been declared applicable to WALP, the ESMF contained sufficient technical guidance to satisfy OP 4.37 provisions, and this guidance was appropriately followed



during the course of implementation.

54. As all project physical activities were envisaged to be carried out on existing sites and structures, as well as river beds which do not belong to individuals or communities, Involuntary Resettlement OP 4.12 was deemed not applicable. However, one unanticipated situation of resettlement did emerge. The original design of the project included funding for construction of three offices in Puntland. During the July 2016 implementation support mission, the review of a planned rehabilitation of government office buildings in Jariban raised concerns of an unanticipated resettlement of a family. While the buildings were government-owned and should have been vacant, there was evidence of a family informally occupying the space. According to MoEWT, a family previously displaced due to conflict had returned to its community of origin and established a household in the vacant building. To clear the space for construction, the Ministry informed the family of the planned rehabilitation of the building and moved them to a different house within the same community.
55. Since project was not anticipated to trigger OP 4.12 on Involuntary Resettlement, social safeguards instruments had not been prepared to facilitate relocation processes. Preliminary investigations indicated that MoEWT had ostensibly provided a reasonable alternative for the family to enable voluntary relocation. In order to ensure the family was not involuntarily displaced, thereby triggering OP 4.12, a retroactive assessment was undertaken to understand more clearly the circumstances leading to the relocation, including a deeper investigation of what measures were taken and processes followed, what the condition of the alternative housing was to ensure fair and adequate compensation, and what the perspective of the family affected was to ensure the process was voluntary, and whether any further remedial measures were required. The resulting assessment was submitted to the Bank for review and No Objection, after which rehabilitation activities for the office buildings proceeded.
56. **Financial Management Compliance:** The ICRR rates the overall Financial Management Compliance under the project as “Satisfactory,” considering both project preparation and implementation aspects. A Financial Management Assessment was conducted at the beginning of the project, and in view of the high risk and weak capacity environment EAFS units were established in the Ministry’s of Finance, a set of fiduciary accountability systems were put in place, bi-annual review missions were undertaken by the Banks Finance Management Specialist to ensure proper accounting and reporting of transactions in accordance with International Accounting Standards, and quarterly reports prepared by the FM team flagged concerns. Key issues noted and expeditiously addressed were lack of appropriate travel advance policy , timely accountability of travel advances and closure of the project in line with the Bank FM and disbursement procedures. Major financial management findings and recommendations were documented in the FM implementation support reports, quarterly IFR review feedback, summary excerpts to the Aide memoires and ISR. The project participated in the joint PFM/Fiduciary forum organized by the Bank FM team in February 2018 (Puntland) and April 2018 (Somaliland).

STEP was designed to bring new efficiencies to tracking procurements. However, as a web-based system, STEP becomes time consuming and laborious in situations where the internet is slow. For example, the uploading of the draft contract for the rehabilitation of the Awbarakhadle dam in Somaliland took seven hours. A further challenge for client staff was that the system required earlier manual No Objections be redone through STEP.

57. **Procurement Compliance:** Implementation of the Procurement function under the project is rated as “Satisfactory,” with moderate shortcomings, mostly associated with the operating environment and capacity of procurement staff. Procurement was conducted in accordance with the Banks guidelines for procurement under IBRD loans and credit, selection of consultants, and specific provisions provided for in the grant agreement. A Procurement Capacity Assessment rated the procurement risk as high and throughout the project particular attention has been paid to procurement and support provided, including a double no objection checking process. Midway through project implementation, the Bank’s Systematic Tracking of



Exchanges in Procurement (STEP) systems was introduced and the need to migrate procurement from manual clearances to STEP resulted in notable procurement delays. It should be noted that the support from the FM, Procurement and Disbursements teams was exemplary and highly appreciated.

58. **Project Sustainability:** Considering the projects scope, the decidedly challenging operational environment in which it was implemented, and the challenges associated with administering the mechanisms necessary to sustain the project benefits over the long-term, on balance, project risks to sustainability of development outcomes is rated as “Moderate.” Regarding the sustainability of project interventions, three concerns are notable. All relate to the capacity of target communities to manage the water assets and the associated water supply sources in an equitable and conflict-sensitive manner. First, existing capacity of communities to oversee and finance the upkeep of the infrastructure and equipment is limited and uneven across the 8 WALP sites. Although newly established and/or reconstituted water use committees were meaningfully engaged in project implementation, questions regarding ownership and operational control of the dams were never clearly addressed. While small dam technology is relatively simple and requires only limited ongoing maintenance, the submersible pumps installed in the shallow wells embedded in the river bed will need to be serviced regularly, and dam walls will require occasional masonry repairs. Secondly, amid weak governance structures, there is inherently a high risk of economically powerful interest groups (e.g., water trucking) monopolizing control and use of the newly constructed water assets to the exclusion of target communities. Thirdly, hydrological monitoring was not effectively institutionalized under WALP and planned monitoring of the newly constructed dams was not properly carried out. A minimum of 12 months, or a full hydrological year, is needed for sufficient data collection on water flows and levels, quality, infiltration rates, etc. However, the dams were only completed shortly before project close out so ongoing water monitoring activities did not commence at most sites until 2-3 months before project close out. A lack of monitoring translates into a lack of data about how the dam is functioning and limits information needed to sustainably manage the asset and associated resources.
59. Midway through implementation, the Project team contracted Altai consulting with an aim to pilot a series of Community Development Plans (CDPs) at the project sites in collaboration with the PIUs and participating ministries. The exercises make use of a set of participatory tools that highlight issues facing water usage, water management, and livelihoods from the perspective of the community. The plans included components on strengthening local capacity for water resource management both in terms of monitoring usage and wadi recharge behavior and on Operation and Maintenance (O&M) in all eight sites in Somaliland and Puntland.
60. Data collection gathered during the CDP highlighted the need to reinforce local water governance. This includes further building community understanding of the water by-laws developed under the project to protect access to the sand dams and water usage, operations and maintenance, water resource management and regulation of abstractions. The Water-by-laws provide some guidance however these laws are not totally understood by communities. Ongoing monitoring will be essential to ensure that communities and agro-pastoralists access to water is protected. Of particular concern in Dinqal, Awbarakhadle and Arabsiyo (SL) is the prevalence of water trucking by the private sector who source water from the sand dams to sell in Hargeisa. The Ministry was encouraged to discuss plans to address water governance and the regulation of water trucking with communities to find ways of regulating these abstractions.
61. A scale up project, Water for Agro-pastoral Productivity and Resilience Project (P167826), designed to build on the experience of WALP, is as of 3QFY19 under preparation. Built into the design of this project are plans to leverage the water assets to support the development of more resilient and sustainable livelihoods in the existing eight sites, which will include ongoing hydrological monitoring and community mobilization to strengthen local capacity to sustainably



and equitably manage the resource. It will also support an Impact Assessment of WALP interventions to be undertaken in FY2020 to more fully assess the sustainability of project investments and the socio-economic impacts, most notably on communities and citizen-state relations.



#### IV. BANK PERFORMANCE, COMPLIANCE ISSUES AND RISKS TO DEVELOPEMNT OUTCOME

62. The project design was prepared by the Bank Team in discussion with government institutions at state level (in both SL and PL). These consultations helped define implementation arrangements, the technical scope, budgets, target areas and technologies. This was necessary because of capacity constraints and a lack of understanding of World Bank project preparation procedures. Although the project faced numerous challenges during implementation none of these were insurmountable and the positive relationship that existed between the project task team and the clients ensured that all challenges that arose were resolved in a reasonable and timely fashion.
63. The Bank's performance regarding project implementation based on a two-dimensional assessment of the Quality at Entry and Quality of Supervision assessment is rated as "Highly Satisfactory". This is based on widespread recognition of the strong cross-GP collaboration between dedicated Agriculture and Water teams that has been widely recognized as best practice within the institution. This enabled the team to efficiently and effectively address challenges when they arose and provide robust support to the client. The rating is also based on recognition of the team's consistent use of the PIM to guide project activities and ensure the strong alignment with original design intent.

#### Quality at Entry

64. In 2012 when the Bank re-engaged with Somalia the task team drafted the water and agro-pastoralist sections for the Country Interim Strategic Note (ISN), drawing from available country policies and relevant literature. The team then secured SPF trust fund resources and developed a draft project concept note. Ministries of Planning in Somaliland and Puntland appointed Ministries of Environments as lead ministries and the task team then worked with ministry teams to appraise the concept note and develop a Project Paper. This process assessed technical, financial and economic aspects, poverty, gender, and social development aspects; environmental assessments, including the development of an ESMF and disclosure, and policy and institutional aspects. Implementation arrangements were negotiated, and the team supported clients to establish PIU's and Steering Committees comprised of Ministries of Environment, Water, Agriculture and Livestock. The task team later supported the development of a Project Implementation Manual and worked systematically with PIU's to develop PIM Action Plans, aligned with work plans, to guide and monitor project activities and progress. During the project mobilization period the team secured resources to fund fiduciary training on FM, procurement and disbursements processes and frameworks in Addis Ababa, Ethiopia, bringing together Somaliland, Puntland and FGS in one room. This was a remarkable achievement considering political economy in Somalia and formed the foundation for a period of enormous collegiality between Somaliland and Puntland PIUs, which catalyzed considerable joint capacity building.
65. The starting point for identifying M&E arrangements was securing trust fund resources to provide technical assistance to develop the Wadi Evaluation Tool (WET). This helped the client using remote sensing and satellite imagery to identify potential sites for the project. This introduced a new technology and created a depository of site selection knowledge while facilitating the development of critical skills. The WET helped clients to navigate complex political contestation for site allocation by using science to guide site selection. The team then leveraged the same trust funds to contract a firm that provided "belts and braces" back stopping support and training throughout the project starting with the development of an M&E framework, identification of key risks, and guiding Bank input and processes.



