Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 18-May-2020 | Report No: PIDA29421

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Project Name	Parent Project ID (if any)
Yemen, Republic of	P174170	Yemen Desert Locust Response Project	
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
MIDDLE EAST AND NORTH AFRICA	15-May-2020	04-Jun-2020	Agriculture and Food
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Food and Agriculture Organization (FAO)	Food and Agriculture Organization (FAO)	

Proposed Development Objective(s)

The Project Development Objectives are to control the desert locust outbreak, support livelihoods in locust-affected areas and strengthen Yemen's preparedness for future locust infestations.

Components

Surveillance and Control Measures
Livelihood Protection and Restoration
Coordination and Early Warning Preparedness
Project Management
FAO Fee 7%

The processing of this project is applying the policy requirements exceptions for situations of urgent need of assistance or capacity constraints that are outlined in OP 10.00, paragraph 12.
Yes

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	25.00
Total Financing	25.00
of which IBRD/IDA	25.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	25.00
IDA Grant	25.00

Environmental and Social Risk Classification

Substantial

Decision

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Violent conflict, now in its sixth year, has crippled Yemen's economy and created an unprecedented humanitarian crisis.** Hydrocarbon exports, the main source of government revenue and foreign exchange, came to a virtual halt in 2015 due to repeated sabotage of vital infrastructure and increased insecurity. The resulting wide-scale suspension of basic public services and civil service salary payments, rapid depreciation of the currency, and shortages of imported goods weakened the non-hydrocarbon sector and left many Yemenis without a regular income. External assistance, which financed imports of food and other necessities and helped stabilize the economy in 2019, was largely depleted by early 2020.

2. **In the absence of fresh external assistance and a stable source of foreign exchange, Yemen faces significant risks of a renewed collapse of its currency and dire economic and humanitarian consequences.** Given Yemen's high dependence on imports, these circumstances would induce an immediate increase in the prices of imported food and other necessities. The complete ban on the use of the new edition of banknotes in Sana'a in December 2019 has deepened divisions in the financial sector and economic distortion, causing exchange rates to diverge between northern and southern Yemen. While the exchange rate of the rial has stabilized in the North due to the shortage of old banknotes, the currency has depreciated sharply in the South as the parallel market was awash with new banknotes that are now illegal in the North. Yemen imports 80 percent of its food. The latest data confirm a sharp fall in the volume of food imports since October 2019, raising serious concerns about Yemen's food security.

Any disruptions in global food supply chains resulting from the COVID-19 pandemic[1] could further exacerbate food insecurity through reductions in food imports and high prices arising from shortages.

3. **The dramatic deterioration of conditions in Yemen has translated into a significant worsening of poverty.** More than 50 percent of Yemenis between the ages of 18 and 24 are unemployed (UNDP 2017). It is estimated that around 80 percent of the population (around 24 million) lives below the poverty line (World Bank 2019). In addition to monetary poverty, up to 80 percent of households experience many overlapping monetary and non-monetary deprivations (World Food Programme 2020). The *Global Report on Food Crises 2020* concluded that "the combined effects of conflict, macroeconomic crisis, climate-related shocks and crop pests, including fall armyworm and desert locusts, were likely to ensure that Yemen remained the world's worst food crisis" in the immediate future.[2]

4. **Yemen's food security crisis is described as one of the world's largest man-made food security crisis, driven by constrained food production, food supply and distribution and people's diminishing purchasing power.** The 2019 International Food Policy Research Institute Global Hunger Index (GHI) ranks Yemen 116 out of 117 counties.[1] Currently, over 20 million people are food insecure while a staggering 10 million people are at risk of famine. An estimated 4.3 million people have fled their homes since the start of the conflict, of which 3.3 million remain displaced. Hunger, food insecurity and malnutrition are the most pressing and overwhelming challenges faced by the country at present, at a scale that is not being fully met by national authorities and the international development and humanitarian communities.

5. **Vulnerability to climate change and infestations of swarming locusts are exacerbating Yemen's dire food insecurity, creating a crisis within a crisis.** Yemen is highly vulnerable to climate change, which significantly threatens food security and intensifies the development of locust swarms. Climate change has triggered the strongest alterations in water temperature in the Indian Ocean in 60 years. Warmer seas create more extreme rainfall as well as stronger and more frequent cyclones, providing ideal conditions for locusts to hatch, breed, and disperse widely.

6. **Yemen's regional importance in terms of locust infestations cannot be overstated.** Yemen is one of the key desert locust breeding grounds, where swarms develop in several locations throughout the year and then disperse across the country and region, negatively affecting the food security and livelihoods of tens of millions of people across East Africa, the Middle East, and South Asia. As of mid-March 2020, 23 countries from Yemen to Pakistan to Tanzania have been affected, with risk of new outbreaks in the Sahel in June/July, and possibly North Africa by October (FAO). The situation is extremely alarming and deteriorating rapidly, with widespread breeding in the region progress and new swarms starting to form, representing an unprecedented threat to food security. A small swarm (1 km^2) can comprise as many as 80 million locusts and can consume the same amount of food in one day as 35,000 people. It is, therefore, crucial to take urgent actions towards the locust control soonest in Yemen, to minimize the continued exponential growth in the swarms, which impact a much larger region, including Africa and Asia.

