

Sudan

Butana Integrated Rural Development Project

Project Completion Report

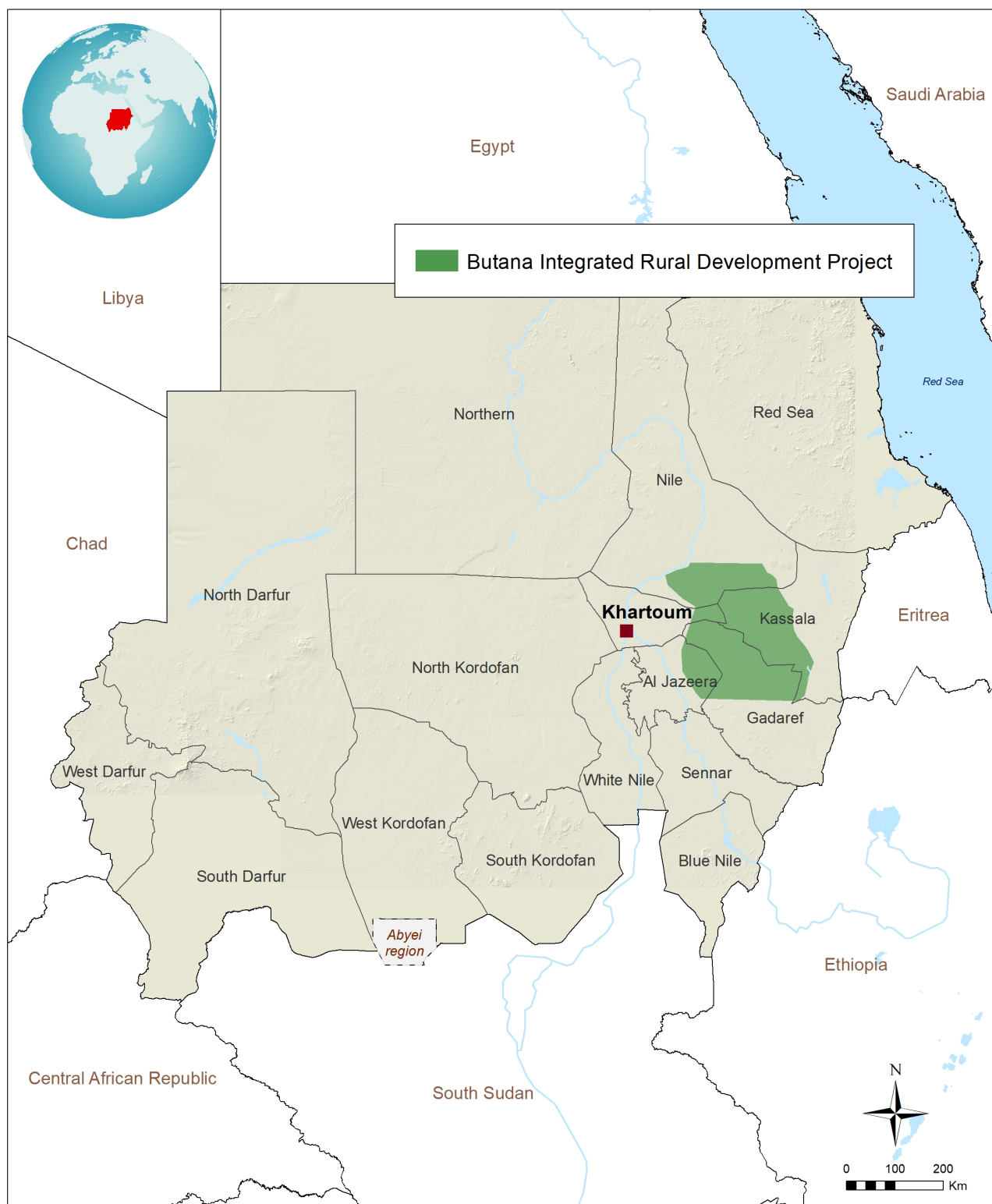
Main report and appendices

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Near East, North Africa and Europe Division
Programme Management Department

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Map of the Project Area



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

Final status of the Abyei area is not yet determined.

Map compiled by IFAD | 28-11-2019

Currency Equivalents

Currency Unit	=	SDG
US\$1.0	=	47 SDG

Weights and measures

1 Kilogram	=	1000 g
1 000 kg	=	2.204 lb.
1 kilometre (km)	=	0.62 mile
1 metre	=	1.09 yards
1 square metre	=	10.76 square feet
1 acre	=	0.405 hectare
1 hectare	=	2.47 acres

Abbreviations and Acronyms

ABS	Agricultural Bank of Sudan
ABSUMI	Agricultural Bank of Sudan Microfinance Initiative
AF	Additional Finance
A/R	Afforestation and reforestation
ASAP	IFAD Adaptation for Smallholder Agriculture Programme
AWPB	Annual Work-Plan and Budget
BDA	Butana Development Authority
BDF	Butana Development Fund
BIRD	Butana Integrated Rural Development Project
BLMIE	Business and Livestock Market Information Entity
BoD	Board of Directors (BDF)
CAHWs	Community Animal Health Workers
CBOs	Community Based Organisations
CBS	Central Bank of Sudan / Central Bureau of Statistics
CCI	Community Capability Index
CCU	Central Coordination Unit
CD	Country Director
CDC	Community Development Centre/Committee;
CDM	Clean Development Mechanism
CEAP	Community Environmental Action Plan
CEAs	Community Extension Agents
CIF	Community Initiative Fund
CN	Community Networks
CPM	Country Programme Manager
CR CVP	Climate Resilient Community Village Plans
CRAP	Community Resilient and Action Planning
DG	Director General
DTs	Development Teams
ECAW	Enhancing Climate Change Adaptation in Agriculture and Water Resources in the Greater Horn of Africa
FC	Financial Controller
Fe/Male	Female and/or Male
Fed	Feddan
FIG	Farmer Interest Groups
FM	Financial Management
FMoAF	Federal Ministry of Agriculture and Forestry
FMoAR	Federal Ministry of Animal Resources
FNC	Forest National Corporation
FS	Financial Statement
GALS	Gender Action Learning System
GBC	Gender-based constraints

GEF	Global Environmental Facility
GHG	Green House Gas
GIS	Geographical Information System
GoS	Government of Sudan
Gov. A	Government Administration
GPS	Global Positioning System
Ha	Hectare
HHs	Households
HQ	Headquarters
IA	Institutional Advisor
ICARDA	International Center for Agricultural Research in the Dry Areas
ICB	International Competitive Bidding
ICO	IFAD Country Office
ICSP	Integrated Carbon Sequestration Project
IG	Interest Groups
IMP	Integrated Pest Management
INGO	International Non-Governmental Organisation
ISA	International Standards of Auditing
KM	Knowledge Management
KP	Knowledge Products
LAPA	Local Adaptation Plans for Action (manual)
LL	Lesson Learnt
LMIS	Livestock Marketing Information System
LMRP	Livestock Marketing and Resilience Programme
LPG	Liquid Petroleum Gas
LR	Learning Route
LULUCF	Land Use, Land Use Change and Forestry
LUs	Locality Units
M	Male
M&E	Monitoring and Evaluation
MCC	Meat Commodity Council
MCN	Mother Community Networks
MFIs	Micro Finance Institutions
MIS	Management Information System
MoAF	Ministry of Agriculture and Forestry
MoAR	Ministry of Animal Resources
MoFEP	Ministry of Finance and Economic Planning
MoIWR	Ministry of Irrigation and Water Resources
MoU	Memorandum of Understanding
MTR	Mid-term Review
n.a.	not applicable

NO	No Objection
NR	Natural Resources
NRGF	Natural Resource Governance Framework
NRM	Natural Resources Management
PA_SI	Parastatal Institution
PFMP	Participatory Forests Management Plan
PIM	Project Implementation Manual
PIU	Programme Implementation Unit
PO	Procurement Officer
PP	Procurement Plan
PPM&E	Participatory Planning Monitoring and Evaluation
QCBS	Quality Cost-Based Selection
RAP	Rural Access Project
REDD	Reducing Emissions from Deforestation and forest Degradation
RF	Revolving Fund
RFA	Rural Finance Agent
RFI	Request for Inspection
RFO	Rural Finance Officer
RIMS	Results and Impact Management System
SA	Special Account
SCGs	Saving and Credit Groups
SCU	State Coordination Unit
SDG	The currency code for Sudanese Pound; Sustainable Development Goals
SECAP	Social, Environmental and Climate Assessment Procedures
SHOATS	Sheep and Goats
SM	Supervision Mission
SMDC	Sudanese Microfinance Development Company
SMFU	State Microfinance Units
SNRLP	Sustainable Natural Resources Livelihood Project
SRDFC	Sudan Rural Development Finance Company
SROI	Social Return on Investment
STC	Supervisory Technical Committee
SWA	State Water Authority
TA	Technical Assistance
TORs	Terms of Reference
ToT	Trainers of Trainers
UNFCCC	United Nations Framework Convention on Climate Change
VDC	Village Development Committee
VSC	Veterinary Service Centre
VSCGs	Village Savings and Credit Groups
WA	Withdrawal Application
YPs	Young Professionals

Project at a glance

Region Near East, North Africa and Europe Division	Project at Risk Status Not at risk
Country Sudan	Environmental and Social Category B
Project Name Butana Integrated Rural Development Project	Climate Risk Classification 2
Project ID 1100001332	
Project Sector Agricultural Development	
CPM Tarek Ahmed	
Project Area Gezira, Kassala, Gedaref, River Nile, Khartoum	

Key Dates

IFAD Approval	Signing	Entry into Force	Mid-Term Review	Original Completion	Actual Completion
14/12/2006	16/02/2007	07/07/2008	01/09/2012	30/09/2016	30/09/2019
		Original Financial Closure	Actual Financial Closure		
		31/03/2020	not available yet		
Date of Last SIS Mission	Number of SIS Missions	Number of extensions	Effectiveness lag		
14/08/2019	24	2	19 months		

IFAD Financing as at the time of PCR submission

Additional Financing Grant	XDR Million	9.52 Million	% disbursed	100.0
Loan	XDR Million	16.8 Million	% disbursed	100.0

Actual Costs and Financing (USD '000) as at the time of PCR submission

Component	IFAD	Cofinancing	Beneficiaries	GOVT	Total
	Actual	Actual	Actual	Actual	Actual
Agricultural, Range and Water Development	0	0	0	0	0
Community Development	0	0	0	0	0
Institutional Support & Project Management	0	0	0	0	0
Livestock and Marketing Development	0	0	0	0	0
Total	0	0	0	0	0
Remarks					

Outreach

Direct Beneficiaries

Number of HH members	Number of persons receiving services
Estimated total: 436 648	Total: 142 265
	Males: 79 865
	Females: 62 400
	Young: 35 497

Project Objectives

Access to natural resources

The overall goal of the project will be to improve in a sustainable manner the livelihoods and resilience to drought of the poor rural households. The specific objectives of the project will include: (i) establishing a coherent and cost effective governance framework that ensures a regulated access to land and water resources of the Butana; (ii) improving the access and bargaining position of women and men in the marketing of livestock; (iii) developing the capacity of community-based organizations to engage in environmentally sound, socially and gender equitable development initiatives. The project will introduce changes to the present governance structure for natural resources to shift from an open-access regime to a system of regulated access.

Country Partners

Executing Institution	Federal Ministry of Agriculture and Forestry
Implementing Institutions	Butana Development Agency

Project Completion Ratings Matrix

COUNTRY: Sudan	
PROJECT NAME: Butana Integrated Rural Development Project	
PROJECT ID: 1100001332	
BOARD APPROVAL DATE: 14/12/2006	
ENTRY INTO FORCE: 07/07/2008	
PROJECT COMPLETION DATE: 30/09/2019	
LOAN CLOSING DATE: 31/03/2020	
IFAD LOAN AND GRANT (USD MILLION): \$38,099,231	
TOTAL PROJECT FINANCING: \$46,689,222	
IMPLEMENTING AGENCY: Butana Development Agency	
Criterion	PCR Rating
Project performance	
- Relevance	5
- Effectiveness	5
- Efficiency	4
- Sustainability	5
Rural poverty impact	5
- Households' incomes and assets	5
- Human and social capital	5
- Food security	5
- Agricultural productivity	5
- Institutions and policies	5
Additional evaluation criteria	
- Gender equality and women's empowerment	6
- Innovation	5
- Scaling up	5
- Environment and natural resource management	5
- Adaptation to climate change	5
- Targeting and outreach	5
- Access to markets	5
Partners performance	
- IFAD's performance	5
- Government performance	4
Overall project achievement	5

Executive Summary

1. The overall goal of BIRDP is to improve in a sustainable manner the livelihoods and resilience to drought of the poor rural households living in Butana area. Its development objectives are: (a) Establishing a coherent and cost effective governance framework that ensures a regulated access to land and water resources of the Butana; (b) Improving the access and bargaining position of women and men in the marketing of livestock; and (c) Developing the capacity of community based organizations to engage in environmentally sound, socially and gender equitable development initiatives and management of natural resources.
2. The overall goal of sister ICSP project is to promote a climate-friendly rural development path in Central and Eastern Sudan by increasing the carbon stock and reducing net Green House Gas (GHG) emissions in the country, while at the same time sustaining rural development in the BIRDP project area. Therefore, the ICSP builds on BIRDP intervention and aims towards addressing the gaps related to the forest and natural resources development including the high demand for biomass energy in the Butana area. Its development objectives are to contribute to the global incremental benefits of GHG mitigation while at the same time to enhance rural sustainable development in the project area.
3. BIRDP responded well to the challenges and constraints faced by the target group through: (a) Improved water accessibility and range carrying capacity; (b) Improved extension services for livestock and crop husbandry; (c) Training on literacy, nutrition, health and IGAs for women and youth; (d) Access to markets through rural infrastructure (roads and crossings and village market places) for livestock and agricultural products; (e) Access to knowledge, market information, and rural finance; and (g) Empowerment of CBOs.
4. ICSP complemented BIRDP interventions through: (a) Afforestation and reforestation activities; (b) development of agro-forestry initiatives involving landless farmers and (c) the improvement of water harvesting systems to support successful A/R activities; (d) promotion of participatory forest management as a way to protect the carbon stock from drivers of deforestation (illegal felling, over grazing, poor management and forest fires), and the protection from causes of deforestation and fires through the development of Participatory Forest Management Plans (PFMP); (e) Wide diffusion of highly efficient, biomass energy technologies (LPG, solar units, improved stoves); and (f) Institutional and technical capacities for monitoring and reporting of forest carbon stock and changes at national level and awareness at local level on forest and climate change mitigation.
5. As per project design, the main beneficiaries of BIRDP/ICSP consisted of the smallholder agro-pastoralists in the sand dune zone and clay plains, the smallholders in irrigated sector, and the smallholder transhumant households. All categories include rural women and youth.
6. Despite several challenges that faced project implementation, such as the high inflation rate, the chronic cash in banking system, diesel and fuel shortage, and staff turnover, the achievements made in terms of Development Objective, Outcomes and Outputs of the project are impressive. According to project progress reports, the overall cumulative output achievements are above 95% for all components.
7. The major projects outcome, as a breakthrough in the Sudanese context, is the establishment of Natural Resources Governance Framework (NRGF) given its crucial importance in helping communities sustainably manage natural resources and reduce conflicts among end users (settled farmers and transhumant pastoralists) in Butana area.
8. Based on completion mission findings the overall project performance is rated as satisfactory. Such rating takes into consideration the country and local context, and the strong challenges facing the smallholder producers and rural women in Butana area. Overall, the total number of direct and indirect households' members reached during project life is estimated at 436 648 persons (equivalent to 63 043 direct and indirect HHs). The total number of direct beneficiaries reached 48 264 HHs, distributed as follows: 28 942 direct poor HH (target 21 000, achievement 138%); 14 431 direct moderately poor HHs (Target 8750 Achievement: 165%) and 4891 direct better off HHs (target 5250, achievement 93%). The less poor HHs were to be included because all livestock owners of the same community commonly use water and rangelands resources.
9. On the quantitative aspect, key achievements include: (i) High efficiency with an EIRR of the whole project estimated at an acceptable level of 17.15 % (against appraisal estimated 14%); (ii) increased productivity of crops and small ruminants by an average of 90%; (iii) increased HHs income by an average of 40%. As a result, the percentage of the poor and very poor has declined from 50.4% before the project to 11.8% because of project interventions. Likewise, the other proportions of the two categories of the average and the less poor households increased from 36.7% and 3.8% before the project to 57% and 31.2% with project, respectively.
10. Improved nutrition, particularly among children and women is another remarkable achievement of the project. The project improved food availability, both self-produced (Jubra) and purchased (IGA), ensuring a minimum necessary intake for households members.
11. Project performance in relation to gender equality and women empowerment is rated highly satisfactory. The project made considerable efforts, to not only empower women and strengthen their position in community organisations, but more importantly to contribute to gender transformation in a conservative society. Unlike in the past, women actively participate in community meetings, and assume leadership positions in CDC, and community networks. Women are well represented in leadership positions viz. One third of CDCs office bearers, water management and procurement committees are women.
12. Project performance in relation to promoting innovations in the Butana context is rated satisfactory. The project implementation was based a thorough understanding of the empowerment of local communities. Its success was largely driven by heavy consultative process around natural resources management through innovative development of NRGF, promotion of community networks and calling on YPs for community mobilisation. In addition to these three innovative features, the introduction of Guar as a drought tolerant fodder plant was highly appreciated by the local herder communities for its suitability to the local environmental conditions.
13. However, the performance of project management and Government is rated moderately satisfactory. Project achievements would have been even greater if the (i) the Project Coordinator played a more pro-active role in collaborating and strengthening the BDF and ICSP management, as clearly stipulated in projects design; and (ii) the Government succeeded in fulfilling its financial commitments. Despite proactive participation of FMOAF and the FMFEP and state ministries in projects supervision and MTR missions during its implementation period, failing to provide timely and sufficient counterpart contribution to project budget was not conducive to a smooth implementation over the entire life of the project. In addition, the Butana Development Fund is yet to reach full operational efficiency as lead Butana development institution.
14. The following are main recommendations aimed ensuring post-project sustainability and feeding into future IFAD's and or

GOS programming.

15. Operationalisation of the NRGE: The process of establishing the Framework has created a dynamic and active process of cooperation among all actors at the local, state and federal levels. The Framework needs to be widely publicized and fully owned by GoS as well as BDF and communities at all levels. BDF, being mandated with the sustainable development of the Butana area, would need to (i) translate the NRGE into Arabic and produce leaflets and brochures for wide dissemination; and (ii) establish its implementation arrangements in collaboration with stakeholders at the federal and state level.
16. Link to Integrated Agriculture and Marketing Development Project (IAMDP): There is need to inform IFAD-GoS supported IAMDP about the existence of testing facilities in ARC New Halfa as well as sharing experiences with the model warehouses managed by the communities. In other words, IAMDP has a full sub component 'Market linkage and value addition through village-based post-harvest crop storage' and could benefit from the ARC laboratory facilities and lessons learnt regarding community managed storage facilities in Butana area.
17. Link to Sustainable Natural Resources and Livelihood Project (SNRLP): In order to further enable the BDF to fulfil its mandate, it is recommended that most of BIRDP fixed and movable assets be transferred to BDF. A limited number of these assets should remain available for the SNRLP so that a smooth start up can take place and scaling-up of BIRDP activities continue. Similarly, key BIRDP project staff could be considered to join SNRLP management unit through competitive and transparent process.
18. Adaptation to Climate Change: According to Sudan's National Adaptation Programme of Action (NAPA), the most vulnerable groups to climate change are traditional rainfed farmers and pastoralists. There is ample evidence of past climatic shocks that, in combination with land tenure, land use changes and land management problems, have led to the degradation of rangelands. Some communities under Additional Finance (AF) have not matured yet to adapt to CC, hence the need to link them to the SNRLP.
19. Gold mining: The area of mining encompasses thousands of square km mainly in Central Butana. Large land parts were allocated to mining companies, which affected the livelihoods of the local communities. People and local governments have no say about their development plans and user rights against mining. Gold mining has had a large negative impact on soil and water and livelihoods of the target group, such as unsafe and illegal employment of children and women in mining operations; significant health problems due to mercury manipulation and dust generation by the mills affecting the lungs and nervous system of workers and local communities; air, water and soil pollution. There is an urgent need for the BDF to conduct a detailed impact assessment of gold mining to establish an environment friendly mining strategy.
20. Knowledge Management: BIRDP/ICSP achievements in the field of KM and dissemination are impressive. To promote benefit of general public and upcoming SNRLP project, BIRDP/ICSP KM products should be made available in print and on the websites of the CCU-IFAD, MOAF and MOFEP.
21. Scaling up of BIRDP activities: Many initiatives successfully promoted by BIRDP are worth scaling up by ongoing and future IFAD or GoS or other donors funded development projects. These include: Hafir water harvesting, land terracing, Guar fodder cultivation, Women group Jubraka, farmers group crop sharing, sand dune fixation, youth professionals serving local communities, solar energy facilities, etc
22. Implementation of BIRDP exit strategy: The exit strategy is well developed with a comprehensive action plan and clear time frame and definition of the role of the various actors involved in its implementation. Although the exit strategy makes explicit reference to BDF, the latter organisation lacks professional staff and financial resources to perform its mandate for the participatory community development in Butana area. MOFEP is urged to arrange for technical and financial capacity building of the BDF.

A. Introduction

1. A joint IFAD-GOS Project Completion mission of the BIRDP/ICSP took place in Sudan from 17 of September to 30 September 2019. The Mission held consultations in Khartoum with Senior Officials at the Federal Ministry of Agriculture and Forestry (MoAF) and the Federal Ministry of Finance and Economic Planning (MoFEP) and Forests National Corporation (FNC). During field visits (18-24 September) in Butana area, in addition to meeting State Government representatives and project staff, the Mission met with smallholder farmers and pastoralists, rural women, young professionals, leaders and members of the Village Development Committees, Women Groups, NR management networks, Development Teams and SCGs members. The Mission findings and recommendations were validated at a stakeholders workshop held in Rufaa 24 September 2019 and a wrap up meeting at the MOFEP in Khartoum on 26 September 2019. Final Wrap up workshop is planned to take place at a later stage.
2. The Mission wishes to express its appreciation to the representatives of the MoAF and MoFEP, NFC, and other partners who participated in the completion mission and contributed to discussions during the field visits and in meetings. The Mission also thanks the coordinator and staff of the CCU for their excellent coordination of mission work, and BIRDP and ICSP coordination teams at Rufaa city and State Coordination Units and the communities met for their availability and for the quality of the exchanges.

B. Project Description

B.1. Project context

3. The Butana Integrated Rural Development Project (BIRDP) was retained for the 2006 pipeline as an investment development priority within the GOS agricultural development strategy and rural poverty alleviation. BIRDP was planned for an initial 8 years duration (2008-2016). An additional financing (AF), which was derived from the project pipeline for the Sudan RB-COSOP (2013-2018) was approved for a three-year implementation period (2017-2019). The AF was based on the need to consolidate some

key BIRDP interventions and to scale-up the most successful interventions to other parts of the Butana to reach the desired impact and to fully achieve the development objective. Moreover, BIRDP benefitted from a USD 381 245 Italian Grant for 'Development of Pro-Poor Warehouse Systems for Improvement of Access of Small Producers to Markets and Value Chains in Sudan'.

