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IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF081451

ON A

GRANT FROM THE GLOBAL AGRICULTURE AND FOOD SECURITY
MULTI DONOR TRUST FUND

IN THE AMOUNT OF USD36 MILLION

TO THE

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
(For the benefit of the Republic of Yemen)

FOR THE

YEMEN SMALLHOLDER AGRICULTURAL PRODUCTION RESTORATION AND ENHANCEMENT PROJECT

DECEMBER 20, 2021

Agriculture And Food Global Practice
Middle East And North Africa Region

CURRENCY EQUIVALENTS

Exchange Rate Effective June 30, 2021

Currency Unit =	Yemeni Rial (YER)
YER 580 =	US$1

FISCAL YEAR
July 1 - June 30

Regional Vice President:	Ferid Belhaj
Country Director:	Marina Wes
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ABBREVIATIONS AND ACRONYMS

CEN	Country Engagement Note
CDD	Community-Driven Development
CAHW	Community Animal Health Workers
CfW	Cash for Work
EIRR	Economic Internal Rate of Return
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FFS	Farmer Field School
GAFSP	TF Global Agriculture and Food Security Program Trust Fund
GDP	Gross Domestic Product
GRS	Grievance Redress Service
IDPs	Internally Displace Persons
IFAD	International Fund for Agricultural Development
IPC	Integrated Food Security Phase Classification
MAI	Ministry of Agriculture and Irrigation
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
NGO	Non-Governmental Organization
OP/BP	Operational Policy/Bank Policy
O&M	Operations & Maintenance
PDO	Project Development Objective
PIM	Project Implementation Manual
PPR	Peste des Petits Ruminants
RALP	Rainfed Agriculture and Livestock Project
SAPREP	Smallholder Agricultural Production Restoration and Enhancement Project
SFD	Social Fund for Development
TOR	Terms of Reference
TPM	Third Party Monitoring
UN	United Nations

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P162659	Smallholder Agricultural Production Restoration and Enhancement Project
Country	**Financing Instrument**
Yemen, Republic of	Investment Project Financing
Original EA Category	**Revised EA Category**
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Food and Agriculture Organization of the United Nations	Food and Agriculture Organization of the United Nations (FAO)

Project Development Objective (PDO)

Original PDO

To increase the use of productivity and nutrition-enhancing agricultural practices by smallholders in targeted project areas

FINANCING

	Original Amount (US$)	Revised Amount (US$)	Actual Disbursed (US$)
World Bank Financing			
TF-A5431	36,000,000	36,000,000	36,000,000
Total	**36,000,000**	**36,000,000**	**36,000,000**
Non-World Bank Financing			
Total	**0**	**0**	**0**
Total Project Cost	**36,000,000**	**36,000,000**	**36,000,000**

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
31-Jul-2017	10-Aug-2017	07-Mar-2019	31-Aug-2020	30-Jun-2021

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US$M)	Key Revisions
06-Aug-2020	36.00	Change in Results Framework Change in Loan Closing Date(s) Change in Implementation Schedule
17-Aug-2020	36.00	
04-Feb-2021	36.00	Change in Loan Closing Date(s)

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Substantial

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US$M)
01	15-Nov-2017	Satisfactory	Satisfactory	12.90

02	14-May-2018	Satisfactory	Satisfactory	12.90
03	05-Nov-2018	Satisfactory	Satisfactory	17.40
04	13-May-2019	Satisfactory	Moderately Satisfactory	27.90
05	22-Nov-2019	Satisfactory	Satisfactory	27.90
06	27-May-2020	Satisfactory	Moderately Satisfactory	36.00
07	10-Dec-2020	Satisfactory	Moderately Satisfactory	36.00
08	30-Jun-2021	Satisfactory	Moderately Satisfactory	36.00

SECTORS AND THEMES

Sectors

Major Sector/Sector	(%)
Agriculture, Fishing and Forestry	**50**
Crops	20
Livestock	30
Water, Sanitation and Waste Management	**35**
Water Supply	35
Industry, Trade and Services	**15**
Agricultural markets, commercialization and agri-business	15

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
Economic Policy	**10**
Trade	10
Trade Facilitation	10

Human Development and Gender	**45**
Gender	10
Nutrition and Food Security	45
Nutrition	10
Food Security	35
Urban and Rural Development	**25**
Rural Development	25
Rural Water and Sanitation	25
Environment and Natural Resource Management	**15**
Renewable Natural Resources Asset Management	15
Watershed Management	15

ADM STAFF

Role	At Approval	At ICR
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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

1. Preparation and appraisal of the Smallholder Agricultural Production Restoration and Enhancement Project (SAPREP) took place in 2016-2017, a time of political turbulence and physical conflict in Yemen. The socio-political movement for change that had begun in the country in 2011 had not led to stability or socio-economic improvement and by 2015 Yemen had descended into a military conflict and a resulting humanitarian crisis. By the same year, an estimated eight million Yemenis had lost their livelihoods or were living in communities with minimal or no basic services. Poverty rates, already high before the conflict, were estimated to have soared to 64-78 percent by 2016. By the end of that year, 60 percent of the population (17 million people) were considered to be food insecure. In addition to physical destruction of infrastructure, there was a profound deterioration in the economy which, with GDP estimated in 2016 to have shrunk by 40 percent, was threatening the entire economic and social fabric.

2. The crisis was most acute in rural areas and in agriculture, the main source of income for three quarters (73 percent) of the population. Already prior to the conflict, much agricultural production was low-yielding and barely above subsistence levels. The conflict rapidly resulted in shortage of seeds, fertilizer and fuel, in damage to agricultural machinery, irrigation systems and storage facilities, in deterioration of water and electricity services, and in breakdown of supply and farm to market logistical chains. Shortage of animal feed and of veterinary services led to a decline in livestock production, a mainstay of the rural poor. By 2016, agricultural employment had plummeted by 50 percent from pre-conflict levels.

3. The World Bank's response to Yemen's critical situation (set out in the FY17-18 Country Engagement Note, CEN) was twofold: (i) to provide emergency assistance in close collaboration with UN institutions to preserve local service delivery capacity in support of conflict-affected families and communities; and (ii) to prepare for post-conflict recovery, laying the foundation for a more inclusive and resilient development framework in the future.

4. In pursuit of these objectives, the rural and agricultural sector was a primary target, because of the prevalent and worsening poverty and food insecurity in rural areas, the high proportion of internally displaced persons (IDPs) who had sought refuge there, and the high vulnerability of the rural population to further shocks, including the impacts of climate change and resource depletion. Furthermore, the sector was seen as a potential 'early recovery' sector where timely support could help revive local food production, restore livelihood activities, and boost rural incomes and overall economic activity.

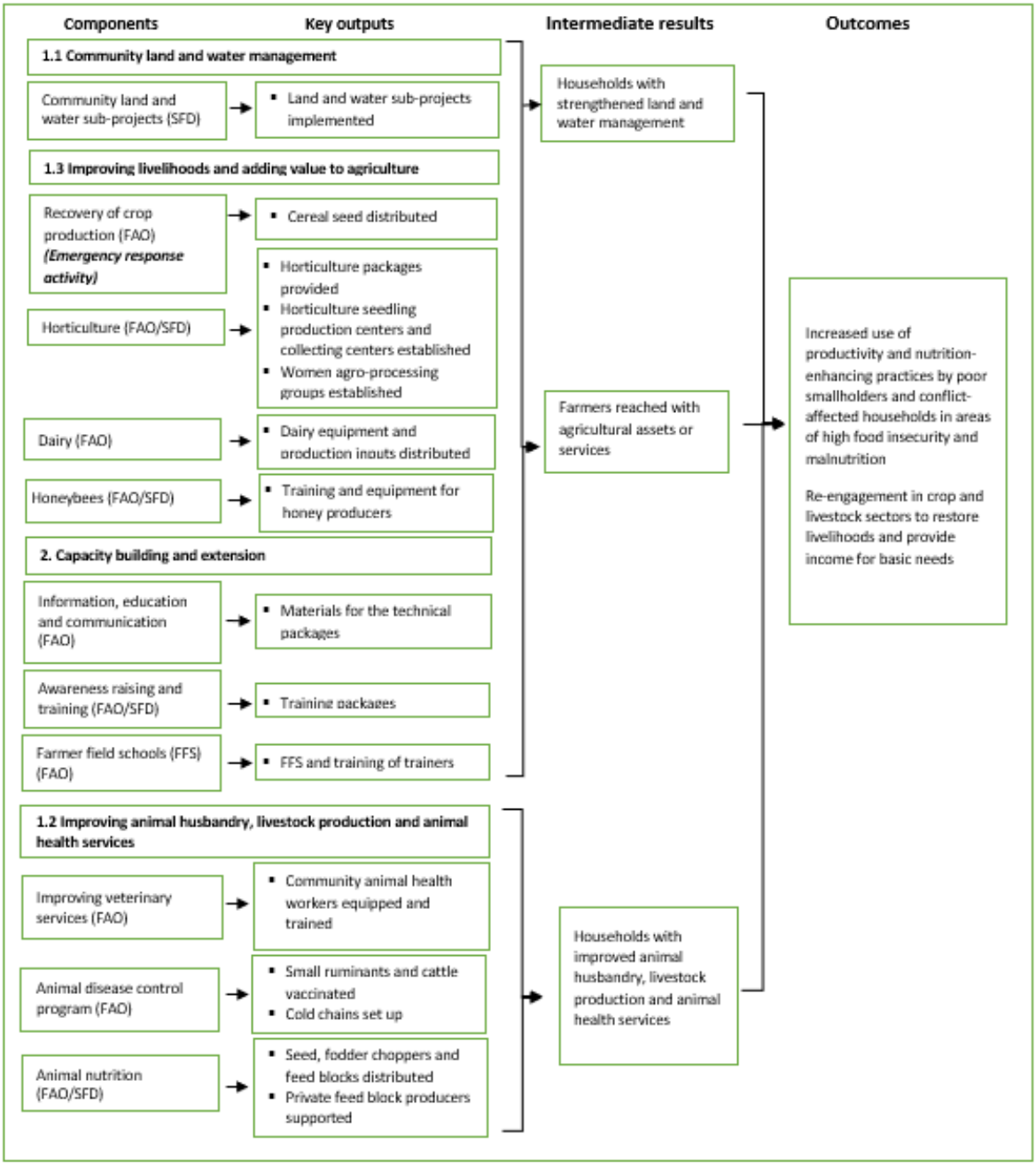
5. The SAPREP project was originally based on a pre-conflict proposal by the Yemeni government that was accepted for financing by the Steering Committee of the Global Agriculture and Food Security Program (GAFSP) Trust Fund in September 2011. The project was intended to support increased productivity in rainfed agriculture, efficient agricultural water management, improved productivity and sustainability of livestock production, and a strengthened role for rural women in food security.

6. Project preparation was carried out through 2014 but was put on hold shortly after Yemen descended into full-fledged military conflict in early 2015. During 2016 and early 2017 the original project design was modified within the

broad framework of the original objectives to respond to the new and critical realities of fragility, conflict and violence (FCV) by emphasizing recovery and rebuilding of livelihood activities. The amended aims were to revive smallholder agriculture and food production, to restore the productivity of the livestock sector, and to diversify and strengthen livelihoods and agricultural value added. Support was to be targeted to the poorest and most vulnerable, including those directly affected by conflict such as internally displaced persons (IDPs) and returnees. In line with the CEN approach of collaborating with UN agencies, it was agreed that, for the first time for a World Bank-financed project in Yemen, SAPREP would be implemented by FAO, in close partnership with competent Yemeni agencies, notably the Social Fund for Development (SFD).

7. Apart from one activity *Recovery of crop production*, which was to provide short-term support to next-season food production, the project aimed to assist early recovery and development for poor and food insecure households within the seven governorates that were the most food insecure in the country as identified by the Integrated Phase Classification (IPC) carried out in February 2017 to classify the severity and magnitude of food insecurity. These governorates - Shabwa, Abyan, Lahj, Taiz, Al-Hodeidah, Hajjah and Saada – were in Emergency Food Insecurity Phase and serious or critical nutrition situation. Together, the seven selected governorates accounted for 42 percent of Yemen's population and 48 percent of the poor. Within these seven governorates, 21 districts were selected for project interventions, based on the food insecurity and malnutrition level as determined by the November 2016 Emergency Food Security and Nutrition Assessment (EFSNA) data. Accessibility and risks of conflict and other implementation constraints were also factored into the choice of districts.

Theory of Change (Results Chain)



Assumptions

8. The main assumptions were:

Behavioural: that communities would be willing to work with the project to identify the target beneficiaries and facilitate project support to them; and that smallholders would be willing to adopt higher productivity and nutrition enhancing practices in a relatively high-risk economic environment.

Technical: that the project menu of investment in assets and farmer services would result in high productivity and resilient farming
External to the project: that security would not deteriorate to the extent that the project could not be implemented substantially as designed; and that the political situation would not hinder implementation unduly.

Project Development Objectives (PDOs)

9. The PDO was "to increase the use of productivity and nutrition-enhancing agricultural practices by smallholders in targeted project areas".

Key Expected Outcomes and Outcome Indicators

10. Within the target areas (see above), the project was to support two inter-related target populations: poor households and smallholders; and farmers specifically affected by conflict. The PDO can thus be broken down into two separate outcomes in support of these two target groups: (1) poor households and smallholders – farmers with very small holdings (less than 1.3 hectares), sharecroppers and casual workers, women-headed households. For this group the aim was Increased use of productivity and nutrition-enhancing practices[1] that would increase agricultural production, income and nutrition; and (2) for conflict affected farmers, the aim was re-engagement in the crop and livestock sectors to restore their livelihoods and provide income for their basic needs.

11. The main indicators in the results framework which measure these outcomes are as follows:

Outcomes	Indicators
For poor households and smallholders, increased use of productivity and nutrition enhancing agricultural practices	❖ Number of male and female farmers reached with agricultural assets or services (target 90,000, of whom 27,000 female) ❖ Number of farmers adopting improved agricultural technology (target 10,000, of whom 3,000 female) ❖ Number of households with strengthened land and water management (target 18,000) ❖ Number of households with improved animal husbandry, livestock production and animal health services (target 34,000)
For conflict affected farmers, re-engagement in crop and livestock sectors to restore their livelihood and provide income for their basic needs	❖ Number of households supported to resume crop and livestock production (target 35,000).

[1] The targeted practices included: improved land and water management; use of improved seed for cereals production; use of improved inputs, planting material and crop husbandry techniques for horticulture; improved hives and equipment for honey production; and improved animal nutrition, disease control and health, together with value addition through processing and market development.

