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INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

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

IN THE AMOUNT OF US\$36 MILLION

TO THE

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

FOR A

YEMEN SMALLHOLDER AGRICULTURAL PRODUCTIVITY RESTORATION AND  
ENHANCEMENT PROJECT

JULY 31, 2017

Agriculture Global Practice  
Middle East And North Africa Region

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective June 1, 2017)

Currency Unit = Yemeni Rial (YER)

YER250.1 = US\$1

ABBREVIATIONS AND ACRONYMS

CEN	Country Engagement Note
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PCU	Project Coordination Unit
PDO	Project Development Objective
PIM	Project Implementation Manual
PPR	Pest des Petitis Ruminants
PPSD	







INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture

Contributing Practice Areas

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/o n / .6 uu0.6 430.99 531.1 13.440.6 477.31 5-2(g)



COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

Yes  No

Does the project require any waivers of Bank policies?

Yes  No

Have these been approved by Bank management?

Yes  No

Is approval for any policy waiver sought from the Board?

Yes  No

Safeguard Policies Triggered by the Project

Yes

No

Environmental Assessment OP/BP 4.01

Natural Habitats OP/BP 4.04

Forests OP/BP 4.36

Pest Management OP 4.09

Physical Cultural Resources OP/BP 4.11

Indigenous Peoples OP/BP 4.10

Involuntary Resettlement OP/BP 4.12

Safety of Dams OP/BP 4.37

Projects on International Waterways OP/BP 7.50

Projects in Disputed Areas OP/BP 7.60





PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Rufiz Vakhid Chirag-Zade	Team Leader(ADM		



YEMEN, REPUBLIC OF  
SMALLHOLDER AGRICULTURAL PRODUCTIVITY RESTORATION AND ENHANCEMENT PROJECT

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ANNEX 1: DETAILED PROJECT DESCRIPTION



## I. STRATEGIC CONTEXT

### A. Country Context

1. As a result of the socio-political events of 2011, Yemen embarked on a political transition based on an agreement brokered by the Gulf Cooperation Council (GCC). The Government of National Reconciliation was formed and confirmed by parliament in December 2011. The National Dialogue Conference (NDC), a key element of the GCC agreement and transition process, was launched in an atmosphere of much hope, trepidation, and protest to address social, economic, and political grievances among all regions and groups. However, only few steps were taken to implement the NDC outcomes, missing important opportunities to overcome grievances and restore some public trust. As the NDC drew to its conclusion, the security situation deteriorated.
2. In early 2015, Yemen descended into an enduring full-fledged conflict that is resulting in a catastrophic humanitarian situation. In May 2015, the United Nations (UN) placed Yemen at Level 3 of humanitarian distress, the highest categorization of countries in conflict. The escalation of conflict amplified an already existing protracted crisis, characterized by widespread poverty, conflict, and poor governance. According to UN agencies, the civilian death toll is estimated to have reached more than 7,500 with about 35,000 wounded. About half of Yemen's population of about 28.1<sup>1</sup> million lives in areas directly affected by the conflict and 3.1<sup>2</sup> million Yemenis have been forcibly internally displaced. The UN Yemen Humanitarian Response Plan (January 2016) estimates that 10.3 million Yemenis require immediate assistance to save or sustain their lives. The conflict has had a devastating impact on service delivery.
3. The ongoing conflict has disrupted service delivery and led to severe economic distress. In addition to



49 percent of the population below the poverty line in 2014.

5. Yemen is among the ten countries in the world with the highest rates of food insecurity and is now facing an unprecedented food crisis. Today, conflict and civil insecurity are the main drivers of food insecurity with devastating effects on livelihood and



in 2015, Yemen already had one of the highest levels of malnutrition in the world. The primary driver of the further deterioration of nutritional status has been the widespread food shortages and increase in the price of food stuffs. Undernutrition was particularly prevalent in rural areas, suggesting that enhanced, rural household-focused nutritional awareness, combined with improved local production can have an important impact in improving nutritional outcomes.