4. The BIRDP was designed in line with GOS National Poverty Eradication Strategy (PES) of 2004, with its two overarching goals: (i) achieving peace and reducing the risk of future conflicts; (ii) making a lasting impact on poverty and progress on other MDGs. BIRDP was also in line with GOS Agricultural Revival Programme of 2006, including its financing priorities: water sector development, promotion of agricultural mechanization and natural resources management aimed at enabling smallholder farmers and herders to sustainably shift from subsistence agriculture to market-oriented agriculture.
5. BIRDP was also in line with IFAD RB-COSOP aimed at building technical, financial and social asset base of poor rural people, through optimum use of investment projects as a vehicle to support institutional reforms in land and water governance; The COSOP highlighted the need to:
 - concentrate on the more disadvantaged populations in areas of rain-fed agriculture and promote optimal use of natural resources for the sustainability of their livelihood;
 - empower women to fully participate in the development process;
 - encourage the use of investment projects to pilot critical policy reforms (governance, empowerment and accountability of local government institutions, land tenure, rural credit, marketing, etc.) and to contribute to peace-building efforts;
 - rely on an enhanced partnership with civil-society institutions;
6. The project area (65 000 km²) falls in ten localities in the five states of Khartoum, Gedaref, River Nile, Gezira and Kassala. Despite the administrative fragmentation of the Butana, the area constitutes one socio-economic unit with predominately-wet season grazing land for the transhumant and nomadic tribes.
7. Appraisal assessment indicated that 74% of the communities reported that the quality of life has worsened or remained the same. The main causes that led to the deterioration in quality of life were low agricultural production due to a decrease in rainfall and outbreak of agricultural pests, low prices for agricultural produce, a decrease in number of livestock, deterioration of the rangeland, increases in prices of consumer goods, and high input prices especially water and fertilizer and inefficient marketing. Likewise, the ICSP project initial outcomes (established in 2013) remained fully relevant with GEF focal area on Climate Change as well as national priorities.
8. In addition to BIRDP and in the same Butana area, the Integrated Carbon Sequestration Project (ICSP)s financed by the Global Environmental Facility (GEF) to promote a climate friendly rural path in Central and Eastern Sudan. This was to be achieved through increasing carbon stock and reducing Green House Gases (GHG) emissions, while at the same time sustaining rural development in the project area towards achieving its development objective.
9. BIRDP responded well to the challenges and constraints faced by the target group through: (a) Improved water accessibility and range carrying capacity; (b) Improved extension services for livestock and crop husbandry; (c) Training on literacy, nutrition, health and IGAs for women and youth; (d) Access to rural infrastructure (roads and crossings); (e) Access to markets for livestock and agricultural products; (f) Access to knowledge, market information, and rural finance; and (g) Empowerment of CBOs.

B.2. Project objectives

10. The overall goal of BIRDP is to improve in a sustainable manner the livelihoods and resilience to drought of the poor rural households living in Butana area.
11. The BIRDP project development objectives are: (a) Establishing a coherent and cost effective governance framework that ensures a regulated access to land and water resources of the Butana; (b) Improving the access and bargaining position of women and men in the marketing of livestock; and (c) Developing the capacity of community based organizations to engage in environmentally sound, socially and gender equitable development initiatives and management of natural resources.
12. The overall goal of sister ICSP project is to promote a climate-friendly rural development path in Central and Eastern Sudan by increasing the carbon stock and reducing net GHG emissions in the country, while at the same time sustaining rural development in the BIRDP project area.
13. The objectives of the ICSP project are to: (a) establish at least 10,000 ha of forests in areas with high potential for sustainable biomass growth using multiple afforestation/reforestation (A/R) forms, mixed species and suitable water harvesting methods; (b) promote sustainable management and maintenance of biomass carbon stock through the implementation of standard forest management practices in selected forest reserves and A/R areas involving local communities; (c) promote wide diffusion of highly efficient, biomass energy technologies, as appropriate, in the project area using climate friendly incentives; (d) develop technical and institutional capacities within the FNC for GHGs mitigation, Reducing Emissions from Deforestation and Forest Degradation, forest and carbon stock monitoring and reporting (REDD+), and access preferentially to the voluntary carbon market.
14. The BIRDP project embraces the following four components:
15. **Component 1: Policy and Institutional Building** (originally named Institutional Support): This component aimed at contributing to achieving the project objective of establishing a coherent and cost effective governance framework that ensures a regulated access to land and water resources of the Butana. The component outcome is effective governance framework that ensures regulated access to land and water resources of the Butana. Its main outputs are the satisfactory facilitation of the development of the governance framework by the lead project agency. It includes 3 sub-components: (i) the development of an improved governance framework for natural resources management; (ii) support to the states to improve their capacity in the implementation of the improved governance framework; (iii) the management of the BIRDP activities through the Butana

Development Agency.

16. **Component 2: Natural Resources Management** (originally named Climate Resilient Natural Resources Management (range, forest, vegetables, crops): This component aimed at contributing to increasing the productivity of smallholders' farming and range systems. It was meant to practically support the investments needed by the governance framework of regulated access to land and water resources. The component outcome is improved climate resilient natural resources management (water, range, forest, vegetables, and crops). Its main outputs included improved on-farm water use and efficiency, improved carrying capacity and biodiversity of the range, and improved water accessibility and affordability. The component includes three subcomponents: (i) technology transfer; (ii) development and improvement of the open access and community rangelands; (iii) the development of domestic water supply.
17. **Component 3: Animal Resources Development** (originally named Livestock and Marketing Development: This component aimed at contributing to improving the access and bargaining position of women and men in the marketing of livestock products. The component outcomes are (i) Improved access to advisory services and bargaining position of men and women in marketing; and (ii) Better animal husbandry and management (large and small animals). Its main output is improved accessibility to markets and market services. The outputs of the Italian grant include a fully operational residue detection systems, available for the communities; and a fully operational model storage facilities.
18. **Component 4: Community Development and Business Options** (originally named Community Development): The component aims to develop the capacity of community-based organizations to engage in environmentally sound, socially and gender equitable development initiatives. The component outcome is community-based organisation sustainably empowered to serve the interest of the communities. Its main output is to establish functional and representative community based organizations. The component consists of five sub-components: (i) community organization and strengthening; (ii) gender sensitization; (iii) skills training for groups and individuals; (iv) community initiatives fund; (v) training of locality and state staff on community development and gender.
19. The ICSP comprises four technical components:
20. **Component 1: Increasing national carbon sequestration potential:** This component focuses on the implementation of A/R activities in suitable areas with favourable conditions for sustainable tree growth to ensure maximum carbon uptake. The implementation of this component is executed with the participation of farmers, villagers, communities and the FNC.
21. **Component 2: Conservation and improved management of forest carbon stock** This component aims at maintaining the forest carbon stock in the long run, through conservation and improved management including protection from causes of deforestation and fires.
22. **Component 3: Promotion of biomass energy technologies:** This component focuses on the promotion of wide diffusion of climate mitigation technologies for rural energy needs and is supposed to be funded by BIRDP.
23. **Component 4: Institutional and Technical Capacity:** This component focuses on building national capacity to develop, implement, monitor and report on carbon stock as well as raise awareness at local level on forest change and climate mitigation.

B.3. Implementation modalities

24. The BIRDP management structure was designed to ensure a number of principles: (i) advocacy for the harmonization of the governance structure for natural resources in the Butana region in five states; (ii) devolution of natural resources management to community organizations or users' representatives; (iii) alignment of the project implementation modalities with the responsibilities of states and localities.
25. The BIRDP has had three organization levels. The first level is the overall project management level, which was originally planned to be undertaken by the BDA, as the lead project agency, later in 2017 the BDA was converted into BDF with same mandate. The second level is State level, where a State Coordination Unit is placed in each of the five State Ministries of Agriculture, Animal Resources and Irrigation. It was to coordinate and carry out the implementation of project activities through the appropriate locality departments. Its outreach to local communities was to be undertaken by development teams deployed from technical staff of the state and localities. The third organization level was the community organizations and interest groups who are largely responsible for selection of project activities, community mobilization and participation in natural resources management or marketing activities, and selection of beneficiary individuals and groups. The involvement of the local communities took place through Community Development Plans prepared by the local communities in collaboration with BIRDP staff and local authorities.
26. Originally, the Board of Directors of the BDA was to act as project steering committee. Its role was to: (i) facilitate, support and assist the progress in implementation through inter-agency co-operation; (ii) approve AWPBs; (iii) monitor the results of the implementation of the regulated access to range and water resources and make appropriate recommendations with regards legal amendments or enforcement; (iv) ensure incorporation of the state counterpart funds in the state respective budgets and ensure that the development budgets of the state - in relation to the development of social services and livestock services in the localities covered by the BIRDP - support the objectives of the project. The limited capacity and low performance of the BDA triggered the Office of the President to replace it with the BDF, but still with limited success beyond regular meetings to approve and monitor implementation of the AWPBs.
27. An administrative Decree No. (48) For the Year 2018 was issued by the Undersecretary of the MoAF to form a Supervisory Technical Committee (STC) for BIRDP. Membership of STC include representatives of MoAF, CCU, MoFEP, ICSP Director, BIRDP Director. The STC was mandated to strengthening the coordination between the Ministry of Agriculture and Forestry (MoAF) with other concerned entities involved in monitoring the implementation of the activities of the BIRDP to the expected

standard and maximize the utilization of the available resources provided by the IFAD and other project financiers.

28. Concerning ICSP management structure, the project has been implemented by the Forest National Corporation (FNC) in collaboration with CCU in Khartoum and all relevant national institutions at both national and state level. A PMU was established at FNC Khartoum. A project steering committee was in charge of supervising overall project implementation
29. BIRDP/ICSP management was guided by the following principles:
- Adoption of a participatory and gender sensitive approach to identification of community needs and assets, planning project interventions at community level, implementation of project interventions on a matching grant basis with local communities, and monitoring of community satisfaction with project service delivery and results.
 - Devolution of implementation and establishment of community organizations at community level to manage natural resources and organize development activities at local level.
 - Adoption of a cost recovery approach to ensure that project services are financially sustainable.
 - Capacity building of front line staff in the state ministries in the localities with the equipment and skills to respond to community needs, build community management skills, and monitor the results of the project on local livelihoods, environmental re-generation, and financial sustainability of service provided. In its outreach to local communities, the project successfully relied on multi-disciplinary Development Teams.

B.4. Target groups

30. As per project design, the main poverty groups include the smallholder agro-pastoralists in the sand dune zone and clay plains, the smallholders in irrigated sector, and the smallholder transhumant households, all including rural women and youth. The main source of income/livelihood for 60% of the communities surveyed at design stage comes from traditional rainfed agriculture. Pastoralism ranks second at 22%, smallholder gravity irrigated agriculture at New Halfa Scheme at 7%, and smallholder pump irrigated agriculture along River Atbara at 7% and off-farm activities at 4%. Traditional agriculture depends essentially on harvesting of rain water through terrace and Wadi cultivation.
31. Poor communities with low capacity of natural resources management have the following characteristics: reliance on agro-pastoralist and pastoralist modes of production (i.e. limited access to irrigated scheme or mechanized farms); lack of permanent water source; absence of social services; average to severe deterioration of the vegetation; and distance from dry season markets. On the basis of poverty profile and development potential; as per design document, the main areas in need of strengthening were:
- The ability to handle land dispute peacefully, which supposes that communal rights to land are recognized and enforced, especially vis-à-vis transhumant and local government.
 - The ability to exclude outsiders through some mechanism such as payment of fees or appointment of guards (these are the two most common exclusionary rules in Butana) from communal range for purposes of resting, reseeding, etc...
 - The development of organizational experience in managing community initiatives and natural resources management.
 - The ability to establish and manage community funds, whether from fees imposed on resource use, or set up of revolving funds, etc.
 - The facilitation of access of the target group to productive inputs, rural finance, knowledge, skills improvement for on-farm and off-farm activities and social development, such as health education, literacy.
32. Overall, the total number of direct and indirect households' members reached during project life is estimated at 436 648 persons (equivalent to 63 043 direct and indirect HHs). The total number of direct beneficiaries reached 48 264 HHs, distributed as follows: 28 942 direct poor HH (target 21 000, achievement 138%); 14 431 direct moderately poor HHs (Target 8750 Achievement: 165%) and 4891 direct better off HHs (target 5250, achievement 93%). The less poor HHs were to be included because all livestock owners of the same community commonly use water and rangelands resources.

Description	Phase 1	AF	Total
Total no. of direct HHs	25,456	22, 808	48,264
Total no. of poor direct HHs	16,650	12,292	28,942
Total no. of moderately (vulnerable) direct HHs	6,579	7,852	14,431
Total no. of less poor direct HHs	2,227	2,664	4,891
% of women headed households	10.50%	9.40%	10%

C. Assessment of project relevance

Rated satisfactory.

C.1. Relevance vis-à-vis the external context

33. On the basis of the following considerations, the relevance of project objectives and activities is rated **satisfactory**: (a) the national strategies and policies for agriculture and rural development and poverty eradication, (b) the key challenges and opportunities for poverty reduction prevailing at the time of project design, and (c) the priorities and needs of the project target groups at the time of project design and at completion.
34. Right at initiation of BIRDP design period, in 2004, the Government of Sudan (GOS) and the Sudan Peoples' Liberation Movement (SPLM) reached an agreement on a joint concept note detailing the vision and key objectives of the policy framework for a National Poverty Eradication Strategy (PES). The PES had two overarching goals: (i) achieving peace and reducing the risk of future conflicts; and (ii) making a lasting impact on poverty and progress on other MDGs. In 2006, the Government of National Unity launched the Agricultural Revival Programme, where financing priority was given to the water sector and natural resources management. The BIRDP project was designed in line with this programme, aimed at enabling small scale farmers to shift from subsistence agriculture to market-oriented agriculture.
35. The BIRDP was also fully in line with IFAD RB-COSOP (2002-2008) for rural and agricultural development in Sudan, aimed at building the technical, financial and social asset base of poor rural people, and supporting their capacities to adapt and their ability to influence policy decisions affecting their livelihoods. The strategy concentrated on the more disadvantaged populations in areas of rain-fed agriculture, such as Butana area; promoted optimal use of natural resources (water, soil, rangelands, forestland) for the sustainability of their livelihood; and encouraged the use of investment projects to pilot critical policy reforms (governance, empowerment and accountability of local government institutions, land tenure, rural microfinance, marketing, etc.). Likewise, the ICSP, which was designed in 2012, was fully in line with IFAD second COSOP (2009-2012).

C.2. Internal Logic

36. Rural poverty profiling at design stage indicated that the main causes that led to the deterioration in quality of life were low agricultural production due to a decrease in rainfall and outbreak of agricultural pests, low prices for agricultural produce, a decrease in number of livestock, deterioration of the rangeland, increases in prices of consumer goods and inputs, especially water and fertilizer and inefficient marketing. The process of impoverishment was largely due to the breakdown of the old resource management system and the failure to install an effective substitute. The strong adherence of the target group to project approach and implementation modalities and the high positive impact on their livelihoods are clear indication of the project relevance to responding to the challenges facing them at design and throughout implementation.
37. The response of the BIRDP to the poverty situation in the Butana was rightly premised on the notion that livestock production and marketing constituted the engine of growth of the local economy and the means to capitalize poorer smallholders raise women economic role, and improve households' food security and living conditions. A fundamental factor to the realization of this vision was the regulation of access and use of rangelands and water by the local communities for their livelihoods. The participatory approach promoted by the project right at onset and throughout its implementation proved instrumental in achieving its objectives.

C.3. Adequacy of design changes

38. Although overall project design was maintained at MTR, the following technical and financial changes were deemed necessary to put the project on better track towards meeting its objectives:
39. At design stage, the bulk of the budget for the first component was allocated for Project Management and Support to the five SCUs, with limited funding to activities related to studies on governance framework for NRM. At MTR a specific allocation was granted for the activities necessary to conduct workshops and forums at different levels (Communities' clusters, Localities, States and Inter-states) which lead to an enabling governance frame work for NRM in Butana. Under same component, KM was also added to document good practices, innovations and demonstrations' findings for intra state and inter-states sharing.
40. Moreover, additional funds were allocated at MTR to Knowledge Management, capacity building, establishing community development centers, young professionals for securing professional cadre in future as well as studies.
41. Although before MTR, 86% of participating communities identified water supply as their first developmental priority, design considered land as the entry point. At MTR It was agreed that water should be the entry point and the cross cutting theme; This change in project focus, led to higher beneficiaries adherence to project approach and ownership of action plans including cost sharing and management. Pre MTR, total number of water facilities proposed were 75 units while, post MTR units were increase to 145 units.
42. In addition, and in order to reflect better project scope and support, the components were changed as follows: Component 1: Institutional support changed to Policy and Institution Building; Component 2: Agriculture, range and water changed to Natural Resources Management ; Component 3: Livestock development and marketing changed to Animal Resources Development; Component 4: Community Development changed to Community Development & Business Options.
43. Unrealistic GOS/IFAD cost sharing of staff salaries Project design expected GOS to gradually take over the cost of staff salaries as follows: 25/75 (2008-2012), 50/50 (2013-2014), 75/25 (2015-2016), 100/0 (2017-2019). This was not realistic because GOS was not in a good position to provide its share. GOS/IFAD cost sharing of salaries was eventually changed to read: 25/75 (2008-

2012), 50/50 (2013-2014), 25/75 (2015-2019), respectively.

44. The above mentioned changes called for reallocation of funds among the categories of expenditures of the FA as follows:

- Civil works decreased by 3.3%
- Vehicles, Equipment and machinery increased by 34.8%
- Technical assistance, Training and Inputs increased by 76.6%
- Grants increased by 11.9%
- Salaries and allowances decreased by 16.5%
- Operation and maintenance increased by 187.5%

D. Assessment of project effectiveness

45. Despite several challenges that faced project implementation, such as the high inflation rate, the chronic cash in banking system, diesel and fuel shortage, and staff turnover, the achievements made in terms of Development Objective, Outcomes and Outputs, are in general above the targets set with a few exceptions due to circumstances. Project effectiveness is rated **satisfactory**.

D.1. Physical targets and output delivery

46. Overall, the project physical targets and output delivery are rated **satisfactory**. According to project progress reports, the overall cumulative output achievements are above 95% for all components.
47. Component 1. Policy and Institutional Building (previously named Institutional Support). Implementation of this component is rated **satisfactory**. As mentioned earlier, this component aimed at contributing to achieving the project objective of establishing a coherent and cost effective governance framework that ensures a regulated access to land and water resources of the Butana.
48. Policy and strategy. The following four studies have been finalized and validated (100% achievement) with effective participation and representation of communities and authorities: (i) Study on land tenure, Ownership and access rights; (ii) Study of Mapping on NRs including water land use mapping; (iii) Study on impact of gold mining; and (iv) Updating of the Ecological Zone study. The key results of the Four studies have been integrated in the final NRGF.
49. The appraisal-planned **Natural Resources Governance Framework (NRGF)** is a major project outcome given its crucial importance in helping communities sustainably manage natural resources and reduce conflicts among end users (settled farmers and transhumant pastoralists). The NRGF has been finalized and validated through different workshops at four levels: (i) At level 1 (Communities' Clusters) 31 workshops were implemented; (ii) At level 2 (Localities) 9 workshops were implemented; (iii) at Level 3 (States) 5 workshops were implemented; and (iv) at Level 4, one inter-States workshop was also implemented. These consultative workshops were a good opportunity for an interactive process for (i) discussing issues of land tenure and governance of NR, (ii) developing a common understanding of the root causes of range/forest degradation, (iii) assuring grass root stakeholders voice being heard at higher levels; and (iv) reaching agreed actions for addressing legislation issues and enhancing the enforcement mechanisms for better NRM. In particular, the final interstate workshop was attended by wide range of stakeholders at different levels of governance including following: relevant Federal Ministries, (MoAF, MoAR, Ministry of Mining, National Council for Environment and Natural Resources, Higher Council for Environment and Natural Resources, National Forest Corporation, General Directorate of Range and Pastures), CCU of IFAD funded projects in Sudan, IFAD country office (ICO), BDF, state level line ministries, relevant departments and state legal advisors; and authorities at locality level and community representatives. All stakeholders unanimously endorsed the NRGF.
50. Institutional development. The Butana Development Agency (BDA), established in 2007 by a special Presidential Act and ratified by the Parliament, was to be responsible for project management, performing following tasks: (i) the development and monitoring of the implementation of the legislative framework supporting the improved governance of natural resources, (ii) monitoring the empowerment and poverty reduction of beneficiary communities, (iii) the delegation of technical implementation matters to competent agencies, (iv) the provision of training (on-the-job and otherwise) and capacity building to the collaborating organizations. As a Public Agency, the BDA was also mandated to raise additional funds for the Butana region from the public or the private sector. The performance of the BDA was below expectation for lack of financial and human capacity. It was eventually replaced by the Butana Development Fund (BDF) in 2017. The BDF Board of Directors met regularly to oversee the implementation of BIRDP. The BDF is currently the custodian of the above-mentioned NRGF. It is mandated to supervise and lead the implementation of the NRGF policies, institutional and legislative arrangements in collaboration with and any existing and or potential partners.
51. Young Professionals (YP). The project has achieved remarkable success in implementing the Young Professionals YP programme. Piloting 26 YP in 2013 the Project managed to fully engage and train 474 YP (424 females and 50 males) against 400 planned YPs (119% achievement). The YPs have been instrumental in advancing project implementation, especially in mobilising communities, raising awareness on gender inclusion and increasing women participation, supporting formation of SCGs, and contributing to monitoring by undertaking simple cost benefit analysis of communal farms. The fact that some of them lived among the targeted communities helped them to serve as agents of change. The experience they gained has been beneficial for the YPs to find employment opportunities and gain work experience after graduation. The overwhelming majority of the YPs are females belonging to Butana directly and indirectly reflecting the project contribution to employability and poverty reduction.
52. Capacity building at various levels. Targeted capacity building activities, aimed at ensuring that sustainable NRM and CC mitigation and adaptation are undertaken in a cost-effective way and with the full involvement of the local population. The

mitigation and adaptation benefits are monitored and reported correctly. Institutional capacity building targeting DTs, YP, CBOs, project staff and project partners progressed remarkably since project start up with an average achievement of 110% of appraisal-planned target (120 000 persons trained). The training involved, among others, training for DTs, YPs and Locality staff on GALS methodology; value chain, preparation of LAPA Plan, GIS and remote sensing, NRM (water, rangelands and forestlands), financial management and procurement, management of SCGs. Because of intensive training and programme support, the appraisal-planned 9 locality units are fully capacitated and reporting performance improvement, in relation the implementation of the environmental, agricultural, water and marketing activities.