Components

Component	Costs (US$ millions) Appraisal	Actual
1: Community subprojects to encourage investments and increase small holders' productivity, income and nutrition	**29.89**	**30.32**
1.1 Strengthening community land and water management, including: (a) water harvesting at farm and micro watershed level in upper catchment rainfed areas, including rehabilitation of existing or constructing new water harvesting and storage; (b) water diversion for improved spate irrigation in the lower catchment of selected governorates; (c) roof-top and other type of water harvesting; (d) improving natural rangelands, including planting trees and establishing protection of structures.	*15.32*	*16.15*
1.2 Improving animal husbandry, livestock production and animal health, including: (a) improving access to veterinary services in targeted communities; (b) carrying vaccination campaigns to prevent major diseases in small ruminants; (c) improving animal nutrition; (d) enhancing animal husbandry and beekeeping; and (e) facilitating the development of new livestock activities, exclusively for poor women, returnees, internally displaced people or famers who lost their livelihood assets as a result of conflict ("Vulnerable Groups").	*5.38*	*5.69*
1.3 Improving livelihoods and nutrition, and increasing value added of selected agriculture products in targeted areas, including: (a) provision of emergency agriculture livelihood kits to the Vulnerable Groups to restore crop production and generate income; and (b) increasing value-added of key value chain agriculture products, through the provision of equipment, technical and business training to farmers to improve processing, packaging and marketing, and promotion of partnership with traders.	*9.19*	*8.48*
2: A program of activities to build the capacity of stakeholders, including: (a) building the capacity building of stakeholders involved in land and water management to introduce more effective climate resilient irrigation techniques, and in livestock production to protect assets and increase productivity; (b) piloting and possible expansion of farmers field schools; (c) promoting nutrition awareness on nutrition-sensitive agriculture; (d) building the capacity of farmers organizations for technical and managerial aspects; and (e) developing the capacity of non-governmental organizations to ensure efficient support to stakeholders under the Project.	**0.90**	**0.55**
3: Facilitating Project implementation, administration and management, and monitoring and evaluation, including: (a) the Recipient's Indirect Costs; (b) the Recipient's direct costs for management and implementation of the Project, monitoring and evaluation ("Direct Costs"); (c) independent Third Party Technical Review of Project activities; and (d) Operating Costs.	**5.21**	**5.13**
TOTAL	**36.00**	**36.00**

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDOs and Outcome Targets:

12. No change

Revised PDO Indicators

13. No change

Revised Components

14. No change

Other Changes

15. The project was twice the object of Level 2 restructuring. The first restructuring (August 6th, 2020) extended the project closing date by six months from August 31st, 2020 to February 28th, 2021 to allow finalization of implementation of several project activities and to ensure satisfactory completion of the project. There was no change to the PDO or to the result indicators but the restructuring amended seven targets: the targets for four indicators were raised to reflect the expected final results of the project; the target for one indicator was raised to include all the outputs under the activity; and the targets for two indicators were revised downwards to reflect changes in implementation modalities for the vaccination activity (see III B below). The changes and the reason for revision are listed in the table *Targets revised in the August 2020 Level 2 restructuring* in Annex 1.

16. A second restructuring (February 4th, 2021) extended the closing date by a further four months, to June 30th, 2021. This second short extension was necessary to complete implementation of four activities[2] because further delays had been caused by increasing difficulties in reaching project beneficiaries in the North due to movement restrictions, fuel shortages, and delays in obtaining permits for field activities. In addition, delays were being caused by COVID-19-related movement and access restrictions, and shortage of liquidity in the banks had slowed down access to project funds for Implementing Partners.

17. When the scaled down animal vaccination campaign was completed (see Section II B), unused drugs from this and the associated deworming campaign were transferred to an EU and SIDA-funded agricultural project, Enhanced Rural Resilience in Yemen Program Phase II (ERRY II) which also supported veterinary treatment activities implemented by FAO. As the veterinary treatment activities of SAPREP and ERRY II were identical, the relevant objectives of this element of SAPREP were met, albeit delivered by another project.[3]

Rationale for Changes and Their Implication on the Original Theory of Change

18. Completion of project activities was held up for a total of ten months by several factors outside the control of the implementing agencies (see III B below). The extensions were made to allow project activities to be completed as designed and the targets were revised to better reflect the expected results. There were no implications for the Theory of Change as a result of the two restructurings.

[2] The activities were: (1) horticulture value chain activities to strengthen organization arrangements of the Horticulture Seedling Centers (HSC), Horticulture Collection Centers (HCC) and Women Agro-processing Groups; (2) rehabilitation of community water infrastructure; (3) distribution of remaining fodder chopping machines and provision of training (delayed by issuance of permits from authorities in the North); and (4) project final survey.

[3] The drugs were used until their expiry date of July 31, 2021, i.e. a month after the SAPREP closing date of June 30, 2021. FAO has reported to the Bank on the use of the drugs, which treated 1.59 million animals in total.

II. OUTCOME

A. RELEVANCE OF PDOs

19. From the design phase onwards, SAPREP was in line with the World Bank Group (WBG) strategy for Yemen (see Section I above) and remained so throughout the implementation period. At completion of implementation, the project was well aligned with strategic objectives at the global, regional and country level. The current World Bank strategy for Yemen was set out in the Country Engagement Note FY20/21 (CEN, April 16, 2019, Report No. 136046-RY). The CEN reflects the gravity of Yemen's situation, with the country still in the midst of a complex conflict causing massive physical damage, devastating the economy, weakening institutions, and generating an unprecedented humanitarian crisis.

20. SAPREP's specific objectives, design and execution are fully in line with the CEN strategy: (a) continued support for basic service delivery and institutional preservation; and (b) extending support to livelihoods, human capital, and basic economic recovery. Similarly, the CEN's aspirations to address vulnerability and food insecurity through a balance of physical recovery and reconstruction with interventions that strengthen social cohesion and address the structural dimensions of fragility fit well with SAPREP's community-anchored blend of physical investment and capacity building. SAPREP also contributed to national priorities as articulated in the National Agriculture Sector Strategy (NASA) 2013-2016.

21. SAPREP is also consistent with the *Yemen Remaining Engaged in Conflict (RECA) Eligibility Note*, (December 17, 2020) with the project's focus on preserving human capital and basic economic recovery and on continued support for basic service delivery through Yemeni partners both at the local level and also with agencies with wider or country-wide reach such as SFD.

22. The project was also in line with the World Bank's 2021 *The Future of Food: Building Stronger Food Systems in Fragility, Conflict, and Violence Settings* with its emphasis on remaining engaged in a conflict situation and helping the country to transition out of fragility. SAPREP's approach responded well to the paper's strategic approach of strengthening food systems and addressing poverty, environmental degradation and low productivity as steps on the pathway to food and nutrition security. SAPREP contributed to the action areas highlighted in the paper: responding to food crises through both food production and poverty reduction; growing the private sector, enhancing rural livelihoods and generating inclusive jobs in agricultural value chains, particularly for women; promoting resilient and sustainable resource management; and strengthening institutional capacity.

23. Although initiated well before the COVID-19 pandemic, the project was responsive to the WBG *COVID-19 Crisis Response Approach Paper* and the MENA-wide platform to mitigate the socioeconomic impacts of the COVID-19 crisis, specifically to the objectives of the *Protecting the Poor and Vulnerable Pillar*.

24. The gender approach under the project contributed, directly and indirectly, to the main pillars of the WBG *Gender Strategy* (FY16-2023): enhancing human development outcomes for females; improving their economic opportunities; and removing barriers to women's productive employment and access to services.

Assessment of Relevance of PDOs and Rating

25. Relevance is rated as ***High*****.** Throughout implementation SAPREP remained highly relevant to Yemen's critical situation and at completion the project delivered on all the relevant objectives and approaches set out in the CEN FY20/21 and other strategy papers.

B. ACHIEVEMENT OF PDOs (EFFICACY)

26. The PDO *to Increase the use of productivity and nutrition-enhancing agricultural practices by smallholders in targeted project areas* contains four elements: (i) increasing productivity-enhancing agricultural practices; (ii) increasing nutrition-enhancing agricultural practices; (iii) targeting food insecure areas; and (iv) targeting poor smallholders. The discussion below first assesses the achievement of each of these four elements in broad terms, and then assesses how each project component contributed to achievement of the PDO, following the causal relationships identified in the ToC.

(i) Achieving the objective of increasing use of productivity-enhancing agricultural practices

27. To achieve the objective of increasing productivity-enhancing agricultural practices, SAPREP provided assets, inputs and services to the target population. Farmers' agricultural practices and production benefited from support designed to increase agricultural productivity and production, income and nutrition. Households with livestock benefitted from support for improving productivity and production in animal husbandry, livestock production and animal health. Amongst these beneficiaries, conflict-affected farmers were supported to resume crop and livestock production. In addition, a much broader group of households (beyond the specific target population) benefited from animal vaccination campaigns. In the event, the project successfully reached many more households than expected – see the table below.

Results	Target	Actual
PDO: Increased use of productivity and nutrition-enhancing agricultural practices in targeted project areas:		
Households benefitting from agricultural assets or services designed to increase agricultural production, income and nutrition	**110,000**	**157,075**
Households benefitting from assets or services for improved animal husbandry, livestock production and animal health	**34,000**	**82,008**
Households benefitting from animal vaccination services to improve livestock health and productivity	**130,000**	**142,252**
Of whom		
Conflict-related households supported to resume crop and livestock production to restore their livelihood and provide income for their basic needs	*35,000*	*59,641*

(ii) Achieving the objective of increasing use of nutrition-enhancing agricultural practices

28. There is evidence from the range of activities and production supported by SAPREP and from the results of these activities that nutrition-enhancing practices were adopted. Basic nutrition was supported through improved seed for the staples of sorghum, millet and wheat and also for cowpeas (53,950 households). Protein and fats were provided through support to increased animal production. Support to 6,000 small scale dairy producers increased availability of milk and cheese. Nutrition enhancing practices and fresh produce availability were boosted by support to intensive production of fresh fruit and vegetables (1,402 small scale growers) and to horticultural seedling production and collection centers. Women's groups were supported for fruit and vegetable processing. Energy was provided by support to 700 small scale honey producers.[4]

[4] 80 percent of respondents to the *Final Survey Report* said that the honey was an 'important element in the diversification of their diet.'

29. Although there is no indicator measuring nutritional status, the output indicator *People receiving nutrition training or awareness* records 2,100 people receiving advice on diet and food preparation, 70 percent of the target of 3,000. The consumption locally of the diverse range of food products supported by SAPREP will have had a positive (if unmeasured) impact on nutritional status. The end of project assessment – the *Final Survey Report* (see IV A below) - provides evidence of nutritional status at the household level. Although there is no baseline with which to compare[5] and hence no possibility to attribute results directly to SAPREP activities, this end-of-project assessment recorded household dietary diversity scores which showed some 90 percent of beneficiaries had either medium or high dietary diversity. Eighty three percent of respondents reported that the horticulture activity improved the nutritional status of women and children. The *Survey Report* also provides evidence of improved nutrition as a result of the livestock component, with 68 percent of respondents asserting 'better family nutrition' resulting from the vaccination campaign. Similarly, respondents to the assessment reported that the livelihoods component improved family nutrition both through a more varied and nutritional range of produce consumed by the family and through additional income with which to purchase food. Income from cash-for-work was also predominantly spent on food (see below).

(iii) Targeting food-insecure areas

30. The project targeted the most food insecure governorates and districts in Yemen, following the methodology described in Section I A above. Project activities were spread evenly across all target districts, although in a limited number of cases conflict reached some areas close to project sites, delaying implementation. Overall, however, the project was successfully delivered in all the targeted districts.

(iv) Reaching the targeted population

31. Targeting prioritized poor farm households, typically farmers with very small holdings less than 1.3 hectares, sharecroppers and casual workers, and women headed households. The two principal implementing agencies applied these criteria systematically, either directly or through their implementing partners. At the local level selection was done and validated through the community engagement process (see IV A below). There is no evidence of bias in this process: in the *Beneficiary Satisfaction Survey*, 90 percent of respondents confirmed that access was 'equitable'. Overall, 157,075 poor farm households benefitted, exceeding the target of 110,000. The number of women and women-headed households benefitting also exceeded the target (38,000 against a target of 27,000).

32. A key objective of the project was to help conflict-affected farmers (amongst the overall target group) to resume crop and livestock production to restore their livelihoods and to provide income for basic needs. Against a target of 35,000, a total of 59,641 conflict-related households benefitted from project activities, predominantly (but not only) from sub-component 1.2 *Improving animal husbandry, livestock production and animal health services* and from sub-component 1.3 *Improving livelihoods and adding value to agriculture.*

How did the target population perceive the flow of benefits?

33. The final *Beneficiary Satisfaction Survey* (August 2021) documents the beneficiaries' qualitative appreciation of project benefits (see the table in Annex 1 for details). Nearly nine tenths of beneficiaries expressed 'overall satisfaction' with the project (88 percent of respondents) and considered that it responded to their priority needs (87 percent). An even higher percentage found the project appropriate to the local environment and needs (96 percent) and said that the

[5] The reasons for this are examined in Section IV A below.

assistance was correctly delivered (92 percent). One remarkable and positive response was the confirmation of no corrupt practice at the point of delivery – all respondents said that no payment had been demanded for services.[6]

How did the activities, outputs and intermediate results support the achievement of the PDO?

34. The Theory of Change (1 A above) sets out the causal relationships from components and activities to outputs to outcomes that contribute to the achievement of the PDO. The table below compares the level of actual achievement against targets and the connections between the activities and the results reported. The following discussion assesses the reported results and what appreciation the beneficiaries had of the activities and their impact.

Key outputs and their linkage to the intermediate results indicators and outcome indicators

		Intermediate results			PDO
Component	**Outputs**	**Indicators**	**Target**	**Achievement**	
1.1 Community land and water management					
1.1 Community land and water sub-projects	107 land and water sub-projects providing 13,038 hectares (target 5,400 ha) with new or improved irrigation and drainage services	Households with strengthened land/water management	26,000	22,660 (87%)	*Increased use of productivity and nutrition enhancing agriculture practices by smallholders in targeted project area:* Households benefitting from agricultural assets or services designed to increase agricultural production, income and nutrition Target 130,000 Achievement: 157,075 (133%) Households supported to resume crop and livestock production Target 35,000 Achievement: 59,641 (170%)
1.3 Improving livelihood and adding value to agriculture					
Recovery of crop production	Distribution of 1,133 t of cereal seed to 53,950 households				
Horticulture	1,402 horticulture packages provided [1,000] 5 horticulture seedling production centres, 3 collecting centres, 10 women's agro-processing groups				
Dairy	Distribution of dairy equipment and production inputs to 6,000 producers	Farmers reached with agricultural assets or services	110,000	157,075 (143%)	
Honeybees	Training and equipment for 700 honey producers				
2. Capacity building and extension		of which women	27,000	38,049 (141%)	
2.1 IEC materials	Materials for the technical packages				
2.2 and 2.3 Awareness raising and training	Training packages Nutrition training for 2,100 [3,000]				
2.4 Farmer Field Schools (FFS)	105 FFS comprising 2,100 farmers; and training of 105 trainers (14 women)				
1.2 Improving animal husbandry, livestock production and animal health services					
1.2.1 Improving vet services	84 community animal health workers equipped and trained	Households with improved animal husbandry, livestock production and animal health services	34,000	82,008 (241%)	
1.2.2 Animal disease control program	2.7 million small ruminants and cattle vaccinated for 142,252 households (target 130,000) 28 cold chain facilities set up				
1.2.3 Animal nutrition (SFD)	Seed, fodder choppers and feed blocks distributed for 25,640 households [25,000] 17 private feed block producers supported				

[6] These positive appreciations were also supported by the third party monitoring reports.