### Quality of Supervision

66. Rigorous implementation support continued throughout the duration of the project in the form of nearly a dozen formal supervision missions, several ad-hoc interim missions, and dedicated remote support from the project team. This level of commitment enabled effective and robust collaboration, rapid responsiveness by the team when challenges arose that threatened achievement of the development objectives, and strong engagement across the participating Global Practices and with the client. Each mission concluded with a meeting in which the PIU presented an updated PIM action plan and updates on the actions undertaken since the previous mission. Aide Memoires were consistently shared with the client within two weeks of the conclusion of formal missions and included detailed action points. The firm contracted to provide TA back-stopping support participated in most of the supervision missions and provided site-specific project construction reports, including recommendations for improving quality and real-time input and advice to the project engineers on site. This high-level quality of supervision contributed greatly to the successful achievement of development objectives.

A sentiment expressed by the Minister of the Ministry of Environment in Puntland during an October 2017 implementation support mission encapsulates government perspective. Minister Ali Warsame talked about how positive this first exposure to the WB has been. After initial concerns (based on structural adjustment critiques) and perceptions that the Bank was distant and unengaged, this perception has totally changed. The Bank team, he said, was highly engaged and dedicated to building capacity and confidence of State Government institutions. The project harnessed capacity, which the Minister summarized as:

- A. Agendas and action plans (flexibility appreciated);
- B. Budget – you came with money;
- C. Capacity enhancement / institutional strengthening/changed values;
- D. Delivery done by ministry which shows MOEWT can deliver;
- E. Evaluation & Monitoring.

Finally, the WALP Project has, he said, empowered Government and facilitated the rebuilding of the citizen-state relations.



## V. LESSONS LEARNED AND RECOMMENDATIONS

67. Drawing from the descriptions and analysis from preceding sections assessing key factors affecting performance and outcomes, this section briefly presents the most noteworthy positive and negative lessons learned from project experience. Where these lessons have general applicability for similar operations in the sector, the country or other countries, this is noted. A more comprehensive list and discussion of lessons learned and recommendations can be found in the project's Endline study, which is available [here](#) and which was prepared at project closing in July 2018.
68. **Finding #1 – Addressing water fragility in FCV context is complex and not without risks.** Intervening in an established system of such a critical resource as water has the potential to generate competing priorities, unintentionally reinforce power dynamics or entrench the status quo, empower or disempower certain groups, or exacerbate a critical source of pre-existing grievances (e.g., corruption, environmental damage, private sector predation). In some pilot areas, particularly in Somaliland, tensions already existed over how water should be utilized; adding new water assets may worsen this situation. If more powerful groups usurp the water from the WALP site, the objective of the project (providing water for pastoralists and agro-pastoralists for their livelihood) would be lost, not to mention the harm unintentionally inflicted upon vulnerable populations.
69. **Recommendation** – To mitigate potential for conflicts, project teams should pay special attention throughout the project to understand local power dynamics and any history of conflict over resources so as to avoid aggravating existing tensions. A notable component of this conflict-sensitive “Do No Harm” approach is to understand how conflicts within a community are handled. Where a conflict-resolution group or association exists, the project activities should seek to strengthen their capacity. Where no such group exists, the project should help establish one. These associations are key to ensuring that the water is distributed fairly and that disagreements are amicably addressed.
70. **Finding #2: Investments in institutional capacity building at all levels is critical to sustainability of investments.** Among WALP's most notable achievements was capacitating the technical, administrative, and community mobilization skills of state governments to successfully carry out small-scale, community-based water infrastructure sub-projects. Providing the opportunity for local governments to implement small-scale, community-based infrastructure projects enables learning by doing and can provide a quick vehicle for post-conflict reconstruction. Its contribution toward improved stability and in clarifying local government roles in service delivery and state building cannot be overestimated. Also, in rural Somalia, traditional community leaders play important roles in managing communally owned water sources. Initiatives to introduce community management must take due consideration and leverage to benefit in the design of project interventions the influential role that traditional leaders play in rural communities across Somalia. In places where private water trucking has benefited from free access to groundwater sources, introducing a structured management of water sources that will be acceptable to communities around the water sources and the private water trackers will be a significant challenge.
71. **Recommendation** – Project teams undertaking the design of similar rural water supply projects in fragile states should consider placing strong emphasis throughout the project life-cycle on capacity-building measures to ensure sustainability of investments. At site-level, engaging communities at the outset in broadly inclusive and sustained community planning and development processes can help stakeholders better understand how their resource management decisions affect their livelihoods and the well-being of their community and build crucial trust and confidence between communities and government agencies delivering services. At institutional level, a robust



program of project management training and knowledge exchange visits for civil servants and facilitating maximum opportunities for community engagement through site supervision mechanisms and participation in community planning processes can greatly enhance their ownership of project activities and outcomes and their service delivery capacity.

72. **Finding #3: Evidence-based, objective criteria-driven is critical to effective site selection.** While small-scale sand or sub-surface dams are generally considered ‘low-tech’, the correct siting presents challenges that are similar to those found in the design of larger, more complex water projects. Additionally, WALP has shown that, due to a combination of less favorable climatic and hydrogeological conditions, Puntland less suitable than Somaliland in for the development of sand or subsurface dams. Two of the dams built under the project did not function as designed due to being built at poorly situated sites. Additional time and resources should have been expended in the site selection process to identify locations. Additionally, in Puntland, socio-economic considerations and political equity seemingly eclipsed environmental and hydrogeological data on where the pilot sites should be located. The poor dam performance that resulted from poor site selection had multiple ramifications beyond failing to provide an improved water source for the two communities concerned: it also affected the communities’ view of the government’s ability to provide this service, of the soundness of the sand dam technology overall and the communities’ willingness to help maintain the site. Multiple dam failures could be catastrophic in terms of the community’s confidence in state systems to provide this service. Also, objective criteria and data should drive the site selection. In Puntland, socio-economic considerations and political priorities seemingly eclipsed environmental and hydrogeological data on where the pilot sites should be located.
73. **Recommendation** – To improve site selection, future project teams are advised to:
- Prepare a prioritized, illustrative list of strong potential locations. Potential new sites should be identified and surveyed in advance to create a positive list from which the Ministries can then choose. More broadly, the key outcome of such an investigative step should be an investment plan.
  - The ministries should employ highly skilled water resources engineers and hydrogeologists to identify and assess potential new sites and develop the Investment Plan. More time and resources than those employed under WALP should be allocated on the site selection process and geophysical assessments. At each potential new site, multiple alternative locations should be considered.
  - A pre-feasibility-level report should be prepared, similar to the one crafted under WALP, for each potential new site and included in the Investment Plan.
  - The criteria of site selection should be flexible to apply to all regions of SL and PL and encompass a variety of water harvesting options besides sand and sub-subsurface dams.
  - Back-stopping support is needed for site selection, design and monitoring. Experienced hydrogeologists and water resources engineers can provide the local ministries with the necessary technical support to help review and quality control the work being performed by local contractors.
  - Explore other water harvesting and storage technologies. More information is needed to determine which water harvesting technology is best suited for the various types of terrain and both communities and government staff should be trained on their operation and management. Teams should consider: i) conducting hydrological and geophysical studies on rain water harvesting; ii) increasing training of communities and governmental staff in the operation and management of rain water harvesting systems; iii) developing policies, guidelines and strategies for rain water harvesting; and iv) improving information management systems for rain water





harvesting.

74. **Finding #4 – The Wadi Evaluation Tool (WET), developed under the WALP project provided a valuable contribution to the process of finding potential areas for wadi water harvesting installations.** However, ‘successful runs’ of the tool are highly dependent on: (a) the modeler’s knowledge of a variety of geospatial and geophysical concepts; and (b) the quality and resolution of the basic information the tool uses to runs its simulations. However, WET alone does not provide the final location for siting sand and sub-surface dams. The WET tool cannot be considered as a substitute for the field surveys and detailed analyses that are necessary for siting a sand or sub-surface dam. At this stage, considering the limitations of the available data, WET’s primary contribution to the overall process is on assisting the rapid identification of general areas of the country where sand or sub-surface dams might be a viable solution to water harvesting.
75. **Recommendation – Multiple data points should be used in the selection of dam sites.** Invest in the collection of additional information to multiply data points and triangulate and ground-truth information. More specifically, project teams are advised to: i) develop and/or update a ‘well database’ by carrying out a field survey, gathering information on the location of existing wells, including some basic information on quality of water, water static levels inside the wells, etc.; ii) develop a more refined shallow water hydrogeological map based on advanced hydrogeological technologies; iii) once candidate sites have been identified, combine remote sensing and field investigation techniques to better clarify the width of the wadi and the estimated infiltration rate (mm/hr).
76. **Finding #5 – Resources needed for supervision support and logistical challenges in FCV contexts should not be underestimated.** Outlays associated with supervision missions to monitor the project’s implementation progress, including expenses related to safeguarding the safety and security of WB staff, far exceeded available BB budget. This placed notable strain on the project team to look for external resources to fill the funding gaps. In addition, delays associated with sourcing materials and transporting them to the sites contributed to higher construction costs than originally anticipated. Moving the heavy equipment during excavation and construction revealed to be harder than originally anticipated, particularly in Puntland. The equipment needed to be moved from hundreds of kilometers away and to a terrain that is usually accessible only by 4x4 vehicles. Access for water for construction turned out to be more challenging than expected and forced some contractors to import water to the site via trucks. This led to higher construction costs than originally anticipated. Manual labor was not always available at site and, sometimes had to be provided by villages that were located far away from the construction site. This also caused an increase in construction costs.
77. **Recommendation – Budget in advance sufficient time and money for project supervision and civil works to avoid budget overruns and construction delays.** Project budgets need to build in sufficient resources for supervision missions by taking into full account the high costs of doing business in an FCV context. Also, construction companies should visit the sites and discuss potential issues and possible solutions with the Ministries. The difficulty and distances should be budgeted for in terms of both money and time to complete the project.
78. **Finding #6 – Developing and mobilizing cost-effective, fit-for-purpose M&E systems in FCV settings is challenging.** Hydrological monitoring was not properly carried out, with only scattered hydrological information collected to determine the hydraulic performance of the newly built water structures. This happened due to: i) sand dams were built later than originally anticipated and the hydrological monitoring could be activated only with few months left before the end of the WALP project instead of 12 months, or a full hydrological year, prior to its conclusion; ii) Ministries in SL and PL did not prioritize the procurement of the necessary monitoring equipment; and iii) the importance of hydrological monitoring was not effectively institutionalized under WALP. A lack of monitoring translates into a lack of data about whether and how the dam is functioning and robs the