9. Yemen agriculture faces severe natural resource constraints. Yemen is one of the most water scarce countries in the world. The annual per capita renewable water resource has declined from 221 m<sup>3</sup> in 1992 to only 80 m<sup>3</sup> in 2014. This constitutes only 1.3 percent of the global average and only 14 percent of the MENA region per capita average. Agriculture accounts for some 90 percent of water use. At the same time, less than six percent of the total land area is considered suitable for field cultivation. Particularly small and fragmented plots (1 ha in average) are another constraint that prevents the sector from making a larger contribution to rural incomes and addressing trade imbalance in food items. In addition, Yemen is particularly vulnerable to climate change. The threats to the water sector from a changing climate is having serious implications on agriculture, including yields.

10. The conflict has severely disrupted agricultural production and markets, transportation and distribution. While productivity has always been low, the situation has become even worse with the conflict. In 2016, the total locally grown food supply was 62 percent of pre-crisis levels, mainly due to a reduction in the cultivated area, thus reducing food availability and household food stocks. The conflict resulted in a shortage of inputs such as seeds, fertilizer and fuel, damage to agricultural machinery, irrigation systems and storage facilities together with deterioration of water and electricity services, and breakdown of logistical chains. The absence of electricity and fuel, as well



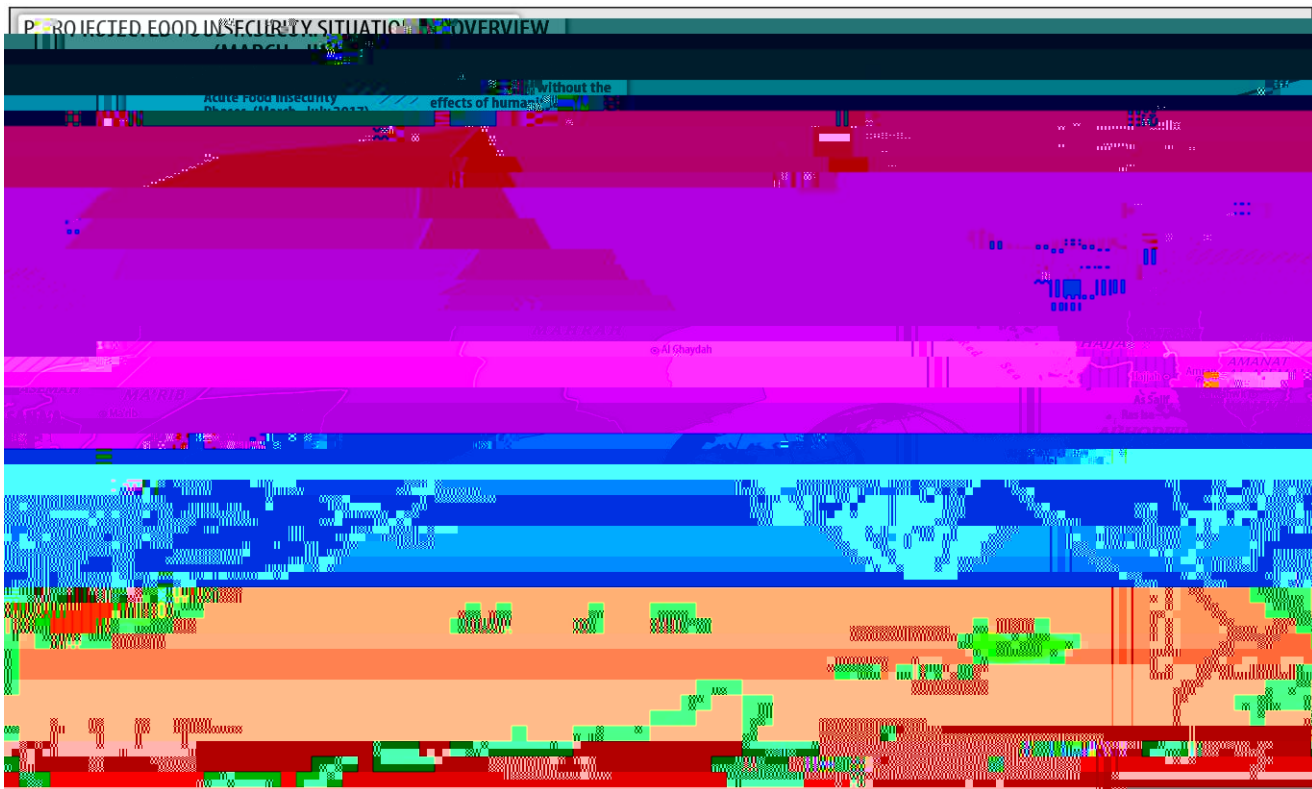






(proportion of rural population), and presence of other relevant programs in agriculture and livelihood support/food security. The scoring system for ranking of districts will be detailed in the Project Implementation Manual. The project will be implemented in areas which are accessible and where the project recovery and development interventions can be implemented. Details on selection criteria are provided in Annex 1.