1.2.4 Poultry and small ruminant packages	6,330 poultry and small ruminant restart packages distributed				

35. Under the ***Community land and water management component (Component 1.1)*** 22,660 households benefitted from strengthened land and water management.[7] This was 25 percent above the original target of 18,000, but 13 percent below the revised target of 26,000 because community demand turned out to be somewhat lower than anticipated. According to the *Final Survey Repor*t, two thirds of beneficiaries found that the investments under this component increased production despite a host of constraints external to the project. Around one fifth (18 percent) experienced a significant increase in incomes, two thirds (65 percent) reported a modest increase. In addition, the injection of cash brought by cash-for-work and community contracting under this component was everywhere welcomed, with the large majority (77 percent) using the income from cash-for-work to buy food. Some respondents also reported that the work had developed their marketable skills.

36. The ***animal husbandry, livestock production and animal health component (Component 1.2)*** improved animal health services with the training, equipment and fielding of community animal health workers (CAHWs). This activity gave an opportunity for educated young people in rural areas to improve their skills and establish a business while providing a valuable service – all of the 84 CAHWs selected lived in the communities they served, 43 percent were under thirty and more than three quarters had secondary education or higher (20 percent were university graduates). Eighteen were women. In the *Final Survey Repor*t all the CAHWs confirmed that they were satisfied with the training and equipment they had received and that they were applying the skills and knowledge gained. In total during the project period, the CAHWs delivered 56,368 basic veterinary interventions for livestock owners in remote areas.

37. The animal disease control program very nearly achieved its revised target of vaccination of half the stock (49 percent achievement against 50 percent target).[8] The program clearly had considerable positive impact with 97 percent of respondents to the *Final Survey Report* confirming improved animal health and 68 percent confirming 'improved livelihoods' as a result.

38. Animal nutrition activities targeted improved animal productivity through better feed, distributing improved fodder seed, fodder choppers and feed blocks. According to the Final Survey Report, about three quarters of beneficiaries (72 percent) reported timely and appropriate assistance but one quarter (24 percent) received the inputs too late (after the rainy season). Average fodder yield increases of 3.5 tons/ha were recorded and the use of feed choppers was found to increase feed intake by 40-70 percent, supporting an average 9 percent increase in milk production. Overall, 58 percent of beneficiaries of this activity reported positive effects on productivity.

39. Poultry and small ruminant restart packages were distributed to conflict-affected farmers.[9] Overall, the component benefitted 82,008 households (more than double the target of 34,000). Beneficiary appreciation of this activity was positive: about 88 percent of beneficiaries of the poultry kits reported significant income increases and 60 percent reported 'diversified food sources'. The main problem was the difficulty of finding appropriate feed.[10]

[7] Although addressing climate change was not a stated objective of the project, these investments and improved natural resource management techniques contribute to building the climate resilience of communities.

[8] These targets were revised downwards from the original target of 80 percent of the stock and 200,000 households due to implementation constraints external to the project (see III B).

[9] For a discussion of implementation problems with 'fodder choppers' under the animal nutrition activity and of the 'restocking' activity for the restart packages, see Section III B below.

[10] *Final Survey Report* page 183. There were concerns, too, about the sustainability of the activity -see IV D below.

40. Under the component ***Improving livelihoods and adding value to agriculture (Component 1.3)***, SAPREP provided 63,500 farm households with inputs for recovery of crop production and materials and equipment for revival of horticulture and dairy production and apiculture.

41. The main emergency activity of the project was recovery of crop production, comprising the distribution of improved seeds for next-season food crops to 53,950 households. Data collected by SAPREP M&E (see Annex 1) suggests that yields increased by between a quarter and one third as a result of inputs and knowledge provided: sorghum yields averaged 24 percent higher, and millet yields an average of 33 percent. The *Final Survey Repor*t confirms that 89 percent of beneficiaries experienced increased production in the season they received the seed.

42. The horticulture activity which directly supported over 1,900 vegetable growers (1,402 by SFD, 500 by FAO), also produced significant yield increases of between 23 percent (potatoes) and 200 percent (onions), with most yields doubling or more.[11] Net profit per hectare nearly doubled from YR 870,000 (US$1,625) to YR 1.66 million (US$3,100), a 91 percent increase. The responses of beneficiaries were positive: eighty-seven percent of respondents considered the irrigation system effective and ninety percent considered the seed provided suited their needs. In addition, this activity was seen as strongly positive to household health and nutrition, reducing women's workload (85 percent of respondents) and improving family nutrition (see above). There were environmental benefits too: requirements for irrigation water dropped by 13 percent (with the use of drip); and the use of pesticides fell by 54 percent through use of integrated pest management (IPM).

43. Ninety percent of beneficiaries of dairy interventions recorded positive effects on production, diet and income: the intervention saved labor (89 percent of respondents), helped to produce high quality dairy products (62 percent), increased production (56 percent), and diversified diet (59 percent). About 90 percent of beneficiaries interviewed experienced 'significant' increases in income.

44. The honeybee activity had a positive effect on production for 700 small-scale honey producers: more than 80 percent reported income increases both from increased production and from improved quality and higher selling price. The impact on household food security and nutrition was notable through the increased family income and through diversification of diet (see above).

45. The ***capacity building and extension component (Component 2)*** provided information and knowledge through documentation, training activities and farmer field schools (FFS).[12] SAPREP facilitated the establishment of 105 FFS and trained 40 FFS Master Trainers (8 women) who, in turn, trained 65 facilitators (including six women). In total, extension reached 58,567 households: the *Final Survey Repor*t found that half of those polled (49 percent) reported a positive effect from the FFS.[13]

Overall, did SAPREP achieve its PDO?

46. SAPREP more than met the targets at the level of the PDO. Based on an average household size of 6.7 members, the project reached over one million poor rural people (against 630,000 assumed at appraisal) in areas of high food insecurity and malnutrition risk and endowed this target population with assets and skills needed to revive smallholder

[11] Source: *SFD sample survey* and FAO Terminal Report, Table 6

[12] A Farmer Field School is a demand-driven and farmer-led mechanism where farmers pool their concerns and their knowledge and with expert guidance develop their own solutions.

[13] The survey for this component was conducted only with 96 key informants, largely community leaders and project staff, so may not be entirely representative.

agriculture and food production and strengthen nutrition, to restore the productivity of the livestock sector, and to diversify and strengthen livelihoods and agricultural value added. Taken together, these results confirm that the PDO – *to increase the use of productivity and nutrition enhancing agriculture practices by smallholders in the targeted project area* – was met.

Justification of Overall Efficacy Rating

47. Efficacy is rated as ***Substantial***. Key targets were exceeded, except for a small shortfall on one gender target, and there is substantial evidence of use of productivity and nutrition-enhancing practices and of resulting improvements in productivity, nutrition and incomes. These positive results, offset only marginally by the lack of clarity on the nutrition element, support the judgement that the project 'almost fully' achieved its intended outcome.

C. EFFICIENCY

Economic viability

48. A detailed financial and economic analysis was undertaken (Annex 4), adapting the methodology used in the appraisal analysis of May 2017. As at appraisal, the present analysis calculated the financial and economic internal rate of return (EIRR and FIRR) and the financial and economic net present value (FNPV, ENPV) using the cash flow of the incremental benefit and cost streams over 10 and 15 years. The economic analysis was conducted, as at appraisal, on a selection of project interventions. Results were calculated for each intervention on a household basis and then aggregated for all beneficiaries at the level of the project as a whole. The overall SAPREP project financial internal rate of return over 10 years was 13 percent and the economic internal rate of return over 10 years was 38 percent, against 12 percent forecast at appraisal. The increase in economic gains was supported by the higher-than-expected number of farmers who benefitted under most activities. The ex-post economic analysis was not able to quantify additional potential benefits that accrued to the project's beneficiaries through the delivery of the animal vaccination and deworming campaigns and training and equipping of CAHWs. A qualitative assessment of these benefits based on the beneficiaries' appreciation of them (see above) would conclude that they were substantial.

49. Based on data provided by the project, the costs of investments in land and water infrastructure, in inputs such as feed blocks, in activities such as field days and workshops, and in human resources were about the same as those charged in the market or equivalent to the costs incurred in other similar projects in Yemen.

Design and implementation efficiency

50. Key elements in the overall efficient design (see III A below) included the selection of FAO and SFD, both highly competent and seasoned agencies, the adoption of well-tested community engagement procedures, the clarity of the targeting criteria and their socio-political acceptability, and the extent of the risk management provisions, including the intensive third party monitoring activity.

51. Although the Grant was extended twice for a total of ten months (see Section I above), implementation was remarkably efficient given not only the FCV context but also Yemen's historic record of poorly implemented projects. In fact, the extensions were due to delaying factors outside the control of the project (see III B below) and they did not result in increased costs. They were essentially to allow orderly completion of the investments and were therefore not a sign of

inefficiency. FAO, which was responsible for all procurement, was efficient and in fact procurement prices were generally below appraisal estimates, allowing targets and activities to be extended within the original budget. FAO and SFD fielded experienced teams with good staff continuity. Administrative costs - the management fees paid to both FAO and SFD – were reasonable. In the case of FAO, this fee was agreed at 5 percent, lower than FAO's standard fee of 7 percent 'in view of the emergency nature of the project'.

Assessment of Efficiency and Rating

52. Efficiency is rated as ***Substantial***. The financial and economic analyses show higher than expected rates of return. This, together with the further unquantified benefits, the reasonable prices of inputs (despite the turbulent situation), and the evidence of design and implementation efficiency, supports the finding that efficiency was substantial.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

53. Overall outcome is rated ***Satisfactory***. The relevance of SAPREP was high throughout the project life, and as much so at completion as at appraisal. That the PDO was substantially met is confirmed by project performance against targets, which were met or exceeded with just one indicator only moderately achieved, by the recorded increases in productivity, and by the positive appreciation of the flow of benefits by the great majority of beneficiaries for almost all activities. Substantial efficiency is confirmed by both cost effectiveness and design and implementation efficiency. Overall, there were only minor shortcomings, notably on the efficacy of the 'recovery of crop production' activity and of the 'restocking' activity. A rating of Satisfactory is justified by the high relevance of PDO and by the substantial efficacy and substantial efficiency.

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

54. In line with Bank strategy, SAPREP aimed at promoting women's involvement and participation in the project, which was particularly appropriate given the project's focus on agriculture. More than 70 percent of agricultural work is done by female farmers, particularly in rainfed production, in processing of basic food crops and in animal husbandry, all of which were specific objects of the project. Project design included provisions for inclusion of women in all stages of the project, including but not limited to micro-enterprises and nutrition. On the delivery side, gender awareness and accountability for gender equity were required in all project agencies. Each social mobilization team included at least one woman. Technical project staff, particularly at field level, included women. Female Community Animal Health Workers (CAHWs) were trained alongside men (although the intention to have equal numbers was not fulfilled).

55. The three gender-specific indicators in the results table give a broad indication of the project's achievement which met two targets 75-91 percent and exceeded the third.[14] Yet, these broad numbers give only a limited indication of the project's achievement. Tens of thousands of women took part in SAPREP - in total 38,049 women benefited from assets and/or services. Eight women were amongst the 40 'master trainers'; recruited for the farmer field schools (FFS) and the gender dimension was factored into the FFS curriculum and delivery. Women benefited from subprojects such as backyard poultry (women were 52 percent of the total 3,550 beneficiaries) and small ruminants (women were 54 percent of the

[14] Over 38,000 female farmers were reached with agricultural assets or services, exceeding the target of 27,000. More than 2,700 female farmers adopted improved agricultural technology (91 percent of the target of 3,000). Women were the beneficiaries of 536 days of extension services, (75 percent of the target of 720).

total 2,740 beneficiaries), with their participation facilitated by female staff on the community engagement teams. In addition, SAPREP supported the establishment of ten women's agro-processing groups.

56. Of the 18,300 workers hired under the project, fewer than 3,300 were women - much of the work was in construction which local norms considered 'not suitable for women'. Although separate meetings were usually held for women, at the point of decision on sub-projects male relatives sometimes represented women. Project staff, who made considerable effort to promote female participation, considered that shortfalls were due to 'local culture and norms'.

57. Overall, most communities readily accepted women's participation, becoming more accepting of reducing gender-related barriers that usually prevent women from working. Women selected and trained as Community Animal Health Workers (CAHWs) were officially recognized as Animal Health Workers which led them to both gain respect and to deal with the broader set of challenges found within their communities. Unusually for a project in Yemen, the women CAHWs were able to move about, providing advice not only in their own village but also in neighbouring villages. The *Beneficiary Satisfaction Survey* found some encouraging indications: more than four fifths of respondents (82 percent) agreed that it was right to involve women in selecting interventions. The fact that many respondents to the *Survey* (41 percent of all respondents) found female participation in the project inadequate is testament to changing community attitudes.[15] Despite the modest shortfall on two indicators, SAPREP marks a step forward in female engagement and empowerment in Yemen.

Institutional Strengthening and Climate Change

58. SAPREP contributed to the CEN aim of preserving and strengthening national institutional capacity. A range of institutional actors benefitted from involvement in the project. Service providers, including extension workers, local veterinary technicians, non-governmental organizations (NGOs) active in the agricultural sector, community-based organizations, farmer groups, and staff of the local offices of the Ministry of Agriculture and Irrigation all benefited from active involvement in executing project activities.

59. The most notable institutional outcomes were the strengthening of SFD, the training of the farmer field school (FFS) staff, and the training and equipment of the CAHWs – in fact the local authorities requested that the CAHW training curriculum be extended to other areas. Training and on-the-job capacity building also built the capacity of local implementing partners. The *Final Survey Report* also found that the participatory approach built social capital. In addition, both the M&E and grievance redress mechanism of SAPREP have been integrated into FAO practice and projects in Yemen – see Section IVA below. SAPREP also gave both FAO and SFD first-hand experience of promoting climate-smart agriculture, a must in Yemen, which is highly vulnerable to climatic variability and change.

Mobilizing Private Sector Financing

60. Despite the fragmented state of enterprise and markets in the conflict situation, SAPREP was able to sustain a private sector focus. The autonomous status of SFD, accountable to but independent of government, allowed broad latitude to operate with efficiency. Project delivery was predominantly through either NGO or private contractors. Many contracts were awarded to local suppliers. The most significant impact of SAPREP on private business was the use by SFD of community contracting approaches for construction under the land and water component (1.1) where communities were empowered to let contracts for constructing or rehabilitating community assets. These contracts were let for a total of US$9.76 million and employed 12,900 workers. In addition, SFD implemented other land and water sub-projects using cash-for-work, employing 12,291 beneficiaries from 6,724 target households and paying out US$3.33 million in wages.

[15] The Survey polled 3,700 beneficiaries, of whom 75 percent were male and 25 percent were female.

Both approaches injected considerable liquidity into the local economy, generated employment and stimulated local enterprise through contracting and the purchase of equipment and materials.

61. SAPREP supported specific private sector activities. The project organized and supported 17 private feed block producers, creating potentially viable and scalable businesses as well as employment for semi-skilled workers. In addition, SAPREP supported the establishment of horticulture seedling centers and packing centers, and of the women's agro-processing groups mentioned above.