ministry of the tools to sustainably manage the site. At many WALP sites, the problem was much less a lack of water but a lack of effective water management. But good water management requires monitoring. A lack of monitoring, therefore, threatens the long-term sustainability of the water investments, regardless of the amount of water available or the initial success of the dam.

79. **Recommendation – Hire an external firm to provide technical backstop support and real-time technical advice to the overall monitoring process.** In addition, government staff and a variety of different stakeholders should receive extensive capacity building in M&E as well as report writing and field exposure. PCUs should also ensure that staff are directly involved (i.e. participate to the field investigation activities) during the site selection process and should ensure that teams are composed not only by water resources engineers and hydrologists but also by socio/agro-economists.

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ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: The Project was expected to contribute to a number of higher level objectives framed around addressing water scarcity among agropastoral communities and strengthening their resilience, supporting eco

| Indicator Name   | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|--|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| Improved community water points constructed or rehabilitated under the project allowing livestock to access water for 10 months or more per year | Number          | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 8.00<br>29-Jun-2018     | 7.00<br>31-Jul-2018           |

Comments (achievements against targets): Most water points were able to water livestock more than 8 months of the year and few to ten months. Several climate related factors contributed to this and the indicator can be considered largely achieved.

| Indicator Name               | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|------------------------------|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| Direct project beneficiaries | Number          | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 20000.00<br>29-Jun-2018 | 42370.00<br>31-Jul-2018       |



|                      |            |                     |                     |                      |                      |
|----------------------|------------|---------------------|---------------------|----------------------|----------------------|
| Female beneficiaries | Percentage | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 60.00<br>29-Jun-2018 | 50.00<br>31-Jul-2018 |
|----------------------|------------|---------------------|---------------------|----------------------|----------------------|

**Comments (achievements against targets):** This target was over achieved compared to the formally revised indicator.

**Unlinked Indicators**

| Indicator Name   | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|--|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| Number of people in rural areas provided with access to Improved Water Sources under the project | Number          | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 20000.00<br>29-Jun-2018 | 42370.00<br>31-Jul-2018       |

**Comments (achievements against targets):** This indicator was overachieved more than double (211%). A total of 42,370 people benefited from access to improved water sources.

| Indicator Name  | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|---|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| Water resources rehabilitated or newly built by the government under the project that are operational and sustainably managed | Number          | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 8.00<br>29-Jun-2018     | 0.00<br>31-Jul-2018           |

**Comments (achievements against targets):** This target was 87.5% achieved by the Project closing date.



| Indicator Name  | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|---|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| Percentage of community stakeholders attributing change to government | Percentage      | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 75.00<br>29-Jun-2018    | 40.00<br>31-Jul-2018          |

**Comments (achievements against targets):** At this stage, it is too early to quantify this value. The construction of the improved water points was completed recently. Early indications however show that in Somaliland, 60% of the respondent think that the situation has improved and 77% of them attribute this positive change to the government. On the other hand in Puntland less number of people attribute the positive change to the government. The above estimate is on the balance and at the time of the baseline survey for new scaled up project, this indicator can be better reassessed.

## A.2 Intermediate Results Indicators

**Component:** Component 1: Developing under-utilized agro-pastoral water supply technologies

| Indicator Name   | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|--|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| Improved community water points constructed or rehabilitated under the project | Number          | 0.00<br>01-Jul-2015 | 8.00<br>07-Dec-2015 | 8.00<br>29-Jun-2018     | 7.00<br>31-Jul-2018           |

**Comments (achievements against targets):** This target was 87.5% achieved.

**Component:** Component 2: Government capacity building and community empowerment

| Indicator Name | Unit of | Baseline | Original Target | Formally Revised | Actual Achieved at |
|----------------|---------|----------|-----------------|------------------|--------------------|
|----------------|---------|----------|-----------------|------------------|--------------------|



|   | Measure |                     |                     | Target              | Completion          |
|---|---------|---------------------|---------------------|---------------------|---------------------|
| Operational water user associations created and/or strengthened | Number  | 0.00<br>01-Jul-2015 | 8.00<br>07-Dec-2015 | 8.00<br>29-Jun-2018 | 8.00<br>31-Jul-2018 |

**Comments (achievements against targets):** Water User Associations to manage and operate the schemes were established in all the newly constructed sites. A typical water user association consists 7 members.

| Indicator Name   | Unit of Measure | Baseline            | Original Target     | Formally Revised Target  | Actual Achieved at Completion |
|--|-----------------|---------------------|---------------------|--------------------------|-------------------------------|
| Livestock watered over longer period in the year in water resources rehabilitated or newly built under the project | Number          | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 418000.00<br>29-Jun-2018 | 200000.00<br>31-Jul-2018      |

**Comments (achievements against targets):** This target is likely to be achieved more than what has been reported above. The figure provided during the end line survey was an estimate and observations later indicated that, there are more than 100 small farms around the dam sites with a potential to support more livestock. This is likely to increase the number of livestock watered over the longer period.

| Indicator Name  | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|---|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| People trained to improve hygiene behaviour or sanitation practices under the project | Number          | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 6000.00<br>29-Jun-2018  | 4300.00<br>31-Jul-2018        |



**Comments (achievements against targets):** The end line survey indicated that close to 70% of the target population has attended basic hygiene behavior and sanitation awareness trainings.

| Indicator Name   | Unit of Measure | Baseline         | Original Target  | Formally Revised Target | Actual Achieved at Completion |
|--|-----------------|------------------|------------------|-------------------------|-------------------------------|
| A monitoring system for localized resources-based conflicts that allows to document occurring conflicts is established and operational | Yes/No          | N<br>01-Jul-2015 | N<br>07-Dec-2015 | Y<br>29-Jun-2018        | N<br>31-Jul-2018              |

**Comments (achievements against targets):** Benefiting communities have a mechanism to resolve disputes. It allows to document conflicts that arise because of resource use, and in particular, helps assess whether the new water source has resulted in new tensions.

**Component:** Component 3: Project Management and Monitoring and Evaluation

| Indicator Name  | Unit of Measure | Baseline            | Original Target     | Formally Revised Target | Actual Achieved at Completion |
|---|-----------------|---------------------|---------------------|-------------------------|-------------------------------|
| Technical, administrative and community mobilization skills strengthened in service providers | Number          | 0.00<br>01-Jul-2015 | 0.00<br>07-Dec-2015 | 2.00<br>29-Jun-2018     | 2.00<br>31-Jul-2018           |

**Comments (achievements against targets):** The two PIUs involved in the project (Somaliland and Punt land) has gone through extensive capacity building and training (that includes, Project management, fiduciary, construction supervision, contract administration, Monitoring and evaluation, Communication skills, Reporting and Documentation and others) that hugely enhanced their capacity.







**ANNEX 2. PROJECT COST BY COMPONENT**

| <b>Components</b>   | <b>Amount at Approval<br/>(US\$M)</b> | <b>Actual at Project<br/>Closing (US\$M)</b> | <b>Percentage of Approval<br/>(US\$M)</b> |
|---|---------------------------------------|--|---|
| Developing under-utilized<br>agro-pastoral water supply<br>technologies | 1,017,420                             | 1,173,042                                    | 1.15%                                     |
| Government capacity<br>building and community<br>empowerment            | 505,973                               | 551,414                                      | 1.09%                                     |
| Project Management and<br>Monitoring & Evaluation                       | 149,940                               | 219,736                                      | 1.46%                                     |
| Physical and Price<br>Contingencies                                     | 326,667                               | 55,808                                       | 17%                                       |
| <b>Total</b>  | <b>2,000,000.00</b>                   | <b>1,944,192.00</b>                          | <b>97%</b>                                |



### ANNEX 3: Economic Analysis

The results of the cost benefit analysis are presented in the following table (Annex 2 provides a similar analysis for each individual site, including detailed justification for the rationale for each number presented below):