53. Component 2: Natural Resources Management (previously named 'Climate Resilient Natural Resources Management (range, forest, vegetables, crops, water). Implementation of this component is rated **satisfactory**. It aimed at enhancing resilience to climate change through effective use and management of water, rangelands, forests and agriculture while promoting access to markets. It has three sub-components: (i) establishment of functional water structures; (ii) improved water harvesting and agro-forestry systems; and (iii) construction and maintenance of feeder rural road.
54. The platform for the implementation of this component is the development, approval, and implementation of 378 Climate Resilient Community Village Plans (CR CVPs), fully involving all planned 378 communities, including 140 communities under original BIRDP and 238 communities under AF. The development of the plans reflects the improved awareness of the communities about their natural resources and their commitment and preparedness to protect these resources.
55. BIRDP role in resolving the critical water problem in Butana and its remarkable achievements have been stressed and appraised by all stakeholders including communities and authorities. Land under improved management and climate-resilient practices, reached throughout the programme implementation period 524 000 Ha, (against appraisal-planned 333 060 Ha, i. e 158% achievement). This involved construction, reconstruction and rehabilitation of 111 Hafir and boreholes, against an appraisal-planned 72 units, i.e. 154% achievement. In addition 181 water yards were constructed or rehabilitated (against 79 planned, i.e 221% achievement). The outstanding achievements under water resources development and management activities is a reflection of the high demand and the importance of water for the communities' livelihoods. The provision of water has positively impacted all aspects of life in the Butana including population stability; improvement and diversification of agricultural production; improved nutrition and health particularly among women and children, improved enrolment of children in education through saving time on fetching water, income generation and investment in other service institutions, improved relationship between pastoralists and farmers and reduction of conflict over water sources.
56. Concerning the range and forest lands development, 4817 ha were brought under Guar cultivation (against planned 4000 ha). Based on beneficiaries own assessment, the Guar cultivation, which was introduced for the first time by BIRDP in Butana area, has largely demonstrated its social, economic and environmental value, for human as well as livestock. A total of 77 community range reserves covering around 65,000 ha have been established by the project during its lifetime. Investment in individual range reserves reached 13 872 ha (against 15 000 ha, i.e. 92% achievement). Establishment of community forests reached 41 570 ha, against planned 30,500 ha (accounting for 136% of planned target during the project lifetime). This area covers 85 community forests, currently managed and protected by the communities themselves. Terrace improvement/rehabilitation under water harvesting practices was also introduced for the first time in Butana area by BIRDP, covers 42,620 ha, accounting for 105% of the planned target (40 000 ha). Programme supported 34 women groups to establish collectively, 220 Jubraka over 112 ha (against planned 120 ha) where vegetables and fodder are grown to benefit around 850 women.
57. The 'Arab 6 - El Subagh' Road: Throughout the rainy season, general access to and from the main external markets in Butana area is very difficult for vehicles, livestock and people especially across seasonal streams. Under the AF, the programme was to support completing the 77 km rural road and 33 crossings that started under BIRDP and other IFAD initiatives in the central Butana. The road is divided into six packages with different lengths. The construction contracts in these packages awarded to five national contractors is almost completed: Sector (1) 16.7 km, 83% achievement, with only sub-base level is missing. Sectors (2) to (6): 16.6 km to 77 km 99% achievement (lower and upper sub-grades and sub-based completed). The road is fully functional resisting this year heavy rain. However and as clearly mentioned in the section on recommendations, completion of the sub-base level for sector (1) by the states of Kassala and Gedarif and yearly maintenance will be necessary for preservation of structural integrity and the sustainable use of this important road.
58. Component 3: Animal Resources Development (previously named Livestock and Marketing Development: Implementation of this component is rated satisfactory. It was aimed at contributing to improving the access and bargaining position of women and men in the marketing of livestock products, through improvement of quality, reduction of transaction costs and better access to markets. The following activities have been 100% completed in the five states: livestock survey, establishment and equipment of 5 veterinary services centers (Managed by CAHWs), provision of five mobile veterinary service Vehicles, five inventories and mapping of animal nutrition resources, and five mappings of animal diseases using GIS.
59. Animal feeding. In order to arrive at year around balanced feeding of livestock in the Butana systems where seasonal tracking with animals is common partly due to shortage of fodder and feed, partly as part of their traditional practices, it was of utmost importance to know which fodder is available in which season, what can be conserved, and what is to be added from outside. In addition, which livestock herds from outside would also graze and browse the range and forest areas. The related calendars, prepared by the Development Teams helped the livestock keepers in analysing the situation and adopting their fodder conservation practices to year around requirements. Hand hay baling of range grasses and/or the fodder crop Guar became very popular among them. In particular, among the women, the hay baling is popular as it allows them to adequately feed their goats and obtain good quantities of milk. Feeding of molasses and chopping of sorghum stalks is popular in certain communities especially there were cattle are kept (e.g. Kassala State).
60. Animal treatments: In terms of Core Livestock Extension Activities and considering that it concerns only the months January – June, project support and training activities were , on average 25% above appraisal-planned target in relation to feeding practices, control of Botulism, control of internal and external parasites. Following the construction and equipment of veterinary centres and the training of 431 (154% of appraisal-target) Community Animal Health Works (CAHWs), they were very active in

vaccination campaigns for control of epidemic diseases especially through their networks. They managed to mobilise the livestock keepers, create awareness and collect money, involve the veterinary doctors who supplied the vaccines and supervised the vaccinations. The CAHWs were also active in spraying of animals to control ticks and other external parasites for which the HH pay the services. While concerned communities managed to establish a fund to purchase veterinary drugs and vaccines.

61. Access to markets through market rehabilitation and development. The project supported the construction of 6 secondary livestock markets against an appraisal target of five markets (achievement 120%) and five primary livestock markets , against an appraisal target of 25 markets (20% achievement). The project financed all physical improvements (fencing, provision of amenities such as water and toilet facilities, sheds, office refurbishment and equipment). Some highly dynamic local communities consider secondary markets more appropriate for marketing their animals given the higher price opportunities. Others prefer small primary markets. Facilitating development of small primary livestock market run by the community allows women to buy and sell animals themselves which is culturally not accepted when market is distanced from the village. For example, the idea of primary markets concerned a demand of the community in Shendi Locality namely Al-Tasab community and as a pilot BIRDIP supported the community in establishing a simple market mainly fencing in 2016. Currently, this small initiative has grown into a considerable business hub namely there as many as 100 shops established on this market while the Shendi Locality has given the authority to Al-Tasab Network Committee to monitor the shops of this called Al-Tasab market. Based on this positive pilot, 25 primary markets were planned for the Additional Finance Phase but up-to-date only five have been established and mainly in River Nile State. The others could not materialize due to delays in fund flow, and setting priorities for more urgent infrastructure activities. The lesson learnt is that these primary markets provide scope for women to market their animals and sell their products, it forms a basis for business activities and a meeting and management ground for the Natural Resources cum Rural Development Networks developed.
62. Although some rural women would prefer primary markets because of their proximity to the villages, some State Governments decided to declare some of these markets as export markets (Gezira and Gedarif States), which encouraged traders and exporters to turn to these markets as key markets for exports. As per observations of the Development Teams, these decisions in the long term would lead to positive results, for example: - encourages more investment in services around these markets (most of these services are provided by women); - raise the bargaining power of the breeders to obtain profitable prices; - create a spirit of competition between the markets; and - increase localities revenues.
63. Component 4: Community Development, Business Options (previously named Community Development). During 2009-2019, the cumulative achievement against appraisal-estimates are as follows: establishment and capacitation of 378 Community Development Committees (CDCs) against 540 appraisal target (achievement 70%); Registration of 300 CDCs (100 % achievement); Establishment of 17 Community Networks (which were not included at design, but added in 2013), 14 of them legally registered; 75% of the Community-based group Development Plans were successfully implemented, against target of 85% (88% achievement); establishment of 4 Community Development Centres, construction of 6 basic schools (100% achievement for both activities), and construction and equipment of warehouse (100% achievement).
64. The project strategy has encouraged mobilizing and organizing youth in groups and providing funds for their group ventures (SMEs). A total of 212 groups were formed, and 6.99 Million SDG disbursed (from various sources) for 33 SMEs (3 blacksmith centres; 15 gas refilling centres; 5 Agriculture Service Centres; 7 Brick making machines, 1 Fodder Farm; 1 Bakery Oven; 1 Tire repairing centre) involving 374 persons.
65. Access to rural finance: The IGAs and other investment activities supported by the project lacked originally a rural finance activity that was included post MTR. The following table summarises the main achievements. As is the case with most MF initiatives, the vast majority of borrowers are women with a higher repayment rate than men:

Description	achievement
Total communities Covered with MF	219
No of SCGs Formed	547
Total No of Groups' Members	8608
Membership of women	8151
Membership of men	457
Total Number of Savers	8456
Total Savings Deposits in SDG	4,435,426

Total Number of Borrowers	5752
Volume of Lending in SDG	3,490,450
% of Savings amounts utilized	79%
% of women Loan Recovery	94%
% of men Loan Recovery	85.50%

66. In addition to the promotion of SCGs, the project promoted access of the target group to finance through setting up 14 Community initiative funds (CIFs), benefitting more than 11 500 persons (96% of appraisal target). CIF operates under matching grant formula financing to groups to set up small scale productive enterprises, such as Animal Restocking; Grain or Fodder storage, Gas units (gas cylinders and/or Gas stoves); Irrigation units; Poultry production; Donkey driven carts; Electric Motors; Titling palm fronds (Hand craft); Veterinary medicines (Paravets); sheep fattening; etc.. The group of beneficiaries designated by the community organization or interest group provide a minimum of 25% of the cost of the investment; in the case of purchased equipment, the group hands over the amount to the CDC and participate in the purchase; where appropriate, the group contribute in kind through labour or materials. The interest group is composed primarily of poor people in the community.
67. Training activities: Socio-economic training of staff and target group was an important cross cutting activities in support of all project components. BIRDP training offerings included community mobilisation techniques, health and nutrition education, adult literacy training, animal health and nutrition, tree seedling production, water harvesting techniques, IPM, forest protection, vegetable production, social and business skills, market access. Adult education was provided to 11684 persons – 98% women - during 2009-2019 against a target of 9624 (122% achievement). During 2009-2019, around 8787 persons provided nutrition classes (against a target of 7385 persons) and 11116 persons - of which 84% female – were trained in first aid against a target of 9510 persons.
68. ICSP achievements include: (i) Increase in tons of carbon stock in the project area reached 190,863 tons out of appraisal target of 108,000 tons this attributed to the increase of implemented A/R from 10,000 ha to 14,911.20 ha; and (ii) Decrease of net GHGs emission in the project area based on the adoption of usage of alternative source of energy reached 56,149 tons which is the appraisal target:
- The project provides support to 14,612 persons out of which 10,394 are women and 4,218 are men;
 - The project contributed to capacity building to technical staff and policy makers in bio-carbon issues, benefitting 782 persons out of initial target of 120 persons.

D.2. Rural Poverty impact

69. Project performance in relation to its impact on rural poverty is rated **satisfactory**. Overall, the total number of direct and indirect households' members reached during project life is estimated at 436 648 persons against an appraisal-target of 540 000 (81% achievement). This is equivalent to 63043 direct and indirect HHs reached against a target 90 000 HHs (**70% achievement**). This achievement is below appraisal target because of the overestimation of the indirect beneficiaries. In fact, and more importantly, as per design targeting strategy, the project directly reached 48 264 HHs, distributed as follows: 28 942 direct poor HH (target 21 000, **achievement 138%**); 14 431 direct moderately poor HHs (Target 8750 **Achievement: 165%**) and 4891 direct less poor (better off) HHs (target 5250, **achievement 93%**). The less poor HHs were to be included because all livestock owners of the same community commonly use water and rangelands resources. Activities with broad coverage and quick results (improved veterinary services, improved water availability, improved physical market infrastructure and improved market accessibility especially during the rainy season) were intended to act as an incentive for the larger livestock owners to comply with the new regulated access to the Butana range and water resources.

i) Household income and assets

70. Project impact on HHs income and assets building is rated **satisfactory**. The impact assessment study concluded that 92.3% of the heads of household reported an increase in their household's income. The increase varied between less than 25% for 22.8% of the respondents; between 25%-49% for 38.3% of them and more than 50% for 38.9% of the households. However, it is noticed that substantial differences exist between the states. The highest percentage (56.2%) of those who reported an increase more than 50% are in Gedarf State followed by River Nile State (46.4%). The lowest percentage (15.9%) is in Kassala State. Variation is due to states potentials.
71. The perceived most important project interventions impacted and led to increase of the household income are improved agriculture, improved animal husbandry, and improvement in range and forests resources, revolving funds and access to finance.

Table : Relative importance of Interventions %								
	Agric.	Range and forests	Animal husbandry	Income generating activities	Initiative fund (revolving fund)	Finance	Others	all
All	31.5	12.9	23.9	8.2	14.6	7.1	1.8	100.0

Concerning assets improvement, results of the impact survey (table below) showed an average increase of 100% of HH owned durable assets and 40% increase of HHs owned economic assets. This a clear concrete empirical evidence of the improved financial situation of the households in the project area.

Table: Household ownership of durable and economic assets

Household Ownership of economic assets

asset	% of HH owned assets	
	Before the project	After the project
Agricultural land	72.9	81.3
Gubrakas	10.0	44.1
Home nursery	5.3	19.5
Hand Agricultural tools	61.2	85.2
Terraces	47.0	63.1
Animal	74.6	94.1
Private/communal rangeland	69.7	87.5
Tractor	6.9	10.0
Crop spraying pump	6.5	28.4
feed store	24.2	62.9
Feed packaging box	7.6	33.0

Household ownership of durable assets

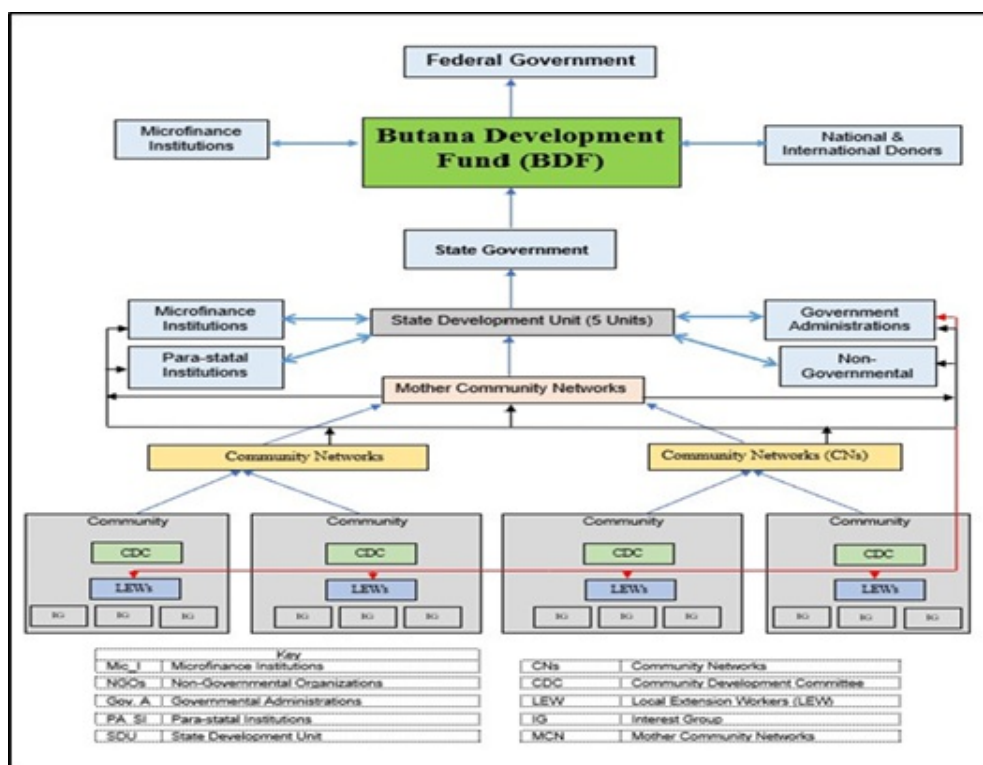
asset	% of HH owned durable assets	
	Before the project	After the project
Shop	6.8	13.5
Mill	5.0	6.8

Cooker	20.8	75.0
car	13.9	23.6
Refrigerator	5.3	19.0
T.V	11.0	26.2
Mobile phone	32.1	83.5
Strung / Bicycle	8.0	12.8
Animal driven carriage	31.5	61.1
Radio	38.9	58.1
Solar energy unit	9.2	31.0
Dardagah	10.0	27.0
Oven	4.9	23.1
sewing machine	3.4	4.4

ii) Human and social capital

72. Project performance on human and social capital is rated **satisfactory**. BIRDP has empowered women, youth, agro-pastoralists, and marginalised communities by instilling a sense of autonomy and self-confidence in them. They are now acting individually and collectively to improve social relationships, and manage the natural resources at their disposal, reduce conflict over them, mobilise support for common initiatives to protect rangelands, build Hafirs, and venture into youth led social enterprises. The formulation of natural resource framework through a multi-layered participative process is a good example of social change. Therefore, the major achievement of BIRDP is empowering individuals, building quality grassroots institutions, skilling local agents for development work, and nurturing networks of interest groups and community organisations.
73. As mentioned above, an important development in community organisation has taken place through the establishment of 17 community networks connecting neighbouring villages together around natural resources and shared interest. A typical example of these networks is Al Tasab Network in River Nile State established in 2014. The Network consists of 6 villages and satellite 23 hamlets with total number of 2970 households that constitute the general assembly of the Network. Since its establishment the Network has managed to effectively protect community resources from the rapidly expanding agribusiness investment in the area; establishing community range reserves, operationalizing health centre and primary livestock market; and establishing two telecommunication towers. The Network had also managed to get funds from government, NGOs and charity organizations and to run an office in the Shendi town.

Diagram 1: Presenting the link of communities, interest groups, CDCs and networks, etc. and their link to BDF, Government Institutions and others



iii) Food security

74. Project performance on food security is rated **satisfactory**. Improved nutrition, particularly among children and women is one of the remarkable achievements of the project. The project improved food availability, both self-produced (Jubraka) and purchased through IGAs, ensuring a minimum necessary intake for households members. This is the result of enhanced awareness and health education, improved availability of food and its diversity, and enhanced levels of employability and income generation. Communities have stressed that elimination of night blindness was associated with improved nutrition. Improved nutrition is attributed to the combined effect of project interventions in water supply, animal health, household Jubrakas (94% of women cultivate vegetables in backyard of their houses) and women groups Jubraka farms, fodder production and storing, introduction of guar fodder, training in home economics, hygiene and adult education and the constitution of saving and credit groups. The role of Jubraka in improving food security at the household level has been particularly stressed which explains the rapid scaling up and momentum the intervention has gained. Women reported that there is increase in supply of dry food substances like okra, which is normally used in off-season when fresh vegetables are not available. Overcoming taboos regarding selecting village women to participate in a one-year mid wife training is another aspect. The trained mid wives are normally popular and also provide attention to feeding mother and child. In nutritional classes, balanced diets are promoted while literacy training also has practical topics related to nutrition.
75. The contribution of the project is further substantiated by the impact assessment study in Tables below where 63.0% of the respondents stated that before the project they used to experience food shortage whether annually (23.6%), every two to three years (52.1%) or every four to five years (24.4%). On the other side 85.5% of the respondents reported that they have not experienced a food shortage during the last five years. They attributed that to improved agriculture production and productivity (34.4%), abundance of cereal production (21.67%), increase in family income (15.8%), and improved economic opportunities (15.8%).

Table : Respondents' experience of food shortage before project

	Food shortage before project %		Frequency of food shortage %			
	Yes	No	Annually	Every two to three years	Every four to five years	All
All	63.0	37.0	23.6	52.1	24.4	100

Respondents' reasons for not experiencing food shortage during project

	Food shortage %	% of relative importance of reasons

	Yes	No	Increase in HH prods.	Increase cereal Production in the area	Increase in HH income	more investment opportunities	others	all
	14.	85.5	34.4	21.6	28.0	15.8	0.2	100

76. Following table illustrates Jubraka impact on HH food security. About 40% of production value is self-consumed at home:

Type of crop	Production (Kg)/Yr	Price per kg	Total value (SDG)	Of which Own consumption (SDG)
Okra	32	25	800	320
Corchorus/ mulukhia	28	15	420	168
Eggplant	24	15	360	108
Crest (girgir)	16	20	320	96
Cucumber	24	10	240	72
Hibiscus	12	30	360	108
Cotton (Barakat 90 <i>Gossypium barbadense</i>)	2.72	80	218	218
Total			2,718	1,090

iv) Agricultural productivity

77. Project performance on agricultural productivity for crops and livestock is rated **satisfactory**. Focus on water harvesting and climate resilient practices have proved effective with acceptance and large-scale adoption. The adopted approaches of fodder conservation combined with promotion of Guar fodder and improved animal health services has significantly contributed to the improved livestock productivity. For example, the live weight of lambs increased by an average of 3 kg every 15 days.
78. Moreover, a significant increase in vertical production (more crop/drop of water/unit of land), due to good farm practices, has been achieved. For example, Rainfed sorghum productivity increased from 40 sacs to 80 sacs/terrace (5 feddan) (Wad Al Ratali). Rainfed terraces: from 5 to 20/40 bag sorghum per terrace (5 feddan) (Arab 7), Irrigated plots: from 10 to 20 bag sorghum per feddan, (Arab 7), irrigated groundnut from 120 sacs/5 feddan to 200 sacs (Wad Al Ritaly); more crop residues imply more fodder for livestock and subsequently more output per animal; apart from crop residues, the current promoted crop rotation in the irrigated schemes has a leguminous fodder crop, which contributes to improving the soil quality as well as producing fodder which can be conserved. These impressive increases in productivity have been validated through the impact assessment study where 96% of the respondents attributed the increase in agricultural productivity to BIRDIP interventions.

Crop Sharing Arrangements

Under Irrigation



Under rain fed



79. Perceived impacts of BIRDIP interventions on agriculture

Impact	Perception %		
	Yes	No	All
Increase production	97.2	2.8	100.0

Increase productivity	96.0	4.0	100.0
Improve soil fertility	91.3	8.7	100.0
Increase Crop diversification	96.3	3.7	100.0
Contribution in enhancing food security	97.5	2.5	100.0
Increase animal feed	96.5	3.5	100.0
Increase HH income	98.3	1.7	100.0
Increase crop storage	92.8	7.2	100.0
Availing More agricultural work opportunities	93.5	6.5	100.0

v) Institutions and policies

80. Project performance on institution building and contribution to enabling policies is rated **satisfactory**. The project has created dynamic process of engagement. The cooperation with Government institutions has remarkably improved. The above mentioned interstate workshop organized in Rufaa in July 2019 for the validation of the NRGF and attended by 3 acting federal ministers is strong evidence. State governments are planning to fully integrate the SCUs within the Ministry.
81. At the level of Butana area wide level, the project achievement on strengthening the Butana Development Agency, which was replaced by the Butana Development Fund, is below expectation. The BDF is yet to reach its full human and financial capacity as the leading agency in charge of promoting NRM in the Butana area.
82. Concerning policies, the project has achieved a breakthrough in NRM in the country context through the establishment of NRGF. As a direct impact some localities and states started to respond positively to the suggested policies, actions, regulations and laws proposed and requested by the communities for better management of natural resources, particularly farming lands, range and forests. Few examples are presented below for illustration:
- The Commissioner of New *Halfa* Locality issued two local orders: the first aims at preventing encroachment of other activities on open rangeland and the second prevents land transactions by way of selling or allocation for investment within the vicinity of villages.
 - The Education Department at Locality agreed to introduce "Green Education" in schools at *Asubri* and *Umm Rish* villages per requests from the respective communities.
 - Minister of Agriculture and Livestock in Kassala State issued a decree and formed a committee composed of relevant institutions and customary native administration to design and implement public awareness media program aiming at promoting the culture of nature conservation.
 - In River Nile state one community was able to identify and map an area of 10,000 feddan divided between communal rangeland, communal forest, and livestock routes. These communal resources are managed and protected by a group of volunteer youth from the village.
 - East Gezira Locality issued a local order in 2017 aiming at regulating land uses in order to minimize conflicts between pastoralists and farmers. Gedarif state reactivated and reinforced the law restricting cultivation beyond the grazing line (latitude 14°-45').
 - ICSP contributed to the policy dialogue at national level, in particular to the revised Forest policies and legislation through awareness raising, in collaboration with ADAPT, SSNRMP and REDD projects.

vi) Access to markets

83. Project performance in promoting access to markets is rated **satisfactory**. The project addressed at least three factors through investment and capacity building, factors that inhibited smallholder livestock owners and women from taking advantage of market opportunities in Butana area, i.e. difficult access to markets during the rainy season and weak market infrastructure and limited post harvest storage facilities. Construction of primary and secondary markets and the two warehouses and the feeder roads, together with market information and skills improvements, have raised the bargaining power of the target group (breeders, and rural women) to obtain higher prices; in addition to creating a spirit of competition between the markets; and increasing localities revenues. The up-graded livestock market in Subagh is most successful. The intake of animals is up to 0.5 Million head of animals per year while it was previously a seasonal small primary market. However, the increase is much due to the BIRD

supported construction of the rural access road construction, which provides basic access to markets for the rural communities by connecting the Butana plains with the main producers' markets especially those serving El Subag and New Halfa.