[1] While Yemen had only eight officially confirmed cases of COVID infection at the end of April 2020, concerns mount over the potential impact of the pandemic, especially given the country's weakened public health system.

[2] World Food Programme (2020), *The Global Report on Food Crises 2020*, available at www.fsinplatform.org/sites/default/files/resources/files/GRFC_2020_ONLINE_200420.pdf.

7. Delayed action increases costs down the road. WFP estimated in February 2020 that the failure to mount a timely response to stop the locusts would result in higher costs for humanitarian response in the long run— as much as US$1 billion, and far more in restoration costs than if the international community acts with the utmost urgency. During the 2003-05 locust plague, early warning systems alerted countries and the international community at the onset of the outbreak. The response was slow, and desert locust swarms invaded eleven countries in West Africa, severely disrupting agricultural production in many areas already suffering from food security. Costs climbed significantly, from $1 million to $100 million in the first 14 months. Ultimately, it cost $450 million to end the 2003-2005 plague, which caused an estimated $2.5 billion in crop damage.

Sectoral and Institutional Context

8. **The agriculture sector has suffered disproportionately from the ongoing civil war, yet increasingly it is the main source of income for Yemenis**. Agriculture—including fisheries and livestock—is the backbone of Yemeni livelihoods and the most important non-oil sector of the economy, even as its contribution to gross domestic product (GDP) has decreased during this period of severe economic disruption. The share of agriculture in GDP contracted from 10.3 percent in 2010 to 4.03 percent in 2018,[3] while the shares of industry and services increased over the same period, revealing the disproportionately high price paid by the sector during the conflict. The agriculture and food sector has played an important role in preserving and restoring the incomes of the people of Yemen—the share of the population dependent on agricultural employment rose from 29.3 percent in 2014 to 36.6 percent in 2019—and it is expected to play a leading role in post-conflict recovery and reconstruction.[4] Notably, agriculture (including livestock) is also the main source of employment for rural women in Yemen. Fifty-nine percent of rural women work in agriculture, although they face many constraints, including limited access to land ownership, finance, markets, livelihood activities, and information, aside from legal and cultural restrictions on economic independence.

9. **Locust infestations are expected to significantly damage crops and pastures, generating serious losses for agricultural producers and worsening food insecurity in Yemen.** The direct effects of locust swarms include the destruction of standing crops, agricultural land, and fodder, leading to crop and animal losses, reducing incomes, increasing the financial burdens on farmers and livestock owners, and heightening food security concerns. The indirect effects of infestations operate through local scarcities of key agricultural and livestock products caused by the crisis, leading in turn to higher consumer prices and more serious shortages, which harm the local economy in affected areas. The expected damages and losses (DALOs) for the 2020 agricultural season are estimated at US$222 million, including US$14 million of production losses in staple crops, US$108 million of production losses in animals, and US$100 million of damages to livestock assets. The swarms growing rapidly at present will start traveling later in the spring and into the summer and fall, so impacts on food security have not yet been felt on a large scale except in Lahj, Abyan, Marab, and Hodeidah Governorates, where the crops of most farmers have been affected. Recent zucchini, green chili, and tomato shortages have stemmed partly from locust attacks in areas of

[3] https://www.theglobaleconomy.com/Yemen/share_of_agriculture/
[4] https://www.theglobaleconomy.com/Yemen/Employment_in_agriculture/

Lahj and Hodeidah Governorates where these crops are grown in the off-season. In many other governorates, the planting season has not started, and impacts will be felt later.

10. **Desert locust breeding grounds are widespread in Yemen, but the conflict has diminished the capacity to respond to emerging swarms.** Spring and summer breeding of desert locusts occurs in the eastern interior desert regions in the governorates of Al Jawf, Marib, Shabwa, Hadramout Valley, and Al Mahra from April to September and mid-October. Winter locust reproduction occurs from September to April on the coastal plains of the Gulf of Aden and the Arabian Sea, from Bab al-Mandab (Taiz Governorate in the far West) to Hoff (Al Mahra Governorate in the far East, bordering on Oman). Locusts also breed in the governorates of Aden, Lahj, Abyan, Shabwa coast, Hadramout coast, and Al Mahra coast, as well as on the coastal plains of the Red Sea from Zabid (the western part of Hodeidah Governorate) to Midi (the northwestern part of Hajja Governorate) and the governorates of Hodeidah and Hajjah (Western Highlands). Around 60 percent of breeding areas are in southern Yemen and 40 percent are in northern areas. The current conflict exacerbated the locust crisis by disabling an effective response when the new swarm formed at the end of 2018, unlike the response during the last two major outbreaks in 2007 and 2013, when Yemen effectively monitored and controlled the forming swarms.