**Table 1: Cost-Benefit Analysis for the overall WALP's investment.**

| N  | Item  | Unit                      | Value                 |
|----|---|---------------------------|-----------------------|
| 1  | Type of Intervention  | Various                   |                       |
| 2  | Total Extractable Amount of Water Over Dry Season             | m <sup>3</sup>            | 1,222,712             |
| 3  | Total Water Needs Over Dry Season (6 months)                  | m <sup>3</sup>            | 728,204               |
| 4  | <b>Direct Capital Investments</b>                             | <b>US\$</b>               | <b>\$1,000,421.44</b> |
| 5  | <i>Survey &amp; Design</i>                                    | US\$                      | 163,140               |
| 6  | <i>Construction of Dam</i>                                    | US\$                      | 528,511               |
| 7  | <i>Construction of Appurtenant Structures</i>                 | US\$                      | 308,770               |
| 8  | <b>Project Management, Monitoring and Evaluation</b>          | <b>US\$</b>               | <b>\$470,000.00</b>   |
| 9  | <i>Government</i>   | US\$                      | 220,000               |
| 10 | <i>External Consultant</i>                                    | US\$                      | 250,000               |
| 11 | Capital Cost per m <sup>3</sup> of water Produced             | US\$                      | \$1.20                |
| 12 | Percentage of Domestic water needs covered                    | %                         | 100%                  |
| 13 | Number of people the dam can serve annually                   | n                         | 43,479                |
| 14 | Capital cost per person                                       | US\$                      | \$33.82               |
| 15 | Total annual costs  | US\$                      | \$4.02                |
| 16 | Unit Cost per m <sup>3</sup> of water                         | US\$/m <sup>3</sup>       | \$0.37                |
| 17 | Average Cost per m <sup>3</sup> of water sold by water trucks | US\$/m <sup>3</sup>       | \$5.04                |
| 18 | <b>Return of the Investment per m<sup>3</sup> of Water</b>    | <b>US\$/m<sup>3</sup></b> | <b>\$4.68</b>         |

Notes:

- Item 2: this is the total amount of water that is possible to extract from all 9 new improved water points assuming that, in most cases, water might stop flowing into the reservoirs after two months from any significant flood;
- Item 3: this is the total water need for the entire dry season (180 days) for people and livestock living within the eight communities targeted by WALP along with those farms that are located in the vicinity of each reservoir;



- Item 11: this is the capital cost per cubic meter of water that can be extracted from the reservoirs (the value is calculated dividing Item 4 + Item 8 by Item 2).
- Item 12: this is the proportion of the domestic water needs (for human consumption only) that the reservoir can serve. The total extractable water (Item 2) is much larger than the total water needs (Item 3) and therefore 100% of the local population can be served.
- Item 14: The capital cost per person was calculated by dividing the total capital investment by the number of people the system was capable of supplying with water annually;
- Item 15: The total annual costs are the sum of the fixed annual costs and the recurrent costs per person. Annual depreciation rates for sand dams were estimated to be 3.3% of total capital investment over a lifespan of 30 years (i.e. Capital Investment / 30 years) / Capital Investment) \* 100 = 3.3% per year). Interest rates were assumed at 7.5% annually, giving a total annual fixed cost of 10.8% of the capital cost per person. Recurrent annual costs were estimated to be 30% of the fixed costs. Hence fixed and recurrent costs were added together to give the total annual cost per person. The fixed costs are 10.8% of \$33.82 which is \$3.65 per person per year. The recurrent annual cost is 10% at \$3.65, which is \$0.37 per person per year. Hence a total annual cost of (US\$ 3.65 + \$0.37) US\$ 4.02 per person per year.
- Item 16: Based on an annual water demand of 11 m<sup>3</sup> per person: (25 liters per day for the 180-day dry season, and 35 liters per day for the rest of the year i.e.185 days). The sum is thus ((25\*180) + (35\*185)) = 10,975 liters, or approximately 11 m<sup>3</sup>. The unit cost of one cubic meter is thus derived by dividing the total annual costs by the annual water demand of one person in cubic meters.

Based on the estimates presented above, the unit cost of all the new improved water points combined is, therefore, **US\$0.37/m<sup>3</sup> of water**. This is a low unit cost: between 2016 and 2018, people across the WALP sites paid, on average, \$5.04/m<sup>3</sup> to water truckers.

### COST OF WATER FROM THE SAND DAMS VS. WATER TRUCKERS

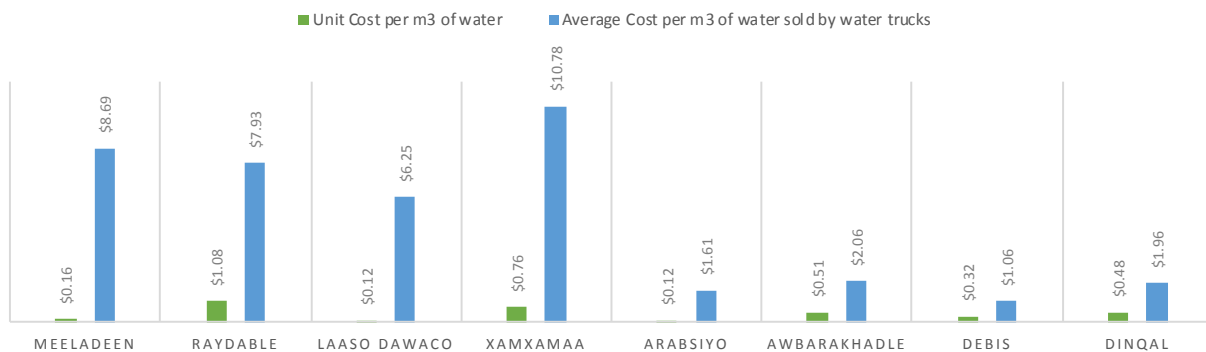


Figure 1: Comparison between the unit cost per cubic meter of water produced by the new dams and the average cost the same cubic meter of water would have if purchased from the water truckers

This means that for each cubic meter of water extracted there is a **marginal gain of \$4.68**. In other words, the return of the investment for the WALP project has been nearly 5 times the money the World Bank has invested (the following chart presents the results of the same type of analysis performed at each one of the eight sites).



**RATE OF RETURN FOR EVERY DOLLAR THE WORLD BANK HAS INVESTED**

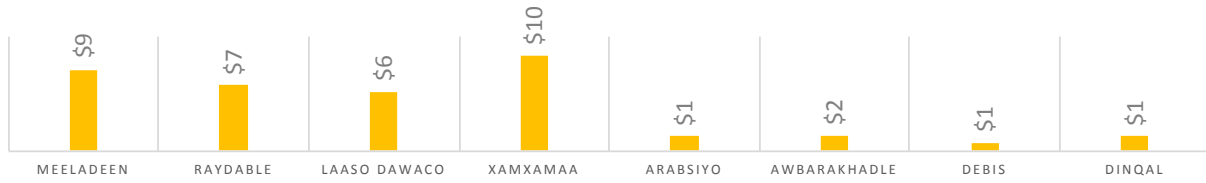


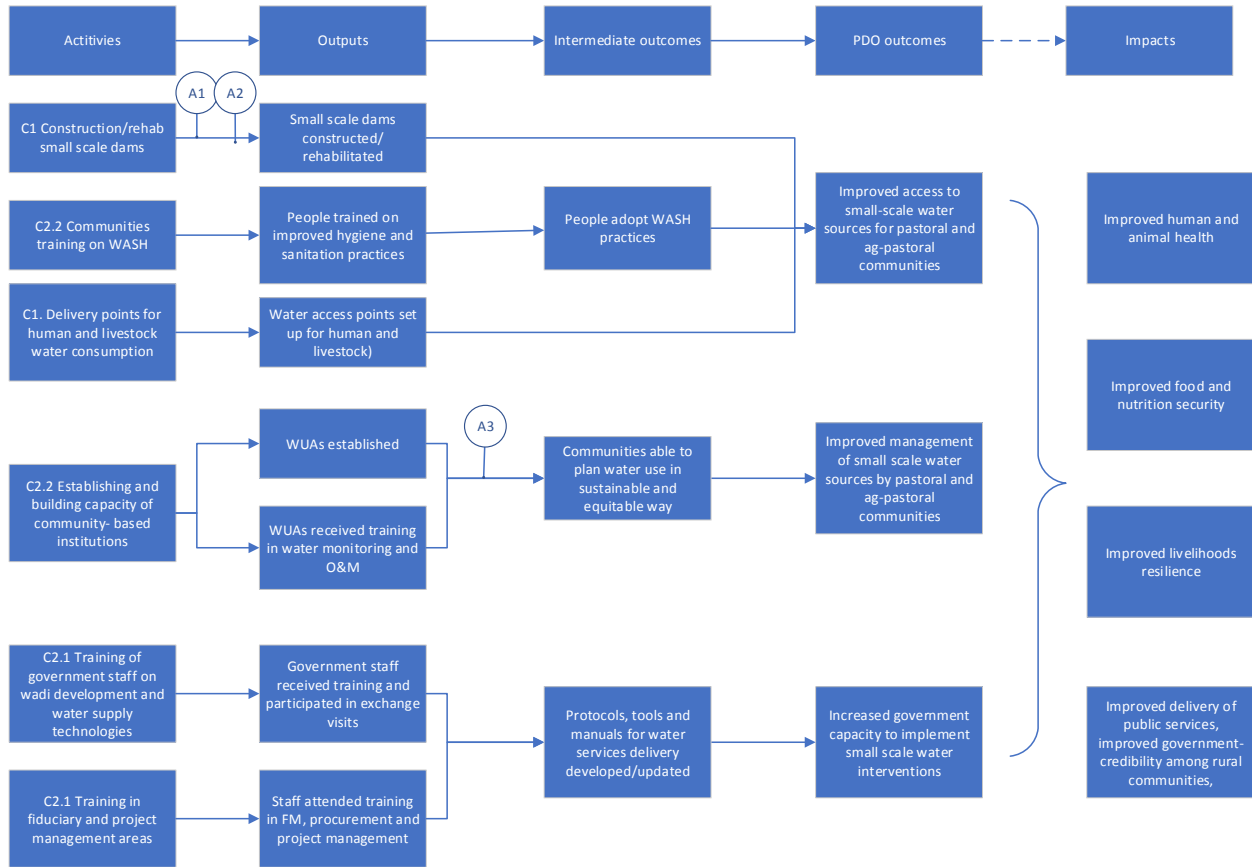
Figure 2: Details of the rate of return on the investment for each one of the eight WALP’s sites.