Map: Governorates targeted by SAPREP



22. Beneficiaries. Poor and food-insecure households as well as people affected by the conflict will be the main target groups for the project. The following groups are considered a priority: (i) landless farmers<sup>8</sup> with no or few livestock; (ii) sharecroppers and casual workers; (iii) smallholder farmers with less than 1.3 ha of land; (iv) women-headed households; and (v) conflict affected households, returnees, IDPs. It is expected that about 90,000 households (about 630,000 persons) will directly benefit from SAPREP investments and subprojects and services, of which at least 30 percent are women. This includes about 35,000 conflict affected households, including IDPs and returnees that will be provided with startup packages to resume agricultural production. In addition, animal vaccinations and treatment activities will benefit about 200,000 including IDPs a





28. Under these circumstances, the proposed SAPREP will focus on two main areas of support: (i) providing support to poor households and smallholders to increase agricultural production, income and nutrition, and (ii) helping conflict affected farmers to re-engage in crop and livestock sectors to restore their livelihood and provide income for their basic needs. The project will be implemented through three components, as detailed below.

## B. Project Components

Component 1: Community Subprojects and Investments (US\$29.89 million)

29. This component will finance priority subproject



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43. The Country Engagement Note (CEN) for Yemen for FY17-18, adopted in July 2016, sets out WBG engagement with Yemen during the conflict, and aims to continue to provide support to preserve local service delivery capacity for conflict-affected families and vulnerable communities, in full partnership with UN agenc



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through standardized designs (including engineering aspects, technical, financial and economic feasibility, O&M, simple environmental guidelines, and cost parameters). All subprojects will be screened by qualified FAO and SFD staff. And technical assistance will be made available to community organizations to assist in subproject identification, implementation and O&M.

### C. Financial Management

77. The proposed project is a TF grant to FAO (signatories of FMFA). The project's financial management arrangements will be governed by the FMFA between the World Bank and the UN agencies, which provides for use of UN Financial Regulations. An FM assessment was carried out to ensure adequate capacity, fiduciary and accountability oversight, consistent with the Operational Policy/Bank Procedures (OP/BP 10.00) for Investment Project Financing. Overall, the FM policies and requirements of the World Bank and the UN are aligned, except for the requirement of external audit as the UN's Financial Regulations give the UN's external auditors, the UN Board of Auditors, the exclusive right to audit the accounts and statements of UN organizations. At the same time, the World Bank audit policies provide for an exemption from its normal requirements if the recipient has more cost-effective mechanisms that provide the World Bank with "equivalent assurance" that the World Bank proceeds have been used appropriately.

78. The Grant Control Account will be subject exclusively to the internal and external audit arrangements applicable to FAO as set out in the UN Financial Regulations. The UN agency will make their externally audited financial statements and accompanying reports of their external auditors on their financial statements available to the World Bank. The UN agency will retain all records evidencing all expenditures in respect of which withdrawals from the Grant Control Account were made, in accordance with its regulations, rules, policies, and procedures relating to retention of records.

79. Accounts and Audits: FAO will: (i) maintain a financial management system, including records and accounts, adequate to reflect the transactions related to the activities, in accordance with the requirements of the UN Financial Regulations; (ii) maintain a separate ledger account (Grant Control Account) in their books to record the financial transactions of this project; (iii) prepare, on a six-month basis, interim unaudited financial reports (IFRs), in accordance with accounting standards established pursuant to the UN



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the third-party monitoring agency; and (iv) the FAOs/SFD field monitoring activities.