تشيد و تاهيل أسواق أولية وثانوية للثروة الحيوانية



84. The creation of small business dynamics of markets is the main indirect impact on rural women and youth, as mentioned below:

Table: Enterprises created in Es Subag Livestock Market after construction of Es Subag-Arab 6 Road

Enterprise	Men	Women	Total
Food –making shop	4	45	49
Tea/Coffee –making shop	-	51	51
Petty Trade	2	-	2
Animal' drugs shop	1	-	1
Loading up labor	15		15
Laundry	6		6
Total	28	96	124

85. In addition, due to investing in storage facilities, good storage management, and good farming practices, the bargaining power of the communities has improved. The quality of grains produced and stored is of high standard. They can set the price beforehand; i.e. can return from market with the product in case the right price is not fetched, because of the available storage facility.

D.3. Gender equality and women's empowerment

86. Project performance in relation to gender equality and women empowerment is rated **highly satisfactory**. The project made considerable efforts, to not only empower women and strengthen their position in community organisations, but more importantly to contribute to gender transformation in a conservative society. Unlike in the past, women actively participate in community meetings, and assume leadership positions in CDC, and community networks. Women are well represented in leadership positions viz. One third of CDCs office bearers, water management and procurement committees are women. Men appreciate newfound empowerment of women and their enhanced role in decision making at home and outside. The GALs approach has made major contribution to improving household food and nutrition security and boost self-dignity of women. The process of establishing the Natural Resources Governance Framework has created a dynamic and active process of cooperation among all actors, leading to formal recognition of women right to access land and water. The prerequisite set at Mid-Term namely 'to ensure that women have access to water' has proven to be successful; simply women spare a lot of time when there is a close by source of drinking water. Women have expanded access to and control over productive assets –savings, common land, knowledge and technologies related to fodder storage, Jubrakas, water and range management. With credit from SCGs, women run petty trade in bakery, vegetables, hay bales, goat milk cheese, etc. Overall women constituted on average 64% of beneficiaries in different types of extension and training programmes, and 95% of SCG membership, YPs groups, Jubrakas establishment and health and literacy programmes.

Table Respondents' perception of the impacts of the project on women (%)

Respondents' perception (%)	Very high	High	Moderate	Limited or no impact
Improvement of women economic situation	86.0	12.7	1.0	0.3
Increase respect for women and their role in society	89.0	9.9	1.0	0.2
Role of women in management of family resources	89.2	8.8	1.9	0.2
Women's empowerment	78.4	17.4	2.4	1.7
Women capacities to express views in meetings	84.5	12.1	2.9	0.5
Role of women in leadership positions in society	78.6	15.8	5.3	0.3
Increase women self confidence	87.2	11.7	1.0	0.0
Enhanced role in decision making	83.5	14.6	1.1	0.0
Active participation in community affairs	89.0	8.9	2.1	0.0

D.4. Adaptation to climate change

87. Project support to the local communities for Climate change adaptation is rated **satisfactory**. Recognizing the high levels of vulnerability and risks to the impacts of climate change and vicissitudes of nature among the Butana population, the project has effectively managed to enhance and strengthen population adaptation to climate change. Building on indigenous knowledge and cultural heritage the Project successfully managed to engage communities in climate resilient interventions that proved effective in reducing their vulnerabilities, especially to drought. Resolving water problem and the focus on water harvesting for cultivation of crops and fodder, particularly guar has demonstrated its social, economic and environmental value. The capacity building in crop production, animal raising, community mobilization and awareness raising about the importance of managing and protecting natural resources remain important inputs. The development of CR CVP and the mapping exercise involved has further contributed to enhance the awareness of communities about their natural resources and the importance of their protection.

D.5. Environment and natural resource management

88. Project performance in relation to environment and natural resources management, which covers water, soil, rangelands, and forestland, is rated **satisfactory**. A characteristic feature of the population in Butana is enhanced awareness about the importance of natural resources. Communities also reflect strong commitment and determination to protect and manage these resources. Voluntary forest guards and the youth groups organized to enhance sustainability of natural resources are in place. Mapping of community land and natural resources and the establishment of community networks around the issue of natural resource management indicate that commitment. The natural resource forums and conferences held together with the networks established around NRs have provided for social harmony while bringing people together around the shared interest of improved management and protection of resources.

D.6. Targeting and outreach

89. Effectiveness of targeting approach is rated **Satisfactory**. The selection of the communities and villages targeted by the project was based on agreed poverty criteria, specified in the appraisal documents. Communities benefiting from the project were prioritized according to the following socio-economic characteristics: (i) single settlements of about 300 households, or groups of hamlets/village cluster of similar number of households; (ii) remoteness from dry season markets, inadequate social and economic services; (iii) communities with average to high deterioration of the rangelands; (v) high percentage of poor within the community, ie over 70% of households classified as poor or average as per participatory wealth ranking exercise; and (vi) social cohesiveness: either a single social group inhabiting the whole area or groups who have demonstrated their ability to cooperate effectively together.
90. Other project activities, such as Jubraka development, literacy and training and sensitisation on nutritional aspects at HH level, access to finance through SCGs are by definition self-targeting because of the limited interest of less poor in these activities,

hence minimum elite capture. The completion mission, through meetings and interactions with project beneficiaries confirmed project focus on the rural poor.

91. Youth Outreach: Project support to youth in project area was not explicitly included in Phase 1. Under AF, BIRDP has encouraged mobilizing and organizing youth in groups and providing funds for their group ventures. 212 groups were formed, and 6.99 Million SDG disbursed in 33 ventures (3 blacksmith centres; 15 gas refilling centres; 5 Agriculture Service Centres; 7 Brick making machines, 1 Fodder Farm; 1 Bakery Oven; 1 Tire repairing centre) involving 374 youth.
92. Having said this, it is important to remind that, as per project design, the project interventions were also intended to benefit the less poor households because of their historical right to use the water, soil and rangelands resources at the disposal of the communities at large. Activities with broad coverage and quick results (improved veterinary services, improved water availability, improved physical market infrastructure and improved market accessibility especially during the rainy season) are intended to act as an incentive for the larger livestock owners to comply with the new regulated access to the Butana range and water resources.

D.7. Innovation

93. Project performance in relation to promoting innovations in the Butana context is rated **satisfactory**. The project implementation was based a thorough understanding of the empowerment of local communities. Its success was largely driven by heavy consultative process around natural resources management through development of NRGF, promotion of community networks and calling on YPs for community mobilisation. In addition to these three innovative features, the introduction of Guar as a drought tolerant fodder plant was highly appreciated by the local herders' communities for its suitability to the local environmental conditions.
 - NRGF: The process of stakeholder consultation on issues of land tenure and governance of natural resources is innovative, in the sense that it aims to develop a common understanding of the root causes of range degradation, the threats this poses on livelihoods and the development of the area, and to develop a consensus for change. All these stakeholders (federal and state governments, traders, pastoralists and farmers unions, state legislature) have been involved during the design and implementation of the project to ensure buy-in to regulated access to range and water resources. The lessons learned from such processes could feed into the national policy dialogue process on land tenure.
 - Promotion of Community networks, as a dynamic vehicle for community development. Each network is managed by an executive committee composed of representatives from member communities and supervised by elders sub committees or consultancy council who have tribal management and capacity to solve any issues or problems rising among the member communities. Some networks added sub committees for women and youth to be taken on board in the planning and management process of the development issues.
 - Young Professionals (YP). The YPs have been instrumental in advancing project implementation, especially in mobilising communities, raising awareness on gender inclusion and increasing women participation, supporting formation of SCGs, and contributing to monitoring by undertaking simple cost benefit analysis of communal farms. The fact that some of them lived among the targeted communities helped them to serve as agents of change. The experience they gained has been beneficial for the YPs to find employment opportunities and gain work experience after graduation. The overwhelming majority of the YPs are females belonging to Butana directly and indirectly reflecting the project contribution to employability and poverty reduction.
 - Introduction of the Guar (Cluster beans), as a drought tolerant fodder plant was another innovation in the local context. Animals do not prefer guar when green, hence its importance in limiting overgrazing. However, Guar is highly rich in protein and gum when dry. Feed animals with Guar increased milk production by an average of 1.3 litres per small ruminant and lambs weigh by 3 kg every 15 days.

Guar Harvest

Collection Process



Separating seeds from fodder



- The introduction of the solar system to operate the water stations in the women group farms has been praised and described by communities as well as authorities as an important project innovation.

D.8. Scaling up

94. Project performance on scaling up is rated **satisfactory**. The AF phase is by itself a scaling up of BIRDP original project. The Mother Communities supported by BIRDP were used as starting points for reaching out to satellite communities under the guidance and facilitation of various project actors, including local communities, development teams, and localities. Field experience and the progress achieved show that the project has effectively managed to support a vibrant process of scaling up.

95. The DTs hand-in-hand with the YPs and the Community Extension Agents Networks and other Community Networks would be the main leaders in scaling-up BIRDP activities. The scaling-up experiences made by BIRDP deserve to be considered when designing new programmes by IFAD/GOs or other donors. There is a high potential for scaling up in Butana area itself. Approximately 800,000 persons inhabit Butana. These inhabitants are mostly nomadic and transhumant tribes as well as agro-pastoralists who practice rain-fed livestock-agriculture.
96. The Participatory Forests Management Plans (PFMP) are an effective mechanism for the involvement of local communities to mainstream them in the maintenance of carbon stock. It is worth noting that FNC, the ICSP implementer, consider this project as a pilot project feeding the future actions foreseen during the REDD+ implementation phase.

E. Assessment of project efficiency

The project efficiency is rated satisfactory on the basis of comparison between appraisal estimates and actual costs.

E.1. Project costs and financing

Project costs and financing (detailed information presented in Annex 3)

97. The total disbursement of BIRDP by financiers -to end of August 2019- is USD 37.25 million with 65% from IFAD loan, 26% from IFAD grant, 8% from ASAP grant, 1% from Italian grant (annex 3). The commitments to closure (March 2020) are around USD 1.1 million as grant (with 97% from IFAD and 3% from GOS), and around USD 0.5 million as IFAD loan. The disbursements to closure for ICSP by GEF are USD 3.17 million, that is 87% of ICSP allocation while the disbursements -to August 2019- by GOS is USD 0.45 million or % 53% of ICSP allocation.
98. The actual expenditures of the project up to September 2019 correspond to 61.12% of total initial and amended budgeted amounts for BIRDP. The revision corresponds to an additional financing from 2018 to 2019, corresponding to (up to September 2019) a budget of SDG 649 million and SDG 441 million of actual expenditures.
99. While the contribution of the external financiers and beneficiaries has been adequately and timely provided, the contribution of the GOS has been systematically lagging behind. The financial projections included in the original and AF design were adequate. The only exception was the IFAD/GOS cost sharing of staff salaries.

Table 2: Annual budgeted and actual project expenditures costs by categories for BIRDP (in SDG and USD)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</	
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Category Description	Allocation	2015	2016	2017	2018	Sep. 2019	Total	Available balance	%
Consultancies	167,00	-	-	4,16	76,52	28,13	108,81	58,19	65%
Equipment and material	150,00	-	97,76	90,50	-	-	188,25	38,25-	126%
Goods, services and inputs	2.029,10	52,64	188,97	297,11	385,06	622,37	1.546,15	482,95	76%
Operating costs	200,90	40,73	60,39	20,07	16,37	14,52	152,08	48,82	0%
Salaries and allowance	299,70	21,99	46,32	67,03	75,41	38,96	249,70	50,00	83%
Travel and allowances	102,30	10,37	20,40	14,35	15,95	5,78	66,86	35,44	0%
Consultancies 2	701,00	25,91	42,03	19,10	228,54	265,93	581,51	119,49	83%
T O T A L GEF	3.650,00	151,64	455,86	512,31	797,85	975,69	2.893,35	756,65	79%

Source: ICSP, September 2019

E.2. Quality of project management

100. Project management performance is rated **moderately satisfactory**. The PCU and five SCUs are adequately staffed and staff members motivated at all levels. Preparation of AWPBs has been participatory through heavy involvement of Village Development Committees (including rural women) at the village and state level. The M&E unit at the central PCU and the state units are adequately staffed and smooth flow of information between Hqrs and state units. The M&E staff participated in the bi-annual follow up missions organised by the Ministry of Finance and Ministry of Agriculture as well as the annual supervision missions organised by IFAD.
101. However, despite great project achievements, implementation could have been even better should project Manager has played a more leading and cooperative role, particularly in relation to proactively collaborating with ICSP management and fully engaging the BDF and ABSUMI (the latter was introduced in project area after MTR for the provision of rural finance to project beneficiaries). Little effort was made to smooth the relationship with BDF and ICSP. Despite explicit specification in the MoU, BIRDP Project Manager often delayed the flow of funds from BIRDP to ICSP in order to channel resources to other states to use for its implementation activities.
102. As mentioned under Section on Implementation Modalities, the role of the Board of Directors of the BDA in acting as project steering committee was rather limited for the approval of AWPBs and follow up and monitoring of their implementation and mobilisation of counterpart contribution.
103. It was anticipated that BIRDP provide an initial advance to ICSP and thereafter replenish the advance as implementation progress was made. It was noted that BIRDP often delayed replenishment of the initial advance due to its own cash flow constraints, ultimately impacting implementation progress made by ICSP.
104. Concerning the cooperation with ABSUMI, which aimed at facilitating access of the target group to rural microfinance was below expectation, despite clear specifications of attributions of both partners -BIRDP management providing four vehicles and ABSUMI providing rural finance to the target group. ABSUMI and BIRDP entered into a MoU on 15/7/2018 but only two vehicles were provided to ABSUMI state branches, hence limiting access of the target group to rural finance.
105. In addition the centralised management of expense approvals slowed to some extent the implementation progress at the various SCUs which are geographically disbursed. Implementation period was extended for three years, which is above IFAD average extension.

i) Procurement

106. The PCR mission confirmed through a brief review of procurement system the following findings: Overall, the CCU, PCU and SCUs succeed in maintaining good progress with respect to the compliance with IFAD Procurement Guidelines and Handbook such as compliance with procurement method procedures and IFAD prior review thresholds. Procurement plans meet the basic requirements. However, the mission noted the following areas for improvement. The project has adopted the Standard Bidding Documents (SBDs) that were developed earlier by Ministry of Finance and Economic Planning for the procurement of goods, works and services using NCB method. The National SBDs were found satisfactory and meet the basic requirements. For ICB method, the World Bank SBDs were utilized; however, unnecessary customization was mistakenly applied. For shopping method, the project has utilized a simplified version of the NCB SBDs which were found sufficient in terms of ITBs, GCCs and SCCs. However, in some cases, the bidding documents were issued with inadequate technical specifications.

ii) M&E and KM

107. M&E: The M&E system is fully functional with head of the Unit acting as Project Deputy Director. He managed to allocate specific monitoring responsibilities to Local Development Committees, local development teams, and state coordination units. On this basis, the main M&E responsibilities at the level of Project central PMU consisted of aggregating M&E data at the project area, analysing trends, and recommending corrective or enhancing actions to the concerned stakeholders. By virtue of their knowledge of the project area, the M&E team at central and state levels played an important role in the selection of the sample of 600 HHs within 31 communities.

108. Knowledge Management: BIRDP achievements are quite impressive. Dissemination of knowledge among communities involved different communication channels including posters, leaflets, knowledge films, and media programs (radio and TV sessions). In addition to broadcasting many local radio sessions, 37 short films on communities' network for development and management of natural resources, GALs methodology and SCGs were produced and disseminated. A website (www.butanaonline.org) was established in 2014. 27 leaflets on BIRDP were also produced and published. Moreover, exchange visits are considered as KM products whereby the linkage among Networks, between new and mother communities/villages and interstate exchange visits for SCGs proved to be an important driving force behind the success of up scaling during the AF. In the process, the culture of knowledge sharing among project staff involving the five DTs has been institutionalized.

E.3. Quality of financial management

109. Fiduciary risk – The most recent supervision mission assessed the project's fiduciary risk as high. Key weaknesses and IFAD interventions are described below.

110. Disbursements and flow of funds – The full disbursement is expected to be reached by project closure of 30 March 2020. The project's ability to ramp up activities in the final months is the result of improved flow of funds to the state units IFAD supported the project to improve the flows of funds by recommending that state units prepare their own budgets, monitor execution and receive advances from the PMU which are replenished in line with progress. Subsequent to this change, budget execution improved significantly.

111. ICSP additional financing – Additional financing of \$1.1 million included in the IFAD Grant and earmarked for ICSP. It was anticipated that BIRDP provide an initial advance to ICSP and thereafter replenish the advance as implementation progress was made. It was noted that BIRDP often delayed replenishment of the initial advance due to its own cash flow constraints, ultimately impacting implementation progress made by ICSP. At closure it is estimated that total disbursement to ICSP under the MOU will reach only 44% of the additional financing amount. The remaining allocation was already channeled by BIRDP management to other states to use for its implementation activities.

112. Liquidity management and pre-financing of Government activities - The project did not submit WAs at regular intervals – an issue which was regularly raised during IFAD missions. This resulted in liquidity for the project. Liquidity constraints were further compounded by delays in receiving Government contributions. In most instances the project opted to use IFAD funds to pre-finance Government contributions. Weak financial management resulted in IFAD funds being utilised to pre-finance Government contributions. This concern was raised with the project and MoFEP throughout the implementation period. IFAD sent a formal letter to MoFEP on 16 August 2019 and requested immediate refund of the pre-financed amount (SDG 10,6 million at 30 June 2010) or risk suspension of the use of the project designated accounts. An IFAD mission again met with MoFEP in September 2019 to request a refund to the project accounts (SDG 11,7 million as at 31 Aug 2019) and to seek an advance of Government's additional contribution required to project closure (SDG 6 million). Successful closure of the project is dependent on receiving Government contributions in a timely manner.

113. The project bank accounts (both designated and local) were maintained with a commercial bank. The use of commercial bank accounts did pose an issue with regards to withdrawing cash at the time that the Government of Sudan adopted the restrictive Foreign Exchange Regulation Bill. This Bill aimed at absorbing liquidity in order to limit further depreciation of the Sudanese Pound to the US Dollar but resulted in cash shortages. This issue did not have a significant impact on project implementation.

114. Exchange rate environment – The exchange rates applicable in Sudan resulted in confusion and uncertainty regarding the correct rates to apply in preparing the AWPB and making payments with reference to US dollar amounts in the AWPB such as salaries. This was an issue during the time that the Central Bank of Sudan exchanges rates were not aligned with the market rates offered by the commercial rates. Various IFAD missions engaged Government on this issue and it was agreed to utilise market rates.

115. Staffing – Financial management is centralised at the PCU. A Financial Controller, supported by an accountant and admin assistant, manages the PCU finance function. An accountant in each SCU supports the central function. The project financial

management suffered due to turnover of the Financial Controller (FC) position. The current FC was appointed in October 2017 and was the 3rd recruitment for this position. Turnover in the FC position and vacancies at SCU level contributed to weakened financial management. Various IFAD missions identified issues related to staff turnover and encouraged the project to fill vacancies as a matter of urgency. Overall, the staff complement was adequate for proper segregation of duties at the PMU.

116. Budget preparation and monitoring – For most years during project implementation the project submitted its AWPB after the start of the related financial year. In addition, multiple revisions were generally required during the year. Various missions requested the project to implement frequent monitoring of budget to actual performance. Weak budget monitoring resulted in overspending on various expenses categories, which was subsequently accepted by IFAD. Budget execution was negatively impacted by rapid depreciation of the SDG to the hard currencies.
117. Internal control – The project commenced operations without a documented Project Implementation Manual (PIM) which resulted in the adoption of informal processes. A PIM was prepared in line with the disbursement condition specified for the additional financing. Subsequent to the preparation of the PIM, IFAD identified areas of improvement related to financial management. At the time of this mission, the project is yet to submit an updated PIM for IFAD no-objection. Overall, the project failed to take ownership of the PIM which contributed to a weak internal control environment.
118. Accounting – Accounting was a key weakness of the project and was largely due to an inadequate accounting software system which was only installed 6 years after project inception. At the time of installation the project did not undertake a process to migrate the paper-based accounting records (related to the IFAD Loan) to the new system. This created difficulty in reconciling the total sources and uses of fund under the IFAD Loan. The software operates via MS Access and is fragmented, with separate databases maintained for each financier and for each location (PCU and SCUs). On a monthly basis, the PMU is responsible for consolidation of project accounts per financier. Although a software upgrade was completed in 2018, the outcome was not satisfactory. Shortcomings in the accounting software made it difficult to monitor issues related to cross-financing between financiers; did not allow for easy budget to actual comparisons and created many challenges in the preparation of consolidated financial reports. In addition, this software did not have user control, contributing to weak internal control. The lack of reliable, locally available commercial accounting software products which are suitable for donor-funded projects was a contributing factor at the time of the initial software procurement.
119. Financial reporting – Financial reporting was considered a key weakness. In 2018 IFAD provided financial reporting training to project staff. The training covered topics such as requirements of the IPSAS Financial Reporting under cash basis of accounting and IFAD requirements as outlined in the IFAD Handbook on Financial Reporting and Auditing of IFAD-financed projects. Subsequent to the training, some improvements were seen in the most recent (2018) audited report. The project does not record or report on in-kind contributions such as tax exemption and salaries / overheads paid for by Government, resulting in an incomplete disclosure of Government's total contribution to the project.
120. Audit – the National Audit Chamber (NAC) conducts the external audit for IFAD-funded projects in Sudan. The NAC was cooperative and participated in an IFAD training event during 2018. The 2018 audit opinion format was in line with International Audit Standards and was accompanied by a comprehensive management letter; however, the audit report did not include agreed upon procedures as requested by IFAD in advance of the 2018 audit. This requirement was again raised with NAC during the mission and it was agreed that these procedures will be included in the final audit report.
121. Closure activities –The mission revised expenditure estimations to closure and agreed on updated advance recovery plans for each facility. It is forecast that advances will be fully recovered by project closure. The project presented a winding period budget to the mission which was discussed and incorporated in the forecast expenditures / cash flow to project closure. The mission agreed with the project to submit the finalised winding period budget to IFAD for its no objection. Project assets (excluding assets transferred to communities) will be transferred to SNRLP. The project commencement date is aligned with the closing date of BIRDP (30 Mar 2020) and allows for a smooth transition. The project maintains an inventory of project assets but it is proposed that the list be updated ahead of the transfer. The project has been made aware of the requirement to retain documents in line with IFAD requirements.

E.4. Project internal rate of return

122. A financial and economic analysis was carried to assess the financial and economic impacts of the Butana Integrated Rural Development Project (BIRDP). Benefits are expected to derive from (i) livestock activities, ii) crop production, iii) market development including storage facilities, roads, and market information, iv) improved on-farm and off-farm incomes and v) increased sustainability of local institutions.
123. The main sources of quantified Project benefits come from: (i) increased livestock production on the rangeland; (ii) incremental crop production; and (iii) net benefits from environmental activities under the Integrated Carbon Sequestration (ICSP) grant, that is carbon Sequestration, reduction of GHG emissions, and Agroforestry practices. The efficiency indicators (IRR, EIRR, financial and economic NPV, BCR, payback) were discounted over the 20-years project economic life period.
124. Crop and farm production, livestock models are based on detailed data collected in five States in the Butana. In order to represent the project financial benefits, four crop production and farm models, livestock model for an average HH, for meat and milk production and environmental models have been developed. These models have been used as building blocks for the financial and economic analysis at the Butana as a whole by referring to the number of HH, hectares of crops and agroforestry per model.
125. The Economic Internal Rate of Return (EIRR) on the investments in the Project area over 20 years is estimated at 17.15%, which is well above the opportunity cost of capital (10%) and exceeded the estimated EIRR of the project at its design which was 14.7% but did not include the environmental benefits of the ICSP. The Net present value (NPV) of the project is positive (USD 26.22 Million) and greater than the economic NPV computed at the BIRDP design. The discounted Benefit-cost ratio (BCR) is

estimated at 1.97:1 showing that for each 1 SDG spent in the project will generate a 1.97 SDG of benefits, which is in favour of the project. The payback period is 9.7 years. The economic analysis suggests that the BIRDP Project is feasible. With an OCC of 11%, the NPV is still positive and the EIRR is higher than the OCC. An estimate made over 25 years economic life time of the project would generate an EIRR greater than that the 20 years period and a higher NPV. All these worthiness indicators establish the economic feasibility of the project.