This simple cost/benefit analysis does not consider any of the secondary benefits that the added water would provide to the community. Such benefits include the profits agro-pastoralists could make if they expanded irrigation (53% of the people interviewed have stated that they are now planning to expand the cultivated area thanks to the new water WALP has provided) as well as the added value for having more livestock, better sanitation, and less disease as a result of greater access to an improved water source.



### Annex 4 – Theory of Change

Although a Theory of Change was not included in the Project Document, an illustration of the result chain/logic behind the operation was developed as part of this review. It depicts the links between the operation’s interventions, outputs, intermediate results, and the desired outcomes, along with some underlying assumptions that affected implementation.



General assumption: Sequencing and timing: infrastructure can be delivered in 12 months

A1: The Bank team has full and regular easy access to sites for supervision.

A2: Procurement and civil works aligned with the anticipated schedule.

A3: Targeted communities have existing capacity to sustainably manage water assets.



**ANNEX 5: WALP – Project completion Report – Puntland**

**PUNTLAND STATE OF SOMALIA**



**Ministry of Environment, Wildlife and Tourism (MOEWT)**

**SOMALI WATER FOR AGRO-PASTORAL LIVELIHOODS PILOT PROJECT**



**Project completion Report**



***Initiation of project (design, mobilisation and effectiveness)***

The Somali Water for Agro-Pastoral Livelihoods Pilot Project (WALP) is to be implemented, over a period of 30 months by the governments of Somaliland (SL) and the Puntland (PL) State of Somalia. It has been designed, in the context of economic reconstruction and recovery from a prolonged Fragile and Conflict affected States (FCS) situation in the whole of Somali region during the last several decades. It is a pilot and learning project beginning with eight water infrastructure facilities located in strategic locations in rural SL and PL. In these locations, the WALP will focus on designing and using multi-sectoral (landscape) approaches in water supply infrastructures for improving the livelihoods of the beneficiary communities.

In PL it is led by the Ministry of Environment and Climate Change. The project was implemented using the multi-sectoral approach so that in PL State (i) Agency for Water and Natural Resources (PSWEN), (ii) Ministry of Livestock and Animal Health (MOLAH), (iii) Ministry of Agriculture (MOA), and Ministry of Planning and International Cooperation (MOPIC). The funding for the project for PL is in the form of a US\$ 1.00 million Grant from the State and Peace Building Fund (SPF) to be utilized with the World Bank acting as the administrator for the Fund.

The Project Development Objectives (PDOs) are: “To improve the pastoral and agro-pastoral communities’ access to, and management of, small-scale water sources and to enhance the capacity of the government to implement small-scale water interventions in targeted arid lands of Somaliland and Puntland”. To achieve the above objective, the Project focused on implementing its interventions through activities categorized into three components with sub-components summarized below:

- **Developing under-utilized agro-pastoral water supply technologies**
  - ✓ Selection of sites for the construction of dams
  - ✓ Recruit consultancy firms (geophysical consultancy) for survey and design of dams and associated structures
  - ✓ Recruit construction firms to construct the dams
- **Government capacity building and community empowerment**
  - ✓ Support to central and local governments
  - ✓ Learning exchange and knowledge management
  - ✓ Peer review for technologies and for management
  - ✓ Equipment supplies
  - ✓ Strengthen community based management





WALP team in Exposure feild Visit on Sand Dam Technologies Kenya



**Constructed MoEWT Offices at jariiban and Bosaso in Mudug and Bari Region Respectively**



**Vehicles and Survey equipments procured for WALP Project**

- **Project Management, Monitoring & Evaluation**
  - ✓ *Staff and project coordination unit*
  - ✓ *Outreach and communication*
  - ✓ *Running costs*
  - ✓ *Monitoring and Evaluation*

The guiding document for WALP Project the Project Implementation Manual (PIM) has been developed which is designed to provide details of a time-bound implementation plan for the Project covering: (i) institutional arrangements at the central government, regional/district, and community levels; (ii) component and sub-component activities and implementation processes; (iii) financial management arrangements; (iv) procurement management arrangements, (v) environment and social safeguards management arrangements;, and (v) monitoring and evaluation procedures.

This PIM has been prepared based on policies, strategies and existing laws (where available) for both SL and PL as well as World Bank policies and guidelines for the preparation of PIMs and also through





extensive consultations with the key stakeholders from the two governments. It is basically an implementation tool for the Project Paper (PP) on which the SL and PL governments have signed the Financing Grant Agreements that provide legally binding guidelines and procedures for the use of the grant resources for the Project.

During initial stage of the project activity, World Bank hired an International Consultant and provided Wadi Evaluation Tool (WET) model training for number of MoEWT staff members. On early February 2016, MoEWT decision makers have selected four sites for sand dam. These locations are named (Xamxamaa, Dharoor, Reyadble and Laasa-Dawaco). Based on this, MoEWT modelers together with WALP coordinator met and agreed to use WET model to identify site suitability for sand dam construction.

Consequently, MoEWT team went to all selected four locations and carried out baseline assessment and run WET model. Based on WET set of physical parameters, the team has identified potential sites for sand dam construction (2 to 3 sites for each location/village was identified). Following to this a ToRs were developed for the recruitment of survey, design and construction of dam, for geophysical and geotechnical study and shared with World Bank for approval. World Bank has sent no objection letter and EOI advertised to local media as well as DG market and on UN business online. Evaluation Committee (EC) has been formed by the Ministry of Environment, Wildlife and Tourism to evaluate the EOI received for Geophysical Consulting Firms.

#### **Participation of PCU throughout the project**

The Participation of the project coordination was very effective and it was designed throughout the project life cycle, with the team composition of the PCU as follows:

- i. Director General of MOEWT (Project Coordinator) – seconded
- ii. Director of Environment – seconded
- iii. Technical Officer (M&E Specialist) – seconded
- iv. Financial Management Specialist – hired as specialist consultant & paid by the Project
- v. Procurement Specialist – hired as specialist consultant and paid by the Project
- vi. Civil Engineer – hired as specialist consultant and paid by the Project

The PCUs ensure fiduciary management including execution of financial management and procurement processes, in line with applicable rules; provide coordinated, efficient, and timely implementation support for the beneficiary institutions; and facilitate timely and adequate compliance with the World Bank reporting requirements. The unit provides secretarial and technical analytical support to the IMPSC and coordinate implementation progress and reporting to the IMPSC. The major specific functions of the PCUs which in all cases was executed through working in collaboration with the implementing ministries in SL and PL, participating districts and communities (with the overall objective of building capacities of existing structures), and additionally included:

- i. Planning, budgeting, and implementation of project activities with the beneficiary institutions
- ii. Preparation and implementation of communication strategies for the project and related reforms
- iii. Procurement of works, goods and services for the project;
- iv. Monitoring and evaluation of the project activities, and assessment of the progress of project implementation;

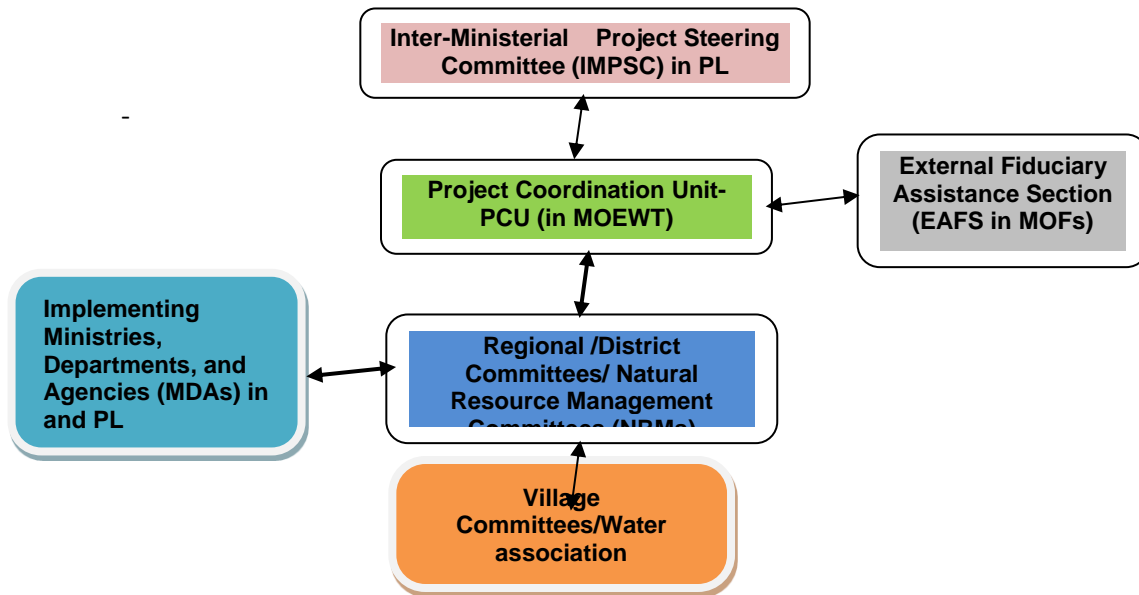


- v. Preparation and dissemination of various reports related to the project;
- vi. Identification of training needs of project staff and relevant training opportunities for the implementing ministries and institutions;
- vii. Submission of progress reports to the World Bank, and other DPs;
- viii. Coordination with the World Bank, and other DPs for the project reviews;
- ix. Ensuring fair and timely handling of complaints.
- x. Serve as the technical and analytical Secretariat of the IMPSC

The project also had inter-ministerial project Steering Committee, this in PL the IMPSC was chaired by the Minister of MOEWT and the members include the Ministers from: (i) State Agency for Water and Natural Resources (PSAWEN), (ii) Livestock and Animal Health (MOLAH), (iii) Agriculture (MOA), and (iv) Planning and International Cooperation (MOPIC). The respective DGs and other technical staff provide the technical support during the IMPSC meetings. The PCU Coordinator in PL (or designee) also served as the Secretary for the IMPSC.