11. **Yemen's locust response capacity is in dire need of rebuilding**. Before the conflict, Yemen had adequate capacity in terms of equipment and human power to control a locust crisis, and the country was a key part of the regional locust monitoring network. Monitoring continues to some extent, but capacity to respond is lacking, as vital equipment has been looted or lost in the five-year conflict, making robust monitoring and control virtually impossible. Aside from the loss of assets, the human capacity at the Directorate of Plant Protection (DPP) under the Ministry of Agriculture and Irrigation (MAI), which used to lead the national locust response, has been depleted. Most personnel with locust expertise in DPP have retired or are about to retire. The young graduates have insufficient experience in managing locust emergencies, so it is imperative to build their capacity and knowledge to create a new cohort of desert locust experts. The development of a more efficient, effective response to desert locust outbreaks in Yemen will also require support to: (i) introduce innovative technology to survey and control desert locusts; (ii) establish and equip a network of Desert Locust Control Centers (DLCCs); and (iii) implement an outreach and awareness campaign to inform farmers, herders, and communities in locust-affected areas about locust control operations and methods that mitigate the impact of desert locust outbreaks.

12. **Key safety net programs and institutions supported by the World Bank and development partners have been providing social assistance but do not fully meet the vast and growing needs of the population**. Unconditional Cash Transfers were provided through the Social Welfare Fund (SWF)—the largest safety net program in the country, covering over 1.5 million poor and vulnerable Yemeni households—which was suspended in 2015. In 2017, the World Bank–financed Emergency Crisis Response Project (ECRP) revived payments to SWF recipient households through the Emergency Cash Transfer program implemented by UNICEF. Unlike many other social protection programs and institutions that have collapsed during the conflict, the Yemen Social Fund for Development (SFD) has maintained its operational functionality and political neutrality, allowing it to implement key safety net programs, including Cash for Work, Cash for Social Services, and Nutrition-sensitive Conditional Cash Transfers under the ECRP and with the support of other development partners. Alongside these key development programs, a range of humanitarian agencies provide cash transfers, food vouchers, in-kind food transfers, and school feeding programs to different segments of the population. Even so, the combined reach of all

of these programs remains limited in comparison to the scale of food insecurity and the vast needs for social protection (particularly social assistance) in the country.

13. **Projections of swarm development highlight major concerns.** Swarms are likely to continue breeding in Yemen's interior, and winter rains could foster further generations of breeding, each of which will multiply the population 20-fold. These swarms will continue to be a major threat during the months of spring and early summer of 2020, as well as later in the fall. Spring breeding will continue on the Red Sea and Gulf of Aden coasts, causing a further increase in locust numbers that will give rise to hopper groups, bands, adult groups, and swarms. Breeding will also occur in the interior in Wadi Hadhramaut and near Marib, where recent rainfall has been good. Forecasts also show favorable conditions (rainfall, green vegetation, soil moisture) for locusts to keep laying eggs in lowland sandy areas and for successive new-generation swarms to emerge. The growing tendency of swarms to spread to new areas is becoming a major concern. Intensive surveillance of locust breeding areas as well as effective ground control operations are urgently needed to detect and reduce locust populations, prevent more swarms from forming, and prevent them from spreading into crop and pasture areas, not only in Yemen but across the region. Unless sustained control operations are carried out, agricultural losses are likely to increase in Yemen.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

14. The Project Development Objectives are to control the desert locust outbreak, support livelihoods in locust-affected areas and strengthen Yemen's preparedness for future locust infestations.

Key Results

15. **Progress toward the achievement of the PDO will be measured by the following outcome indicators**:

Outcome 1: Control of desert locust outbreak implemented:

- Share of affected pasture/rangeland restored to productivity (%)
- Share of affected agricultural land restored to productivity (%)

Outcome 2: Livelihoods in locust affected areas supported

- Affected households (number) supported by social safety nets, of which females (percent) are the direct recipients of benefits
- Share of locust-affected farmers (including crop farmers, livestock owners and beekeepers) reporting renewed agricultural activity, of which female-headed farms (percent), of which female-headed farms

Outcome 3: Country's preparedness against future locust outbreaks strengthened

- Yemen's locust control plan developed (Yes/No)

- Early warning system developed and functioning (Yes/No)

D. Project Description

16. **The proposed project design reflects the approach adopted as part of the World Bank's Emergency Desert Locust Response Program (MPA)**. It groups its activities within three inter-linked technical components (Surveillance and Control; Livelihood Protection and Rehabilitation; and Coordination and Early Warning Preparedness), and a fourth component focuses on project management, monitoring, and evaluation. The implementation of project activities will be sequenced to respond first to the country's urgent needs: controlling the ongoing locust outbreak (Component 1) and providing immediate cash support and restoration of productive assets to households and farmers affected by the locust infestation (Component 2). Priority will be given to the most affected areas to ensure efficient control of locust reproduction. Annex 2 provides a detailed description of the project components.