126. With an estimated total number of 436 648 direct and indirect households' members reached, the estimated cost per beneficiary of USD 107 at completion, the higher EIRR, the positive NPV, the BCR greater than 1, and the low risk of non-profitability of the project (5%) contribute to the efficiency of the BIRD project. The BIRDP project is worthwhile, especially if we consider the conservative assumptions made in the computation of the benefits; only quantifiable benefits directly related to agricultural production have been considered in the analysis.

F. Partners' performance

F.1. IFAD's performance (Quality of supervision and implementation support)

127. IFAD performance is rated **satisfactory**. IFAD supervision missions, implementation support missions and MTR mission were timely, planned and adequately staffed. Procurement and AWPB reviews and WAs processing were timely conducted. IFAD management and relevant services at headquarters (mainly FMD), and the ICO in Khartoum were pro-actively engaged in accommodating in-country circumstances. IFAD supported the project to improve the flows of funds by recommending that state units prepare their own budgets, monitor execution and receive advances from the PMU which are replenished in line with progress. Subsequent to this change, budget execution improved significantly. However, the disbursement conditions established by IFAD has slowed the disbursement from the AF whereby the first disbursement was made only 12 months after signing the FA.

F.2. Government's performance

128. Government performance is rated **moderately satisfactory**. Despite proactive participation of FMOAF and the FMFEP and state ministries in projects supervision and MTR missions, failing to provide timely and sufficient counterpart contribution to project budget was not conducive to a smooth implementation over the entire life of the project. For example, the GOS could not respect the following design-established GOS/IFAD cost sharing arrangement: 25/75% (2008-2012), 50/50% (2013-2014), 75/25 (2015-2016). This Government underperformance was expected due to the very difficult economic situation of the country in relation to international sanctions, high inflation, currency devaluations and high budget deficit.

F.3. Other partners' performance (including co-financiers)

129. Co-financiers performance is rated **satisfactory**. Co-financing by GEF (ICSP) and Italian Cooperation (BIRDP) was fully and timely provided as planned. There was not much involvement of both co-financiers in project supervision and follow up. GEF reporting requirements, being different from IFAD's added an extra burden on project compliance with these requirements.
130. The project has been implemented in partnership with various institutions that ensure the execution of project activities and benefits of enhanced capacity at operational and policy levels. These include the FMAF, Forest National Cooperation, the FMFEP and Ministries of agriculture and animal resources at the five states level, and the Higher Council of Environment.
131. The project also developed fruitful partnerships with several training and capacity building initiatives at national level and abroad, including Partners in Socio Economic Environmental Service (PLC)-Ethiopia, Salva Terra SAS –France, Irtiqaa Training & Capacity Building Center and Yataka Training Center Malaysia. Finally, the project built strong partnerships with Research Centers and Universities such as Khartoum, Sudan and Bahri Universities and ARC in five states of Butana area.

G. Assessment of sustainability

132. Project performance in creating sustainability elements is rated **satisfactory**. The main sustainability factor to assure relevance and sustainability of development activities was the heavy involvement of the CBOs in project planning and implementation. The project succeeded in strengthening the capacity of CBOs (CDCs, Producer Associations, VSCGs, Women groups, Youth groups, Farmers Interest Groups, etc) and the local government to recover the costs of investments in range and water development and market infrastructure and to apply the proceeds to maintenance and build up of services to the livestock sector. BIRDP main achievement towards sustainability of investments and activities at the federal, state and village levels:

- Establishment of the state legislation supporting the regulated access to the resources of the Butana.
- Establishment of CBOs responsible for the management of the range and water resources.
- Promotion of rural finance through SDGs where repayment rate maintained above 95%, thus securing funds for continued on lending to the members, in addition to ABSUMI continued support to the local communities investment requirements.
- The capacity of the locality is strengthened in the area of planning and budgeting for the development of the livestock sector and the enforcement of the rules of a regulated access to the Butana range and water facilities

133. At the community level, the project supported the development of the capacity of CBOs in planning, budgeting, monitoring, and

cost recovery mechanisms (such as water, rangelands, etc). It trained a large number of community members including women on group management and leadership, ensuring the renewal of the management of community organizations. The involvement of community in planning, procurement, and implementation, has greatly enhanced a sense of ownership among community-based service providers.

134. Project sustainability is further enhanced through ICSP promotion of Participatory Forest Management Plans (PFMPs). The combination of A/R activities together with agroforestry and facilitating access to new energy sources (LPG, solar units, improve stoves) bear a clear direct and positive impact on the quality of life of poor farmers and land less farmers. Awareness activities and trainings gave them the capacity to improve their livelihood while understanding the importance of protecting the forests, hence their sustainability.
135. With regards to activities supported through the Italian grant, it is expected that the investment shall be sustainable due to the following considerations: motivation and skills to care for the store are in place (Executive committee, Committee and farmers trained, strategy to attract more farmers, Sufficient land & products (incl. neighbouring communities) to expect full capacity of warehouse, Partial or Full insurance that shall assist in overcome shocks, In addition, three service providers clarified that the services shall be provided beyond the two beneficiary communities and against a fee. It allows generating income for operating and maintenance of the facilities.
136. The project team has effectively managed to develop an articulated Exit Strategy with clear time frame and definition of the role of the various actors involved. The strategy was thoroughly discussed and agreed upon by the various stakeholders including communities, BDF, and government authorities at different levels. The Strategy involves the establishment of more community networks as well as strengthen linkages between networks and Local Extension Workers LEWs with potential partners and relevant government institutions as important sustainability measures. BDF, one of the main owners of the Strategy is anticipated to be more proactive in positioning itself as development actor in the Butana while securing the deployment of YPs.

H. Lessons learned and knowledge generated

137. Implementation arrangements: Despite many challenges, the following arrangements have helped project meeting its objectives:

- Procurement procedures: Although Procurement plans meet the basic requirements, the following areas need further improvement in ongoing and future projects for improvement: The project has adopted the Standard Bidding Documents (SBDs) that were developed earlier by Ministry of Finance and Economic Planning for the procurement of goods, works and services using NCB method. The National SBDs were found satisfactory and meet the basic requirements. For ICB method, the World Bank SBDs were utilized; however, unnecessary customization was mistakenly applied. For shopping method, the project has utilized a simplified version of the NCB SBDs which were found sufficient in terms of ITBs, GCCs and SCCs. However, in some cases, the bidding documents were issued with inadequate technical specifications.
- Establishment of Community Procurement Committees: 85 committees played an active role in processing procurement plans within their Community Action Plans. Their heavy involvement contributed to better transparency and local ownership of project approach and investment activities.
- Proximity of community training at village level: BIRDP training activities in favour of the beneficiaries conducted at village level encouraged rural women and men to benefit from such training without jeopardising their daily works.
- Establishment of MOUs with implementation partners: As BRIDP PCU did not and could not technically implement all activities, 12 MOUs were signed with partners for outsourcing according to their respective comparative advantages.
- Heavy use of young professionals as community mobilisers: The YPs programme was based on the idea that the YPs (new graduates) are likely to stay with their communities to support them while enhancing their own experience and capacities to join the labor market. The proximity dimension and community trust in the YPs (Being from the villages themselves) contributed to better and sustainable delivery of the services to the communities.
- Project effectiveness: Development projects are more effective when targeting small communities and hamlets because they are more homogenous, better organised among themselves and have a higher dedication and ownership for local development.

138. Indirect impact of markets: Many small shops were established at markets spaces by women as IGAs to service livestock buyers and sellers (restaurants, coffee shops, handicrafts, cheese, cookies, etc.) and other shops by youth to sell goods and small equipment. Women reported a 300% increase of income from small restaurants near livestock markets. The markets establishment contributed also to employment of youth as night animal guards for one to three nights, at SDG 1000/night.

139. Market information system (MIS): With Arab 6 road completed animal transportation is much faster at lower cost. Market dynamics would be more beneficial to the livestock owners and traders. The use of FM and community radio in spreading livestock prices would be more effective. Need to keep data collection very basic and using local animal classification.

140. Gender transformation: in conservative and traditional Sudanese society such as Butana, it is feasible to arrive at gender transformation, but it needs sensitisation, training and time. The Gender Action Learning for Sustainability (GALS) methodology proved effective on this matter. Ongoing and future projects funded by IFAD and/or GOS/donors should be encouraged to adopt GALS methodology when addressing gender issues.

141. Price escalation due to currency depreciation: Price escalation forced local contractors to stop works and seek repetitive revisions of contracts. PMU had to revise contracts twice on average. Such revision was not conducive to smooth implementation. Project design should thoroughly estimate expected inflation rates and their impact on costing.

142. Project-specific salaries structures for project staff: Large differences in salaries level between projects led to high turn over of

staff seeking better terms at other projects. Some project staff left BIRDP to AFD and WB-financed projects for better salaries and privileges. There is need to unify salaries for all externally funded projects.

143. Salaries financing structure: GOS/IFAD cost sharing arrangement at design, consisting of a declining contribution by IFAD, was not realistic. This was not conducive to smooth implementation (GOS is not in a good position to provide its share). A 100% IFAD-financed salary system contributes to staff stability and dedication.
144. Contractors direct payment: IFAD decision to abolish direct payments to local contractors led to delays in implementation.
145. Sound financial management system and effective internal controls: reliable accounting software system should be a disbursement condition for future projects. While qualified financial management staff should be in place from the onset.

I. Conclusions and recommendations

146. Based on completion mission findings and above analysis, the overall project performance is rated **assatisfactory**. Such rating takes into consideration the country and local context, and the strong challenges facing the smallholder producers and rural women in Butana area. On the qualitative aspect, the project succeeded in NRGF. On the quantitative aspect, key achievements include: (i) the EIRR of the whole project is estimated at an acceptable level of 17.15 %; (ii) increased productivity of crops and small ruminants by an average of 90%; (iii); increased HHs income by an average of 40%. As a result, the percentage of the poor and very poor has declined from 50.4% before the project to 11.8% because of project interventions. Likewise, the other proportions of the two categories of the average and the rich households increased from 36.7% and 3.8% before the project to 57% and 31.2% with project, respectively.
147. The following are main recommendations aimed ensuring post-project sustainability and feeding into future IFAD's and or GOS programming.
148. Operationalisation of the NRGF: The process of establishing the Framework has created a dynamic and active process of cooperation among all actors. The Framework needs to be widely publicized and fully owned by GoS as well as BDF and communities at all levels. BDF, being mandated with the sustainable development of the Butana area, would need to (i) translate the NRGF into Arabic and produce leaflets and brochures for wide dissemination; and (ii) establish its implementation arrangements in collaboration with stakeholders at the federal and state level.
149. Prefinancing and counterpart funding: The accumulated BIRDP pre-financing reached SDG 11 734 681 (up to end of August) , consisting of (i) due Government contribution to expenses (salaries, overheads) and (ii) taxes such VAT on goods and social security taxes. Related to ASAP grant, an amount of SDG 453 205 is also considered ineligible. In addition, further contribution is required as per AWPB 2019 until closing date (31 March 2020). The practise of pre-financing is contrary to the Loan covenants. MoFEP should transfer the entire pre-financed amount (if not yet done as of now) and make sufficient and timely transfers to the project bank account to avoid any shortage of cash preventing project from fulfilling its commitments.
150. Unified salary structure for all PMU/PCU staff: As mentioned above, it is common to see in Sudan externally financed development projects adopting different salaries scales for their staff. MOFEP should apply same salary structure (in Foreign currency or SDG) to all externally financed projects to minimise staff turnover during project implementation.
151. Future IFAD-funded projects should apply parallel (separate) financing between IFAD and GOS as much as possible. This would minimise implementation delays, which due to the unavailability of government contribution.
152. Feeder road sustainability: (The Arab6 road). Intensive work is ongoing to complete the construction of the bridges and crossings by 30 September 2019. It is to be understood that expenditures can only be considered eligible for works and good delivered and completed by or before 30 September 2019. The three year old portion of the road is still functioning properly but Gadaref and Kassala State Ministries of Infrastructure should commit to maintain the entire 76 km road. Moreover, given the importance of this road for the states and regional development, it is highly recommended to include the cost of its asphaltting into the investment programme of the two states of Kassala and Gadharef for 2020. The two Governors could be invited to visit the road very soon.
153. Link to Integrated Agriculture and Marketing Development Project (IAMDP): There is need to inform IFAD-GoS supported IAMDP about the existence of testing facilities in ARC New Halfa as well as sharing experiences with the model warehouses managed by the communities. In other words, IAMDP has a full sub component 'Market linkage and value addition through village-based post-harvest crop storage' and could benefit from the ARC laboratory facilities and lessons learnt regarding community managed storage facilities.
154. Link to Sustainable Natural Resources and Livelihood Project (SNRLP): In order to further enable the BDF to fulfil its mandate, it is recommended that most of BIRDP fixed and movable assets be transferred to BDF. A limited number of these assets should remain available for the SNLRP so that a smooth start up can take place and scaling-up of BIRDP activities continue. Similarly, key BIRDP project staff could be considered for SNRLP through competitive and transparent process.
155. Adaptation to Climate Change: According to Sudan's National Adaptation Programme of Action (NAPA), the most vulnerable groups to climate change are traditional rainfed farmers and pastoralists. There is ample evidence of past climatic shocks that, in combination with land tenure, land use changes and land management problems, have led to the degradation of rangelands. Some communities under AF have not matured yet to adapt to CC, hence the need to link them to the SNRLP.
156. Gold mining: The area of mining encompasses thousands of square km mainly in Central Butana. Large land parts were allocated to mining companies. Such allocation affected the livelihoods of the local communities where people and local

government have no say about their development plans and use rights against mining. The PCR mission confirmed the negative impact on soil and water and livelihoods of the target group, such as unsafe and illegal employment of children and women in mining operations; significant health problems due to mercury manipulation and dust generation by the mills affecting the lungs and nervous system of workers and local communities; air, water and soil pollution. There is an urgent need for the BDF to conduct a detailed impact assessment of gold mining to establish an environment friendly mining strategy.

157. Knowledge Management: BIRDP/ICSP achievements in the field of KM and dissemination are impressive. To promote benefit of general public and upcoming SNRLP project, BIRDP/ICSP KM products should be made available in print and on CCU-IFAD websites.
158. Scaling up of BIRDP activities: Many initiatives successfully promoted by BIRDP are worth scaling up by ongoing and future IFAD or GoS or other donors funded development projects. These include: Hafir water harvesting, land terracing (simple rectangular system of earth embankments which retain surface runoff water), Guar cultivation, Women group Jubraka (6 cases), farmers group crop sharing (8 cases), sand dune fixation, youth professionals serving local communities, etc.
159. Implementation of BIRDP exit strategy: The exit strategy is well developed with a comprehensive action plan and clear time frame and definition of the role of the various actors involved in its implementation. Although the exit strategy makes explicit reference to BDF, the organisation lacks professional staff and financial resources to perform its mandate for the participatory community development in Butana area. MOFEP is urged to arrange for capacity building of the BDF.

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Butana Integrated Rural Development Project Project Completion Report

Appendix 1: Project logical framework

Mission Dates: 17 - 30 September 2019
Document Date: 30/03/2020
Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
DSF Grant ID 2000001634

Near East, North Africa and Europe Division
Programme Management Department

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Butana Integrated Rural Development Project

Logical Framework

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
Outreach	1.b Estimated corresponding total number of households members							Progress Reports; Surveys; Approved CR CVPs	half yearly	PCU/DTs	
	Household members			540 000	27 918	436 648	80.9				
	1.a Corresponding number of households reached							RIMS baseline and impact surveys; ASAP surveys (including benchmark setting); UNICEF MICS survey; Wealth surveys; Score Card; CCI	half yearly	PCU/DTs	
	Women-headed households										
	Non-women-headed households										
	Households			90 000	4 653	63 043	70				
	1 Persons receiving services promoted or supported by the project							Progress Reports; Surveys; Approved CR CVPs	half yearly	PCU/DTs	
	Females			50 000	12 284	62 400	124.8				
	Males			50 000	15 643	79 865	159.7				
	Young			100 000	6 980	35 497	35.5				
	Total number of persons receiving services			200 000	27 927	142 265	71.1				
	Communities receiving project services										
	Villages			540	0	379	70.2				

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
Project Goal Improve in a sustainable manner the livelihoods and resilience to drought of the poor rural households	Prevalence of malnutrition in children under age of five years							RIMS baseline and impact surveys; ASAP surveys (including benchmark setting); UNICEF MICS survey; Wealth surveys; Score Card; CCI	half yearly	PCU/DTs	- Continued political and macro-economic stability - Government continues its commitment to poverty reduction and development of Butana
	Males	22.3	16.75	15		11.2	74.7				
	Females	26.1	17.65	17		9.2	54.1				
	Poor smallholder household members supported in coping with the effects of climate change										
	Total household members			192 000	2 686	164 880	85.9				
	HHs with improved assets ownership										
	Household		0	90 000		44 240	49.2				
Development Objective The capacity of CBOs to engage in climate resilient, environmentally sound, socially and gender equitable development initiatives and management of NRs developed.	Persons -incl. pastoralists – receiving project services							Progress Reports; Surveys; Approved CR CVPs	half yearly	PCU/DTs	
	Males			50 000	15 643	104 178	208.4				
	Females			50 000	12 284	106 194	212.4				
	Male youth			40 000	3 908	23 199	58				
	Female youth			60 000	3 072	31 220	52				
	Total			100 000	27 927	210 372	210.4				

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
Outcome Effective governance framework that ensures regulated access to land and water resources of the Butana	People reporting secure access and user rights to land							Impact Assessment Surveys; Minutes CDCs; Progress Reports	End current phase (2016), mid-term AF (2018) and end	PCU/DTs	Favourable government policies; Clarity on user rights; Ability to capture pastoralist movements
	Males			35 000		311	0.9				
	Females			17 000		56	0.3				
	Males youth			26 000		323	1.2				
	Females youth			8 000		54	0.7				
	People (pastoralists) reporting secure access and user rights to water							Impact Assessment Surveys; Minutes CDCs; Progress Reports	End current phase (2016), mid-term AF (2018) and end	PCU/DTs	
	Males			5 000		23 203	464.1				
	Females			5 000		28 359	567.2				
Output Policy and Strategy (incl. NRM legislation); Framework (FW) for Governance of NRs established; Relevant studies conducted ('Land tenure, ownership and access rights'; 'Mapping Study on NRs incl. WATER and Land Use Mapping', 'on impact of gold mining')	Study conducted							Reports of Policy Advisor; Content Framework; Minutes CDCs; ToRs studies; Agenda & Reports of W/shops, PCs	half yearly	PCU/BDA	Framework approved by all actors; Presidential decree (Feb., 2015) 'Range Org. and Dev. of Fodder Resources Law' activated at all five States
	Study	0		3	3	3	100				
	Workshop conducted							Reports of Policy Advisor; Content Framework; Minutes CDCs; ToRs studies; Agenda & Reports of W/shops, PCs	half yearly	PCU/BDA	
	Workshop	0		10	1	23	230				
	Conference	0		20	2	10	50				

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
Output Institutional Development building occurred	BDA (Butana Dev. Agency) established							Minutes BoD; Annual turn over; Progress reports BDA; Outcome pilots (business)	half yearly	PCU/BDA	Presidential decree on BDA respected by all parties Sufficient staff allocated to Locality Units; low turnover of LU - and SCU teams
	BDA			1		1	100				
	Govt. partners supported: locality units (LUs) that are capacitated and reporting performance improvement							progress reports Locality Units; Surveys	half yearly	PCU/DTs	
	Locality unit	0		9		9	100				
	1.1.4 Persons trained in production practices and/or technologies										
	Men trained in crop	0				13 306					
	Women trained in crop	0				6 437					
	Young people trained in crop	0				7 897					
	Men trained in livestock	0			63	4 988					
	Women trained in livestock	0			13	4 993					
	Young people trained in livestock	0				6 672					

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
	Total persons trained in crop	0				19 743					
	Total persons trained in livestock	0			76	9 981					
	People trained in post-production, processing and marketing										
	Males			700		3 241	463				
	Females			700		1 164	166.3				
	Studies										
	Study	0		15	3	16	106.7				
	Policy 1 Policy-relevant knowledge products completed										
	Number	0		750	13	464	61.9				
	People trained in income generating activities										
	Males				1 338	7 950					
	Females				223	5 193					
	People reached with Knowledge Products										
	Persons	0		100 000	41 100	97 580	97.6				
	People trained in NRM - rangelands										
	Females			13 500		29 460	218.2				
	Males			31 500		42 939	136.3				
Output Drinking water / sanitation	Drinking water system constructed / rehabilitated										

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
	Water system	0		75		248	330.7				
Outcome Improved climate resilient natural resources management (range, forest, vegetables, crops)	Approved and implemented Climate Resilient Community Village Plans (CVPs)							Content approved CVPs; Surveys / GPS maps	Quarterly	DTs/ LUs/ PCU	Sufficient Technical Support received on planning and monitoring CVPs. Cooperation with other actors active in water supply facilities.
	CVPs	0		280		379	135.4				
	Time spent collecting water							CDCs minutes; Surveys; Data WUCs	half yearly	DTs/LUs/PCU	
	Min/day/HH			30		30	100				
Output Improved Water harvesting per agro-ecological zone and enhanced agro-forestry systems.	Land under rainfed agroforestry practices									DTs/LUs/PCU	Acquainted with Climate Risk Assessment. Constructive partnership with FNC.
	Hectares of land			50 000	1 955	4 461	8.9				
	1.1.2 Farmland under water-related infrastructure constructed/rehabilitated										
	Hectares of land			302		3 776	1 250.3				
	3.1.4 Land brought under climate-resilient practices										
	Hectares of land			333 060	4 780	524 618	157.5				
	Land under climate-resilient practices							Progress reports; CDCs minutes; Surveys / GPS maps	half yearly	DTs/LUs/PCU	
	Land area			65 880	4 780	99 910	151.7				
Output Rural roads used and maintained	2.1.5 Roads constructed, rehabilitated or upgraded							Surveys; Minutes CDCs;Progress reports	Quarterly	DTs/LUs/PCU	Road & wadi crossing constructions in place.
	Length of roads			61		74	121.3				

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
Outcome Improved access to advisory services and bargaining position of men and women in marketing	People (including pastoralists) with access to secondary and primary markets							Data markets; Score card exercise		DTs/LUs/PCU	Market data reliable; 20% pastoralists access markets. Localities / States maintain secondary - and People primary markets.
	Males			26 000	3 220	26 850	103.3				
	Females			26 000	3 510	18 135	69.8				
	% of fully functioning primary (P) and secondary (S) livestock markets							Data markets; Score card exercise		PCU/DTs/LUs	
	Market			30		37	123.3				
Outcome Better Animal husbandry and - management (large and small animals incl. traditional poultry)	Mortality rate of large and small animals incl. traditional poultry (random sample of 150 head)										
	Mortality rate			5		3	60				
Outcome Community Development, Business Options and Rural Micro Finance	Implemented Community-based group Development Plans, CVPs, and others implemented							Records CEAs / networks / groups; Progress reports; Score card exercises	half yearly	DTs/LUs/PCU	Rural finance taking off as planned. Payment for services happens.
	Rate			85		75	88.2				
	Community Extension Agents being effective							Records CEAs / networks / groups; Progress reports; Score card exercises	half yearly	DTs/LUs/PCU	
	Rate			75	70	70	93.3				
Output Organisation, Management and Social Skills of CDCs, groups, networks enhanced.	Community Capability Index (CCI) value							CCI surveys; Progress reports; Studies	half yearly	DTs/LUs/PCU	CEAs/networks active in service provision.
	Rate			85		78	91.8				
Output Business promoted through access to Rural Finance	People with access to rural financial services							M&E Rural Finance Data; Progress reports	half yearly	DTs/LUs/PCU	Relevant credit products developed.
	People			10 000	1 475	11 399	114				
	Community extension agents trained										

Results Hierarchy	Indicators							Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2019)	Cumulative Result (2019)	Cumulative Result % (2019)	Source	Frequency	Responsibility	
	People	0		2 500	523	3 479	139.2				

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Butana Integrated Rural Development Project

Project Completion Report

Appendix 2: Summary of amendments to the financing agreement

Mission Dates: 17 - 30 September 2019
Document Date: 30/03/2020
Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
DSF Grant ID 2000001634

Near East, North Africa and Europe Division
Programme Management Department

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Appendix 2: Summary of amendments to the financing agreement

Extension of Italian grant closing date	5 August 2019
Reallocation of loan proceeds	14 October 2013
Extension of effectiveness date of the FA	23 May 2008
Extension of effectiveness date of the FA	12 December 2007
Extension of effectiveness date of the FA	11 June 2007

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Butana Integrated Rural Development Project Project Completion Report

Appendix 3: Actual project costs

Mission Dates: 17 - 30 September 2019
Document Date: 30/03/2020
Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
DSF Grant ID 2000001634

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Appendix 3: Actual project costs

Initial/amended projected disbursements and actual disbursements, by Financier.