The IMPSCs perform the following specific key functions: (i) discuss and decide on key policy and strategic issues of the project; (ii) approve annual work plans and budgets; (iii) resolve any bottlenecks referred from the central government, district and community levels through the PCU; and (iv) review project reports, including auditors' reports submitted by the PCUs and decide on appropriate actions to be taken in regard to the project implementation.

**Figure 1: The WALP Institutional Implementation Structures for PL**



The IMPSC meets at least once every quarter of the year. The Project Coordinators at the PCUs were responsible for preparing minutes of the meetings. The approved IMPSC minutes was included as annexes in the quarterly project reports.

***Lessons learned - What worked, what didn't***



1. The ToR for geophysical consultancy should be revised in a way that it shows more accountability, based on the final decisions and recommendations made,
2. Spend more time on the site selection process, geophysical assessments, and always have second option (Alternative) for the sites selected.
3. Construction of dams should be done during dry season.
4. Community knowledge and attitude are changed and become more informed.
5. Skills and knowledge transformed to the staff community, and contractors.
6. Highly skilled engineers are important for the real time design changes during the construction.
7. After awareness community applied principles of rotational grazing and other NRM activities.
8. Water accessibility for human and livestock was increased and community was satisfied with this.
9. Geophysical consultant at a local level should be improved in terms of equipment and knowledge.
10. Potential sites should be surveyed in advance list and prioritize sites identified for future intervention.

What you would want to do differently if given the opportunity

- a) Integrated NRM Project (Agriculture, livestock, water, livelihood, rangeland management, afforestation and gully control).
- b) Increase project lifetime into 5 years'.
- c) Continuous capacity building with different stakeholders.
- d) Field exposures of best practice.
- e) Allocate percentage of the budget for maintenance and oversees of the project unexpected overcomes.
- f) Introduce ownership and handover of the projects to the communities at a very early stage.
- g) Change the livelihood style of community at WALP sites i.e Agriculture Practice/Agro-Pastoral Practices.
- h) Introduce the concept of Alternative energy sources to combat deforestation.
- i) Conduct technical and feasibility studies on potential sites for "Rain Water Harvesting" in Puntland and kind of appropriate technology.
- j) Conduct hydrological and geophysical studies on rain water harvesting in Puntland.
- k) Prequalification of companies for construction should be done, workshops and orientations regarding this field should be extended to "Puntland Construction Companies".
- l) Increase Training of communities in operation and management of community on "Rain Water Harvesting systems".
- m) Training of government professionals in rainwater harvesting development
- n) Recruit full time staff for the life time of the project.
- o) Develop policies, guidelines and strategies for rain water harvesting in Puntland.
- p) Empower/Strength and establish where do not exist water management associations,
- q) Improve information management systems for rain water harvesting in Puntland.
- r) Trainings on cumulative and strategic environmental impact assessment

**New Projects Ideas**

- 1) Sand dams.
- 2) Subsurface dams.
- 3) Earth dams.
- 4) Rangeland restoration and tree planting programs.



- 5) Roof top rain water harvesting/Roof catchments project.
- 6) Ground water infiltration practices developed.
- 7) Soil and water conservation structures introduced.
- 8) Strength adaptation, mitigation, resilience to climate change and drought.
- 9) Botanic Gardens-Seed bank/naïve trees introduced- through urban youth employment projects.

### ***Evaluating the World Bank support***

- The bank support was outstanding in the different stages of the project life cycle, the planning, consultation, guidance, technical support, decision making, and evaluation were all in line with the project implementation guidelines and, we believe it had covered coordination aspects between partners,
- Although the long procedures at the different levels/system was sometimes bringing delays, as this was new to our country; but we believe that since this was a pilot project we learnt a lot from it and we are looking forward to apply this in the next project.
- Government capacity to execute world bank projects was enhanced through the capacity building and skill transfer gained during WALP project. The bank support also contributed to strengthen the network of inter-ministerial structures within Puntland and this was a good structure that enhanced coordination and collaboration between the government institutions.
- The bank support has also contributed in empowering and building the country systems whereby they supported in developing systems (IFMIS) and establishing structures that enhance the image of the country and show more accountability and transparency,
- Another aspect of the bank Support was the bank not having any physical address in Somalia/Puntland, but this has been covered by the field missions that the TTL undertake once every six months whereby they come at Puntland to facilitate a lot,

### **Human stories**

*One of the stories that we had captured during the WALP Project was that people have shown less interest on the technologies as this was newly introduced to Puntland; so we had resistance from the community side on the implementation of such intervention in their respective areas, Although water scarcity is a major issue in these regions and has a negative impact on their livelihood but they still showed less interest, this was due to the little knowledge they had on the technologies.*

*However, we did some extension outreach workshops to the communities regarding the benefits and operation of the technology, and this has contributed towards changing their thinking where by the community has shown more acceptance.*

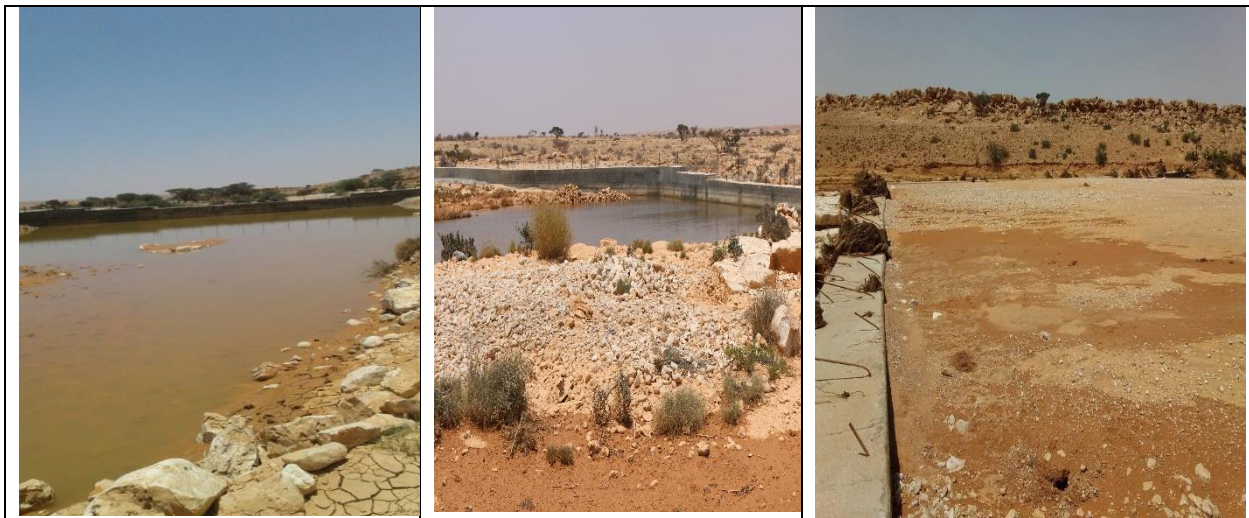
*On the other hand, after completion of the sites and receiving rains, the communities witnessed a real experience on the benefit of the technologies and shown their appreciation and gratitude to puntland governemnt for extending this to their areas, and thanked world bank for funding such wonderful project.*



*Another interesting story was there was a conflict of interest between the communities settling the upper stream and the lower stream of the wadi, whereby the community at the lower stream claimed the water they used to get will be blocked for communities at upper stream, and this will have a direct impact on their life, but after the construction of the dams and receiving rains in the specific area the communities realized that it will not block the rain they used to receive it will rather reduce its speed and this will benefit them more as the water will pass with a low speed and velocity hence this will give time for more infiltration and ground recharge*



*Community Consultation Meeting at Meeladeen during the site selection process*



**Pictures of Laasadawaco Sand Dam in Bari Region, After Completion and received rains**



**Pictures of Xamxamaa sub-surface Dam in Nugaal Region, After Completion & received rains**



**ANNEX 6: WALP Project completion Report – Somaliland**

**REPUBLIC OF SOMALILAND**



**MINISTRY OF ENVIRONMENT AND RURAL DEVELOPMENT (MoERD)**

**SOMALI WATER FOR AGRO-PASTORAL LIVELIHOODS PILOT PROJECT**



**Project Completion Report**



***Initiation of project (design, mobilisation and effectiveness)***

**1. Project design, Mobilization and Effectiveness**

|  |   |                             |                                 |
|--|---|-----------------------------|---------------------------------|
| <b>Project Information</b>   |   |                             |                                 |
| <b>Project title</b>   | Somali Water For Agro-Pastoral Livelihoods Pilot Project  |                             |                                 |
| <b>Project number</b>  | P152024   | <b>Project location(s)</b>  | Maroodi Jeex Region, Somaliland |
| <b>Project Duration</b>  | 1 <sup>st</sup> January 2016- 30 <sup>th</sup> June 2018  | <b>Source(s) of Funding</b> | World Bank                      |
| <b>Project Implemented by: Ministry of Environment and Rural Development</b> |   |                             |                                 |
| <b>Project Goal</b>  | To improve the pastoral and agro-pastoral communities’ access to, and management of, small-scale water sources and to enhance the capacity of the government to implement small-scale water interventions in targeted arid lands of Somaliland. |                             |                                 |
| <b>Author(s)</b>   | WALP PCU + line Ministries focal persons  |                             |                                 |