17. **The proposed project leverages other World Bank–financed projects for livelihood restoration and support.** It will seek collaboration and complementarity with other World Bank–financed operations in the agriculture and social protection sectors. For example, it will provide further complementary support for protecting and restoring the livelihoods of farmers and other project beneficiaries in areas affected by desert locust infestations. It will also collaborate with the ECRP and the new proposed Yemen Emergency Social Protection Enhancement and COVID-19 Response Project (P173582, under preparation for delivery in FY21). Similarly, the Smallholder Agriculture Restoration and Enhancement Project (SAPREP) and the follow-up Strengthening Agriculture Productivity and Resilience Project Plus (SAPREP+), also to be delivered in FY21, will be leveraged to support farmers in locust-affected areas. These projects provide kits of productive assets to restore the production of crops and livestock (with seed, equipment, animals, feed, and other elements). SAPREP+ is expected to include activities to develop value chains, possibly with the involvement of the International Finance Corporation (IFC). Such commercialization-oriented activities may also be leveraged to support locust-affected farmers and ensure their access to markets through value chain development after production is restored.

18. **Climate and disaster risk screening performed as part of project preparation indicates that global warming will lead to higher-than-average rainfall and increased frequency of drought in Yemen.** Climate change has already triggered significant alterations in water temperature in the Indian Ocean creating ideal conditions for locusts to hatch, breed, and disperse widely. . This project will address the vulnerability to climate-induced locust upsurge by strengthening capacity for ex ante surveillance and control operations. It will support investments in monitoring and control of locust population, as well as build resilience by rehabilitating the livelihoods of locust-affected communities.

19. **In light of these considerations, the main interventions financed by the proposed project are detailed next for each project component.**

Component 1: Surveillance and Control Measures (US$10.1 million, all IDA)

20. **The objective of this component is to limit the growth and spread (driven by climate change) of current desert locust populations, while mitigating the risks associated with control measures and their**

impacts on human health and the environment. Component 1 will improve the capacity for surveying and surveillance of breeding and infestation areas and for gathering meteorological data, support locust control activities (spraying), and implement risk mitigation measures for the workers and affected communities. This component has been designed to enable informed, climate-responsive decision making in locust management. Satellite images and associated geospatial technologies can provide timely data to assess the risk of impending locust outbreaks. This information will be used for targeted preventive management in locust breeding areas under changing climatic conditions. Habitat mapping will apply climate, soil, and other variables to map the susceptibility of land areas in space and time to locust outbreaks (locust vulnerability mapping) and also to highlight areas where locusts have already proliferated (locust impact map).

21. **Sub-component 1.1: Continuous surveillance (US$2.7 million).** Activities under this sub-component aim to provide early warning of locust outbreaks, inform effective control operations, and mobilize assistance (under Component 2) for affected and at-risk communities. The project will procure inputs for satellite surveillance (satellite maps and meta-data analysis) and equipment for land surveillance (elocust3, GPS, camping kits, dissection kits, 4WD pickup trucks), as well as finance the staff and operating expenditures for locust surveillance and monitoring. Training-of-trainers (TOT) sessions for representatives of the affected regions will ensure further organized training occurs in affected communities, in conformity with the Food and Agriculture Organization (FAO) Guidelines on desert locust surveillance. To the extent possible, communities will be equipped to participate actively in desert locust surveillance and monitoring.

22. **Sub-component 1. Control 2: measures (US$6.3 million).** Activities under this sub-component aim to reduce locust populations and prevent their spread to new areas. It would emphasize neutralizing hopper bands using bio-pesticides before they develop into adult swarms, the control of which requires extensive use of conventional pesticides. The use of bio-pesticides with lower carbon footprint compared to conventional pesticides will help reduce GHG emissions. This sub-component will finance the procurement of all material and equipment for operations to control the desert locust on the ground, including 4WD pickup trucks, pesticides and bio-pesticides (in accordance with FAO Guidelines and Pesticide Referee Group recommendations), vehicle-mounted ultra-low volume (ULV) sprayers, backpack motorized ULV sprayers, hand-held ULV sprayers, pesticide pumps, pesticide drum cleaners and crushers, personal protective equipment (PPE), and so on. The operational costs of control operations (salaries of workers, vehicle fuel and maintenance) will also be supported. Pesticide-related equipment will be procured, used, and maintained in conformity with the FAO Guidelines on pesticide equipment, application, and maintenance. The vehicle-mounted sprayers to be procured will have specifications that cannot be altered and will be manufactured as built-in modules that cannot be used for another purpose. The technical specifications will also ensure that these units are energy efficient.