62. SAPREP also promoted public-private cooperation. Local private seed growers were contracted to supply seeds of staple crops. The seeds were processed and tested at the public Seed Multiplication Corporation (GSMC). This public-private partnership enabled the private sector to gain more experience in producing good quality seed and to enjoy greater market access, while farmers benefited from a larger supply of certified quality seed.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

63. The FCV context in which the project was prepared and approved had a strong influence on design, including of the Results Framework. Because of the extreme uncertainty about how the situation would evolve, the PDO was worded realistically, and targets were initially set conservatively (see Section II A above). In the event, many of these targets were exceeded by a margin of 50 percent or more. This prudence was appropriate given the prevalence of uncertainty and risk. Some targets were raised once facts on the ground could be established.

64. Similarly, because of the unstable and changing context and the diverse needs of the target population, the design offered a wide range of interventions. Most of the activities were tried and tested over three decades of Bank investment in rural Yemen and were well adapted to the situation.[16] Only two innovative activities (fodder choppers and feed blocks) proved to be hard to implement in the prevailing context (see III B below).

65. Design included a strong focus on M&E and detailed provision for both in-house and third-party monitoring and evaluation. The strength of the M&E design (and its subsequent implementation) allowed intelligent management, flexible approaches to problem solving, and continuous assessments of progress and results – see Section IV A below.

66. There were clear targeting and project selection criteria that proved acceptable politically. In Yemen's conflict-ravaged countryside and the disastrous state of the rural economy, the selection of the target areas and groups was highly appropriate (see II B above). Selection criteria were politically palatable and in implementation (see III B below) they proved largely workable and socially acceptable.

[16] Past projects had demonstrated: (i) the feasibility and value of community-based land and water investment that combined water storage with water harvesting and terrace rehabilitation (Land & Water Conservation Project, LWCP, Groundwater and Soil Conservation Project, GSCP, Rainfed Agriculture and Livestock Project, RALP); (ii) the need to address the challenges of farming in rainfed areas through both agriculture and livestock (RALP); (iii) the key need to adopt a broad range of investments, grounding them in community-based approaches and to prioritize sustainability (the Dhamar Participatory Rural Development Project, DPRDP, and the Al Dhala Community Resource Management Project, ADCRMP, Social Fund for Development, SFD); and (iv) use of community contracts and cash-for-works schemes to strengthen ownership, build local capacity, and inject liquidity into the economy through the poorest in the community (Public Works Project, PWP).

67. Implementing agencies were specifically selected to be independent of government. Bank policy dictated the selection of a UN organization as the implementing agency. With its long experience worldwide with agriculture projects and three decades of in-country implementation experience, FAO was the appropriate partner.

68. The choice of the Social Fund for Development (SFD) as the main national implementing partner of FAO was a significant factor in the project's success in the activities implemented by SFD. SFD had over 25 years of experience and it combined good governance with independence of government. It had long experience working with a wide range of donors and was well used to donor procedures and requirements. Its good track record over more than two decades ensured the trust of both politicians of all stripes and of the administration at both central and local levels. SFD's long history of community engagement and investment throughout the country had earned it the respect and trust of communities. Its extensive decentralized structure gave it a field presence in all areas. The existence of regional offices allowed it to communicate with the shifting political establishments. It had a competent, dedicated and motivated staff, and over the years it had developed efficient fiduciary systems for procurement, financial management, grievance redress mechanism (GRM), monitoring and evaluation (M&E) and reporting.

69. Design recognized that implementing the project in the difficult context of ongoing conflict was extremely risky and the overall risk to the achievement of the PDO was rated as "High". The long list of high risks included: political and governance risks; macroeconomic risks; technical design risks; environmental and social risks; and fiduciary and stakeholders' risks. The risk from conflict was mitigated by including actual or probable conflict as a criterion in selection of districts. The situation on the ground was to be closely monitored during implementation, with the option of switching districts in the event that the situation changed. The risks from the political situation and possible negative impacts from the de facto administrations were mitigated at the design stage by selecting two well-appreciated and neutral implementing agencies and by the close contacts maintained by FAO with the authorities.

70. A second factor in risk management was local ownership and support characterized by community involvement throughout, including in selection of beneficiaries and subprojects, preparation, implementation, monitoring, operation, and maintenance. Community support was strengthened by the provisions for monitoring and recourse. Arrangements for third party monitoring (see IV A below) not only verified delivery but also reflected beneficiaries' appreciation. Recourse was provided through a GRM which got off to a slow start but then functioned well (see IV B). Overall, the successful implementation of the project demonstrated that, despite the high level of risk, the mitigation strategies were effective.

71. The three-year project duration proved ambitious but close to the mark. The three-year term was selected because it was long enough to implement the project essentially as designed but concise enough to ensure continued relevance in a fast-changing environment. The project period was also long enough to test several innovative activities for possible scaling up in subsequent operations. In the event, two extensions totalling ten months proved necessary in order to complete activities, but these were caused very largely by unforeseeable factors outside the project's control (see B below).

B. KEY FACTORS DURING IMPLEMENTATION

Factors subject to the control of government and/or implementing entities

72. The political situation was the cause of delays to implementation. Unusually, the implementing agency (FAO) was not part of government and hence the implementing agency could be subject to decisions and actions over which it had no control. Although considerable efforts were made at preparation and throughout implementation to consult with both

de facto governments, there were, nonetheless, instances of negative effects of central or local government action (or inaction). In particular, there were often long delays in the issue of clearances and permits, and these delays were amongst the reasons for overall implementation delays that resulted in a ten-month delay in project completion.[17]

73. Community participation greatly contributed to ownership. Targeting and registration of beneficiaries and selection and implementation of community projects was successfully accomplished through community engagement and systematic procedures. The project followed a community-driven development (CDD) approach that had been used successfully in several rural projects in Yemen. The principal implementing partner, SFD, had an intensive, well-tried community engagement process on which to build and it already had an extensive knowledge of many of the beneficiary communities. Communities were thus able to share in decision-taking about which beneficiaries and activity should be chosen, and SFD's prior knowledge was helpful in steering the process. FAO and SFD community mobilization teams consulted each community through focus group discussions, questionnaires and interviews, using a participatory, inclusive and transparent community-based targeting mechanism where communities identified beneficiaries based on the agreed criteria. FAO did report some initial challenges in targeting and registration but developed standard operating procedures with a three-stage process for verifying eligibility. FAO also established an information management unit to manage a data base and trained all its implementing partners in the community engagement procedures. Separate community consultations were held with women, led by female community mobilization staff and there was a particular focus on maximizing the number of women eligible. The *Beneficiary Satisfaction Survey* found that 90 percent of respondents considered access for target groups equitable. Few specific complaints were received on beneficiary selection.

74. Community participation also facilitated implementation. In a second stage, the community mobilizers and technical staff and consultants worked with communities to select the nature and scope of the activity for funding and how it would be implemented. Two particular features of implementation strengthened community engagement and the flow of benefits: community contracting and the use of community labor – 'cash-for-work' (see Institutional strengthening in Section II E above). Overall, 94 percent of beneficiaries polled considered that SAPREP strengthened social relations. Beneficiaries of the land and water component, for example, reported overwhelmingly to the Beneficiary Satisfaction Survey that the beneficiary selection process was fair (94 percent), that they had received enough information regarding the options (96 percent), and that they had been involved in project selection (95 percent).

75. Inevitably a few activities proved harder to implement than others. The livestock restocking activity with poultry and small ruminant packages (Component 1.2, see II B above) was poorly conducted by some of the implementing partners (IPs) selected and supervision was initially inadequate. As a result, many sub-standard animals were introduced, including animals from different agro-climatic zones ill-adapted to local conditions. Although FAO implemented corrective actions, monitoring IP performance more closely in the field, strengthening training and ensuring purchase of livestock from areas with similar agro-climatic conditions, these shortcomings contributed to relatively poor outcomes from the activity (see II B above).[18] The introduction of mechanical fodder choppers under the animal nutrition activity (Component 1.2, see II B above) had limited success. In some areas the required feedstock (typically sorghum or millet stover) was not available.

[17] There were, for example, lengthy delays in the issue of permits for the movement of livestock (of poultry to Shabwah, or sheep and goats to Hajjah and Ta'iz). The distribution of feed choppers in Shabwah, Hodeida and Hajjah was held up by delays in obtaining permits from the Supreme Council for the Management and Coordination of Humanitarian Affairs (SCMCHA). Permission to distribute the last seven fodder choppers in Tihama governorate was given by SCMCHA only in August 2021, after the SAPREP closing date. In line with World Bank policy and after all necessary internal clearances, these fodder choppers were transferred to the Bank-financed FSRRP project which supports similar activities.

[18] According to the FAO Terminal Report on the project, FAO intends to carry out an 'After-action Review (AAR)' on livestock restocking activities to diagnose the problems and to help with design of a strategy and roadmap for future restocking activities in Yemen, including those planned under the restocking / poultry kit distribution activity of the follow up project Yemen Food Security Response and Resilience Project (FSRRP), approved by the World Bank board in April 2021

Operation turned out to be technically challenging, and the required fuel was high cost and often simply not available. The introduction of feed blocks under the same animal nutrition activity required careful management by farmers. Although training was provided, many farmers nonetheless found problems in their use.

Factors subject to the control of the World Bank

76. The quality of Bank supervision was a strongly positive factor. Proactive and responsive supervision and the high quality, strong commitment and flexibility of the Bank team proved a strong and well-recognized factor in project success (see IV C below).

77. One activity was scaled down following Bank intervention. The vaccination campaigns were delayed and reduced by half (from 4.8 million head to 2.6 million head) when the World Bank required in December 2019 that no project resources should be used to implement any activity through central government. The decision was taken that vaccination would be managed instead by the governorate-level authorities, acting as implementing partners. One further negative result of these delays was that a stock of unused vaccines passed their expiry date and had to be disposed of (in compliance with the specific ESMP for the sub-component).

Factors outside the control of government and/or implementing entities

78. Inevitably, conflict caused disruption to project activities, although this was largely minimized by agile implementing agencies. FAO kept constant contact with the de facto authorities and worked hard to foresee and minimize disruption, which was primarily of three kinds. Physical movement was sometimes impeded and zones where fighting was occurring had to be avoided. Community contracting and the use of local labour were prime mitigation measures because they required less movement. Nonetheless, the problem caused the deselection of some sites or delays in implementation. Markets and logistical chains were disrupted, causing problems in both supply of inputs and marketing of project-related production. Flow of funds worked fairly well despite the existence of parallel banking systems in the two parts of the country. However, there were delays in access to funds (see Section I above). In addition, the high rate of inflation and the fluctuations in the foreign exchange rate made budgeting problematic.

79. COVID was inevitably a factor in delays, although it did not affect the quality, nature or extent of implementation. Although travel and contact were restricted, protocols for field operations were successfully introduced to mitigate effects. These protocols limited face-to-face contacts required social distance and provided for the wearing of masks and gloves. In addition, COVID 19 health messages were mainstreamed into all FFS sessions.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

80. The Theory of Change in Section I above illustrates the causal sequence from activities to outputs to outcomes (see also the table in Section II B above and the detailed tables in Annex 1). The indicators selected were generally adequate to monitor progress towards the intended outcomes. No nutrition target was set as the project duration was too short to realistically expect measured outcomes. However, the addition of indicators to track the 'nutrition-enhancing agriculture' objective and to record how specific target groups such as IDPs and returnees were reached could have strengthened the results framework. The PDO is framed realistically, appropriate in the highly risky and volatile context. The two PDO indicators – *the number of farmers adopting improved agricultural technology*, and *households supported*

to resume crop and livestock production – illustrate only a part of the project's intended outcomes. However, the intermediate outcome indicators provide adequate support to demonstrate achievement of the PDO (see II D above).

81. Design provided for four complementary M&E functions. The first provided for the design and monitoring of results indicators to measure the key outputs and outcomes based on the results framework. At each FAO or SFD hub office, data was to be collected and reviewed before being consolidated at the central level by FAO. In addition to the usual M&E and reporting for a project, the M&E system was designed to meet specific GAFSP reporting requirements.[19]

82. In a second function, FAO was to hire an independent third-party monitoring (TPM) agency to assess quarterly performance and conduct field monitoring of subprojects funded under the project. The TPM agency was to (i) track performance; (ii) analyse evidence and recommend improvements to inform decision making; and (iii) report on performance and lessons to facilitate learning and support accountability, including learning from beneficiaries' experience. The terms of reference for the TPM were to be agreed upon with the Bank and the TPM reports shared with the Bank.

83. Third, a needs assessment/baseline survey was to be conducted during the first three months of the project, and additional surveys held at mid-term review stage and at project completion. FAO was to produce a mid-term review (MTR) and a completion report. Finally, ad hoc studies were to be conducted to assess particular aspects of the project which were problematic, or which had significant learning potential.

M&E Implementation

84. FAO developed the basic M&E tool, the Indicator Performance Tracking Table (IPTT), which was updated every three months. FAO's M&E unit consolidated the data and reported to the World Bank every six months. The Bank in turn reported to GAFSP twice a year. With the partial exception of the geo-referencing requirement (see below), all GAFSP requirements were satisfied as they were part and parcel of routine M&E for a Bank-supervised project.

85. Designated officers (FAO or SFD according to responsibility for each project activity) collected data from the field and completed a standard template which was then submitted to the FAO M&E officer for Yemen. Collaboration between FAO and SFD and their respective teams was good. Some difficulties were encountered in the collection of data. The dispersed nature of field activities across a vast geographical area and the large number of implementing partners[20] meant that information sometimes arrived with a considerable delay. Particular challenges arose with data on animal health and vaccination because of the highly decentralized nature of the activity and the huge number of vaccinations being conducted (more than 2.6 million). In addition, it proved difficult to meet GAFSP's requirements for geo-coordinates of sub-projects due to government concerns and prevalent security considerations.[21]

86. For the TPM, after Bank clearance of the terms of reference, FAO contracted with APEX Company to conduct the third-party monitoring. Eleven quarterly reports were produced. Regarding the surveys and ad hoc reports, the FAO M&E unit produced the needs assessment/baseline survey and conducted a mid-term review. APEX produced a consolidated

[19] Performance assessment of SAPREP was to be carried out in accordance with the GAFSP Monitoring and Evaluation Plan dated February 2011. Key features included: (i) ex-ante Cost-Benefit Analysis of the project; (ii) a baseline on which to assess progress on common indicators across all GAFSP projects, with regular reporting of progress to the GAFSP Steering Committee; (iii) project activities georeferenced on a map overlaid with sub-national development indicators; and (iv) an independent evaluation of project implementation at project completion.
[20] In addition to SFD, FAO contracted with ten NGOs and (for the vaccination campaign) with several decentralized government agricultural offices.
[21] FAO reported 'FAO procured the necessary equipment and provided training to ensure the collection of GPS data. However, the effort was put on hold due to lack of clearances from authorities and the sensitivity of the information in the prevailing security condition in Yemen.'

end-of-project compilation of its surveys, the *Beneficiary Satisfaction Survey* (August 2021). Moore Yemen produced the *Final Survey Report*, based on field work between June and August 2021. Conducted through beneficiary questionnaire and interviews[22] the *Final Survey Report* assessed project achievements and perceived impacts and identified findings and lessons (see Annex 1). In October 2021, FAO's Office of Emergencies and Resilience produced a Terminal Report on the project.

87. Finally, a number of specific assessments were also commissioned by FAO, including: (i) a crop productivity assessment; (ii) a performance assessment of the community animal health worker (CAHW) activity; (iii) a milk productivity survey (January 2021); (iv) an assessment of the restocking activity; and (v) a study of the vaccination campaign.