**Background**

*Somali water for agro-pastoral livelihoods pilot project (SWALP) funded by the World Bank (WB) is a pilot project aimed at enhancing resilience of pastoral and agro-pastoral communities in drought prone areas, it is to improve access to and management of small – scale water sources and at large to enhance the capacity of the government to delivery service. The SWALP is a 18 month project Under the project 8 water infrastructure facilities located in strategic locations in rural SL and PI will be constructed. The project implementation in Somaliland is led by the Ministry of Environment and Rural Development (MoERD). The project will be implemented using the multi-sectoral approach so that in SL, MOERD will be working in close collaboration with three other ministries comprising: (i) Ministry of Water Resources (MOWR), Ministry of Livestock (MOL), and Ministry of Agriculture (MOA).*

**Project Development Objectives (PDOs)** are to improve the pastoral and agro-pastoral communities’ access to, and management of, small-scale water sources and to enhance the capacity of the government





to implement small-scale water interventions in targeted arid lands of Somaliland and Puntland.

A key purpose of the pilot is to better understand the specific impacts of developing water sources and building capacity of government and communities to manage them, on cooperation and conflict in the fragile Somali context as well as on pastoral and agro-pastoral livelihoods in arid lands more broadly.

#### **PROJECT BENEFICIARIES**

The main beneficiaries of this project will be pastoral and agro-pastoral communities in targeted areas of SL and PL. It is expected that the project will directly benefit people whose livelihoods rely on pastoral and agro-pastoralism, including but not limited to livestock rearing, processing and/or marketing, and agro-pastoral activities including small-scale farming and fodder production. Secondary beneficiaries, mainly of capacity building, will be service providers (both public and private), central and local government staff. Baseline assessments and partner consultation workshops undertaken in the early stages of the project will determine exact locations and beneficiary numbers.

#### **Expected results:**

- Increased access to improved water sources for target beneficiaries/communities;
- Increased access to water during dry season for livestock from the targeted communities;
- Increased confidence in state institutions ability to deliver services;
- Conflicts over resources monitored and documented;

These results will be measured by the proposed key PDO indicators:

- Number of people provided with access to “improved water sources”;
- Number of improved community water points constructed or rehabilitated under the Project
- Number of livestock with access to water over 12 months of the year in project areas;
- Percentage of community stakeholders attributing change to government;
- Number of direct project beneficiaries, of which female (percentage).

Three components are to be implemented within 18 months starting January 1st 2016 to December 31st 2017.

#### **Component 1: Developing under-utilized agro-pastoral water supply technologies**

##### **Preparation Activities**

This component will focus on establishing eight sand and/or sub-surface dams, together with the associated infrastructure for multiple-use water provision, in strategically selected sites along the wadis (sand rivers) in both SL . The key outcome for this component is “access to improved water sources for target beneficiaries/communities and livestock increased”. The activities that will be undertaken to realize the above outcome are summarized below

##### **1. Selection of sites for the construction of the dams:**



The Somali Water for Agro-Pastoral Livelihoods Pilot Project (WALP) is to be implemented, over a period of 18 months by the governments of Somaliland (SL). The project has been designed, in the context of economic reconstruction and recovery from a prolonged period of fragility and conflict across the whole of Somali region lasting several decades. It is a pilot and learning project beginning with four water infrastructure facilities aimed at enhancing water resource availability in wadis located in strategic locations in rural SL. In these locations, the WALP will focus on designing and using multi-sectoral landscape approaches for the development of multiple-use water infrastructure for improving the livelihoods of the beneficiary communities.

A Wadi Evaluation Tool (WET) was developed to find potential areas for wadi water harvesting installations (Sand dam) in Somaliland. The WET allows for fast and broad spatial analysis of wadi water harvesting potential in a selected area, yielding a weighted ranking between the potential sites. Using the WET six potential sites were preselected and two ground truthing missions were carried out to assess the suitability of the sites. The parameters used to select the sites were based on purpose of use of water, for of scarcity of water for agriculture, livestock and human consumption, proximity to regional capital, interest by the government to conduct future interventions and presence of existing water infrastructure. The project team went several missions in the sixteen sites visited were Arabsiyo, Awberhadle, Horahadle, Duha Guban, Ceel Dhere and Berato, Diin-qal, Geedka-Dheenta, Abdal, Dalaw, Biyo guure, Biyoolay, dubur, Ceel-bilcille, Gawaama and Dhaga-Cade. The following observations were made during the visit.

**Conclusion and Recommendations:**

1. It is notable to mention that the missions was very convenient and effectively met its expectations. The aim of site selection was to assess socio-economically and validate technically the viability of the sites visited for WALP intervention and to introduce the communities for the project scope. After comprehensive field study and desk review, the Team has collectively decided that the following four sites Arabsiyo, Awbarkhadle, Diin-Qal, Debis, were taken as primary sites for geophysical study.
- 2: Recruitment of consultancy firm(s) for surveys and design of dams and associated structures: the following activities were carried out:
  - ToR (survey designs, construction and associated structures of dams) was developed.
  - Recruit firms for surveys, designs and construction of dams and associated structures
  - Surveys and design of dams
  - Engineering surveys to establish suitable technology
  - Geophysical surveys
  - Design of dams
3. Recruitment of construction firm(s) to carry out construction of the dams and the water facilities: the following activities were carried out
  1. Preparatory activities for dam construction:
    - Develop TORs for surveys, designs and construction of dams and associated structures
  2. Recruit firms for surveys, designs and construction of dams and associated structures
    - Surveys and design of dams
    - Engineering surveys to establish suitable technology
    - Geophysical surveys



- Design of dams
- 3. Specifications, tenders and contract awards for constructions
  - Specifications, project Gantt Chart, tender and contract documents
  - Contract award
- 4. Construction of dams and associated civil works
- 5. Construction of three offices
- 5. Commissioning of the dams

Component 2: Government capacity building and community empowerment

Sub-component 2.2. Community-based management

This sub-component is establishment and strengthening of community-based institutions (women's groups, water user associations, environment management institutions etc.) to manage water and surrounding natural resources, including rangelands, using participatory methods for the development of locally appropriate cost recovery mechanisms for operation and maintenance of the facilities; the rules for accessing and managing surrounding land and pasture; public and animal health; conflict resolution mechanisms, and liaising with local and national government on water quality monitoring, sanitation and hygiene promotion. This component is to support peer-to-peer horizontal learning among communities directly involved in the project and where possible with communities that have benefitted from and are managing existing wadi developments.

Ragrating this the project provided different trainings and exposure visit to the community and District authorities this include:

1. Training on Operation and Management of water facilities
2. Training on WASH
3. Development of Water management By-laws
4. Exposure visit in Ethiopia for experience and knowledge sharing

**2. Participation of PCU throughout the project.**

Project Coordination Unit: A Project Coordination Unit (PCU) was established in MOERD in SL the PCU to provide secretarial and technical analytical support to the IMPSC and coordinate implementation progress and reporting of all project activities in support of the IMPSC. The functions of the PCUs is to executed through working in collaboration with the implementing MDAs in SL, participating regions/districts and communities (with the overall objective of building capacities of existing structures).

The routine staff for to the PCU in MOERD in SL comprise a combination of seconded staff and recruited specialist consultants comprising: (i) Director Genera; of MoERD (Project Coordinator) on secondment; (ii) Director of Administration and Finance – on secondment; (iii) Technical Officer (M&E Specialist) – on secondment; (iv) Financial Management Specialist – was hired as specialist consultant and paid for by Project; and (vi) Procurement Specialist - was hired as specialist consultant and paid for by Project. Specially recruited staff or consultants will have the responsibility of mentoring and building capacities of



local staff as specified in their ToRs.

The specialist consultants (Finance and Procurement) duties was included to train the seconded staff Director of Finance MoERD and Procurement Officer. After their contract ended the seconded staff of MoERD replaced their role.