23. **Sub-component 1.3: Risk reduction and management (US$1.1 million).** Activities financed under this sub-component aim to monitor and assess environmental and human health risks associated with locust control and to implement health, environmental, and safety measures to reduce risks to an acceptable minimum. Activities and measures financed under this sub-component will include: (i) procurement of the ChE Cholinesterase Test System and (ii) testing of human health and soil and water for contamination arising from the use of insecticides. All personnel involved in the project and exposed to pesticides must meet the necessary health and safety requirements; (iii) at the end of the locust eradication campaign, soil, water, and plant samples will be tested for pesticide residue. This sub-

component will also support: (iv) preparation of a comprehensive National Pest Management Strategy (NPMS); and (v) safety and awareness training for spraying teams and other locust control personnel.

24. **Support for women's participation in locust surveillance and control will help to narrow the gender differences in locust control interventions**. To that end, the project will support women's participation and learning in several ways. It will engage young women graduates on the staff responsible for treating the nymphs centers and strips, encourage rural women to take on the role of preventing packaging materials for treatment products (pesticides) from being reused at home, and employ rural women to alert children to keep away from chemical products and storage areas.

Component 2: Livelihood Protection and Rehabilitation (US$4.35 million, all IDA)

25. **Component 2 is designed to provide a robust protection response that ensures immediate relief to affected farmers and livestock owners and build their resilience to climate-induced locust infestation.** It includes two types of measures: (i) creation of temporary employment opportunities and (ii) restoration of lost assets. Farmers, beekeepers, livestock owners, and other primary producers and agricultural laborers who have incurred losses as a direct result of the climate-induced desert locust crisis need urgent assistance to reverse the decline in their incomes and meet their production and consumption needs. Component 2 will promote the adoption of climate-smart crop and livestock management practices as well as diversification into livelihood activities that are less dependent on climate and weather variability. Households benefitting under Sub-component 2.1 below will not be eligible to benefit under Sub-component 2.2, and vice versa. The SFD has extensive prior experience in implementing the types of activities supported under Component 2 and will be the implementing agency for this component. This arrangement will ensure the transparency and availability of information to cross-verify the beneficiaries of each sub-component to avoid double-dipping and spread the project's benefits across a greater number and wider range of beneficiaries.

26. **Sub-component 2.1: Safeguarding food security and protecting human capital for enhanced resilience(US$1.45 million).** This sub-component aims to provide immediate Cash for Work (CFW) support to selected beneficiaries in locust-affected areas. These beneficiaries are expected to be primarily women (around 80 percent of all beneficiaries), as well as agricultural laborers, tenant farmers, and sharecroppers. The CFW program will provide short-term employment (up to six months) to these beneficiaries for a monthly wage payment in cash. The CFW program relies on a mechanism of self-targeting that sets wages below market rates to limit participation to the genuinely poor and limit leakage and over-subscription. The focus on women participants in CFW interventions is motivated by the need to promote gender equality by supporting women's empowerment through livelihood protection, as well as to promote women's roles in enhancing community resilience.

27. **The CFW activities selected will include**: (i) clearing dead locusts from affected agricultural land; (ii) planting seedlings and hybrid seed; (iii) rehabilitating small water reservoirs to improve water storage and tackle drought; (iv) collecting locusts (not treated under the control activities) from fields to use as fertilizer and livestock feed; (v) (re)introducing selected pollinators following control measures; (vi) training women in target areas on best health practices and hiring them as community health workers (to be integrated with the COVID-19 response); (vii) providing childcare activities/services near CFW worksites; and (viii) encouraging women to care for home gardens, cultivate plants that repel locusts from

houses, and improve family nutrition. This sub-component will reach an estimated 1,500 beneficiaries, including 1,200 women.

28. **Sub-component 2.2: Rehabilitating agricultural and pastoral livelihoods (US$2.9 million).** This sub-component focuses on the longer-term restoration of livelihoods by providing targeted support to restore the assets of farmers and livestock owners affected by locust infestations and train primary producers to restart production based on more resilient practices. To that end, this sub-component will prioritize the adoption of climate-smart crop and livestock practices for reduced greenhouse gas emissions, enhanced resilience, and the implementation of livelihood support/diversification initiatives. Support will be provided for agroecosystem management approaches that enhance resilience of farm and landscape to changes in climate and pests. Climate-resilient grazing will be supported, including legumes and grasses adapted to the local environment to increase biodiversity and landscape resilience. Leguminous species are also beneficial for climate mitigation, fixing atmospheric nitrogen and improving soil fertility. Specific activities will include: (i) provide productive assets (farmer packets/kits) to affected households dependent on agriculture, livestock, and beekeeping to help them resume activities and (ii) increase the production, productivity, and climate resilience of farmers and agricultural households through training and agri-technical assistance. The farmer kits will build on good and climate-smart practices to support diversified production and climate resilience—for instance, by introducing improved varieties and plantings that will restore pollinator populations. It is estimated that around 9,300 beneficiaries will receive productive asset kits, which will include agricultural inputs as well as emergency fodder and limited animal restocking. Selection criteria for eligible beneficiaries are briefly described in Annex 2 and will be developed in detail in the Project Operational Manual (POM).