M&E Utilization

88. The regular IPTTs and the MTR report were shared with the Bank and formed the basis of supervision and mid-term assessment of progress. The TPM reports were shared with FAO and the Bank and formed the basis for a timebound follow up action plan with the FAO and SFD project teams. These plans were systematically implemented. The two final survey reports contributed to FAO's Terminal Report and also to this report. The specific assessments were used to evaluate results not captured by regular monitoring – for example, crop or milk yields, the performance of the CAHWs, or the scope and results of the vaccination campaign – or they were used to identify issues and assess solutions, for example with the restocking activity.

89. There have been longer term institutional and capacity building impacts of SAPREP M&E.[23] The launch of the project M&E activity coincided with the establishment of a permanent M&E unit within FAO Yemen. The IPTT and the data collection procedures used in SAPREP have now been adopted for all FAO M&E in Yemen. FAO has also prepared a curriculum to train implementing partners in M&E, GRM etc.

Justification of Overall Rating of Quality of M&E

90. The results framework was generally sound and allowed causal relationships to be tracked. The addition of indicators to track use of nutrition-enhancing practices and how the project reached specific target groups would have been helpful. The M&E system design and its implementation tracked progress against the results framework and kept project management and the Bank informed. The TPM and final survey gave an in-depth knowledge of project achievements and issues and ensured that beneficiaries' views were understood and included in project evaluation. The complementary assessments and studies were helpful for in-depth monitoring and trouble-shooting. Only minor shortcomings arose in data collection. The four M&E functions provided a wealth of information that was used to manage implementation, deal with issues, revise targets and substantiate results. With only moderate shortcomings in design and only minor shortcomings in implementation, a rating of ***Substantial*** is justified.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

[22] The *Beneficiary Satisfaction Survey* was based on 205 site visits, on 3.700 beneficiary interviews, on 994 male group discussions and 477 female group discussions, on 199 Interviews with implementing partners, and on 373 key informant interviews. The *Final Survey Report* is based on consultation of over 3,100 beneficiaries and a hundred key informants, 60 percent male and 40 percent female.
[23] See also Section II E above.

Environmental and social compliance

91. The ESMF developed at appraisal proved robust and was largely implemented according to plan. Only two significant issues arose. The first was that although site-specific ESMPs were prepared for each 'moderate risk' sub-project in line with the ESMF, presentation to the Bank was delayed by multiple rounds of clearance within and between SFD and FAO. In some cases, works commenced before the Bank had cleared the ESMPs. As a result, the Bank was obliged to require the halt of these works. Actions were promptly agreed to ensure the timely preparation of ESMPs and their submission to the Bank. These actions also included the strengthening of community consultation requirements for the ESMPs, with particular provision for consulting women community members.

92. A second issue, which led to the Implementation Progress (IP) rating being reduced to MS in May 2019, was a fatality which occurred when soil which had accumulated on a berm fell on a worker and suffocated him. The TPM conducted an independent investigation which revealed inadequate pre-work planning, hazard identification and risk management, as well as insufficient safety training. As a result, corrective actions to strengthen occupational health and safety (OHS) were set out in a Consolidated Safeguard Corrective Action Plan (CSCAP), which included risk classification of all sub-projects to identify additional OHS-related mitigation measures for each category of works and level of risks, together with strengthened training and monitoring. SFD established a dedicated OHS unit. The CSCAP also included longer-term actions for enhancing compliance with the ESMF. The required corrective actions were implemented across the project and no further problems arose.

93. The overall safeguard performance was rated satisfactory at project closure. A notable contribution of SAPREP was in building the capacity of SFD and other implementation partners in overseeing and applying environmental safeguards, with a particular institutional strengthening effect in OHS aspects.

Flow of funds and fiduciary compliance

94. Financial management was rated satisfactory or moderately satisfactory throughout the life of the project. Flow of funds proceeded in line with agreements, with the Bank making advances to FAO and FAO making subsidiary advances to SFD. The project's financial management arrangements were governed by the Financial Management Framework Agreement (FMFA), which provided for the use of FAO's Financial Rules and Regulations and which did not require annual audit. Interim Financial Reports (IFRs) were submitted regularly on time. The only issue which arose was that SFD initially incorrectly reported advances to its branches as expenses rather than as advances. This was promptly corrected. Audits of SFD by FAO were conducted, the reports were shared with the Bank, and follow up actions were promptly taken. As noted in Section II above, the final third-party monitoring assessment recorded that not a single beneficiary interviewed thought that there had been bribery or corruption in the project.

95. SAPREP procurement was carried out in accordance with FAO's procurement procedures as Alternative Procurement Arrangements allowed by the World Bank's new Procurement Framework Policy. FAO procurement procedures were assessed and found acceptable to the World Bank. The FAO procurement team, led by an experienced international procurement specialist supported by national procurement experts, was responsible for day-to-day implementation of procurement activities.

96. Procurement plans were correctly prepared and regularly updated. Given the need to promote business activity, FAO and SFD made strong efforts to publicize procurement plans locally. FAO implemented two levels of inspection, one through an independent international company, usually pre-shipment or in the warehouse, the second an on-site inspection by FAO staff. No procurement anomalies were reported. Procurement arrangements were overall satisfactory.

Grievance Redress Mechanism (GRM)

97. FAO established a GRM facility soon after the start of implementation. Initially, outreach to the target population was limited and the system was not fully operational until late 2018 when the project was already well underway. Subsequently the facility was given wide publicity, including through WhatsApp, SMS and e-mail and by leafleting (109,000 leaflets were distributed), and a free 'hotline' was set up. SFD already had a GRM system and dealt with its own complaints, reporting to FAO each month. At completion, the TPM found that two thirds of beneficiaries consulted were 'aware of the GRM'. Over the project life, 325 complaints were received (220 by FAO and 105 by SFD), all of which were resolved in an acceptable timeframe and feedback given to the complainants. All cases were reported in the semi-annual project progress reports, including types of complaint and how they were resolved.

C. BANK PERFORMANCE

Quality at Entry

98. The project, as prepared, was of high strategic relevance in the dire situation of the country and was closely aligned with Bank regional and country strategy (see I and II A above). The two phases of the preparation process and the solid grounding in country knowledge and experience and lessons from previous projects ensured good quality technical, financial, and economic design.

99. One risk at the design phase was the high degree of uncertainty about the reality on the ground that the project would face. Another was the considerable number of activities and their dispersed character. However, the components were in themselves straightforward and for the most part well tested. Poverty reduction, gender inclusion and participation were part and parcel of the design. Environmental aspects and fiduciary aspects were well covered. The Implementation arrangements – with a UN agency as the implementing agency but in partnership with an effective local organization, SFD, and working through local institutions wherever possible - were well in line with Bank strategy for a country in conflict and balanced the need for effective implementation with the need to maintain and rebuild local service delivery capacity. Despite the turbulent context, the project was carried out almost exactly as designed and in a timespan close to the design timeframe, testament to the quality of preparation.

100. Arrangements for M&E, TPM, impact assessment and GRM were well thought through and proved implementable and effective (see IV A above). The risk assessment and mitigation measures were appropriate (see III A above). The Bank committed adequate budget to the preparation process ($260,000, 40 staff weeks) and fielded a skilled multi-disciplinary team with all required competences.

Quality of Supervision

101. The Bank committed a significant level of resources to project supervision – a total of $550,000 over just three years, 114 staff weeks, including 49 staff weeks in the first year of implementation. This commitment reflected the very high risks attendant on the project and the Bank's determination to bring urgently needed benefits to the target population. Until the advent of COVID-19, periodic supervision missions took place through meetings with FAO and SFD in third party countries, but from early 2020 supervision was strictly through virtual technology. The mid-term review led to the revision of project targets in the August 2020 restructuring (see I B above). Despite the constraints, the supervision effort was effective throughout the life of the project. There was excellent continuity, with a single task team leader (TTL) who saw the project through from appraisal to completion. Supervision teams were adequately staffed and there was proactive identification, follow-up and resolution of implementation issues. Reporting was clear and in appropriate detail. Managerial inputs were constructive, pertinent and supportive of the overall supervision effort. Issues arising were flagged and dealt with – for example, the shortcomings of the restocking activity (III B) or the occupational health and

safety issue (IV B). Appropriate attention was paid to post-project sustainability and there were structured interactions between the SAPREP team and the team responsible for preparation of the follow-on project, FSRRP (see the next section). In view of the design, implementation and delivery of results achieved by SAPREP under difficult FCV conditions, the decision was taken to give a fuller assessment in this ICR for learning purposes than for a typical project.

Justification of Overall Rating of Bank Performance

102. Quality at entry was high, with strong relevance, implementable components matched with both need and context, sound identification and mitigation of risks, overall effective arrangements for M&E, and workable implementation arrangements. There were some minor shortcomings with the design of the results framework. Quality of supervision was high, with both Bank management and FAO expressing strong appreciation. The quality of Bank performance at entry and in supervision justifies a rating of ***Satisfactory***.

D. RISK TO DEVELOPMENT OUTCOME

103. Despite the achievements of the project, there are some risks to sustainability. SAPREP has demonstrated the feasibility of reviving agricultural activity and markets and of sustaining and even strengthening services in rural areas despite conflict and economic disruption. Activities proved feasible and economically attractive to farmers, and the third party monitoring and the *Final Survey Report* showed high levels of commitment to continue. The capacity built in the project agencies, notably SFD, and the strong engagement of communities provide a sound institutional base for sustainability. There are, nonetheless, some risks to project outcomes. Inevitably, all activities are vulnerable to the impacts of resumption of hostilities and of further economic downturn. In addition, beneficiaries were concerned that if the project were just a once-for-all intervention, some results might be vulnerable. The *Beneficiary Satisfaction Survey* also found concerns about the sustainability of specific outcomes.

104. Services to farmers and livestock keepers have been revived in local areas under SAPREP but their continuation requires follow-up support. These services include farmer field schools; the deployment of community animal health workers (CAHWs); and the animal disease control program. There is strong demand for these services and a solid foundation has been laid, but further technical support and capacity building will be necessary. This support is foreseen under existing FAO-implemented activities in Yemen, and also under an upcoming World Bank-financed project (see below).

105. Several SAPREP activities are of a pilot or start-up nature and require further development. The horticulture seedling and collection centres and the women's agro-processing activities are off to a good start and cost recovery, although so far limited, gives some prospect of the financial viability that will be one key to sustainability. These are still fledgling organizations which will need to build their business model, increase turnover, develop business skills and strengthen their links to markets, micro-finance etc. Feed block production and demand for feed blocks have been initiated but there is still need to further develop the activity. Technical and business training and market development will be needed. The poultry activity is at risk for varying local reasons – one cited by beneficiaries was the difficulty of finding quality, affordable feed locally.

106. The sustainability of some assets created under SAPREP needs follow up. There is some risk to maintenance of shared or communal land and water assets. These assets generate a strong flow of benefits which provide both incentives and resources for their maintenance, and community committees have been set up and trained. However, in a few locations maintenance has been insufficient and follow up is required. Also, for the continuity of the animal disease control program, attention is needed to the maintenance of some cold chain facilities and the solar panels that power them.

107. Design of a larger follow-up project includes provision for continuing support to many SAPREP investments, as well as their scaling out. The Yemen Food Security Response and Resilience Project (FSRRP), approved by the World Bank board in April 2021, is designed to consolidate the achievements of SAPREP (and of other parallel projects). FSRRP will provide follow-up support as needed to SAPREP activities, and also expand many SAPREP activities to 77 districts in ten governorates, supporting strengthening community productive infrastructure (through cash-for-work); improving livelihoods and value chains, particularly for women (horticulture, dairy, honeybees); capacity building through FFS; and animal health and nutrition.

V. LESSONS AND RECOMMENDATIONS

108. Effective delivery was in large part due to the partnership and trust amongst all implementing agencies and the target communities. Implementation of the project through a highly professional UN agency (FAO) and a seasoned and well-respected national organization (SFD) was the most important factor in the successful delivery of the project largely as designed and within a short time frame. The use of local implementing partners with local knowledge and the trust of the population was also a key factor. Another strongly positive factor was the proactive involvement of the beneficiary communities throughout the implementation process, an involvement strengthened by empowerment of local people through the CDD approach, community contracting, and job and income creation through cash for work. *These lessons have been incorporated in the follow up FSRRP. The recommendation for comparable FCV situations, particularly where little or no reliance can be placed on government services, is to select experienced and reputable humanitarian and development agencies with tried and tested presence on the ground and, if at all possible, trusted local partners and to build reciprocal relations of trust with communities not only through a flow of benefits but also through empowering communities with responsibilities. This approach can also build institutional capacity for service delivery even where public services are largely absent.*

109. A broad range of interventions in food systems can achieve positive outcomes even in a fluid FCV situation. At appraisal it was not possible to know how the political and security situation would evolve. A broad palette of emergency and recovery activities was included in design, ranging from investment in next-season food production to water management infrastructure and private sector development. Overall, these activities helped to relieve the immediate food and nutrition crisis, invested in resilient and sustainable natural resource management, and built assets, skills and community and private institutional capacity, thereby helping to rebuild rural livelihoods, strengthen resilience and reduce poverty. *The recommendation in comparable FCV contexts is to construct a range of interventions in food systems aiming both at relieving emergency situations and at building resilience and reducing poverty.*

110. The clear targeting and project selection criteria were a strong factor in gaining support for the project. These criteria were not only set objectively based on the best available knowledge but were acceptable both to the authorities and to the beneficiary communities. *A similar approach has been adopted for FSRRP. The general lesson – and implicit recommendation – is that clarity, fairness and community involvement in setting criteria and selecting beneficiaries can win broad acceptance of a project even in the most difficult FCV contexts.*

111. Monitoring and evaluation went well beyond box ticking to become a prime instrument of both knowledge and accountability. The strong focus on M&E, the extensive beneficiary consultations through third party monitoring, the range of special evaluations, and the operation of the GRM provided a huge body of knowledge to help steer the project and gauge its results. The continuous consultation of beneficiaries strengthened mutual accountability and built a

comprehensive picture of project impacts on the ground. *FSRRP has adopted this same range of M&E instruments. The recommendation even for challenging FCV contexts is that every effort should be made to have sound and transparent M&E, and particularly to implement community-level and participatory monitoring, together with GRM.*

112. The special targeting of women and women-headed households had an effect not only on incomes and female empowerment but also on nutrition and on local community attitudes (see the discussion on Gender in III E above). Although no SAPREP specific data are available, research on similar operations in Yemen has shown that involving women in productive activities both generates income and enhances their role in household decision-making with a positive effect on dietary diversity and child nutritional status. In addition, under SAPREP the local community became more accepting of reducing gender-related barriers that usually prevent women from working. Many communities promoted women's involvement, work and mobility. *These lessons have been incorporated in the follow-up FSRRP. The recommendation in the broader FCV context is to specifically target female inclusion in agricultural value chains and rural livelihoods interventions, as this can not only strengthen food security and nutrition in the short-term but also help to 'break the cycle of inter-generational poverty common in FCV settings'.*[24]

113. Remaining engaged in FCV contexts in the absence of government. In the conditions which prevailed in 2016 of conflict and humanitarian crisis where there were questions over the legitimacy of government, the Bank took the decision to remain engaged – and does so to this day, with a follow up project to SAPREP about to start. *The lesson is that even in situations of persistent conflict and uncertain governance, it is possible to find work-arounds that can reach the target population. The recommendation for FCV contexts where no more can be expected of government than acquiescence is to remain engaged in a principled and pragmatic way to transparently deliver results at the community level.*