F. Environment (including Safeguards)

92. According to the World Bank's Operational Policy OP 4.01 on Environmental Assessment, this project is classified as Environmental Category "B". Activities supported by this project are expected to be small-scale interventions such as construction and rehabilitation of: water harvesting structures (cisterns), terraces, on-farm water storage facilities for animal and domestic use and on-farm water harvesting through underground cisterns and open wadi pits and wadi soil conservation and erosion control through check dikes in wadi beds. Other water harvesting structures to be supported under the project include construction of roof-top collection areas, conveyance systems, and storage facilities.

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Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: This indicator measures a share of animals vaccinated in project regions.							
Name: Farmers benefitting from vaccination of their livestock		Number	0.00	200000.00	Semi-		



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
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members etc.



Target Values

Project Development Objective Indicators

Indicator Name	Baseline	YR1	YR2	YR3	End Target





Indicator Name	Baseline	YR1	YR2	YR3	End Target
community members etc.					
Of which women	0.00	120.00	300.00	300.00	720.00





- i. Water harvesting at farm and micro watershed level in upper catchments of rainfed areas, including: rehabilitation of existing or construction of new terraces in the uplands (associated with existing or new water storage); on-farm water storage facilities (rehabilitation of existing and/or construction of new storage) for animal and domestic use and supplemental irrigation of existing terraces; on-farm water harvesting through underground cisterns and open *wadi* pits; *wadi* soil conservation and erosion control through check dikes in *wadi* beds and vegetative measures; rehabilitation of shallow wells and springs;
- ii. Water diversion for improved spate irrigation in the lower catchments of selected governorates, through: small spate diversion works using traditional technology and



be included. Works will be advertised and contractor hired by the community according to simplified procurement procedures which envisage supervision from SFD. Performance of the contractor will be verified by the committee and an SFD technical consultant, who will also be responsible for ensuring compliance with the technical specifications, quality standards, contractual arrangements and timeline, and safeguard policies. Upon completion, works will be approved by the technical consultant and handed over to the community that will be responsible for maintenance of rehabilitated infrastructure. SFD will also provide training to communities on maintenance of investments. Operational details of subproject preparation and implementation will be provided in the Project Implementation Manual.

7. *Subcomponent 1.2: Improving animal husbandry, livestock production and animal health services (US\$5.38 million).* Activities and investments under this subcomponent aim at protecting livestock assets of poor households through improving access to veterinary services, and increase small ruminants and poultry productivity through better husbandry and feeding. The subcomponent will also support recovery of livestock production to improve food security, incomes and nutrition. Livestock is particularly important across rural Yemen; more than 80 percent of farms participate in livestock production and it is an important





established at the national level and legally responsible for all animal husbandry and veterinary training



immediately at project effectiveness, aiming at distributing of the start-up packages during the first quarter of project implementation.

13. The private farmers – suppliers of sheep and goats for restocking purposes under the project will be required to follow certain FAO protocol to ensure that goats and sheep conform to established standards. In this regard, training sessions and consultation with the private suppliers and the implementing partners (NGOs) will be organized by FAO on improved feeding and disease prevention and treatment practices. This ensures that the private suppliers get the opportunity to improve their skills and capacities in livestock trading. These practices will strengthen private suppliers' ability to serve the market.

14. *Subcomponent 1.3: Improving livelihoods and adding value to agriculture*

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20. This component will finance: (i) capacity building activities to strengthen skills of stakeholders involved in service provision in the project areas; and (ii) extension activiti





*Table 1: Food insecurity level and number of agricultural households in governorates (IPC and EFSNA)*

Governorates	Population (projected 2016)	Number of people in Emergency (Phase 4)	% of people in phase 4	GAM rate	Rural poverty (2014)	Number of agricultural households (Ag HH)	% of Ag HH in total number of HH
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ANNEX 2: IMPLEMENTATION ARRANGEMENTS

Republic of Yemen













During the implementation phase, monitoring the execution of any works with respect to environmental and social aspects. Social monitoring should include livestock related investments, water and social protection investment, spate irrigation network, cash crop activities and women's income generating activities;

During the operation and maintenance phase, the overall environmental monitoring (including monitoring human-natural resources conflict) and alerting on any emerging environmental hazards in conjunction with the ongoing subproject activities. Communities will pass on their observations and concerns through the local FAO and SFD project staff.