Table : Disbursements per financier for BIRD Project (USD)

	IFAD Loan	IFAD Grant	Italian Grant	ASAP Grant	total disbursment
2008	2.416.186	-	-	-	
2009	1.110.903	-	-	-	
2010	2.351.761	-	-	-	
2011	2.282.757	-	-	-	
2012	2.857.965	-	-	-	
2013	1.992.606	-	-	-	
2014	2.024.938	-	-	-	
2015	2.110.282	-	-	-	
2016	3.394.653	-	-	-	
2017	1.927.797	2.361.194	149.421	829.148	
2018	1.073.801	3.125.088	229.769	1.641.141	
2019	705.549	4.124.654	-	535.529	
total	24.249.197	9.610.937	379.190	3.005.818	37.245.141
Expenditure to closure	496.918	1.983.320	41	-	2.480.279

Source: IFAD, Sept 2019

Table: IFAD loan cash flow forecast to closure

PCU & SCUs	Financier (Loan or grant - specific)	Category	IFAD %	Sept 2019	Oct 2019	Nov. 2019	Dec 2019	Jan 2020	Feb. 2020	Mar. 2020	Total
B / Services											-
September expenditure	Loan	tech assistance	100%	14.856.103							14.856.103
Impact assessment study	Loan	tech assistance	100%		2.228.850	-	-	-	-	-	2.228.850
Training and workshops	Loan	tech assistance	100%		-	-	-	-	350.000	-	350.000
C / Works											-
Sept expenditure	Loan	civils	100%	36.775,00							36.775
10 crossing - retention payment	Loan	civils	100%		366.379						366.379
Arab 6 (note 1)	Loan	civils	100%		7.007.807						7.007.807
Total				14.892.878	9.603.036	-	-	-	350.000	-	24.845.913
<i>Note 1: Reallocation from IFAD Grant</i>		<u>Loan</u>									
<i>to ensure full IFAD Loan allocation is utilised</i>		Civils		36.775	7.374.186	-	-	-	-	-	7.410.961
		Tech assistance		14.856.103	2.228.850	-	-	-	350.000	-	17.434.953
		Total		14.892.878	9.603.036	-	-	-	350.000	-	24.845.913
		SDR estimate		238.286	153.649	-	-	-	5.600	-	397.535

Table 1.3: cashflows to closure (grant)

	IFAD GRANT						GOS - GRANT					
PCU & SCUs	Oct 2019	Nov. 2019	Dec 2019	Jan 2020	Feb. 2020	Mar. 2020	Oct 2019	Nov. 2019	Dec 2019	Jan 2020	Feb. 2020	Mar. 2020
A / Salaries and allowances:												
1. Project Director	137.500	137.500	137.500	137.500	137.500	137.500	45.833	45.833	45.833	45.833	45.833	45.833
2. Financial controller	87.500	87.500	87.500	87.500	87.500	87.500	29.167	29.167	29.167	29.167	29.167	29.167
3. Accountant	59.398	59.398	59.398	59.398	59.398	59.398	19.799	19.799	19.799	19.799	19.799	19.799
4. PCU Driver	20.611	20.611	20.611	20.611	20.611	20.611	6.870	6.870	6.870	6.870	6.870	6.870
5. PCU Guard x 2	17.280	17.280	17.280	17.280	17.280	17.280	5.760	5.760	5.760	5.760	5.760	5.760
6. PCU Catual labors	4.500	4.500	4.500	4.500	4.500	4.500	1.500	1.500	1.500	1.500	1.500	1.500
7. SCU Coordinator x 5	135.000	135.000	135.000	135.000	135.000	135.000	-	-	-	-	-	-
8. Accountant x 5	118.750	118.750	118.750	-	-	-	-	-	-	-	-	-
9. ICSP staff salary	115.000	115.000	115.000	115.000	115.000	115.000	-	-	-	-	-	-
ICSP Sept salaries overdue	600.000	-	-	-	-	-	-	-	-	-	-	-
10. SCU Driver x 5	49.875	49.875	49.875	49.875	49.875	49.875	-	-	-	-	-	-
11. Benefit after service	825.000	-	-	-	-	168.846	275.000	-	-	-	-	56.282
12. Annual leave	-	-	-	-	-	84.423	-	-	-	-	-	28.141
13. Medical Allowances	-	-	-	-	-	168.846	-	-	-	-	-	56.282
14. DSA and field allowan	7.500	7.500	7.500	7.500	7.500	7.500	2.500	2.500	2.500	2.500	2.500	2.500
B / Services	-	-	-	-	-	-	-	-	-	-	-	-
Audit: NAC	-	-	-	-	-	60.000	-	-	-	-	-	190.000
Mission and vistors	-	-	-	-	125.000	-	-	-	-	-	-	-
Leagle Advisor	6.000	6.000	6.000	6.000	6.000	6.000	-	-	-	-	-	-
Closure workshop	-	-	-	-	500.000	-	-	-	-	-	-	-
Financial system consulta	96.000	-	-	-	-	96.000	-	-	-	-	-	-
Engineering team	472.835	-	-	-	-	-	-	-	-	-	-	-
Conslutancy (NRF + YP)	230.000	-	-	-	-	-	-	-	-	-	-	-
C / Works	-	-	-	-	-	-	-	-	-	-	-	-
Arab 6 - final invoices for	29.726.290	-	-	-	-	-	-	-	-	-	-	-
Arab 6 - retention paymen	1.119.115	-	637.225	-	-	9.098.738	-	-	-	-	-	-
Hafir, water yards and women farms construction. Fencing	-	-	-	-	-	-	-	-	-	-	-	-
Hafir - retention payment	21.803	47.964	745.489	549.876	319.780	-	-	-	-	-	-	-
Developtment Center cons	201.050	-	-	-	-	29.404	-	-	-	-	-	-

Table: ICSP Grant: GEF contribution (000 USD-2015-30 Sep.2019

Category Description	Allocation	2015	2016	2017	2018	Sep. 2019	Total	Available balance	%
Consultancies	167,00	-	-	4,16	76,52	28,13	108,81	58,19	65%
Equipment and material	150,00	-	97,76	90,50	-	-	188,25	38,25-	126%
Goods, services and inputs	2.029,10	52,64	188,97	297,11	385,06	622,37	1.546,15	482,95	76%
Operating costs	200,90	40,73	60,39	20,07	16,37	14,52	152,08	48,82	0%
Salaries and allowance	299,70	21,99	46,32	67,03	75,41	38,96	249,70	50,00	83%
Travel and allowances	102,30	10,37	20,40	14,35	15,95	5,78	66,86	35,44	0%
Consultancies 2	701,00	25,91	42,03	19,10	228,54	265,93	581,51	119,49	83%
T O T A L GEF	3.650,00	151,64	455,86	512,31	797,85	975,69	2.893,35	756,65	79%

Source: ICSP, September 2019

Table: ICSP Grant: Government contribution (000 USD-2015- 31 Aug. 2019

Category Description	Appraisal	2015	2016	2017	2018	Aug. 2019	Total	Available balance	%
Consultancies	102,40						-	102,40	0%
Equipment and material	109,20	39,59	30,02	115,41	12,31		197,32	88,12-	181%
Goods, services and inputs	360,80		26,98	55,94	8,15		91,06	269,74	25%
Operating costs	-	2,01	1,44	32,87			36,32	36,32-	0%
Salaries and allowance	133,20	14,66	18,88	28,97	23,45	37,21	123,16	10,04	92%
Travel and allowances	-						-	-	0%
Consultancies 2	134,50						-	134,50	0%
T O T A L	840,10	56,26	77,32	233,18	43,90	37,21	447,86	392,24	53%

Source: ICSP, September 2019

Initial/amended budgeted amounts and actual expenditures, by Component and Year

Tab 2.1: IFAD Loan-Actual expenditure Vs Budget in SDG of BIRDP (2009-2019)

Year	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019-UP September	
Categories			Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.	Budget	Actual Exp.
civil work	3,056,477	3,012,34	6,663,069	1,597,969	4,570,405	4,522,407	4,803,442	3,644,759	9,533,650	6,490,604	27,795,455	7,228,100	23,589,946	7,816,576	25,829,827	11,728,166	55,009,863	18,327,417	39,956,865	20,423,000	255,000	-
vehicle and equipment	2,533,379	3,108,441	10,361,032	1,631,826	430,510	1,141,411	33,400	60,997	2,880,575	870,18	4,073,950	1,678,803	2,546,015	938,161	1,519,977	2,677,404	2,074,000	1,148,728	31,675	62,000	49,408,887	25,149,328
technical assistant	2,744,441	468,850	2,839,019	1,168,131	4,258,962	1,668,452	3,629,089	1,978,159	7,098,412	4,422,217	10,154,803	6,264,754	17,150,737	6,500,585	17,935,663	8,478,877	22,020,040	16,419,418	7,801,67	9,369,000	32,917,923	13,668,006
grant	241,500	-	941,504	28,105	660,000	506,716	874,000	107,095	10,201,000	461,543	992,747	1,029,367	2,420,000	1,984,251	4,990,000	2,732,550	4,320,350	3,609,221	-			-
recurrent cost	1,453,630	1,203,927	1,685,057	1,684,283	2,093,394	2,284,105	2,531,178	3,299,682	2,747,353	2,277,813	4,010,291	3,022,939	3,594,220	3,104,139	5,807,429	4,291,028	13,870,938	7,666,309	-			-
Total	10,029,626	5,082,452	13,164,681	6,131,314	12,013,461	10,324,162	11,871,709	9,090,692	23,279,990	13,739,195	47,027,246	19,222,862	49,250,918	20,342,501	56,182,896	29,928,144	97,295,211	47,171,694	47,028,727	29,854,000	82,582,810	39,017,334
																					The remaining (2019-up) balance are commitments	

Source: BIRDP, September 2019

Table: Additional Financing: Actual expenditure Vs Budget in SDG (2018-2019)

Year	2018		2019 up to September	
Categories	Budget	Actual Exp.	Budget	Actual Exp.
civil work	201.500.687	91.893.928	160.853.328	111.097.117
vehicle and equipment	39.959.115	43.605.289	21.260.574	25.115.445
technical assistant	54.137.588	40.775.192	66.779.539	34.943.448
Grant	402.750	-	979.950	1.085.987
recurrent cost	30.706.357	39.260.902	71.925.097	53.474.654
Total	326.706.497	215.535.311	321.798.488	225.716.651

Source: BIRDP, September 2019.

Sudan

Butana Integrated Rural Development Project

Project Completion Report

Appendix 4: Project internal rate of return (detailed analysis)

Mission Dates: 17 - 30 September 2019
Document Date: 30/03/2020
Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
DSF Grant ID 2000001634

Near East, North Africa and Europe Division
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Appendix 4: Project internal rate of return (detailed analysis)

1. A financial and economic analysis was carried to assess the financial and economic impacts of the Butana Integrated Rural Development Project (BIRD). Benefits are expected to derive from (i) livestock activities, ii) crop production, iii) environmental activities, iv) market development including storage facilities, roads, and market information, v) improved on-farm and off-farm incomes and v) increased sustainability of local institutions. Other benefits arising from the Project include: benefits derived from roads such as savings in vehicle operating costs, improved of agricultural productivity and market prices, passenger travel savings in time and transportation tariffs, benefits from women's small-scale trading and value added by increased access to education and health services; ii) gender equity and women involvement within the communities; iii) greater community participation, iv) better nutritional status and human health from the improved domestic water supplies and water investments.

2. Crop and farm production, livestock models are based on detailed data collected in five States in the Butana. In order to represent the project financial benefits, four crop production and farm models, livestock model for an average HH, for meat and milk production and environmental models have been developed. These models have been used as building blocks for the financial and economic analysis at the Butana as a whole by referring to the number of HH, hectares of crops and agroforestry per model.

Financial analysis

3. The primary objective of the financial analysis is to determine the financial viability and incentives of the target group for engaging in the BIRD activities, by examining the impact of project interventions on family labour, cash flow and net incomes. BIRD has two phases: 2009-2016 (initial phase) and the additional financing phase (2017-19) that aimed to scale up some of its activities. Based on these phases, four representative financial farm models were identified during the design process. They cover different project areas of the great Butana to depict variability in different farming systems and agro-ecological conditions of the project area (Model):

- Farm model 1: the modification of terrace cultivation (A1) in localities of Shindi, Ed dammar, Es Soubagh, Al Butana, Um algura, and Geizeira East, East Nile, Kassala;
- Farm model 2: the improvement of wadis and depression cultivation in the Gadareif and Nile river states;
- Farm model 3: women gardens cultivation & shelterbelt establishment in Nile river State; and
- Farm model 4: small scale irrigated schemes in Nahr Atbara Locality, River Nile State. This model is used for irrigating fruit trees and vegetables.

4. Farm model 1 relates to the modification of terrace cultivation with cropping pattern for a one feddane (Fed) based on sorghum (0.75 Fed) and guar (0.25 Fed.). Farm model 2 represents a combination of livestock, food and cash crops. Crop production mix is corresponding to four crops per feddane: sorghum (0.5 fed), guar (0.25 fed), watermelon (0.125), and cucumber (0.125).

5. Farm model 3 represent women gardens cultivation & shelterbelt establishment and relates to a mixture of cropping patterns: Fodder (0.125 feddan), Vegetables (0.125 feddan), Sheep/Goats (20), shelterbelt (6km). Finally, farm model 4 depicts a farm unit of 2 fed that represents small scale irrigated schemes with irrigated fruit trees and

vegetables: grapefruit/ Tomatoes (1fed) and Lemon/Onion (1fed). A cash-flow analysis was carried out to present the "with" and "without" project analysis.

6. The stream of net economic benefits has been set for livestock, crop production, and environmental activities (alternative energy sources to charcoal and fuel use, carbon sequestration). The estimated incremental production of these activities is estimated from the technical parameters of these models and the expected improvement in productivity due to project interventions in different regions of the BIRD project. These are gradually built to approximate the pace of implementation of the interventions and the adoption rates of targeted producers.

7. Individual crop and livestock budgets have been used to calculate the value of production net of inputs and labor costs. The quantified benefit stream of production is based on the assumption of crop failure, due to natural hazards and prices collapse, once each three years.

8. The farm Models built characterize typical farming households that reflect the predominantly mixed farming systems of the project area and focus on the integration of crops and livestock to help cope with the risk of production failure. The presence of crops and animals in these models helps to improve farmer's cash flow, attenuate risk, creates job opportunities and contributes to household diet (milk, cheese, liquid butter and other dairy processing products).

9. Most models are expected to provide farmers with physical outputs and financial returns that are attractive in relation to their extra labor and other inputs and financial investment.

10. Livestock models are included in the analysis and encompass sheep, goats, and cattle units. Livestock activities are part of integrated and diversified small farming systems that was adopted by smallholder farmers and agro-pastoralists.

11. The analysis was based on an average unit of household with five (5) Goats, three (3) sheep, and one cattle. Incremental livestock production is estimated in terms of the number and of heads and milk production from sheep, goat, and cattle. In the "with project" situation, per unit livestock numbers augmented at the development period (year 11) by 300% for sheep, by 190% for goats, and by 100% for cattle. The Milk production increased by 110% for goats, 100% for sheep, and 11 times for cattle. Livestock production augmentation characterizes the actual poor level of husbandry.

12. **Labor.** Employment was created through wage and family on-farm and off-farm activities, income generating activities and small enterprises, infrastructure improvement of roads, markets, water yards, water points, and hafirs.

13. Demand for labor provides opportunities for the poorest to gain employment. The cost of average farm labor set at going market rate depends on the region and the crop activity. It varies from SDG 300 for sowing and weeding; SDG 350 for harvesting cereals, SDG 400 for harvesting horticultural products introduced by the BIRD (watermelon, cucumber, guar...) in small scale irrigated schemes (model 4).

14. For livestock, the cost of labor is high (SDG 2250 per head per year for guarding). Returns to labor as well as net farm income within different models increases by a rate that is substantial and much higher than the prevalent wage rate for inexperienced labor in the area, especially for livestock guarding. The needs for labor and the return to labor (SDG per person-day) increase "with the project" as compared to the "without project" situation.

15. The number of person-days required for herding changed, reflecting a decrease in family labor use within models considered and an increase of hired labor. Nevertheless, labor is not a constraining factor in agriculture in the BIRDP area. The family labor available will largely meet the field requirement. However, some staff interviewed mention the difficulties of getting guards for livestock.

16. **Return.** The gross value of crops production per feddane (products and by products) with the project for farms of Model 1 goes from the "without project" situation or "year 0" (SDG 2.661) to full development (SDG 39.746), that is an increase by 14.1 times. Total outflows or total production cost would increase from SDG 14. 638 to SDG 20.083 in the development period (DP), that is an increase by 325 % for the same period. Thus, the net value of production increased by 268% from year 0 (SDG) to the DP. The incremental net margin augmented from SDG (0.2) million to SDG 6.8 million, that is an augmentation by 100% from year 1 to DP.

17. The gross value of the main production in model 2 increases from SDG 3.631 per fed. ("without project") to SDG 128.134 at DV; that is a change by 34.4 times. Total outflows would go from the "without project" situation (SDG 14188) to SDG 76.569 in the DP. 11, or an increase of 440% for the same period. The net value of production increased by 594% from year 0 to the DP. The incremental net margin augmented from SDG (9.49) million to SDG 0.57 million from year 1 to DP, that is an augmentation by 100%.

18. For model 3, the gross value of the main production increases from SDG 6500 per fed. ("without project") to SDG 65.000 at DV; that is a change by 9.15 times. Total outflows would go from the "without project" situation (SDG 9978) to SDG 18.968 in the DP, or 90% for the same period. The net value of production increased by 14.2 times from year 0 to the DP. The incremental net margin augmented from SDG (9.49) million to SDG 0.57 million, that is an augmentation by 100% from year 1 to DP.

19. The gross value of the main production in model 4 increases from SDG 16 per fed ("without project") to SDG 145 500 at DV; that is an important change due to the nature of the activity developed by BIRDP (small scale irrigated schemes in River Nile). Total production cost would go from the "without project" situation (SDG 24 640) to SDG 71 850 in the DP, or 192% for the same period. The net value of production increased by 200% for from year 0 to the DP, and the incremental net margin augmented by 100% from year 1 to DP.

20. The gross value of livestock from heads and milk production increased from SDG 7 662 (without project) to SDG 24 334 with the project (DP), that is an increase of 218% while the production costs increased by a higher percentage (314%), from SDG 3 228 (without project) to SDG 14 230 with the project (DP). Net benefit goes from SDG 4 435 (without project) to SDG 10 104 with the project (DP), that is an increase of 128%. Therefore, the additional Net benefit was computed at SDG (3478) in year 1 of the project to SDG 5 669 in the DP year, or an absolute rise of 263%.

21. Increments are explained by the improvement of agricultural practices due to the project activities.

22. All the four farm models for the five Butana States present a higher financial efficiency per feddane in terms of financial Net Present Value (FNPV), financial internal rate of return (IRR), and the financial benefits-cost ratio (BCR) (table 1). Financial NPV is positive for the four models (USD Million 12.41 for model 1, USD Million 4.26 for model 2, USD Million 0.98 for model 3, USD Million 9.80 for model 4).

Table: Efficiency indicators for BIRD farm models

	IRR (%)		Financial NPV (million)	
	SDG	USD	SDG	USD
Model 1	34.09	13.64	453.75	12.41
Model 2	35.21	15.31	111.28	4.26
Model 3	132.56	96.22	15.31	0.98
Model 4	61.24	35.38	154.03	9.80

23. The IRR is greater than the opportunity cost of capital (OCC) for all models. The IRR for total crops models (additional net benefit) is 15.8% while of livestock is 14.0%. Taken together (crop and livestock production, this yields an IRR of 16.2%. These indicators do not include total project costs. Changes in financial indicators illustrate the predicted transformation in agricultural practices from the project design and analyses confirm that the impact of the project at the crop, farm and project level is financially attractive for family households and net farm incomes are expected to increase.

24. While including aggregate financial project costs (BIRDP and ICSP grant) and benefits of crops, livestock (sheep, goats, and cattle), and environmental activities from ICSP, the aggregate financial IRR is 11.53%, which presents a higher level than the opportunity cost of capital of 10%. The financial NPV is USD 8.02 million, and the benefit-cost ratio¹ is 1.3:1. The higher EIRR, the positive NPV, and the BCR greater than 1 contribute to the financial efficiency of the BIRD project.

Economic Analysis

25. **Benefits and Beneficiaries.** The main sources of quantified Project benefits come from: (i) increased livestock production on the rangeland; (ii) incremental crop production; and (iii) nets benefits from environmental activities under the Integrated Carbon Sequestration (ICSP) grant, that is carbon Sequestration, reduction of GHG emissions, and Agroforestry practices.

26. The objectives of the economic analysis are to: (i) assess the project durability over its economic life time period; (ii) to estimate the project's impact by calculating the economic rate of return, the economic net present value, and the benefit-cost ratio.

27. The project is expected to benefit about 436 648 direct and indirect beneficiaries or 63 043 households (HH). In terms of direct poor HH, BIRDP touched 28 942 poor HH, 14 431 moderately poor HHs, and 5250 better off HHs. With an estimated total number of 436 648 direct and indirect households' members reached, the estimated cost per beneficiary of USD 107 at completion. The incremental production is estimated from livestock, food and cash crops production, and environmental activities.

28. **Environmental Benefits.** A recent baseline study undertaken in Butana by the ICSP indicated that there is no release of CO₂ from the conversion of wood to charcoal. However, rural people in Butana depends heavily on biomass-based fuels, particularly firewood, and ineffective technologies such as old stoves. This put an extreme burden on forested areas in Butana. The survey mentioned that rural people depends mainly on the "three-stones" stoves fire, charcoal stoves, and LPGs² stoves. The main sources of energy used in Butana are charcoal, LPG and firewood. Total biomass consumption is estimated at 689 675 CO₂

¹ That is the NPV of aggregate benefits over that of aggregate costs.

² Liquefied Petroleum Gas.

and led to an important emission. The ICSP aimed at reducing fuel wood consumption by 35% by developing renewable and efficient energy sources.