[24] See *Building Stronger Food Systems in Fragility, Conflict, and Violence Settings*, World Bank, November 2021

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: To increase the use of productivity and nutrition-enhancing agricultural practices by smallholders

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Farmers adopting improved agricultural technology	Number	0.00 31-Jul-2017	10000.00 31-Jul-2017		13,322.00 30-Jun-2021
Farmers adopting improved agricultural technology - Female	Number	0.00	3000.00		2,728.00
Farmers adopting improved agricultural technology - male	Number	0.00	7000.00		10,594.00

Comments (achievements against targets):

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

					Completion
Households supported to resume crop and livestock production	Number	0.00 31-Jul-2017	35000.00 31-Jul-2017		59,641.00 30-Jun-2021

Comments (achievements against targets):

A.2 Intermediate Results Indicators

Component: 1. Community Subprojects and Investments

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Farmers reached with agricultural assets or services	Number	0.00 31-Jul-2017	90000.00 31-Jul-2017	110,000.00 06-Aug-2020	157,075.00 30-Jun-2021
Farmers reached with agricultural assets or services - Female	Number	0.00	27000.00		38,049.00
Number of HHs with strengthened land and water management	Number	0.00 31-Jul-2017	18000.00 31-Jul-2017	26,000.00 06-Aug-2020	22,660.00 30-Jun-2021

Number of HHs with improved animal husbandry, livestock production and animal health services	Number	0.00 31-Jul-2017	34000.00 31-Jul-2017		82,008.00 30-Jun-2021
Number of HHs with strengthened capacity and enhanced extension services	Number	0.00 31-Jul-2017	38000.00 31-Jul-2017		58,567.00 30-Jun-2021

Comments (achievements against targets):
All the conservatively set targets were surpassed with the exception of HH strengthened with land and water management, where the revised target of 26,000 (up from 18,000) was only partly met (87%) for the reasons discussed in Section II B.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Area provided with irrigation and drainage services (ha)	Hectare(Ha)	0.00 31-Jul-2017	444.00 31-Jul-2017	5,400.00 06-Aug-2020	13,038.00 30-Jun-2021
Area provided with irrigation and drainage services - Improved (ha)	Hectare(Ha)	0.00 31-Jul-2017	444.00 31-Jul-2017	2,400.00 06-Aug-2020	3,924.00 30-Jun-2021
Area protected by wadi	Hectare(Ha)	0.00	350.00	1,800.00	3,873.00

works		31-Jul-2017	31-Jul-2017	06-Aug-2020	30-Jun-2021
New on-farm water storages	Hectare(Ha)	0.00 31-Jul-2017	24.00 31-Jul-2017		75.60 30-Jun-2021
Terraces rehabilitated	Hectare(Ha)	0.00 31-Jul-2017	70.00 31-Jul-2017		42.36 30-Jun-2021

Comments (achievements against targets):
With the minor exception of terrace rehabilitation, all targets were more than met.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Increased milk production	Percentage	0.00 31-Jul-2017	10.00 31-Jul-2017		9.00 30-Jun-2021

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Additional hectares with	Hectare(Ha)	0.00	160.00	700.00	1,251.00

adopted technology being promoted		31-Jul-2017	31-Jul-2017	06-Aug-2020	30-Jun-2021

Comments (achievements against targets):
Additional hectares: The target was more than met (179%)

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Households benefitting from rooftop water harvesting	Number	0.00 31-Jul-2017	2000.00 31-Jul-2017		3,031.00 30-Jun-2021

Comments (achievements against targets):
The target was exceeded by 50%.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Vaccination against PPR and sheep&goat pox	Percentage	0.00 31-Jul-2017	80.00 31-Jul-2017	50.00 06-Aug-2020	49.30 30-Jun-2021

Comments (achievements against targets):
The target was revised downwards for the reasons explained in Section II B and III B of the ICR. The revised target was substantially met.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Farmers benefitting from vaccination of their livestock	Number	0.00 31-Jul-2017	200000.00 31-Jul-2017	130,000.00 06-Aug-2020	142,252.00 30-Jun-2021

Comments (achievements against targets):
The target was revised downwards for the reasons explained in Section II B and III B of the ICR. The revised target was more than met.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Households benefitting from improved animal feed	Number	0.00 31-Jul-2017	25000.00 31-Jul-2017		25,640.00 30-Jun-2021

Comments (achievements against targets):
The target was met.

Component: 2. Capacity Building and Extension

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

People receiving nutrition training/awareness	Number	0.00 31-Jul-2017	3000.00 31-Jul-2017		2,100.00 30-Jun-2021

Comments (achievements against targets):
Achievement was 70% of target. Access was reduced by gender considerations (Section II E) and by COVID-related movement restrictions (see Section III B).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Client days of extension services provided to farmers, community members etc.	Days	0.00 31-Jul-2017	2400.00 31-Jul-2017		2,434.00 30-Jun-2021
Of which women	Days	0.00 31-Jul-2017	720.00 31-Jul-2017		536.00 30-Jun-2021

Comments (achievements against targets):
The target was met overall, although access to women was constrained (see Section II E).

B. KEY OUTPUTS BY COMPONENT

Key outputs and their linkage to the intermediate results indicators and outcome indicators

		Intermediate Results			Outcomes			
Component	**Outputs**	**Indicators**	**Target**	**Achievement**	**Indicators**	**Target**	**Achievement**	**PDO**
1.1 Community land and water management								
1.1 Community land and water sub-projects	▪ 107 land and water sub-projects	Area provided with new or improved I&D services	5,400 ha	13,038 ha (241%)	Number of households with strengthened land and water management	26,000	22,660 (87%)	**PDO**: To increase the use of productivity and nutrition enhancing agriculture practices by smallholders in targeted project area **PDO indicator 1**: Farmers adopting improved agricultural technology ❖ **Target** 10,000 ❖ **Achievement**: 13,322 (133% of which women ❖ **Target** 3,000 ❖ **Achievement**: 2,728 (91%) **PDO Indicator 2**: to resume crop and livestock production ❖ **Target** 35,000 ❖ **Achievement**: 59,641 (170%)
		Area protected by wadi works	1,800 ha	3,873 ha (171%)				
		New on-farm water storage	24 ha	76 ha (315%)				
		Terrace rehabilitation	70 ha	42 ha (61%)				
		Households benefitting from rooftop water harvesting	2,000	3.031 (150%)-				
1.3 Improving livelihood and adding value to agriculture								
Recovery of crop production	▪ Distribution of cereal seed				Farmers reached with agricultural assets or services of which women	110,000 27,000	157,075 (143%) 38,049 (141%)	
Horticulture (	▪ Horticulture packages provided ▪ Horticulture seedling production centres and collecting centres							
Dairy	▪ Distribution of dairy equipment and production inputs							
Honeybees	▪ Training and equipment for honey producers							
2: Capacity Building and Extension								
2.1 IEC materials	▪ Materials for the technical packages							
2.2 and 2.3 Awareness raising and training	▪ Training packages	People receiving nutrition training or awareness	3,000	2,100 (70%)				
2.4 FFS	▪ 105 FFS and training of trainers	Client days of extension services provided to farmers, - of which women Number of households with strengthened capacity and enhanced extension services	2.400 720 38,000	2,434 (101%) 536 (75%) 58,567 (154%)				

		Intermediate Results			Outcomes			PDO
Component	**Outputs**	**Indicators**	**Target**	**Achievement**	**Indicators**	**Target**	**Achievement**	
1.2 Improving animal husbandry, livestock production and animal health services								
1.2.1 Improving vet services	▪ 84 community animal health workers equipped and trained				Number of households with improved animal husbandry, livestock production and animal health services	34,000	82,008 (241%)	As above
1.2.2 Animal disease control program	▪ 2.7 million small ruminants and cattle vaccinated ▪ Cold chain[25] facilities set up	Vaccination against PPR and goat and sheep pox Farmers benefiting from vaccination of their livestock	50% 130,000	49% (98%) 142,252				
1.2.3 Animal nutrition (SFD)	▪ Seed, fodder choppers and feed blocks distributed ▪ Private feed block producers supported	Increased milk production Households benefiting from improved animal feed	10% 25,000	9% (90%) 25,640 (103%)				
1.2.4 Provision of poultry packages and small ruminants	▪ Poultry and small ruminant packages distributed							

[25] A cold chain facility comprises of a refrigerator, a solar panel and a battery to ensure the proper storage of vaccines at governorate and district level.

Assessment of Achievement of Each Objective/Outcome

Components, outputs and results

1. The Theory of Change (Section 1 of the main ICRR) sets out the causal relationships from components and activities to outputs to outcomes that contribute to the achievement of the PDO. The following tables compare the level of actual achievement against targets and the discussion assesses the directness of the connections between the activities and the achievements reported.

Intermediate outcome 1: Number of households with strengthened land and water management

2. Under the *Community land and water management component* (Component 1.1), 107 land and water sub-projects were implemented. These included a range of new or upgraded infrastructure to provide water for irrigation, livestock watering and household use - terrace rehabilitation, wadi works, on-farm water storage, ponds, shallow wells, and rooftop water harvesting. Sub-project execution was the responsibility of the benefitting communities, either through community contracting or cash for work.[26] As a result, 22,660 households benefitted from strengthened land and water management. This was 25 percent above the original target of 18,000, but 13 percent below the revised target of 26,000 because community demand turned out to be somewhat lower than anticipated. Although addressing climate change was not a stated objective of the project, these investments and improved natural resource management techniques contribute to building the climate resilience of communities.

Component 1.1: Community land and water sub-projects

Outputs	Output indicators	Target	Achievement	Intermediate outcome 1 indicator	Target	Achieve-ment
107 land and water sub-projects	Area provided with new or improved I&D services	5,400 ha	13,038 ha (241%)	Number of households with strengthened land and water management	18,000 (original) 26,000 (revised)	22,660 (87%)
	Area protected by wadi works	1,800 ha	3,873 ha (215%)			
	New on-farm water storage	24 ha	76 ha (317%)			
	Terrace rehabilitation	70 ha	42 ha (61%)			
	Households benefitting from rooftop water harvesting	2,000	3.031 (150%)-			

Intermediate outcome 2: Farmers reached with agricultural assets or services

3. Two sets of activities were designed to reach farmers with agricultural services and build up their agricultural assets. Under the component *Improving livelihoods and adding value to agriculture* (Component 1.3), SAPREP provided

[26] For a discussion on these two instruments, see III B below.

63,500 farm households with inputs for recovery of crop production and materials and equipment for revival of horticulture[27] and dairy production and apiculture.

Component 1.3: Improving livelihoods and adding value to agriculture

▪ *Recovery of crop production*: Distribution of 1,133 tons of cereal seed to 53,950 households (598 t sorghum seed, 445 t millet seed, 48 t wheat seed)
▪ *Horticulture*: - Packages of irrigation equipment, inputs and intensive training and supervision for 1,402 small scale vegetable growers (target 1,000) - Establishment and operationalization of 5 horticulture seedling production centers (each run by a group of 20 trained members) - Establishment and operationalization of 3 horticulture collecting centres (each also run by a group of 20 specially trained members) - Establishment, equipment and training of ten women's agro-processing groups for horticultural products (e.g. drying of tomatoes and peppers)
▪ *Dairy* : Distribution of dairy equipment and production inputs to 6,000 small scale dairy producers (32 percent women)
▪ *Honeybees*: Training and equipment for 700 small-scale honey producers

4. The *capacity building and extension component* (Component 2) provided information and knowledge through documentation, training activities and farmer field schools (FFS).[28] SAPREP facilitated the establishment of 105 FFS. Initially, the project trained 40 FFS Master Trainers (including 8 women) who, in turn, trained 65 facilitators (including 6 women) during the life of the project. These schools, each comprising 20 members, were divided into three groups: 40 schools prioritized cereal production, 40 schools prioritized vegetable production and 25 schools prioritized animal production. In total 2,100 farmers and livestock keepers met regularly met to discuss production challenges and ways to address them.

5. The number of FFS days attended by farmers was right on target (2,434 days delivered against a target of 2,400)[29] while the number of farm households that benefited from the FFS was nearly 60,000 (58,567) against a target of 38,000. Nutrition training and awareness sessions reached 2,100 people (70 percent of the target of 3,000).

Component 2: Capacity Building and Extension: Outputs

Outputs	Output indicators	Target	Achievement
Awareness raising and training: packages	People receiving nutrition training or awareness	3,000	2,100 (70%)
Farmer field schools: 105 FFS	Client days of extension services provided to farmers, - of which women	2,400 720	2,434 (101%) 536 (75%)

[27] The horticulture activity was jointly implemented by SFD and FAO with a two-pronged approach with the common objective to increase production and commercialization. SFD implemented a strategy based on the support of individual farmers with targeted irrigation infrastructure, inputs and training, while FAO uses a group approach to provide Farmer Field School training on good agricultural practices and to establish joint seedling production centers and horticultural collecting centers for aggregation and joint commercialization of products.
[28] A Farmer Field School is a demand-driven and farmer-led mechanism where farmers pool their concerns and their knowledge and with expert guidance develop their own solutions.
[29] However, the number of FFS days targeted specifically at women (536) fell short of the target of 720 by 25 percent, see the discussion on Gender below.

and training of trainers	Number of households with strengthened capacity and enhanced extension services	38,000	58,567 (154%)

Intermediate outcome 3: Households with improved animal husbandry, livestock production and animal health services

6. The *animal husbandry, livestock production and animal health component* (1.2) improved animal health services with the fielding of community animal health workers (CAHWs). In total, 84 community members (including 18 women) were selected from the seven governorates, trained on animal health for a month and certified as CAHWs. They were provided with kits of equipment and drugs that allowed them to establish their own animal health practices. During the course of the project the CAHWs provided animal health services to 56,368 livestock keepers in remote areas with poor or non-existent public services. CAHWs also contributed to improving the disease surveillance system, detecting and providing early warning on potential disease outbreaks. All CAHWs confirmed at the end of the project that they were continuing to provide services, although further support may be needed to ensure sustainability – see IV D below.

7. The animal disease control program very nearly achieved its revised target of vaccination of half the stock (49 percent achievement against 50 percent target)[30], vaccinating 2.7 million sheep and goats and 20,000 cattle and reaching 142,252 households (9 percent above the revised target of 130,000).[31] In addition, 28 cold chain facilities were provided to veterinary services at district and governorate level. [32]

8. Animal nutrition activities, benefitted 25,640 households (slightly above the target of 25,000). 6,330 poultry and small ruminant restart packages were distributed.[33] Overall, the component benefitted 82,008 households (more than double the target of 34,000).