27. FAO with SFD through the design and supervision consultant's reports will monitor safeguards compliance as well. Additional field visits or further investigations will be undertaken when necessary. The project will also use Third Party Monitoring mechanism to ensure the project is compliant with environment and social safeguards.

28. Addressing women's concerns. In rural Yemen, it is estimated that more than 70 percent of the agriculture work is done by female farmers. Women are mainly in charge of the very labor intense rain-fed agriculture and production of basic food crops for family consumption. Animal husbandry is also usually under the responsibility of women, as is grinding grain by hand, fetching and hauling water, collecting fire wood, storing, preserving and processing dairy and food products, (whereas men are responsible for irrigated agriculture and the production of cash crops, particularly qat and coffee).

29. In view of the strict gender segregation which prevails in Yemen, SAPREP will implement procedures to ensure that women's needs are taken into consideration and that women are able to benefit as intended from project interventions. In particular, the following will be pursued:



- All project staff will be held accountable for being gender sensitive and implementing gender equity approaches in their work
- Gender-sensitive staff will be recruited or trained, as appropriate
- Equitable treatment of female and male colleagues
- Teams of social mobilizers will be composed of one man and one woman each
- Technical project staff particularly at field level will include women
- Project management TOR and performance evaluation will give considerable attention to their support for gender issues and to the involvement of women in the project
- Women will be informed systematically of project activities through the Social mobilizers as well as through women community leaders who will be systematically contacted by project staff
- Meetings with women, including demonstration and farmer field school activities will be organized at times convenient for women [ideally in the afternoon between 'asr and Maghreb prayers (about 3-5.30 pm)
- Female Community Animal Health Workers will be trained in equal numbers to men to ease women's access to animal husbandry support, also to provide income generating activities for women. Women will be given training and support to start and develop micro-enterprises, thus improving their income generating and enabling them to have better access to nutritious foods
- Women will be given training in nutrition in a manner which is easily accessible regardless of their literacy levels.

30. Community Participation. The participatory approach is the basic principle underlying the implementation mechanism for this project. There are a number of reasons for this choice, including the following:

- a) When people have planned their own activities and the activities respond to their needs, their commitment to quality and timely implementation is significantly higher
- b) Operating in a participatory manner encourages cooperation between people within the same community and can be an opportunity for reducing tensions and increasing solidarity among the community members
- c) In the current fluid context at the institutional level in Yemen, focusing on the community level will ensure that benefits from efforts and investments are maximised
- d) Community involvement is a good way of ensuring quality delivery by service providers, as community members would not accept work which is below their expected standards
- e) Supporting economic and social development of community-based institutions will contribute to assisting the emergence of a new Yemen based democratic and inclusive principles. Population capacity will be expanded to address other broader issues.

31. Participation mechanisms and procedures will be described in details in the Project Implementation Manual.

### Monitoring and Evaluation

32. The project monitoring and evaluation system will be focused on several types of data specific to activities under each component/subcomponent in accordance with the results framework described in Section VII. FAO's M&E Unit will comprise a full-time M&E specialist and a part-time IT/GIS specialist. The M&E specialist will be responsible for coordinating the M&E tasks, organizing and updating &E part





field visits, if and when they become possible. In addition to conducting “reverse” missions, the Bank will obtain regular TPM reports to assess project performance.

3. The World Bank team comprises specialists in the areas of agriculture, nutrition, operations, M&E, financial management, procurement, social and environmental safeguards, legal and





Operations Specialist	5 SW annually	At least 2 trips per year	Consultant
M&E specialist	2 SW annually	2 trips per year	HQ based

## ANNEX 4: FINANCIAL AND ECONOMIC ANALYSIS

### Introduction

1. The financial analysis primarily intends to evaluate project impact on project stakeholders which consist of poor households in the selected areas. It consists of: (i) evaluating the impact from the major investments under the project providing better access to irrigation combined with marketing and technical advice on crop performances and farmers' incomes; (ii) developing financial models corresponding to the investments proposed by the project (terrace rehabilitation, small irrigation facilities, income generating activities) in order to assess their financial returns and viability.