29. The computation of environmental benefits starting in 2015 (year 7 of the BIRDP) is based on three elements (table 2):

- afforestation for carbon Sequestration (in tons): the number of hectares of forests varied from 260 in 2015 to 1093 in year 20 of ICSP with an average price of 28 USD of carbon sequestrated per year. The total value of carbon goes from USD 93 816 in 2015 to USD 394 462 in 20;
- the reduction of greenhouse gas (GHG) emissions by: i) the distribution of 5418 LPGs and improved stoves of households per year³ with an annual increase of 30 units each year starting from 2015 to 2028. The price per unit considered in the analysis is 73 US\$/unit. In parallel, the use of solar units contribute to the reduction of GHG emissions. This will reduce emissions to about 14 105 tco2e/year and a revenue about USD 98 734;
- the practice of agroforestry by combining at the farm level agricultural and forestry to create productive and sustainable land use practices. The ICSP aimed at planting 100 ha per year, starting year 2015 with a net revenue of USD 93.37 per ha.

³ 1746 LPGs and 3672 improved stoves per year.

Table : Environmental net benefits of ICSP (USD million)

NETS BENEFITS	Unit	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1. carbon Sequestration :															
Number of hectares per year	Nb. ha (1)	260	1000	4,990	2,300	6,811	970	460	978	813	1055	1048	943	1006	1093
Tons of Carbon sequestrated per year	t CO2/ha * Nb of ha (2)	3,328	12,800	63,872	29,440	87,181	12,410	5,883	12,513	10,404	13,503	13,413	12,076	12,874	13,993
Price of Carbon sequestrated per year	US\$ (3)/ ton	28	28	28	28	28	28	28	28	28	28	28	28	28	28
Total value of carbon (sub-total: S/T 1)	\$ for total nb of ha (1)*3	93,816	360,832	1800,552	829,914	2,457,627	349,827	165,838	352,749	293,284	380,642	378,116	340,409	362,925	394,462
2. reduction of GHG* emissions:															
* Use of LPG & improved stoves of HH	Units of LPG & improved	-	-	-	-	5,418	5,448	5,478	5,508	5,538	5,568	5,598	5,628	5,658	5,688
	US\$/units (2)					73	73	73	73	73	73	73	73	73	73
total 1(t 1)	\$*nb (1)*(2)	-	-	-	-	394,918	397,105	399,291	401,478	403,665	405,852	408,038	410,225	412,412	414,598
* Use of Solar units	numbers (1)					2,301	2,316	2,331	2,346	2,361	2,376	2,391	2,406	2,421	2,436
	US\$/nb (2)					51	51	51	51	51	51	51	51	51	51
total 1(t 2)	\$*nb (1)*(2)	-	-	-	-	117,351	118,116	118,881	119,646	120,411	121,176	121,941	122,706	123,471	124,236
	values (US\$)														
sub-total (S/T 2)	t 1+t 2	-	-	-	-	512,269	515,221	518,172	521,124	524,076	527,028	529,979	532,931	535,883	538,834
3. Agroforestry practices:															
Number of ha fo agroforestry	ha	-	-	-	100	100	100	100	100	100	100	100	100	100	100
total net benefit of agroforestry practices	\$*ha				93	93	93	93	93	93	93	93	93	93	93
sub-total (S/T 3)	S/T 3	-	-	-	9,337	9,337	9,337	9,337	9,337	9,337	9,337	9,337	9,337	9,337	9,337
Total nets bénéf. environnementaux	S/T 1+S/T 2+S/T 3	93,816	360,832	1800,552	839,251	2,979,233	874,384	693,348	883,210	826,697	917,006	917,432	882,677	908,144	942,633
in Million (Total nets bénéf. Env)	1000,000	0,09	0,36	1,80	0,84	2,98	0,87	0,69	0,88	0,83	0,92	0,92	0,88	0,91	0,94
carbon project costs		0,21	0,53	0,75	0,84	1,01	0,20	0,20	0,20	0,20	0,20	0,20	0,20	0,20	0,20
net carbon benefit		-	0,11	-	0,17	1,06	-	0,00	1,97	0,67	0,49	0,68	0,62	0,71	0,74

30. Incremental aggregated financial and economic budgets, production and inputs, financial and economic efficiency measures, and other technical and economic indicators were then calculated. The phasing of farm participation to the Project activities was based on the rate at which farms are projected to contribute to Project output. The estimated non discounted economic value of net benefit at the year 20 of BIRD is USD 13.41 million while the value of non discounted cash flow is USD 9.45 million at the end of the project (table 3). The drop of net benefit each three years reflects the production failure due to drought.

Table . Incremental net economic benefit at the project level (USD million)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13
Crop Mdls-Net benef	- 8,74	- 30,18	- 80,34	68,26	49,11	20,67	27,58	14,75	14,50	10,28	4,02	9,16	10,07
LIVESTOCK-Net benef	- 0,92	- 1,0	- 0,93	-0,98	-0,63	0,55	0,79	1,13	2,84	0,59	0,58	0,41	1,98
Carbon-Net benefit	-	-	-	-	-	-	-	0,09	0,36	1,80	0,84	3,03	0,87
Total Add. Net benef	- 9,67	- 31,22	- 81,27	67,27	48,48	21,22	28,36	15,97	17,70	12,67	5,44	12,60	12,92
Total BIRD Costs	0,33	2,01	2,21	3,10	2,73	2,81	3,04	2,95	4,34	6,25	12,27	0,00	3,50
Total ICSP Costs	-	-	-	-	-	-	-	0,09	0,36	1,80	0,68	3,03	0,87
Total PROJECT Costs	0,30	1,81	1,99	2,79	2,45	2,53	2,73	2,74	4,23	7,25	11,66	2,73	3,94
Cash flow_Projet	- 9,97	- 33,02	- 83,26	64,49	46,02	18,69	25,63	13,23	13,47	5,42	- 6,22	9,87	8,98

31. Incremental production of livestock and crop production will either be consumed by the households in the Project area or sold to local and external traders in the primary, secondary and terminal markets. The market for livestock is primarily within the State in villages and urban areas. Sales are made both for consumption in large cities such as Khartoum and for the export market and the trade tend to be dominated by a small number of large merchant buyers. Milk that is surplus to household requirements start to be sold locally as fresh milk or processed dairy products.

32. The incremental production is marketed either in the region or to neighboring states and even abroad (livestock animals). Marketing prospects is improved with investment in road infrastructure and marketing development investments. Additional crop production represent a relatively minor proportion of total existing production in the region.

33. **Assumptions.** The economic analyses include the investment and incremental recurrent costs of the project components. The main assumptions considered are as follows:

- The efficiency indicators (IRR, EIRR, financial and economic NPV, BCR, payback) were discounted over the 20-years project economic life period.
- Based on the conjecture of farming system failure every three years, a drop in production of 50% from year 12 to 20 was assumed for food and cash crops, and livestock.
- In order to avoid double counting, the final aggregation considers only those costs that were not included in the financial models. Furthermore, it has been assumed that after the 12th year, economic costs were assumed to be the average of all costs over the 12 years of the implementation period of BIRD, which represent USD 3.5 million (investment and recurrent costs).
- Economic costs in border prices for major agricultural inputs and products were computed using standard conversion factor (SCF) to adjust the local content of costs and goods assumed to be non-traded. A SCF equal to 0.9 has been applied when converting financial prices into economic prices. Prices requiring a different conversion factor such labor are introduced. Employment opportunities in the project area are relatively limited; therefore, the opportunity cost of farm labor is low. Hence, the related labor financial price is adjusted downward by using a standard conversion factor of 0.75, used in similar projects in Sudan.
- The exchange rate varies from year to year. The analysis considered this change that increased from 2.3 SDG/USD in 2008 to 45 SDG/USD in 2019 (table 4). An economic life time of 20 years is taken to assess the improvement in technology used.

Table : Exchange rate used in the computation of BIRD efficiency indicators

2008-09	2010	2011-12	2013	2014	2015-16	2017	2018	2019
2,3	2,5	3	4,4	5,7	6,2	6,8	18	45

Source: BIRD, 2019

34. The Economic Internal Rate of Return (EIRR) on the investments in the Project area over 20 years is estimated at 17.15% and the Net present value (NPV) of the project is

positive (USD 26.22 Million). The Benefit cost ratio estimated is 1.97:1 showing that for each 1 SDG spent in the project will generate a 1.97 SDG of benefits, which is in favor of the project. The payback period is 9.7 years. The economic analysis suggests that the BIRDP Project is feasible. With an OCC of 11%, the NPV is still positive and the EIRR is higher than the OCC. An estimate made over 25 years economic life time of the project would generate an EIRR greater than that the 20 years period and a higher NPV. All these worthiness indicators establish the economic feasibility of the project.

35. **Sensitivity Analysis.** In order to include risk factors, a sensitivity analysis in terms of "variable by variable" and "scenario" analysis was done to test changes in economic indicators in conjunction with aggregate costs, benefits, and delays in the realization of project costs and benefits. The ERR would drop to 16.4% and 15.5% if the project's revenues fell by 10 to 20%, respectively. An increase of aggregate costs of BIRDP by 10% to 20% still yields a feasible project (table 5): the EIRR is around 17%. However, BIRDP benefits must be decrease by more than 50% with constant costs, to be the EIRR are smaller than the OCC, and therefore a non-viable project.

36. In terms of scenario analysis, the project remains feasible with a simultaneous increase of aggregate costs by 10% to 20% and a diminution of total benefits by 10% to 20%.

Table . Sensitivity analysis

	EIRR	NPV
Costs + 10%	17,2%	26,22
Costs + 20%	17,2%	26,22
Benefits - 10%	16,4%	20,89
Benefits - 20%	15,5%	15,57
Costs + 10% et Benefits - 10%	16,4%	20,89
Costs + 20% et Benefits - 20%	15,5%	15,57

Additional full analysis of the five farm models is available at NEN division of IFAD.

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Appendix 5: Environmental social and climate impact assessment (detailed analysis)

Mission Dates: 17 - 30 September 2019
Document Date: 30/03/2020
Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
DSF Grant ID 2000001634

Near East, North Africa and Europe Division
Programme Management Department

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Appendix 5: Environmental social and climate impact assessment (detailed analysis)

1. The environmental degradation in the project area has been caused by the open access regime to natural resources, the poor enforcement of the existing environmental legislation, and the low political and economic importance accorded to extensive livestock production vis-à-vis irrigated farming or mechanized farming. Recurrent droughts, inequality of agency between the resident, transhuming and trader communities, inadequate agricultural and pastoral practices, have further exacerbated the environmental degradation.
2. The Project has been designed specifically to address environmental problems that could be addressed at community level and all components have had a direct beneficial effect on preserving or enhancing the natural resource base. Project support included development of the communities' and localities' capacity to develop an environmental management plan for water facilities and rangelands; the devolution of natural resources management to local communities enabled through the NRGF regulatory framework.
3. The project does not address large scale environmental problems such as sand dune formation. The activities initially identified at formulation to fix sand dunes were of too small scale to have the needed environmental effect and have been consequently shifted to technology transfer of shelterbelts.
4. The completion mission has validated the environmental impacts and risks as well as mitigation measures for each component and its activities. In particular, the mitigation measures promoted by the project proved their effectiveness in limiting the negative impact of climate change in Butana area. Packages promoted by the project properly addressed NRM issues as follows: reconstitution of the soil fertility, resistance to drought, and improved productivity of smallholder farming and herding, integration of crop and livestock production as well as forestry, thus enabling households to diversify their production systems and sources of revenues while conserving the resource base. The introduction of soil and water conservation techniques aiming to manage soil moisture effectively provided some yield stability despite the erratic rainfall. Construction of road and crossings rendered access to and from Butana regions much easier during the rainy season.

Component/ activities	Environmental impacts/ risks	Mitigation measures
Component 1: Institutional Support and Project Management Component		
Animation and Mobilization	- Poor communities that have deteriorated natural resources base that the project will enable them to regenerate.	Project support to community development includes training and mobilisation at community level.
Capacity building of communities and Environment	- Enabling communities to organize collective action to conserve their environment.	-community based development committees and

Component/ activities	Environmental impacts/ risks	Mitigation measures
Conservation Fund	- distribution of gas stoves to reduce tree cutting for fuelwood.	networks developed and implemented NRM Action Plans.
Enabling environment for NRM	<ul style="list-style-type: none"> - greater awareness among decision-makers, rural communities and wider public about threats of mechanization and current farming and herding practices on land and water - production of land use and investment map - promulgation of laws for sustainable NRM 	<p>Awareness among decision makers at state and federal level took place through workshops held in context of preparing NRGF.</p> <p>Land use map produced in five states.</p>
Set up of PMU unit and capacity building of extension teams	<p>Mainstreaming of participatory extension and improved technology transfer methods</p> <ul style="list-style-type: none"> - Monitoring of environmental and productive aspects of the technology packages 	Central PCU in Rufaa and five SCUs capacitated
Component 2: Agricultural, Range and Water Development		
Demonstration of improved technical practices for crop husbandry, livestock nutrition, Jubrakas (at HH and women group level), range and forests	<ul style="list-style-type: none"> - Improved moisture management - Introduction of tested drought resistant varieties , - Higher food and fodder production - Integration crop/livestock/forestry allowing risk spreading - Limited impact expected on rangelands as fodder bridging dry season gap 	Monitoring of environmental, production and economic aspects of the technological packages
Training of farmers	<ul style="list-style-type: none"> - Training on technological packages for crop and livestock and on monitoring environmental impacts of the technological packages - Increased awareness among farmers about processes of moisture/fertility/climate risk management 	Training provided through BIRDP and ICSP
Collaboration with the ARC	<ul style="list-style-type: none"> - Capacity building of extension teams on improved techniques will enable them to optimize yields and environmental benefits. - Applied research on zero tillage will enable to reduce in the long term soil erosion and degradation 	Collaboration took place with ARC centres in five states.

Environmental category

5. Given that the project interventions contributed to redressing the past degradation of the land resources and build the resilience of smallholders to climatic variability,

the project environmental classification is confirmed as **category B**. This classification is based on technical considerations and on the alignment of project interventions with climate change adaptation and mitigation measures for Sudan.

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Appendix 6: Dates of supervision mission and follow-up missions

Mission Dates: 17 - 30 September 2019
Document Date: 30/03/2020
Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
DSF Grant ID 2000001634

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Mission	Dates
Supervision Mission 1	01 October 2009 - 17 October 2009
Impl. Sup/Follow Up Mission 1	25 April 2010 - 01 May 2010
Supervision Mission 2	25 September 2010 - 07 October 2010
Impl. Sup/Follow Up Mission 2	06 February 2011 - 10 February 2011
Impl. Sup/Follow Up Mission 3	09 March 2011 - 10 April 2011
Supervision Mission 3	08 September 2011 - 08 October 2011
Impl. Sup/Follow Up Mission 4	16 April 2012 - 20 April 2012
Mid-Term Review 1	01 September 2012 - 26 September 2012
Supervision Mission 4	01 September 2012 - 27 September 2012
Impl. Sup/Follow Up Mission 5	07 June 2013 - 12 June 2013
Supervision Mission 5	01 December 2013 - 20 December 2013
Impl. Sup/Follow Up Mission 6	25 June 2014 - 26 June 2014
Supervision Mission 6	11 November 2014 - 12 December 2014
Impl. Sup/Follow Up Mission 7	23 March 2015 - 25 March 2015
Impl. Sup/Follow Up Mission 8	13 April 2015 - 23 April 2015
Supervision Mission 7	15 October 2015 - 03 November 2015
Impl. Sup/Follow Up Mission 9	24 April 2016 - 28 April 2016
Supervision Mission 8	05 November 2016 - 25 November 2016
Supervision Mission 9	05 November 2017 - 24 November 2017
Impl. Sup/Follow Up Mission 10	11 March 2018 - 16 March 2018
Impl. Sup/Follow Up Mission 11	15 July 2018 - 25 July 2018
Supervision Mission 10	06 November 2018 - 01 December 2018
Impl. Sup/Follow Up Mission 12	24 March 2019 - 08 April 2019
Supervision Mission 11	20 July 2019 - 14 August 2019

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Appendix 7: Terms of Reference of the completions review mission

Mission Dates: 17 - 30 September 2019
Document Date: 30/03/2020
Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
DSF Grant ID 2000001634

Near East, North Africa and Europe Division
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Appendix 7: Terms of Reference of the completions review mission

1. MISSION NAME: Joint Integrated Carbon Sequestration Project (ICSP) and Butana Integrated Rural Development Project (BIRDP)
2. Project Completion Review Mission (ICSP-BIRDP PCR).
3. MISSION START AND END DATES: 25 August to 10 September (EFA), 17 September— 5 October 2019 (Mission Leader), 21 September — 30 September 2019 (ICSP)
4. REPORT TO: Dr. Tarek Ahmed, Sudan Country Director/ NEN (name, title, Division/Department)
5. MISSION COMPOSITION:
 - ..Mr. Abdelhamid Abdouli, Team Leader
 - ..Mr. Majid Ben Abdallah, Economic and Financial Analyst (EFA)
 - ..Mr. Youssef Brahimi, Environmental and Climate Change Specialist

BACKGROUND:

6. The BIRDP was approved in December 2006. Its Mid Term Review took place in September 2009. The project is planned to close and complete as planned 30 September 2019 and 30 March 2020, respectively. The goal of BIRDP is 'improve in a sustainable manner the livelihoods and resilience to drought of the poor rural households'. Its objective is 'build the capacity of CBOs to engage in climate resilient, environmentally sound, socially and gender equitable development initiatives and management of NRs developed'.
7. The Butana grazing area is the geographical outreach of BIRDP and covers 9 localities, 5 States, 140 targeted villages (34,000 Households) of phase 1 which are called mother or old communities and 400 satellite or new villages (64,000 Households) under AF phase.
8. BIRDP has four components namely 1.) Policy and Institutional Building, 2.) Climate Resilient Natural Resources Management (range, forest, vegetables, crops, water), 3.) Livestock and Marketing Development and 4.) Community Development, Business Options, and Rural Micro Finance.
9. The total project costs are US\$43.15 million (FAD loan US\$24.24 million + DSF grant US\$10.3 million + ASAP Grant US\$3.0 million). In addition, there is the Italian grant (US\$381 ,245) plus GOS and beneficiaries contribution.
10. The project was supervised in November 2011 clearly concluding that routine field work was hindered due to shortage of fuel. High inflation discouraged road contractors and other consultants in entering into contracts paid in Sudanese currency. Despite these challenges, BIRDP presents an elegant and efficient example of how scaling up can take place; in less than two years (2017-2018) 239 additional communities have been reached against 140 communities during phase one (2009 — 2016).
11. Under the auspices of BIRDP, the Integrated Carbon Sequestration Project (ICSP) constitutes a complementary project, which is financed by the Global Environmental Facility (GEF) with USD 3,650,000, in addition to the local component funded by the Forest National Corporation (FNC), through the Ministry

of Finance and Economic Planning (MoFEP) (USD 840,000) and the Government of Sudan as taxes and others (USD 67,700). The original project implementation period was scheduled for 2014-2017, however due to delays in the project start-up phase the project became fully operational in March 2015. In October 2018 FAD approved a

12. second no-cost extension for an additional 9 month of the ICSP. Current Project Completion and Closing dates are aligned to BIRDP namely respectively 30 September 2019 and March 2010. Additional Financing was approved for BIRDP in 2016, and part of these additional funds (\$ 1.17 million US\$) are meant for financing activities under ICSP.
13. The objective of the ICSP is promote a climate friendly rural path in Central and Eastern Sudan by increasing carbon stock and reducing Green House Gasses (CHG) emissions in the country, while sustaining rural development in the project area. ICSP was designed so that a number of the project activities are co implemented by the ongoing Butana Integrated Rural Development Project (BIRDP).

MISSION OBJECTIVES AND OUTPUTS:

14. For BIRDP and ICSP, the purpose of the PCR Mission is to undertake (i) an assessment and analysis of key aspects of the projects in relation to project objectives and key outputs, outcomes and impact; and (ii) in close collaboration with project staff produce the Project Completion Report (PCR) in accordance with the IFAD format. This entails that the assessment of project impact include the following domains: (i) physical infrastructure and assets; (ii) food security; (iii) environment and common resource base; (iv) human assets; (v) social capital and environment; (vi) agriculture productivity; (vii) institutions and services; (viii) financial assets; (ix) markets, innovation, sustainability; (x) gender and youth focus, (xi) potential for scaling up, etc.
15. The PCR should analyse both success and shortcomings in order to draw lessons for the future. In this context, the mission is expected to:
 - Prepare a factual review of the project implementation, including physical implementation achievements, financial expenditures and indicating the overall successes and shortfalls encountered in the course of implementation;
 - Analyse financial progress and whether the use of project funds is commensurate with the attainment of physical progress and the timeliness of procurement and disbursement activities;
 - Analyse the project relevance as a measure of its strategy pertinence to the needs of the rural poor; • Assess the efficiency of project organisation and management, reporting, effectiveness of the M&E system and follow-up on primary stakeholders' reactions to project activities;
 - Assess the relevance and effectiveness of technical assistance and training given to primary stakeholders and staff in relation to design objectives, and

the extent to which these have been provided based on needs assessment and followed up to determine their impact;

- Assess the quality and impact of cooperation with institutions and service providers;
- Assess degree of compliance with Financing Agreement;
- Identify and describe factors and constraints that have influenced project implementation, including technical, bureaucratic, managerial, organisational, institutional and socio-economic policy issues, in addition to other external factors unforeseen during design, and how these have affected the project in terms of implementation delays and shortfalls, and impact on the beneficiaries.

INDIVIDUAL RESPONSIBILITIES, EXPECTED OUTPUTS AND REQUIRED COMPLETION DATES:

Abdelhamid Abdouli, Team Leader, will be responsible for the day to day coordination of the team and the work progress, as well as the review and assessment of the project activities, and the finalization of AideMemoire and the PCR report.

- Lead the mission to prepare a factual review of project implementation, including above mentioned elements;
- Review all BIRDP and ICSP project documents and reports and collect all information deemed necessary to understand and analyse the project design,

management and implementation capacities, structure and facilities, implementation performance, and achievement of objectives;

- Assess the project implementation in terms of relevance, effectiveness, efficiency, impact, sustainability, and rural poverty impact and potential for scaling up;
- Together with the EFA specialist, review the project costs and benefits and the efficiency of the overall project
- project cumulative outreach implementation process, including IF-AD's and partners' performance.
- Describe the implementation arrangements adopted, articulating modifications — if any — from the original design, and rationale for these changes;
- Together with PCU staff and EFA Specialist identify and describe factors and constraints that have influenced project implementation;
- Identify main lessons learnt to be documented and reported into the KM section of the PCR report • Check the data in terms of direct beneficiaries compared to the planned targets set in the project design and in the ORMS;
- Review results achieved by the project to date compared to the planned targets set in the design report for the indicators validated in the Logical Framework;
- Review the overall adequacy and performance of the project M&E system in the domains of project planning, timely monitoring and reporting quantitative outputs and ORMS;

Deliverables:

- Prepare the BIRDP Aide Memoire
- Prepare the BIRDP PCR Report and respective Appendices

Mission Dates: 17 September — 26 September 2019 in Sudan (including 2 travel days), 27 September to 5 October 2019 report writing home-based.