1.2 Improving animal husbandry, livestock production and animal health services

Outputs	Output indicators	Target	Achievement	Intermediate outcome 3	Target	Achievement
Improving vet services: Community animal health workers (CAHW) equipped and trained			84 CAHW	Number of households with improved animal husbandry, livestock production and animal health services (including CAHW services)	34,000	82,008 (241%)
Animal disease program ▪ 2.7 million small ruminants and cattle vaccinated ▪ Cold chain facilities	Vaccination against PPR and goat and sheep pox Farmers benefiting from vaccination of their livestock	50% 130,000	49% (98%) 142,252 (109%)			
Animal nutrition: ▪ Seed, fodder choppers and feed blocks distributed	Increased milk production Households benefiting from improved animal feed	10%	9% (90%)			

[30] These targets were revised downwards from the original target of 80 percent of the stock and 200,000 households due to implementation constraints external to the project (see Section III B of the ICR).
[31] With the scaling down of the activity, about 60,000 vials of vaccines and drugs (PPR, SGP and Ivermectin) were transferred to the ERRY project – see Section I of the ICR - and used there.
[32] A cold chain facility comprises a refrigerator, a solar panel and a battery to ensure the proper storage of vaccines.
[33] For a discussion of implementation problems with 'fodder choppers' under the animal nutrition activity and of the 'restocking' activity for the restart packages, see Section III B of the ICR.

▪ Private feed block producers supported		25,000	25,640 (103%)			
Restart packages ▪ Poultry and small ruminant packages distributed	Hens, feed, hosing Sheep/goats, concentrate, feed blocks	2,500	3,550 (142%) 2,780			

Outcomes and the achievement of the PDO

9. The three intermediate outcomes discussed above contribute to the two overall outcomes distinguished in the Theory of Change (see Section I of the ICR). Overall, 157,175 poor households and smallholders benefitted from project activities (target 110,000). Amongst these, 59,641 households (target 35,000) were supported to resume crop production (*PDO indicator*). The number of women beneficiaries was well above target (38,000 against a target of 27,000). The other PDO indicator - *Farmers adopting improved agricultural technology* – was also more than met (13,322 farmers against the target of 10,000).

10. Thus, scored against the targets for both intermediate outcomes and outcomes[34] as well as against the targets for the PDO indicators, SAPREP more than met the large majority of the targeted results. Based on a household size of 6.7 members, the project reached over one million poor rural people in the target areas and endowed this target population with assets and skills that helped to revive smallholder agriculture and food production, to restore the productivity of the livestock sector, and to diversify and strengthen livelihoods and agricultural value added. Taken together, these results confirm that the PDO – *to increase the use of productivity and nutrition enhancing agriculture practices by smallholders in the targeted project area* – was more than met.

Table: Achievement of project outcomes

Intermediate outcomes and indicators	Target	Actual	Outcomes	Target	Actual
1: Households with strengthened land/water management (Component 1.1)	26,000	22,660 (87%)	Households with increased agricultural production, income and nutrition through increased use of productivity and nutrition enhancing agricultural practices	110.000	157,075
2: Farmers benefitting from agricultural assets or services (Components 1.1, 1.3 and 2)	110,000	157,0755 (143%)			
of which women	27,000	38,049 (141%)	Households re-engaged in crop and livestock sectors to restore their livelihood and provide income for their basic needs	35,000	59,641
3: Households with improved animal husbandry, livestock production and animal health services (Component 1.2)	34,000	82,008 (241%)			

[34] Some of which were revised upwards at the August 2020 restructuring

11. In addition to these results measured against targets, further information contributes to the assessment of the achievement of the PDO: data on productivity impacts, on the nutrition objective that forms part of the PDO, and on the views of the target population on the flow of benefits.

Table: Targets revised in the August 2020 Level 2 restructuring

Indicator	Target		Reason for revision
	Original	Revised	
▪ Farmers targeted with agricultural assets or services	90,000	110,000	Target raised because the scale of the remaining project activities was identified and the target number of project beneficiaries had already been surpassed.
▪ Households with strengthened land and water management	18,000	26,000	With all planned subprojects approved, the final number of beneficiaries could be more accurately estimated
▪ Area provided with irrigation and drainage services	444 ha	5,400 ha	Target increased to reflect all categories of project works.[35]
▪ Area protected by wadi works (i.e. bank reinforcement and protection with gabions, check dikes, small spate diversion canals)	350 ha	1,800 ha	As many project areas located in the valleys were subject to erosion due to floods, the demand for the wadi works to protect the land substantially exceeded the original estimates. Target raised to reflect all subprojects agreed.
▪ Additional hectares with adopted technology being promoted	160 ha	700 ha	End target increased to reflect the increase in the area protected by wadi works
▪ Vaccination against PPR and sheep/goat pox	80%	50%	The animal vaccination campaign was scaled down due to the changes in the implementation modalities, COVID-19 related restrictions and the vaccine expiration date (see Section III B)
▪ Farmers benefiting from vaccination of their livestock	200,000	130,000	

[35] The original target had only the area of terrace rehabilitation, on-farm water storage, and the area protected by wadi works.

Table: Beneficiary Satisfaction Survey (TPM)

Question	Positive answer	Negative answer	Main complaints	FAO/SFD responses
Responded to priority needs	87%	13%	▪ Investment not complete ▪ Inappropriate (fodder chopper)	
Appropriate to local environment and needs	96%	4%	▪ High operating costs (fodder chopper) ▪ Animals and seeds supplied not adapted to local conditions	
Assistance correctly delivered	92%	8%	▪ Delays and quality of contract works ▪ Fodder choppers did not work ▪ Animals supplied did not meet specifications ▪ Poultry kits inadequate ▪ Delays in delivery of horticulture support and of seeds ▪ Honey bee inputs sub-standard ▪ Frequent changes over training dates	Many problems were due to security (e.g. changes in dates of training) and to the diffuse nature of the project. Vendors' poor performance Lists of beneficiaries inconsistent Phased deliveries (poultry, feed) difficult with supply chain disruptions Chopper design poorly adapted
Equitable community access	90%	10%	▪ IDPs and women did not get fair access ▪ Some contractors came from outside the community with their own labor	
Female participation	59%	41%		Local culture and norms Females were in the vaccination teams Construction work not suitable for women Women sent male relatives
'Payment' demanded for services	100%	0%		
Overall satisfaction	88%	12%	▪ Delays ▪ Insufficient investment ▪ Damage from gabions causing floods ▪ Hens died ▪ Sheep not from region ▪ Fodder chopper hard to use, not enough raw material ▪ Only received training	

TPM:

- 10 reporting cycles
- 205 sites/projects visited
- 2,766 male respondents
- 934 female respondents
- 994 male focus groups discussions
- 477 female ditto
- 199 implementing partners interviewed
- 373 key informant interviews

Table: Average productivity of horticulture crops before and after intervention

Crop	MT/ha		Increase	%
	Before	After		
Watermelon	10.66	24.48	14.02	132%
Sweet melon	14.13	24.93	10,80	77%
Tomatoes	15.41	28.97	13,56	88%
Squash	10.14	18.82	8,68	86%
Capsicum	4.78	10.56	5.78	121%
Okra	3.89	9.42	5.53	142%
Cucumber	6.86	20.13	13,27	193%
Eggplant	4.81	9.67	4.86	101%
Onion	6.82	20.45	13.83	200%
Potatoes	13.54	16.72	3.18	23%

Source: SFD/FAO

ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Rufiz Vakhid Chirag-Zade, Faiza Hesham Hael Ahmed	Task Team Leader(s)
Jamal Abdulla Abdulaziz	Procurement Specialist(s)
Walid Hamoud Ali Al-Najar	Financial Management Specialist
Faiza Hesham Hael Ahmed	Team Member
Ibrahim Ismail Mohammed Basalamah	Social Specialist
Amer Abdulwahab Ali Al-Ghorbany	Environmental Specialist
Naif Mohammed Abu-Lohom	Team Member
Moad M. Alrubaidi	Team Member
Nabila Ali Al-Mutawakel	Team Member
Andrianirina Michel Eric Ranjeva	Team Member
Jasna Mestnik	Team Member
Jeren Kabayeva	Team Member
Edith Ruguru Mwenda	Counsel
Supervision/ICR	
Rufiz Vakhid Chirag-Zade	Task Team Leader(s)
Ashraf Ahmed Hasan Al-Wazzan	Procurement Specialist(s)
Akram Abdelaziz Hussein Mohame ElShorbagy	Financial Management Specialist
Wael Ahmed Elshabrawy	Financial Management Specialist
Silvia Mauri	Team Member
Andrianirina Michel Eric Ranjeva	Team Member
Amer Abdulwahab Ali Al-Ghorbany	Environmental Specialist

Ibrahim Ismail Mohammed Basalamah	Social Specialist
Faiza Hesham Hael Ahmed	Team Member

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US$ (including travel and consultant costs)
Preparation		
FY17	27.776	159,352.10
FY18	9.247	53,829.98
FY19	7.239	27,402.89
FY20	5.172	19,446.53
Total	**49.43**	**260,031.50**
Supervision/ICR		
FY18	46.785	137,039.99
FY19	31.475	182,957.37
FY20	36.036	227,177.88
Total	**114.30**	**547,175.24**

ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US$M)	Actual at Project Closing (US$M)	Percentage of Approval (US$M)
1. Community Subprojects and Investments	29.89	30.32	101.4%
2. Capacity Building and Extension	0.90	.55	61.1%
3. Program Administration, Monitoring and Evaluation	5.21	5.13	98.5%
Total	**36.00**	**36.00**	100.0%

ANNEX 4. EFFICIENCY ANALYSIS

FINANCIAL AND ECONOMIC ASSESSMENT

12. Ex-ante versus ex-post Economic and Financial Analysis (EFA). A one-to-one comparison of the ex-post and ex-ante EFA results cannot be conducted as the ex-ante EFA was limited in its content and detail. This situation at appraisal was mainly caused by uncertainty at time of conflict. The project's interventions were expected to be demand-based, hence hard to cost in aggregate at the appraisal stage due to the high levels of uncertainty related to the unknown number of specific interventions to be implemented. The data used in the ex-ante analysis came from multiple sources: the Ministry of Agriculture and Irrigation, the Social Fund for Development (SFD), the PMU of the World Bank-funded Rainfed Agriculture and Livestock Project, and from the IFAD-funded Rural Growth Programme (RGP). FAO Yemen collected financial prices of inputs and outputs. The quantitative part of the ex-ante EFA assessed eight indicative interventions and yielded the following results: (i). terrace rehabilitation (incremental net benefit per 1 hectare (ha) of US$ 471), (ii). water harvesting (incremental net benefit of US$2,115 per family); (iii). spate irrigation (incremental net benefit per ha per year of US$3,119), (iv). water ponds (incremental net benefit of US$ 343 per family per year); (v). water harvesting cisterns (incremental net benefits of US$ 1,789 per family per year); (vi). increased livestock production (incremental net benefit of US$975 per ha); (vii). commercial and local laying poultry model (incremental net benefit to farmers of YER 54,403 per year); (viii). beekeeping and honey production (incremental net benefits of US$1,694 per year). The overall results of the ex-ante EFA using an economic discount rate of 10% suggested the ERR of 12% and the ENPV of YER 1,054.32 billion (US$ 4.22 million). The ex-post EFA, in turn, was endowed with more details that could be used to enrich the analysis. The ex-post EFA consists of a quantitative analysis of ten interventions implemented by the project and a qualitative discussion of interventions that could not be assessed quantitatively due to the lack of information on their benefits. The choice of evaluated interventions covers all ex-ante EFA interventions (except water harvesting cisterns for which the stream of benefits was impossible to establish due to the lack of specific data). However, the ex-post EFA includes the quantitative assessment of other interventions that were not assessed at appraisal[36]: (i). vegetable seedlings production centers, (ii). support to recovery of crop production (sorghum and millet), and (iii). the delivery of dairy production packages. The difference between the type of interventions assessed in the ex-ante and the ex-post EFA stems from the fact that the ex-ante EFA assessed indicative interventions. In contrast, the ex-post EFA assessed interventions that were implemented. The ten interventions that were evaluated quantitatively in the ex-post EFA are presented in detail below.

[36] These interventions were not assessed at the appraisal due to the lack of upfront information on the project's implementation in the conflicted country. The ex-ante interventions evaluated quantitatively in the EX-ante EFA were indicative (as per statements in the PAD EFA).

Table 1

Model	With Project (WP) Scenario. Treated as Incremental Scenario	Assumed Aggregate number of HHs-beneficiaries
Model 1	Rehabilitation of existing terraces in the uplands. The case of sorghum cultivation is analyzed.	708
Model 2	Rehabilitation/construction of check dikes and gabions/retaining walls and wadi beds and small spate diversion canals. The case of sorghum cultivation is analyzed.	10,790
Model 3	Delivery of the fodder seed package for sorghum and cowpea intercropping.	7,300
Model 4	Establishment of Vegetables Seedlings Production Centers.	100
Model 5	Delivery of the start-up "Backyard Poultry Production Package."	2,500
Model 6	Delivery of the start-up “Small Ruminants Production Package."	1,760
Model 7	Delivery of the start-up "Apiculture Production Package."	800
Model 8	Delivery of the start-up “Dairy Production Package."	6,001
Model 9	Support to recovery of crop production. Delivery of improved millet seeds.	26,675
Model 10	Support to recovery of crop production. Delivery of improved sorghum seeds.	26,675

13. Methodology of the ex-post EFA. The quantitative ex-post EFA yielded the financial net present value (FNPV), financial internal rate of return (FIRR), modified internal rate of return (MIRR) and economic net present value (ENPV), economic rate of return (ERR), economic modified internal rate of return (EMIRR) estimates of ten interventions, in individual terms (per specific intervention) and aggregate terms (per assumed number of households (HHs) that received each intervention (Table 1)). The Benefit-Cost Ratios (BCRs) were also derived. The quantitative analysis does not include the “Without Project Scenarios” as these were not available to assess for the ex-post analysis. Therefore, the presented results are estimated using “With Project Scenarios”[37] that are treated as “Incremental Scenarios.”[38] In the first step, the financial analysis of each intervention was conducted. The financial analysis included assessing investment and operation costs and annual revenues of each intervention (in individual terms). These results were then aggregated using the number of HHs who received the said intervention (as per Table 1). The numerical output of this analysis provided estimates on individual and aggregate FNPVs, FIRRs. MIRRs, separately for each intervention. In the next step, the financial inflows and outflows were adjusted to their economic benefits and costs using conversion factors (CFs).[39] This procedure allowed the estimation of ENPVs, ERRs, and EMIRRs of each intervention (individually and in aggregate terms). The BCR of each intervention was also derived. Lastly, the results of ten models were aggregated to estimate

[37] “With Project Scenario” is a scenario after the individual intervention was put in place.
[38] “Incremental Scenario” is a difference between “Without Project Scenario” (WOP) and “With Project Scenario” (WP). Due to the lack of data, the WOP scenario was not established; therefore, the WP scenario is, in fact, an incremental scenario as it includes the post-project implementation benefits.
[39] The CFs used in the ex-post analysis were not calculated due to the lack of the necessary data but came from the previous research, specifically from the IFAD RLDP Oct. 2020 and the PAD 4351 EFA.

the overall benefits of all assessed interventions. Consequently, the overall FNPVs, FIRRs, MIRRs, ENPVs, ERRs, EMIRRs, and BCRs were estimated. The estimation of the overall net benefits of the project, based on ten quantitatively assessed interventions, was possible as, in the ex-post EFA, each of these interventions was modeled using the same unit of accounting, an individual Yemeni household that received one of these interventions.