Roles and responsibilities of WALP Project PIU

| Name                   | Role                   | Organization |
|------------------------|------------------------|--------------|
| Eng.Abdirizak Jama Nur | DG/Project coordinator | MoERD        |
| Ahmed DualeWarsame     | Finance officer        | MoERD        |
| Rahma Abdirahman Ahmed | Procurement officer    | MoERD        |
| Mubarak mohamoud       | Technical Engineer     | MoERD        |
| Mohamed Mohamoud Elmi  | Site Engineer          | MoERD        |
| Abdikarim Aden Omar    | Monitoring &Evaluation | MoERD        |
| Amun Ali Haibe         | Community Mobilizer    | MoERD        |
| Saam Ahmed Jama        | Focal Point            | MoA          |
| Musdafe Omer Jibril    | Focal Point            | MoL          |

**3. Project progress report (Highlights)**

| <b>Component 1: Developing under-utilized agro-pastoral water supply technologies</b>   |                                  |
|---|----------------------------------|
| <b>Activity</b>   | <b>Status</b>                    |
| 1. Selection of sites for dam construction<br>a. Finalize and present recommendations of the macro and mICRRo-study findings<br>b. Conduct the WET refresher courses<br>c. Define parameters including land issues for final dam sites<br>d. Field visits by project team to selected dam sites<br>e. Ground “truthing” feasibility studies for appropriate technologies<br>f. Discussions with communities to finalize agreements on exact locations | complete                         |
| 2. Preparatory activities for dam construction<br>a. Develop TORs for surveys, designs and construction of dams and associated structures<br>b. Recruit firms for surveys, designs and construction of dams and associated structures   | complete                         |
| 3. Surveys and design of dams<br>a. Engineering surveys to establish suitable technology<br>b. Geophysical surveys<br>c. Design of dams   | complete<br>complete<br>complete |
|   |                                  |
|   |                                  |



|  |                                |
|--|--------------------------------|
| 4. Specifications, tenders and contract awards for constructions<br>a. Specifications, project Gantt Chart, tender and contract documents<br>b. Contract award   | Complete                       |
| 5. Construction of dams and associated civil works<br>a. Dams/sand dams<br>b. Gabions/trees for river embankments.<br>c. Shallow wells<br>d. Animal troughs<br>e. Standpipes/kiosks<br>f. Storage tanks – 25 CUM<br>g. Solar pump systems<br>h. Pipes and fittings | Complete                       |
| 6. Construction of three offices   | Complete                       |
| 7. Commissioning of the dams<br>a. Negotiation for service delivery<br>b. Certification and documentation<br>c. Commissioning  | Complete<br>Not yet<br>Not yet |

| <b>Component 2: Sub-component 2.1 – Support to central and Local governments</b>   |               |
|--|---------------|
| <b>Activity</b>  | <b>Status</b> |
| 1. Preparatory activities for Government staff training<br>a. Carry out Training Needs Assessment (TNA)<br>b. Prepare comprehensive Training Plan<br>c. Select/nominate government staff for training                  | Complete      |
| 2. Technical training<br>a. Procurement and disbursement training<br>b. Training on watershed management/rain water harvesting<br>c. GIS/RS Analytics<br>d. PCM and Leadership training                                | Complete      |
| 3. Administrative Training<br>a. Hands on training during project implementation<br>b. Mentoring by and understudying the consultant specialists.<br>c. Workshops/seminars (including those by World Bank Specialists) | Complete      |
| 4. Training for community mobilization<br>a. Operation and maintenance training (O&M)<br>b. Sanitation and hygiene promotion.<br>c. Community mobilization   | complete      |
| 5. Learning exchange and knowledge management<br>a. Study tour to Ethiopia with communities<br>b. Exposure visit to Kenya and training on water harvesting technologies, government staff                              | Complete      |
| 6. Provision of equipment and supplies   |               |



|  |          |
|--|----------|
| a. Motor vehicle purchase<br>b. Office equipment<br>c. Office sundries<br>d. GIS equipment | complete |
|--|----------|

|   |               |
|---|---------------|
| <b>Component 2. Sub-component Community based management</b>  |               |
| <b>Activities</b>   | <b>Status</b> |
| <b>Training and visit tours</b>   |               |
| 1. Training on Operation and Management of water facilities<br>. Training on WASH<br>3. Development of Water management By-laws<br>4. Exposure visit in Ethiopia for experience and knowledge sharing | Complete      |

1.

|  |  |
|--|--|
| <b>Component 3: Project Management and Monitoring &amp; Evaluation</b>   |  |
| <b>Activity</b>  | <b>Status</b>                                |
| <b>1. Establish the PCU in MOERD</b><br>a. Procurement Specialist (consultant)<br>b. Project coordinator (Secondee from MOERD)<br>c. Finance Officer (Secondee from MOERD)<br>d. Procurement Officer( Secondee from MOERD)<br>e. M&E Officer ( Secondee from MOERD)<br>f. Finance Management Specialist (consultant)   | complete                                     |
| <b>2. Establish and operationalize Project Committees</b><br>a. Establish and operationalize the IMPSC   | Complete                                     |
| <b>3. Organize and coordinate key project operational activities</b><br>a. Undertake coordination, supervision & management of all project activities.<br>b. Establish/operationalize/implement project financial mgt. system<br>c. Establish/operationalize/implement project procurement mgt. system   | Complete                                     |
| <b>4. Undertake outreach and communication activities</b><br>a. Organize project opening/launch workshops<br>b. Carry out project branding<br>c. Undertake outreach communication  | complete<br>complete<br>On-going             |
| <b>5. Coordinate project M&amp;E</b><br>a. Prepare consolidated M&E and reporting system<br>b. Conduct routine M&E and ESMP M&E (monthly, quarterly and annual reports)<br>c. Conduct six-monthly M&E surveys (including Bank supervision missions)<br>d. Conduct good learning baseline, project completion/good learning end line surveys<br>e. Impact Assessment end line | Complete<br>Complete<br>Complete<br>Complete |

4. Regional/District and Village Committees:

The community institution consists of (women’s groups, water user associations, and environment management institutions etc.) their role is to manage water and surrounding natural resources, including



rangelands, using participatory methods for the development of locally appropriate cost recovery mechanisms for operation and maintenance of the facilities; the rules for accessing and managing surrounding land and pasture; public and animal health; conflict resolution mechanisms, and liaising with local and national government on water quality monitoring, sanitation and hygiene promotion.

### **5. Lessons learned - What worked, what didn't**

- A new technology of water harvesting techniques (sand dams) has been successfully adapted.
- World Bank finance and procurement procedures were fully adapted.
- The close cooperation of the ministries was the major success of WALP project.
- Community willingness to participate the development projects in Somaliland.
- Criteria of site selections should be flexible to apply all regions of Somaliland.
- Government ministries should guide international consultants.
- The feasibility studies should be relevant to for the future projects

### **6. Evaluate Bank support**

- Hiring monitoring firm TS
- Capacity building trainings
- Hiring technical engineers
- Daily monitoring for successful implementation of the project
- Preparation of Disaster Risk Management (DRM) strategy
- Preparation of investment plan for WALP project sites
- Including WALP project sites to the drought project FAO is implementing and funded by World Bank
- WALP project design was included construction of ONE shallow well each of the sand Dam. We came to know that due to shortage of water in the villages surrounding the Sand dam have no safe water supply system and the shallow wells of the project can not supply water to the needed people in the villages. Thus we propose that more shallow wells to be constructed in the implemented project sanddams to supply water to the villages

This project played important role on minimizing the water scarcity of both pastoralists and Agropastoralists

### **7. What needs to change moving forward about Bank support**

- WALP project design was included construction of ONE shallow well each of the sand Dam. We came to know that due to shortage of water in the villages surrounding the Sand dam have no safe water supply system and the shallow wells of the project can not supply water to the needed people in the villages. Thus we propose that more shallow wells to be constructed in the implemented project sanddams to supply water to the villages
- In the future we recommend World Bank to support in the construction of Earth Dams and sand dams in the rural areas (especially in the pastoral areas) to minimize the risk of water shortage in the dry seasons and also drought period. These earth dams will be constructed in the Grazing



reserves in the drought prone-areas of Somaliland, to provide pasture and water for livestock during the dry seasons.

- Reforestation programs to create income general for youth and women groups in the rural areas. This will play improtnat roel to combet water runoff and prevent soil erosion
- Support of implementation of Disaster Risk Management Strategy.
- Strengething Government capacity building in terms of infrastructure, staff training and provision of mediam courses.

## 8. Success Stories

### **Diinqal, Somaliland**

An old pastoralist women said that I have only one boy who apondened me. I am Alone and I have small number of livestock. She said before the construction of this sand dam and water facilities it was very diffecult for me to get water for both my livestock and my self. I am very weak I couldn't carry water for my self in long distance, when I am watering the livestock. Some time I was weaking in the mid nith becauaes of thirst. But now thanks those who constructed this Water facility now I can have water for my self and my livestock easily.







**Arabsiyo, Somaliland**

Abdulahi the District commissioner of Arabsiyo was one of the participants that has been trained in Mekele University on FLOOD BASED FARMING training. Abdulahi has Farm in Arabsiyo near the sand dam but due to lack of skill on farm production his farm was not producing crop or vegetables. But in the training he learned many skills that can improve the farm production and sustainable use of water for irrigation.



**Before and After pictures**

**a) Before**



**b) After**







## **Annex 7 – Government Capacity Building**

An impressively wide range of subjects were taught to governmental staff throughout the project. The subjects can be grouped into four broad categories: 1) Reporting and Documentation; 2) Project Mobilization; 3) Financial Management; and 4) Communication and Coordination.

**Reporting and Documentation** capacity building included trainings on the following:

- PAD Development
- Action Plans, including Project Implementation Manual (PIM)
- Narrative reporting and aide memoires

**Project Mobilization** capacity building included:

- Procurement (including setting up the Project Coordination Units, civil works, STEP, RFQ's, contracts, and NO's)
- Backstopping support for site selection and monitoring (including for feasibility testing, geophysics, civil works design, hydrological studies, socio-economic studies, and conflict management)
- Contracting Processes
- International Travel
- Monitoring and Evaluation and follow-up
- Environmental and Social Management Plan, with step-by-step guidance

**Financial Management** capacity building included:

- Fiduciary training
- Budgeting
- Cash Forecasting
- Internet Banking

**Communication and Coordination** capacity building included:

- Coordination between donors, the government, INGOs, UN agencies, inter-ministerial committees, and other bank projects
- Coordination and communication between the PCUs, district ministerial staff and the community, particularly the WUA/water committees at the pilot sites
- Communication and receiving technical feedback on site selection, geophysics, designs, RFQ's, BOQs, and contracts
- Communication technologies such as email and WhatsApp



• Capacity

development in Leadership & Project Management Course for Somaliland and Puntland Ministry Partners