16. Majid Ben Abdallah, Economic and Financial Analyst, will assess project efficiency in terms of:

- Conduct the analysis of various data needed for the ex-post economic and financial analysis of both BIRDP and ICSP•,
- Assess actual total project cost and financing at completion of both projects;
- Review and update assumption on market prices as well as quantities (yields and inputs) applied in the development of each financial model. Recalculating

profitability indicators for each model in order to confirm their financial viability and expected impacts;

- Develop new model that reflect activities that were not considered at design or during mid-term in order to properly reflect the theory of change of the project;
- Review and update the economic assumptions of the model mostly in relation with target beneficiaries and adoption rates for each type of intervention, re-calculating project cash flows for net incremental benefits and economic profitability indicators (NPV, IRR, etc.);
- Update Logframe using the new EFA results to show the extent to which targets were met;
- Write an EFA annex of the Project and contribute to the write-up of the Completion Report and relevant Annexes where appropriate, and in accordance with detailed directions provided by the Team Leader;

Deliverables:

- Draft the relevant sections of the Aide Memoires of BIRDP and ICSP o Prepare the relevant sections of the BIRDP PCR and Appendices as well as the ICSP GEF report

Mission Dates: 17 September 27 September 2019 in Sudan (including 2 travel days and 3 days for ICSP / GEF related components), 27 September to 2 October 2019 report writing home-based

17. Youssef Brahimi, Environmental and Climate Change Specialist, will be responsible for the reviewing and assessing the performance of the ICSP and fulfilling its GEF-related reporting requirements:

- Provide a comprehensive and systematic account of the performance of the GEF-funded ICSP by assessing its design, implementation, and achievement of objectives;
- Review all project documents and reports and collect all information deemed necessary to understand and analyse the project implementation achievements and failures, management and implementation capacities, structure and sustainability;
- Prepare the ICSP terminal evaluation report in line with the Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full Sized Projects, which includes sections on General Information, Project Theory of Change, Assessment of Project Results, Outputs, Outcomes, Sustainability, Progress to Impact, Assessment of Monitoring & Evaluation Systems, Assessment of Implementation and Execution, Other Assessments and Lessons and Recommendations;
- If necessary and related to the GEF-funding, undertake any other task assigned by the FAD Country Director;

Deliverables:

- Prepare the ICSP Aide Memoire
- Terminal Evaluation Report for the ICSP in line with the GEF Monitoring and Evaluation Policy (2010) and the Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full Sized

Projects, for more information see the following link:

<https://www.gefio.org/sites/default/files/ieo/evaluations/files/gef-guidelines-te-fsp-2017.pdf>

Mission Dates: 21 September — 30 September 2019 in Sudan (10 days including 2 travel days).

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Appendix 8: List of person met and mission's programme

Mission Dates: 17 - 30 September 2019
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Project No. 1100001332
Report No. 5245-SD
Loan ID 1000002751
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Near East, North Africa and Europe Division
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Appendix 8: List of person met and mission's programme

#	Name	Organization/institution
1.	Gutbi El Mahdi	DG, BDF
2.	Bakri Mahmoud	Project manager, ICSP
3.	Balla Musa Yassin	FNC Director Gedarif State
4.	Rashid Abdel Aziz	Project manager, BIRD
5.	Adil Osman Idris	Coordinator, CCU
6.	Abdalla Ibrahim Abdalla	Accountant, ICSP
7.	Nimat Ahmed	Federal MoARF
8.	Selma Abdalla Rajab	MOARF
9.	Fatima Osman	MoFEP
10.	Hussein Hassan	Project Officer, Environment, BIRD
11.	Mohamed Ahmed Omer	Coordinator, SCU, Gezira State
12.	Abdalla Adam Abbakar	Coordinator, SCU, Gedarif State
13.	Hisham Saeed A.	Coordinator, SCU, Khartoum State
14.	Ahmed Ghani Sheikih Eldin	Coordinator, SCU, River Nile State
15.	Hamad Yousif Abu Sin	Coordinator, SCU, Kassala State
16.	Mahmoud Osman	Sate Administrator, Kassala
17.	Gummah Ahmed Gummah	Implementer, A/R , Gedarif State
18.	Aida Adam Osman	CD Officer, BIRD
19.	Salah Ankosh Ahmed	Federal MoFEP
20.	Manal Taha Ali	6 Arab Community, Kassala State
21.	Nagat Ali Osman	Range Admin, Kassala State
22.	Siddig Mohamed Al Sayed	R/P Admin, Shendi Locality, River N
23.	Taghreed	ICSP, Gedarif CU
24.	Huwaida A/Alla Fadl Almula	Federal MoFEP
25.	Mohamed El Hassan Ali	NRs Officer, BIRD
26.	Fathi Ismail Omer	M&E Officer, ICSP
27.	Muddathir A/rahman Ali	Gedarif Communities, Makharbash F
28.	Izzeladin Mohamed Ahmed	Butana Communities, Makharbash F
29.	Hashim Dafaalla	Gedarif Communities, Makharbash F
30.	Abdalla Ahmed	Gedarif Communities, Makharbash F
31.	Kamal Mohamed	Gedarif Communities, Makharbash F
32.	Muna Mahmoud	Gedarif Communities, Makharbash F
33.	Yassin Doule	M&E BIRD, Rufaa

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Appendix 9: Final wrap-up/stakeholder workshop findings

Mission Dates: 17 - 30 September 2019
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Butana Integrated Rural Development Project (BIRDP)



Project Completion Report Review Stakeholders Meeting



**Rufaa, Sudan
17th March 2020**

BIRDP Completion Report Stakeholders Meeting to Review the Project

Summary of the Minutes

Introduction:

At the initiative of BIRDP and coordination with implementing stakeholders/Partners , an stakeholder meeting was conducted in Rufaa Town (BIRDP head-office) on March 17, 2020 to review discuss the project completion report, in addition to review the findings of the project impact assessment study report which was conducted by the Development Partners Group (funded and supervised by BIRDP).

Objectives of the meeting:

- Brief BIRDP stakeholders and partners on the main findings of the project completion report as well as the main results of the project impact assessment report.
- Receiving feedback from participants to feed in the development of the final report.
- Putting forward recommendations to support the sustainability of the project generated results to facilitate the implementation of the upcoming projects and their future designs.

Participants of the meeting:

- The general managers of the ministries of agriculture at the five states State of Khartoum, River Nile, Kassala, Gedarif and Gezira.
- The project coordinators at the five states.
- IFAD Country Programme Officer (CPO),
- high-rank representatives from the Federal Ministry of Finance and Economic Planning, the Federal Ministry of Agriculture and Natural Resources, Federal Ministry of Animal Resources, Central Coordination Unit of IFAD Projects in Sudan (CCU),
- In addition to a number of technical and administrative staff who worked on BIRDP, (list of the meeting attendance attached).

I. The Project Completion Report

The meeting started with a welcoming remark from BIRDP Manager. He pointed out this meeting is intended to be a workshop which should involve all partners and stakeholders, including representatives of beneficiaries and communities. But due to the current health emergency declaration as well as the decisions issued by the Government preventing big people gathering as precautionary steps to control the outbreak of COVID-19, the workshop couldn't be conducted replaced by this meeting, with the hope the meeting will be beneficial in achieving the desired purpose.

After that, the CPO had the opportunity to present a summary of the completion report (PCR). The CPO started his presentation by indicating that, this report was supposed to be delivered by the IFAD consultant who prepared it, but due to the prevailing health conditions in Sudan and the globe, the consultant was unable to come to Sudan and attend the meeting.

The presentation highlighted the detailed findings of the report, which included in the following overall summary:

1- It is very important in such workshops / meetings to listen to the opinion of all partners and stakeholders regarding the importance of the results stated in this report, and it was hoped that the beneficiaries would participate in particular if not the circumstances and procedures that prevented their participation.

2- The report included in its introduction, a detailed list of the historical sequence of project implementation periods, starting with the signing of the agreement, passing through the various stages until the date of completion and closure of the project.

3- It also included the project's objectives, the environmental background under which the project was designed, the different project components and the expected results from each component. As well as a detail of the region on which the project's work, the number of targeted communities that the project was able to cover during the project's phases (basic loan stage + the additional finance stage).

4- The report also included the general evaluation methodology of the project, as the project was classified as satisfactory in terms of relevance, and effectiveness.

5- The project made good achievement on policy and institutional building, such as establishment of a coherent and cost effective natural resources management governance framework, But, a decision is taken to establishing the Butana Development Fund with its composition of the Board of Directors and the Secretary-General, the fund is still ineffective, which threatens the sustainability of the impacts generated.

6- With regard to the results related to the management of natural resources, the project has made remarkable progress and good results in managing natural resources and supported the communities on preparing a community climate change adaptation plans and the use of land and forests in addition to completing rural roads.

7- Regarding the results on access to livestock markets, there is a large and satisfactory progress in the access of beneficiaries to secondary and primary markets. As well as, the establishment of slaughterhouses and slaughter-slabs, the services provided by the project in the field of livestock development have led to raising the bargaining capabilities of the beneficiary in the sale of livestock in addition to the significant decrease in the proportion animal deaths, thereby maximizing the financial return from livestock to the beneficiaries.

8- The performance of the Community Development and Business Options, the report indicated a high percentage of achievement and success in the field of establishing grassroots organizations, establishing development centers, providing classes for adult education in addition to the high ability of communities to manage their various resources (CCI), which reached 92%. This in addition to, the good microfinance services provided to saving and credit groups.

9- The report indicated that the project was succeeded in exhausting its financial resources (financing with different kinds and financiers), as the total expenditure rate almost reached 100%.

10- As for the impact of the project, there are several evidences that, project has achieved, including:

- The increase in lands planted with vegetables.
- Expanding on the services of drinking water.
- Low fuel consumption for firewood.
- The increase in the trees planted in villages.
- Increase the enrolment of students to schools.

11- The project has made good progress in the field of food security and all related elements, for example, the increase in the production of vegetables and dairy through various project interventions and training of beneficiaries (men and women) the fields of health, nutrition and increasing of income.

12- The involvement of the youth groups in the project activities and interventions is one of the distinct results achieved, which classified as satisfactory. There has been significant progress in this field, as the project was supported many investments for youth initiatives that has generated significant financial returns for youth groups, in return to that, the youth groups adopting different services and activities that serve the development and good management of natural resources in their communities.

13- With regard to the suitability of the project, it was evaluated in the report as satisfactory.

13- Lessons learned from the project

There are many lessons learned that will support the stakeholders in improving the performance or designing and implementing any future projects in Sudan, including:

- The experience of service providers, one of the effective experiences that the project used to enhance the implementation of its various activities.
- Mobilizing of the development committees to participate in the project activities.
- Capacity building and training of beneficiaries at community level.
- Signing memorandum of understanding with many partners.
- Absorption of young professionals to mobilize communities' follow-up the field work.
- The project's effectiveness in targeting homogeneous and socially harmonious communities.
- The participatory approach to natural resource management.
- Gender mainstreaming and participation in all project activities through the using of several approaches (such as PLA, GALS ... etc).

14- Some issues and problems encountered the project:

- The problem of salaries, which negatively affected many jobs and led to departure of many cadres from the project repeatedly.

- The contracts with contractors and the policies issued by the government that negatively impacted contract management.
- Delaying the establishment of accounting systems, this was supposed to be established early since the start-up of the project.

Feedback and Comments on the Report:

- Introduction of the innovative young professional program is the main factor contributed to great achievement in the community development component and the project fulfilled its development objectives. This experience should be up-scaled by LMRP and IAMDP projects.
- The ecological zonation study assisted in the transformation of forestry sector and the impact study revealed strong evidences. It is important to include some satellite images of the vegetation in the report. As well, access to community structures is not only limited to the road, but the grain and fodder stores should also be included in the report.
- Road committees formed under specific criteria to be activated and linked to water management structures.
- Natural Resources Governance Framework (NRGF) is a policy engagement intervention that requires more orientation sessions on it and officially to be endorsed by the government. Now further work is needed to materialize the framework so as not to remain as a frozen structure. Ministry of Agriculture and Natural Resources (MoANRs), the Central Coordination Unit (CCU) and other should come together to ensure the activation of the framework.
- On sustainability aspects, government has many indicators that support the sustainability of the results and this, needs to be highlighted in the report. Although, great worries are coming up on the assurance of the sustainability particularly on the technologies adopted. The communities have the capacity to manage their own resources but the government is play its role in identifying a clear pathway of the sustaining the results. A well-defined linkage should established between the government and communities on sustainability matters.
- The road should be attached to the federal government to upgrade it to the asphalt road stage as part of the national roads network because it serves the export of the livestock from the area to International markets.
- Appreciation extended to the project team and the government for the project recognizable achievements and the role of IFAD is acknowledged in transforming the livelihood of the rural people in Butana region.
- The Ministry of Finance and Economic Planning congratulating the project for the great achievement and is committed to pay the obligated counterpart funding arrears before the end of March 2020. There is a need for the government to sit with the stakeholders for better utilization of the project huge assets. The Ministry of Agriculture in collaboration with the of finance and economic planning will organize a meeting to discuss the fade of the project assets. It is recommended that all staff on board to keep their positions for two months till the government decide on assets distribution and the Ministry of Finance to pay the salaries of the staff.
- Both the government and the communities to develop a clear vision on Butana Development Fund (BDF) functions and the state governments should put more pressure on the federal government to accelerate the BDF role.

- The BIRDP Manager and the Financial Controller criticized the ratings of the project management and financial management performance as the project managed to disburse all resources allocated to the project by different financiers.

15- Recommendations:

- The necessity for the government (the Ministry of Finance) to pay the due financial contributions, since any delay until March 31, 2020 will cast negative shadows on the resources that will be allocated by IFAD to the Sudan.
- The necessity of periodically monitoring of the rural road and establishing of a mechanism for follow-up and maintenance.
- BIRDP should be linked to the new project (SNRLP), which is expected to be start soon (SNRLP Sustainable Natural Resources and Livelihoods Programme), by making use of the assets currently available to serve, accelerate and activate the start-up and establishment of the new project.
- Integration of the BIRDP good performing technical cadre in the new project (SNRLP).
- Linking of all climate related adaptation interventions to the new project..
- The issue of gold mining and its negative impact on natural resources should be considered.
- Take the advantage of the vast amount of knowledge materials that were produced by BIRDP in new projects.
- Follow the project exit strategy to achieve continuity.
- Scaling-up of services and good innovations achieved by BIRDP in the new project

II. Project Impact Assessment Report:

The representative of the Partners for Development Services had the opportunity to present the results of the project impact assessment findings; he reviewed a number of points summarizing the results of the study as follows:

- 1- The study was carried out by Partners in Development Services with the participation of a number of researchers and consultants.
- 2- The study relied on a huge amount of information that was collected on a field basis, where the focus was on the group of villages of the project phase one, which likely can have impact of project interventions.
- 3- The study focused on the process of transformation and social change based on quantitative and qualitative information. At the same time, the group of the experts participated in the study were mostly from those who have a good and reliable relationship with the project and follow its activities and interventions, and most of them are fully familiar with the nature and the area of the project.

The most important results of the study:

- 4- The project was able to implement about 88 different activities and interventions with levels of implementation ranging between 88% - 100%.
- 5- The project targeted a high proportion of the poor and women, amounting to 94.7%.
- 6- There are positive results economically, politically, socially and environmentally.
- 7- There is significant and clear progress in matters related to food security.
- 8- Positive intervention of the project in solving water problems.
- 9- The project succeeded in forming a dynamic and effective process for social and economic change in Butana region through the organizing communities in an effective development structures.
- 10- A major gender empowerment has occurred among communities.
- 11- The project greatly contributed to strengthening natural resource management, and the governance framework to develop NRM is the latest dynamic for community cooperation in the field of environment and natural resource management.

Sustainability issues:

- 12- There is an active positive transformation process in the project area through the establishment of community development committees and community networks to manage, develop and good use of natural resources.
- 13- Establishment of a wide network of development agents at community, locality and State levels in various fields.
- 14- The sustainability process requires cooperation and continuous participation among the stakeholders.
- 15- It is very important to activate the Butana Development Fund for the purpose of sustaining the project services.

Highlights on the project approach.

- 16- The good approach in addressing rural poverty issues.
- 17- The close linkage between natural resource management, livelihoods and climate change.

- 18- The good and distinguished project approach in identifying the capabilities and potential and hidden power of the poor, and directing and transforming them to serve their issues, and thus achieving the project's development goals and objectives.
- 19- The project succeeded in testing and selecting the correct starting point for the communities, and good participatory implementation of the communities' priorities.
- 20- Follow the networking process, and create community networks to manage, develop and make good use of the natural resources.
- 21- Investing in capacity building in a qualitative and effective manner.
- 22- Introducing the young professional programme on mobilizing communities, and enhance follow-up on the implementation of the activities and interventions at field level.
- 23- The new innovations to solve many problems facing the communities (for example introducing the use of solar energy to operate water facilities).
- 24- Clear commitment on the process of monitoring and evaluation, preparing reports and documenting successes and innovations.
- 25- The close and interrelated relationship between project cadres at all levels and the relationship of these cadres with beneficiary and communities at both institutional and social level.

Recommendations:

- 26- Linking between the BIRDP and the new project(SNRLP) , at least in Butana area.
- 27- Enhance the current community networks and create new ones.
- 28- Consolidating efforts among stakeholders to activate the Butana Development Fund.
- 29- More documentation for the success stories in the project area.
- 30-The current political changes has provided ample opportunity for justice and institutional reform issues.
- 31- The vast wealth of knowledge provided by the project needs to be documented, preserved, published and shared.

Summary of observations / recommendations received from the participants:

- 1-The constant presence and communication with the beneficiaries and stakeholders was one of the reasons for the success of the project.
- 2- There is many important studies carried out by the project (for example the Ecological Zonation Study-2012), this study and other studies contributed to the entry of new projects, and it can be taken as advantage especially after the renewing in 2019.
- 3- There is many infrastructures that the project implemented, especially in the field of grain stores at the community and household levels, they must be added to the project completion report as one of the important achievements that contributed to the issue of food security.
- 4- There is community committees, formed by the project to follow the rural roads (from the villages nearby the roads) for the purpose of following-up and participating in the maintenance and operations, it must be recommended to activate these committees and link them to government institutions involved in the rehabilitation and maintenance of roads.

5- The document of the governance framework of natural resources management is one of very important documents. It must be recommended to translate, print and distribute it to stakeholders, in addition to finding a mechanism to activate its use.

6- Although, the establishment of the Butana Development Fund is one of the important factors mentioned in the exit strategy of the project to ensure sustainability, it is imperative to make the final decision whether or not to establish the fund.

7- There is many initiatives and contributions at the state and community levels towards sustainability that must be mentioned or referred to in the report.

8-The issue of the road has a clear problem regard to its dependency (a local/state or national road), and for the importance of this road in the national economy and the possibility of linking it to more than one state, it must be recommended to be as a national road.

9- The Initiative of involving young professionals, is one of the new initiatives in which BIRDIP has strengthened the implementation of its activities and interventions, therefore it must be recommended that it be applied to other existing and new projects (for example, the LMRP).

10- The issue of plant and tree cover must be mentioned in the report, so that it can be used in existing and new projects.

11-There are significant contributions made by the project, especially with regard to the mechanism of intervention in the lands, as there are many state laws that have been activated, even partially, such as the Law for the Prevent agriculture practice north of the pasture area (Gedaref State) these initiatives must be referred in the report to encourage its development, adoption and application..

12- As for the tree cover, there is a great effort and contributions from some states in this area (for example, Algazera State), as it contributed in spreading the culture of afforestation in villages and homes, although its success was limited, but it is necessary to identify and develop such experiences and adopt them in the next project. This is in addition to the necessity of widespread adoption for innovations of different methods of water harvesting for agriculture.

13- In spite of the large contributions made by the states, but the issue of sustainability, especially in light of the successes achieved by the project by introducing new technologies is highly needed, there is general pity on the project in the upcoming period of the project life, especially regarding the issue of sustainability, care must be taken to these successes not to be regressed and working to push them strongly towards continuity and sustainability.

14- There is some communities in Butana area expected to continue working with in the new project, but we should think about the rest villages.

15- The issue of the government's fulfillment of the rest of the financial contraption on the way of solution, the payment of the remaining amount will take place before March 31, 2020 AD, and the same for the project assets.

16- A mechanism must be established to link the current project with the beneficiaries to ensure sustainability and benefit from the project's assets as much as possible in promoting any new interventions; also it is possible to benefit from the experiences of previous projects in the project area. A clear follow-up of the federal government as well as at state and locality levels should take place for the activities and the assets after project completion.

17- It is necessary to take advantage of the presence of partners and stakeholders in this meeting to consult on adopting a clear opinion on the Butana Development Fund in terms of its activation or finding an alternative.

18- The road has reached advanced stages of completion and needs simple works to reach the asphalt stage, so it must be recommended in the report to upgrade it to asphalt road.

19- With regard to the project assets, we value the efforts which have been made in inventory the assets, but all the project assets must be assigned to the Ministry of Agriculture as the authority supervising the project, and then the Ministry of Agriculture will determine the entities that can benefit from it before March 31, 2020.

18- One paragraph in the project impact evaluation report indicates that 46% of the project fund was allocated for livestock component; this percentage must be reviewed and correct.

19- The overall evaluation scores granted by the project completion report are an area of pride for project workers, but some components of the project have been awarded scores less than expected. Likewise, the scores granted to project performance in some areas, especially financial and management which were classified as unsatisfactory, this is not straightforward, and may create a kind of discrepancy between quantitative performance, results, and positive effects, while at the same time classifying financial and management performance as weak and unsatisfactory.

20- In many reports received during the project's supervisory missions, we find that there is a weak evaluation of the project management and financial performance, while there is a high evaluation for the outputs and the overall results of the project, therefore the general evaluation of the financial and management performance that was mentioned in the project completion report was taken from the report of the last supervisory mission (It was more appropriate to look at the financial and management evaluation at the level of the general project management performance, from its start of its implementation until the stage of its completion). The indication of poor financial and management performance is not consistent with the high percentage achieved by the project in terms of financial disbursement on its allocated budget which almost reached 100%.

21- An important issue that must be taken into account when evaluating the project is that at its beginning, the worked for 9 months in very difficult circumstances, which affected the financial disbursement, in the same time there were many state obligations that were not fulfilled (providing offices – Rest-houses - working cadres), these things led to the slow start of the project. The project has adopted the treatment of these problems by building and rehabilitating offices and rest-houses, in addition to establishing the complex of project head-office to provide a good environment for work. These infrastructures reduced the operational cost by almost 40%, the project also benefit from the service providers and young professionals in the field work.

22- By the end of March 31, 2020, the issue of the project's assets will be a very sensitive issue, and it must be considered in a serious manner. It has already been recommended to keep the existing cadres until the start of the new project, knowing that the current cadres have no any objection to stay working until the start of the new project.

23- Emphasis the benefit of all current assets in the new project after consulting with the Ministry of Agriculture, and at a later stage, thinking and consulting on how to reallocate these assets after the availability of the new project assets (the assets to be as advance- refundable, to be delivered later to the authority that will lead the BIRD P activities). It should also be recommended to keep the development teams in the states, and the Ministry of Finance ensures payment of their benefits.

24- It was recommended that an urgent meeting to be held next week on Sunday, 22 March 202 at the Ministry of Agriculture with the participation of the general directors of the State Ministry of Agriculture, the CCU, representatives of the Ministry of Finance, Livestock, Agriculture and Forestry and the director of the BIRD P to reflect on the issue of the assets.

Summary respond to the comments and recommendations:

1- The scores awarded to the project was built on objective and known basis and according to a specific methodology followed by IFAD in such reports, and these reports are subject to continuous and repeated review and revision, these degrees are not granted based on the report of supervisory missions only, but IFAD has a clear and specific methodology. As this report was presented to two different groups of IFAD team, as well as presented to advisers from outside IFAD, to ensure that these scores were awarded according to specific justifications and agreed criteria.

2- With regard to the comment regarding the young professional, there is a system known as the volunteer system that is currently working in LMRP, and it has been recommended to develop it and continue in it as well as to benefit from the experience of BIRD P.

3- All the comments received from the participants will be taken into consideration and added to the report in its final form.

4- With regard to the new communities that were not covered by the project impact evaluation, they were excluded due to the fact that they were newly participated in the project (still in the beginning stage), which makes it difficult to measure the impact in such communities.

5- We believe in the importance of summarizing and translation of these reports into Arabic language and share them with the stakeholders.

List of representatives of stakeholders participating in the meeting

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