14. Data sources. While no field data collection was conducted for this ex-post EFA, the implementing organizations, FAO Yemen, and Social Fund for Development (SFD), delivered the data to create the assessed interventions models. FAO Yemen provided the total number of beneficiaries that received each of ten analyzed interventions. When required, adjustments were made to turn the number of farmers or hectares into the number of HHs that received interventions. This type of adjustment was necessary to model all interventions with the same unit of accounting that would allow comparisons between assessed interventions and aggregation of overall costs and benefits of the project.

15. Assumptions used in modeling. The assumptions used in the modeling process can be divided into general assumptions that concern all assessed interventions and intervention-specific assumptions. The general assumptions include: (i) the time frame of analysis: 10 years and 15 years, for comparison[40], (ii) discount rate: 6% and 10 % as used in the ex-ante EFA for comparison[41] for both, financial and economic analysis, (iii) exchange rate (1 US$ =580 YER), (iv) average HH size (6.7 people/HH), (v) average landholding per individual HH (1 ha). Intervention-specific assumptions differ per intervention type and include yield, prices, labor requirement, maintenance costs, investment costs, etc. These intervention-specific assumptions were largely based on information provided by FAO Yemen and SFD.

16. Quantified ex-post EFA results using 6% discount rate. The results of the ex-post EFA when using discount rate of 6% and the exchange rate of 1US$=580 YER show positive financial and economic outcomes of each of ten interventions that were assessed quantitatively. Firstly, the results were estimated over a standard analytical timeframe of ten years for individual Yemeni HH and in aggregate terms for the assumed number of HHs that received each type of intervention. The aggregate financial analysis results range from the FNPV of US$ 17,858 to US$ 12,618,722 (with FIRR of 7%-20% and MIRR of 7%-13%). The aggregate economic analysis results range from ENPV of US$ 54,395 to US$ 27,377, 724 (with ERR of 20-64%, EMIRR of 12%-23%, and Benefits-Cost Ratio (BCR) between 1.22-1.65) (Table 2). Additionally, per intervention, a longer time frame of 15 years was also analyzed in individual and aggregate terms. The aggregate financial analysis results range from the FNPV of US$ 44,234 to US$ 22,322,907 (with FIRR of 12%-25% and MIRR of 8%-13%). The aggregate economic analysis results range from ENPV of US$ 91,946 to US$ 40,622,161 (with ERR of 22-65%, EMIRR of 12%-19% and BCR between 1.26-1.75). [42] The results of this analysis are presented in Table 2. In the case of both analytical time frames, the individual and aggregate FNPVs and ENPVs are presented in both local currency (YER) and the US$. (Tables 2 and 3 in the project file). Lastly, the overall results based on all ten assessed interventions are presented in Table 4. The results of the overall analysis over ten years suggest a positive overall FNPV of US$ 22.68 million and ENPV of US$ 92.65 million, with FIRR and ERR of 13% and 38%, and BCR of 1.31. The results of the overall analysis over 15 years suggest a positive FNPV of US$ 51.43 million and ENPV of US$ 139.45 million, with FIRR and ERR of 17% and 39%, and BCR of 1.37 (Table 4).

[40] Please note: A time frame of 10 years is a standard approach in this type of analysis as the stream of benefits that will accrue to the project's beneficiaries might last longer than the project itself. A longer time frame was also used to compare how the stream of benefits might change.

[41] Please note: In the PAD EFA, the discount rate used was 10%. However, the suggested discount rate is 6%, and it is the preferred discount rate for Yemen. The results of the analysis using both discount rates are shown for comparison. Also, the exchange rate in the case of results using the discount rate of 10% was kept at the same level as in the case of the ex-ante EFA: 250.1 YER=1 US$ (instead of 580 YER=1 US$ as is the case in the ex-post EFA). ---if you do not decide to include results with a 10% discount rate, please delete this footnote.

[42] Please note: The aggregate results (financial and economic) are calculated by aggregating the number of HHs that received each intervention and they differ per intervention as the number of beneficiaries was intervention specific.

Table 4

Financial Analysis Results over 10 years @ 6%.			Financial Analysis Results over 15 years @ 6%.		
Currency	YER	US$	Currency	YER	US$
FNPV	13.16 billion	22.68 million	FNPV	29.83 billion	51,43 million
FIRR (%)	13%		FIRR (%)	17%	
MIRR (%)	10%		MIRR (%)	11%	
Economic Analysis Results over 10 years @ 6%.			Economic Analysis Results over 15 years @ 6%.		
Currency	YER	US$	Currency	YER	US$
ENPV	53.74 billion	92.65 million	ENPV	80.88 billion	139.45 million
ERR (%)	38%		ERR (%)	39%	
EMIRR (%)	19%		EMIRR (%)	17%	
BCR	1.31		BCR	1.37	

17. Quantified ex-post EFA results using 10% discount rate. The results of the ex-post EFA when using 10 % discount rate and the exchange rate of 1 US$ =250.1 YER (as per PAD) show positive financial and economic outcomes in eight out of ten interventions that were assessed quantitatively. As it was the case with the analysis using 6% discount rate, firstly, the results were estimated over ten years analytical timeframe for individual Yemeni HH and in aggregate terms for the assumed number of HHs that received each type of intervention. The aggregate financial analysis results range from the FNPV of US$ -3,911,721 to US$ 18,012,635 (with FIRR of 7%-20% and MIRR of 9%-15%). The negative financial results using 10% discount rate are observed only in the case of intervention labeled as Model 9 and 10 (Table 1). These interventions included emergency delivery of millet and sorghum seeds. The aggregate economic analysis results range from ENPV of US$ 93,019 to US$ 47,988,735 (with ERR of 20-64%, EMIRR of 14%-25% and BCR between 1.22-1.65). (Table 5 in the project file). Additionally, per intervention, a longer time frame of 15 years was also analyzed in individual and aggregate terms. The aggregate financial analysis results range from the FNPV of US$ 61,116 to US$ 31,995,902 (with FIRR of 12%-25% and MIRR of 11%-15%). The aggregate economic analysis results range from ENPV of US$ 147,129 to US$ 67,073,338 (with ERR of 22-65%, EMIRR of 15%-22% and BCR between 1.26-1.75) [43] The results of this analysis are presented in Table 6. In the case of both analytical time frames, the individual and aggregate FNPVs and ENPVs are presented in both local currency (YER) and the US$. (Tables 5 and 6 in the project file). Lastly, the overall results based on all ten assessed interventions are presented in Table 7. The results of the overall analysis over ten years suggest a positive overall FNPV of US$ 19.62 million and ENPV of US$ 160.11 million, with FIRR and ERR of 13% and 38%, and BCR of 1.31. The results of the overall analysis over 15 years suggest a positive FNPV of US$ 61.04 million and ENPV of US$ 227.55 million, with FIRR and ERR of 17% and 39%, respectively, and BCR of 1.37 (Table 7 below).

[43] Please note: The aggregate results (financial and economic) are calculated by aggregating the number of HHs that received each intervention and they differ per intervention as the number of beneficiaries was intervention specific.

Table 7

Financial Analysis Results over 10 years @ 10%.			Financial Analysis Results over 15 years @ 10%.		
Currency	YER	US$	Currency	YER	US$
FNPV	4.91 billion	19.62 million	FNPV	15.27 billion	61.04 million
FIRR (%)	13%		FIRR (%)	17%	
MIRR (%)	12%		MIRR (%)	13%	
Economic Analysis Results over 10 years @ 6%.			Economic Analysis Results over 15 years @ 6%.		
Currency	YER	US$	Currency	YER	US$
ENPV	40.04 billion	160.11 million	ENPV	56.91 billion	227.55 million
ERR (%)	38%		ERR (%)	39%	
EMIRR (%)	21%		EMIRR (%)	17%	
BCR	1.31		BCR	1.37	

18. Unquantified project's benefits. The ex-post EFA included the quantitative estimates on ten interventions for which the numerical data on costs and benefits was available. However, other interventions were put in place for which the information on benefits was not accessible. These interventions include the deworming and vaccination campaigns and training and equipping of CAHWs. It is expected that these interventions provided additional positive benefits that accrued to the project's beneficiaries in the form of improved management of livestock, higher milk yield, and possibly lower livestock mortality. However, even if the data on potential benefits associated with these interventions were available, a possible caveat would put into question the inclusion of these interventions in the quantitative analysis. The potential issue that could be introduced in the quantitative analysis would be associated with a high probability of double counting as it is likely that some beneficiaries of the ten assessed interventions also benefited from animals vaccinations/deworming or CAHWs interventions. Other non-quantified benefits included temporary job creation/income generation during construction of terraces, dikes, etc., and some potential gains that could accrue as the effect of flood risk mitigation. Lastly, it is expected that the project's beneficiaries also gained in various ways from extension and advisory services provided by the FAO Yemen and SFD staff. While some of these services were quantified and are embedded in the overall increase in yield, animal management, etc., and are directly included in the ex-post EFA modeling, some benefits may remain unaccounted for.

19. Sensitivity analysis for individual interventions. The per intervention "what if scenarios" were established using 10- and 15-years analytical timeframe and 6% discount rate. In the case of each of the assessed interventions, simple "what if scenarios" were built to determine how changes in the most critical model variables could influence the individual and aggregate ENPV, EIRR, and EMIRR. The analysis was pursued using a 30%, 20%, and 10% increase or decrease in variables that were deemed influential in the case of each of the modeled interventions. The results of this simple sensitivity analysis are outlined in Tables 8-13 below. The variables that were sensitized in "what if scenarios" included: price and yield of sorghum grain, price of millet grain, sorghum fodder yield, price of eggs and local hen, price of honey and cane sugar, price of cowpea fodder, price of tomatoes and hot peppers seedlings, price of fertilizer. Overall, this analysis shows that the results are robust as the ENPVs remained positive in eight out of ten assessed interventions. Similarly, the levels of ERRs remained above the economic discount rate of 6% in eight out of ten interventions. The only cases where the results fell to negative values were in the case of Model 9 (Support to the recovery of crop production. Delivery of improved millet seeds) and Model 10 (Support to the recovery of crop production. Delivery of improved sorghum seeds) (Table 10 in the project file). In both cases, the interventions proved to be highly sensitive to a decrease in the price of millet and sorghum, respectively. The 20% and 30% decrease in the price of these grains turned the ENPVs into negative values and EIRRs to levels lower than the discount rate (6%). For details, please see Table 10 in the project file, Models 9 and 10.

20. The "what if" analysis on overall results using 6% discount rate. The analysis with 6% discount rate shows that 30% increase in overall costs (of all 10 interventions combined) when using 10-years timeframe would yield negative economic results (ENPV of US$-12.01 million, ERR of 2%). The 20% increase in overall costs in the case of 10 and 15-

years analytical timeframe would still keep positive overall economic benefits of the project (@ 10 years analytical framework: ENPV of US $22.87, ERR of 14% and EMIRR of 10%, @ 15 years analytical framework: ENPV of US$50.05, ERR of 17% and EMIRR of 11%. The 10% increase in overall costs in the case of 10 and 15-years analytical timeframe would keep positive overall economic benefits of the project (@ 10 years analytical framework: ENPV of US$57.76, ERR of 25% and EMIRR of 15%, @ 15 years analytical framework: ENPV of US$94.75, ERR of 18% and EMIRR of 14%.

Table 8

	Sensitivity Analysis Results over 10 years @ 6%.			Sensitivity Analysis Results over 15 years @ 6%.		
Cost increase	Currency	YER	US$	Currency	YER	US$
[+30%]	ENPV	-6.97 billion	-12.01 million	ENPV	3.10 billion	5.35 million
[+30%]	ERR (%)	2%		ERR (%)	7%	
[+30%]	EMIRR (%)	4%		EMIRR (%)	7%	
[+20%]	ENPV	13.27 billion	22.87 million	ENPV	29.03 billion	50.05 million
[+20%]	ERR (%)	14%		ERR (%)	17%	
[+20%]	EMIRR (%)	10%		EMIRR (%)	11%	
[+10%]	ENPV	33.50 billion	57.76 million	ENPV	54.96 billion	94.75 million
[+10%]	ERR (%)	25%		ERR (%)	28%	
[+10%]	EMIRR (%)	15%		EMIRR (%)	14%	

21. The “what if” analysis on overall results using 10% discount rate. The analysis shows that 30% increase in overall costs (of all 10 interventions combined) when using 10 or 15-year timeframe would yield negative economic results (ENPV of US$-47.42 million, ERR of 2% or US$ -22.40, ERR of 7%, respectively). The 20% increase in overall costs in the case of 10 and 15-years analytical timeframe would keep positive overall economic benefits of the project (@ 10 years analytical framework: ENPV of US$21.76, ERR of 14% and EMIRR of 12%, @ 15 years analytical framework: ENPV of US$60.92, ERR of 17% and EMIRR of 13%. The 10% increase in overall costs in the case of 10 and 15-years analytical timeframe would keep positive overall economic benefits of the project (@ 10 years analytical framework: ENPV of US$90.93, ERR of 25% and EMIRR of 17%, @ 15 years analytical framework: ENPV of US$144.23, ERR of 28% and EMIRR of 16%.

Table 9

	Sensitivity Analysis Results over 10 years @ 10%.			Sensitivity Analysis Results over 15 years @ 10%.		
Cost increase	Currency	YER	US$	Currency	YER	US$
[+30%]	ENPV	-11.86 billion	-47.42 million	ENPV	-5.60 billion	-22.40 million
[+30%]	ERR (%)	2%		ERR (%)	7%	
[+30%]	EMIRR (%)	5%		EMIRR (%)	9%	
[+20%]	ENPV	5.44 billion	21.76 million	ENPV	15.24 billion	60.92 million
[+20%]	ERR (%)	14%		ERR (%)	17%	
[+20%]	EMIRR (%)	12%		EMIRR (%)	13%	
[+10%]	ENPV	22.74 billion	90.93 million	ENPV	36.07 billion	144.23 million
[+10%]	ERR (%)	25%		ERR (%)	28%	
[+10%]	EMIRR (%)	17%		EMIRR (%)	16%	

ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

By e-mail of December 8th, 2021, FAO provided comments on the draft ICR. Finding the draft 'comprehensive and in line with (FAO's) own Terminal Report', FAO suggested noting in the discussion of Relevance (Section II A) the alignment of the project with the National Agriculture Sector Strategy 2013-2016. This comment, along with some textual suggestions and factual corrections, have been incorporated in the final ICR. In addition, in a separate note, the FAO confirmed that the quality of Bank supervision was a strongly positive factor, endorsing the assessment of 'proactive and responsive supervision and the high quality, strong commitment and flexibility of the Bank team'.

ANNEX 6. SUPPORTING DOCUMENTS (IF ANY)

Apex Consulting: Final Report 2018-2021, August 2021.

FAO Office Of Emergencies and Resilience: FAO SAPREP Terminal Report (OSRO YEM 704 WBK), September 2021.

FAO comments on the draft ICRR (e-mail from Hussein Gadain, FAOYE, December 8th, 2021).

Moore Yemen: SAPREP *Final Survey Report*, August 2021.

Third Party Technical Review (TPTR): *Beneficiary Satisfaction Survey*, Yemen SAPREP.

Project Appraisal Document Report No: PAD2319 July 31, 2017

Publicly dosclosed ISRs:

01 15-Nov-2017
02 14-May-2018
03 05-Nov-2018
04 13-May-2019
05 22-Nov-2019
06 27-May-2020
07 10-Dec-2020
08 30-Jun-2021