Component 3: Coordination and Early Warning Preparedness (US$5.6 million, all IDA)

29. **The objective of Component 3 is to strengthen national capacity for early warning and early response, linking these efforts to regional locust surveillance and control networks thereby enhancing climate-resilience.** Early warning systems will be developed and implemented to support prevention and rapid response to new and existing climate change induced locust infestation, thereby limiting in-country and cross-border spread and intensification. Emphasis will be placed on building capacity to enable rapid and targeted short-term responses and long-term adaptation planning.

30. **Sub-component 3.1: Improving the infrastructure and institutional capacity of the national locust control centers (US$4.5 million).** This sub-component will build a network of DLCCs as follows: (i) establish a new Central Desert Locust Control Center (CDLCC) in Aden and three regional hub centers in Hodeidah, Shabwa and Sieun, as well as (ii) rehabilitate the infrastructure and operational capacity of the DLCCs in Sanaa and Hodeidah, which have been severely affected by the ongoing crisis. The new centers will be built on land that belongs to the Government of Yemen.

31. **The network of control centers will be established near key locust breeding areas to permit rapid deployment of technical and human resources to respond to an infestation**. The centers will be furnished and equipped to be fully operational. Investments in climate-proof and energy-efficient infrastructure will be pursued. The centers will have facilities suitable for storing pesticides and other control material and equipment, including refrigerated facilities/stores for bio-pesticides. Investments in storage facilities will be designed with the objective (among others) of reducing the exposure of products

to extreme weather conditions. The centers are expected to be prefabricated buildings that are easily and quickly constructed, to be built within a fenced area to ensure the safety of assets procured under the project. The standard operating procedures for a desert locust response will be established and agreed in connection with the relevant international and regional organizations. The centers will also prepare and maintain the National Desert Locust Control Plan, which will include the measures and procedures for locust surveillance and control, as well as resource requirements and planning and deployment mechanisms. To ensure a coordinated locust response, the network of centers will be operationally linked through the analytical and information platform described in Sub-component 3.2.

32. **Sub-component 3.2: Early warning preparedness (US$1.1 million).** This sub-component will finance the design, testing, and deployment of a Desert Locust Early Response System (DLERS) throughout the DLCC network. Early warning systems will be developed and implemented to support prevention and rapid response to current and new climate-change-induced locust infestations, thereby limiting their spread and intensification within Yemen and across bordering nations. This integrated system will have the most up-to-date information to trigger informed desert locust ground and/or aerial operations for swarm control. The system will also monitor metrological data, which will enable response mechanisms for other disasters and adverse climate events. Monitoring will also help increase outreach on reliable climate-smart pest management knowledge in the communities. This integrated system is based on an application installed on mobile devices to enter data in the field on the locust situation, monitor and maintain the necessary equipment and logistics, and track the quantity and quality of pesticide stocks.

33. **The DLCC network will aim to develop regional collaboration.** In addition to participating in the regional network that provides regular updates and information on the desert locust situation to the FAO, the network of DLCCs will also benefit from collaboration with other countries in East Africa and MENA participating in ELRP. In particular, the DLCCs will provide regular reports on the situation on the ground to help implement a consistent management of regional risks, ensure timely response activities and share the lessons learned. The DLERS information platform will allow DLCCs to consolidate and easily share the information and data for regional use. Through the MPA, DLCCs would also be able to collaborate multilateral, donor and regional agencies active in the locust area.

Component 4: Project Management (US$3.31 million, all IDA)

34. **Project Management (US$2.81 million).** Component 4 will cover costs associated with project management (inclusive of costs pertaining to the FAO and SFD), such as implementation support, financial management, procurement, monitoring the project environmental and social safeguards, and overall monitoring and evaluation (M&E). This component will also finance a third-party monitoring (TPM) mechanism and the establishment and maintenance of a grievance redress mechanism (GRM).

35. **Component 4 also provides support for awareness raising, communication, and knowledge management activities, including in response to COVID-19 (US$0.5 million)**. Before, during, and after locust control operations, a public awareness campaign will be implemented to keep the public informed about possible environmental and health effects of insecticides and empty pesticide containers. Monitoring and building environmental and climate literacy will also help to increase the dissemination of reliable climate-smart pest management knowledge. The public awareness campaigns are expected to reach at least 75,000 beneficiaries.