2. The economic analysis aggregates all project costs and projected benefits at national level by adjusting financial prices into economic values if and when necessary with the purpose to assess the economic justification of the overall project for the country. The present economic analysis goes beyond the conventional approach for economic appraisal of agriculture investment projects involving the conversion of costs from financial to economic terms and the definition of benefits through the aggregation of economic returns from indicative farm or area models. In order to assess important project benefits in terms of reduction in undernutrition, and in stunting, the analysis follows the methodology developed to directly value the impact of the decline in stunting in terms of the

rainfed conditions and based on a cereals-legumes intercropping and rotation system<sup>15</sup>. Being a dominant cereal crop grown in rainfed systems, sorghum model has been used as proxy for cereal crops. Incremental revenue is derived from increased yields due to improved soil fertility and better agricultural techniques. Terracing will not only contribute to return previously fallow land into productive use but also will reduce runoffs, water losses and water-originated damaging floods which might contribute to soil erosion and destruction of further downstream terraces. On the rehabilitated terrace reduction of soil erosion will translate into increase of the productive potential of the soil, into less depletion of the soil's nutrient content and ultimately into increase of soil fertility. The model presents an incremental net benefit per ha of 471 USD.

5. Water harvesting (cisterns). Each water harvesting structure will have a capacity of about 153 m<sup>3</sup>. Water harvesting structures are meant to provide water principally for agriculture but also some for animal consumption. It is assumed that 40 percent of this water is for human consumption, 50 percent for livestock watering and the remaining 10 percent for agriculture. Therefore, there would be water available for domestic consumption which would represent economies for households that will not be buying water from alternative water sources at market price. In addition, there will be water to irrigate some agricultural land (the amount of hectares of land will depend on the water requirement of each crop).

6. Using almond as a proxy for an irrigated crop (with water crop requirement of 6,000 liters/ha/year), the command area for irrigation is about 0.012ha of agriculture land for each water harvesting cistern. Furthermore, each water tank will provide daily water to 201 heads of small ruminants per year. The benefits from livestock production are calculated in a separate model. It was conservatively assumed that only 50 percent of the benefits of the livestock model (benefits in terms of meat and milk production) will be due to a substantially better water supply. The investment cost of the water harvesting tank has been assumed to be 120 USD/m<sup>3</sup> or about USD 18,360 per cistern. As presented above, the benefits are expected to come from (i) the cost of drinking water reduced to families, (ii) increased milk and meat production with better livestock watering and (iii) increased production of irrigated crops. Model shows the incremental net benefit of USD 2,115 per family.

6. Spate irrigation is based on traditional Yemeni irrigation techniques when floodwater is diverted from its river bed and channeled to basins where it is used for irrigation and, when possible, to feed water ponds for animal watering. Given unpredictable character of spate irrigation, this type of irrigation is essentially used for drought resistant crops, mainly sorghum. It's been assumed that



enhance the overall health and nutritional status of the flock. This will result in lower mortality rates and better productivity (more meat and milk production). Moreover, this will strengthen the household's food security and resilience during the droughts. Each reservoir would have a capacity of 1,000 m<sup>3</sup> which is equivalent to 1 million liters of water for animal consumption. Given an evaporation level of 20 percent, an average of eight million liters of water would be available each year or almost 2,192 liters per day over the whole year. Given the size and composition of a typical family livestock unit in the project area, as well as their daily needs in water<sup>16</sup>, the reservoir could supply 1,096 units (21,918 heads). Based on recent analytical work carried out in the similar project context<sup>17</sup>

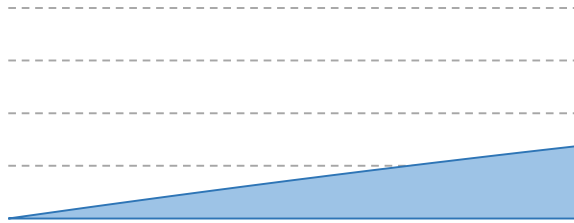


adopting improved husbandry practices (better hygiene, vaccination and supplementary feed) as well as having better access to irrigation infrastructure and animal watering. The existing animal husbandry



14. Evaluation of economic benefits of reduction in undernutrition and stunting. The literature describes the economic benefits of improving n

### Projected SAPREP Impact on Stunting





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