36. **Integration of COVID-19 response (US$0.35 million).** The project will use its resources (such as field consultants) to integrate COVID-19 awareness and preventive measures in the training events and awareness campaigns planned for beneficiaries. Awareness raising and training events will follow precautionary measures described in workshop/training protocols, as well as enforce and maintain adequate distancing during control, distribution, training, payment, and other project activities. The project will work with local communities, consultants, and beneficiaries to reach households with awareness and hygiene materials (such as masks, hand sanitizers and other relevant consumables). The decision on which hygiene materials to procure will be made in coordination with the COVID-19 health emergency project in Yemen.

37. **To reduce greenhouse gas (GHG) emissions from project interventions, the program also includes activities from the approved list in Annex A.C.1 of the Joint Report on MDB's Climate Finance**[5] and the World Bank's Guidance for Addressing Climate Change Corporate Commitments in Agriculture.[6] The project activities fully qualify as generating climate change mitigation Co-Benefits under Sub-Category 4.1. Agriculture and 9.1 from the A.C.1 List of activities eligible for classification as climate mitigation finance. The GHG accounting results are summarized in Section IV, Project Appraisal Summary.

Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

38. Due to the use of pesticides, the project might potentially impact local populations of farmers and pastoralists dependent on natural resources for their livelihoods such as pasture and crop fields, and potentially impact ecologically sensitive areas such as water bodies, wetlands, national parks, and reserves. Other interventions might generate risks and impacts related to construction works, such as dust emissions, debris, and other solid waste generation, ground/surface water contamination, social annoyance and community safety due to traffic increase, blocked streets, noise, dust, unsafe construction sites, etc. as well as workers safety including occupational health and safety, and other standard risks and impacts of construction. Although, the environmental risks and impacts are expected to be site-specific, reversible, and of low magnitude that can be mitigated following appropriate measures.

[5] Joint Report on Multilateral Development Bank's Climate Finance (2019). http://pubdocs.worldbank.org/en/650791574955718829/2018-joint-report-on-mdbs-climate-finance.pdf

[6] World Bank (2018). Climate Change Requirements: Guidance Note for Meeting Corporate Requirements for Climate Smart Agriculture https://worldbankgroup.sharepoint.com/sites/Agriculture/Knowledge%20Base/GuidanceNoteClimateChangeRequriementsAgriculturalOperations.pdf

E. Implementation

Institutional and Implementation Arrangements

39. **The World Bank - UN partnership will allow an operational reach that would be difficult to achieve otherwise.** First, partnering with UN agencies allows the project to reach more conflict-affected areas where vulnerability and needs are high, yet a government-led project may not be able to access. Second, it enables the project to continue despite increased insecurity as UN agencies have demonstrated their ability to operate continually in volatile situations. Third, it will allow the Bank to leverage UN agencies' existing in-country capacity, technical expertise, and existing relationships with various stakeholders. Fourth, the partnership allows the Bank to seek synergies with other UN-supported programs and make a greater impact.

40. **Under the proposed project, therefore, FAO will be responsible for successful overall project implementation.** The proposed project will operate within the Financial Management Framework Agreement (FMFA) signed between the World Bank and FAO on May 10, 2017. The FAO will be a recipient of the IDA financing, as well as the overall managing and implementing agency responsible for project implementation. As such, FAO will help ensure financial and technical accountability of the implementing partner organizations (such as SFD) and ensure appropriate training and capacity building of the staff of the implementing partner organizations. In addition, FAO will provide technical leadership for implementing Component 1 (*Surveillance and Control Measures*), Component 3 (*Coordination and Early Warning Preparedness),* and the technical activities (community outreach) under Component 4 (*Project Management)*.

41. **The FAO is well positioned to ensure satisfactory leadership and project management of the locust crisis response project.** As a specialized UN agency, FAO is primarily responsible for responding to emergencies in agriculture and food security, including crop and food supply monitoring and needs assessments, evaluations of agricultural relief requirements, and the mobilization of assistance and resources to restore agricultural activity. The FAO has prior experience in supporting implementation of Bank-financed projects on the ground in Yemen (since 2017 it has led implementation of SAPREP toward satisfactory achievement of results), and it has global technical knowledge on locust monitoring and response, including management of the global locust early warning system.

42. **The FAO Country Representation in Yemen will be responsible for implementing the project and coordinating all project activities at the sub-national level.** The FAO has fast-track procedures in place for countries in level 3 emergencies, such as Yemen, where a dedicated country Emergency Support Team can ensure that the required technical and operational support are provided to the country on a timely basis. The SFD will play a key part as the local implementing partner for Component 2, alongside FAO, building on SFD's recognized strengths in sustaining the delivery of critical programs throughout the conflict in a politically neutral and credible manner, including under the World Bank ECRP and SAPREP (the latter in collaboration with FAO). The FAO and SFD have well-established institutional and implementation mechanisms for delivering project activities in Yemen. The FAO will also work closely with the DLCCs to ensure adequate capacity building of the center networks that will enable the DLCCs to mount a coordinated response to future outbreaks of desert locusts.

43. **The FAO team in the office—the Project Coordination Unit (PCU)—in Sana'a will be in charge of the day-to-day management of the project, including all fiduciary, environmental, and social aspects, as well as monitoring and reporting.** The PCU in Sana'a will comprise a Chief Technical Advisor, Operations Officer, Procurement Specialist, M&E Specialist, Communication Specialist, Administration and Finance Officer, and Environmental and Social Safeguard Specialist.

44. **At the regional level, implementation will be supported by the Regional Project Coordination Units (RPCUs) set up under SAPREP and located at the FAO regional hubs in Aden, Hodeidah, and Saada**. The tasks performed by the RPCU staff will include providing implementation advice and general supervision, monitoring progress, supporting the implementation of safeguards, reviewing and approving annual work plans for the region (which would then be consolidated at the national level), conducting M&E, and reporting. The RPCU in Aden will coordinate activities in Lahj, Abyan, Al Dalea and Taiz. The FAO hub in Shabwa will provide support for activities in Marib, Albida, and AlJaf, whereas the RPCU in Hodeidah will provide support to Hajjah and Al Mahweet. The regional hub in Ibb will support implementation in the part of Taiz that is not covered by the Aden hub. The Saada RPCU will be responsible for implementing project activities in Saada Governorate. Each hub office will have dedicated project staff, including a Technical Advisor, Operations Specialist, Administration and Financial Management Specialist, and M&E and Reporting Officers.

45. **FAO will take the lead in sourcing equipment, vehicles, tools, information platforms, and other assets required for implementing Components 1, 3, and 4, as well as production inputs for emergency livelihood interventions under Component 2.** These inputs (seeds of staple crops, agricultural tools, and startup packages for backyard poultry and small ruminant production and apiculture) will enable crop and livestock production to resume in the locust-affected areas. Frontline services will be carried out by local implementing partners (such as SFD) engaged through standard agreements of FAO. The partners will be selected based on their technical and logistical capacities to implement the respective activities, past experience, track records in implementing related projects, value for money, and extent of coverage in the target districts. Some project activities will be implemented directly by staff and consultants of the FAO Country Representation in Yemen, particularly those related to support for activities under Components 1 and 3, for which FAO has technical expertise. As needed, the project will closely collaborate with the local implementation partners, which will include local non-governmental organizations (NGOs), local authorities, community-based organizations (CBOs), and private service providers.

46. **The SFD is a key institution for poverty reduction and social and economic development in Yemen, with extensive experience in working with local communities, as demonstrated under previous World Bank–financed agricultural and social protection operations in Yemen**. Among the most significant investments of SFD are investments in agriculture. The SFD is a key local partner in implementing the ongoing ECRP, and it will lead the implementation of Component 2 (Livelihoods Protection and Rehabilitation) under the proposed project. The selection of SFD for this role will preserve national capacity for community-based interventions during the post-conflict phase. For activities that will be implemented by SFD, FAO will provide technical guidance and backstopping as required. The Agriculture and Rural Development Unit (ARDU) in SFD's central office in Sana'a will provide overall support to the project, while the branch offices in Aden, Ammran, and El Mukalla will provide support and coordination for the project activities in Abyan, Lahj, Saada, and Shabwa, and branch offices in Hajjah, Taiz, and Al-Hodeidah will provide support and coordination in their own governorates. Staff in the branch offices include a Branch Manager, Procurement Officer, Financial Management Officer, and Technical

Officer for Quality Supervision, M&E, and Information Technology (IT), who are involved in day-to-day operational activities. Additional personnel will be recruited to cover areas where there are gaps. All staff are required to have satisfactory expertise, experience, and qualifications.

47. **A network of DLCCs will be established as described under Sub-component 3.1**. These centers will be key project beneficiaries, receiving technical and capacity building support to sustain their key role in locust monitoring, surveillance, and future response. The centers will be established in Aden and Sana'a, as well as in the three RPCUs close to the desert locust breeding and development areas. As discussed, all of the DLCCs will be operationally linked in a network to ensure they have the capacity to mount a coordinated locust crisis response.

48. **Project Operational Manual (POM)**. A detailed POM and a separate CfW Transfer Manual will be prepared for all project components within one (1) month of effectiveness. The POM and the Manual will be subject to the World Bank's no objection.

49. **Financial Management and Procurement arrangements**. The project's financial management (FM) arrangements will be governed by the FMFA between the World Bank and the UN agencies, which provides for the use of the UN's Financial Regulations. For procurement, FAO will follow its own procurement procedures as Alternative Procurement Arrangements, as provided under the World Bank New Procurement Framework Policy Section III. F. This implementation arrangement is sound, since the procurement procedures of FAO were assessed and found acceptable to the World Bank under agreements with UN agencies.

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