

Desert Locust Infestation Emergency Support Program

Khyber Pakhtunkhwa & Sindh Pakistan

Third Party Evaluation - 2021



Beyondsolutions Pvt. Ltd
Chinnar Center Plaza # 150, Block-D, Civic Center, Bahria Town, Islamabad
info@beyondsolutions.co , www.beyondsolutions.co
Tel: +92 (0) 51 2724013

Authors

This third part evaluation was commissioned by Japan Platform. This evaluation has been carried out by Beyondsolutions Pvt Limited Pakistan. For more information, please contact info@beyondsolutions.co

Acknowledgements

Beyondsolutions would like to thank everyone who participated in and supported the undertaking of this evaluation. This includes community members, Ministry of National Food Security & Research, Department of Plant Protection, Agriculture Extension Department, Department of Livestock, Pakistan Agriculture Research Council, Arid Zone Agriculture Research Institute, District Management, Provincial Disaster Management Authority, Japan Emergency NGO (JEN) and Japan Platform for support, active coordination, and facilitation. Beyondsolutions would like to mention about Mr. Gokhan Erkutlu (M&E Consultant JPF) for his strong vision, continuous guidance and coordination for meeting deadline and delivering every milestone successfully. We also acknowledge and appreciate the evaluation team for successful completion of the assignment and delivery of their tasks as Aftab Alam Khan -Technical Lead and Report Writer, Dr. Fayyaz Ahmad - Strategic Advisor, Dr. Hammad Naqvi -Survey Design and Data Analysis, Uzma Latif - Gender Advisor, Nusrat Thakar – Evaluation Coordinator and Quality Assurance, Pervaiz Ahmed- Contract Management and Mushtaq Ahmed - Data Collection Manager.

Disclaimer

The views expressed in this report are those of the authors and the stakeholders who participated to share their experiences voluntarily in the evaluation process and do not necessarily represent the views of the Japan Platform.

Contents

Authors	<i>i</i>
Contents	<i>ii</i>
Abbreviations	<i>iv</i>
Executive Summary	1
1. Background & Context	2
2. The Assignment	3
2.1 Project Overview	3
2.2 Objectives of the Evaluation	5
2.3 Evaluation Methodology	6
2.4 Evaluation Phases	6
Phase 1: Inception	6
Phase 2: Data Collection	6
Phase 3: Data Cleaning, Synthesis, Analysis & Reporting	8
Phase 4: Presentation & De-briefing of Findings	9
3. Evaluation Findings	9
3.1 Results & Achievements Against Outputs	9
Output-1: Crop damage is minimized in the 30 most affected areas identified for locust egg hatching, herd formation, and locust outbreaks.	9
3.2 Output-2 The locust invasion early warning system and locust monitoring and control system have created an early warning mechanism (EWM) against pests in the least implemented and most affected areas affected by pest damage, and the role, monitoring and control mechanism of LCG and the Agricultural Bureau are strengthened.	10
3.3. Output 3: An emergency aid to livestock farmers affected by pest damage, provide fodder, anthelmintic treatment and knowledge of related livestock raising to alleviate the condition of feed shortages that are directly linked to the food crisis.	12
	15
3.4 Adherence to CHS and other International Standards	16
3.5 Sustainability	18
3.6 Gender & Inclusion	19
3.7 Progress Towards Project Goals	19
4. Discussion	20
4.1 Key Findings	20
4.2 Lessons Learned	21
Good practices	21
What to do differently in the future	22
4.3 Limitations of the Evaluation	23

5.1 Recommendations for Member NGO	23
5.2 Recommendations for JPF	25
6. <i>Case Study</i>	26
6.1 Rebuilding livelihoods:	26
7. <i>Annexures:</i>	27
8. <i>IEC material</i>	1
9. <i>Desert locust surveillance and control poster</i>	1

Abbreviations

CHS	Core Humanitarian Standards
DI Khan	Dera Ismail Khan
DPP	Department of Plant Protection
EWM	Early Warning Mechanism
FAO	Food and Agriculture Organization of the United Nation
HHS	Household Survey
IDIs	In-depth Interviews
IP	Implementing Partner
JEN	Japan Emergency NGO
JICA	Japan International Cooperation Agency
JPF	Japan Platform
KII	Key Informants Interview
KPK	Khyber Pakhtunkhwa
LCG	Locust Control Group
LEGS	Livestock Emergency Guidelines and Standards
MoNFS&R	Ministry of National Food Security and Research
NAP	National Action Plan
NDMA	National Disaster Management Authority
NGO	Non-Government Organization
NOC	No Objection Certificate
PDMA	Provincial Disaster Management Authority
QA	Quality Assurance
QDA	Qualitative Data Analysis
SOPs	Standard Operating Procedures
SPSS	Statistical Package for the Social Sciences
TOR	Terms of Reference
TPE	Third Party Evaluation
UC	Union Council
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development

Executive Summary

Desert locust swarms entered in Pakistan in January 2019 through Balochistan from Iran and by the end of May its spread reached the agriculture areas of four provinces, destroyed crops, wiped out fodder and greenery leading to a serious threat for life of livestock and food security of the people across the country. The government declared emergency and a comprehensive National Action Plan for Surveillance and Control of Desert Locust was prepared in Pakistan, 2020-21 (NAP-DL-Pak). JPF mobilized 330 million Japanese Yen under the Locust Infestation Emergency Support Program 2020 (Period 1st April 2020 - 30th Oct. 2021) for South Sudan, Pakistan and Kenya. Japan Emergency NGO (NGO) received funds from the JPF and implemented an emergency project in 30 worst affected communities in two districts DI Khan in KP and Tharparkar in Sindh.

The key strategies of community-based desert locust management include empowering the community by selecting locust control groups from target villages, training them and providing them necessary materials for pest control and joint pest control on locust, creation of early warning mechanism against pests and strengthening of monitoring and controlling system. To protect the livestock-related assets of crisis-affected communities¹ project provided emergency aid to livestock farmers affected by pest damage by providing fodder, anthelmintic¹ treatment, vaccination and livestock management.

This evaluation applied a mix method approach; literature review, household survey, key informant interviews and in-depth discussions with experts, government officials, community members and development partners. Third-Party Evaluation demonstrated that due to delays in issuance of NOC the project was delayed by 87 days and locust had moved away from the planned districts. Hence, project design and geographic location was changed according to the changing context. The project selected 6 worst affected union councils based on assessment reports and consultation with government departments. The project in consultation with Agriculture department and other stakeholders selected 68 LCGs in 30 villages to engage them in process of creating an early warning mechanism. In both districts project successfully created EWM in government offices and focal points appointed. 88 people (68 LCGs and 20 Government officials) were oriented about the roles and responsibilities pertaining to EWM. The project provided necessary supplies including spray pumps, protective equipment (gloves, goggles, masks) to people involved in EWM. By using FAO prescribed Livestock Emergency Guidelines and Standards (LEGS) 820 Households in DI Khan and 3860 in Tharparkar were supported with high standard livestock feed, parasite anthelmintic and vaccination. Eighty-eight (88%) percent of the beneficiaries reported animal health improved and 92% had noted increase in milk production. The interventions aligned with the LEGS and CHS standards. The support delivered with dignity and respect. Over 60% survey respondents were satisfied with beneficiary selection processes. A high percent (78.6%) did not face difficulty during project assistance. More effort was required to mainstream gender so that women were part of all the project interventions and also benefitted as direct as well as indirect beneficiaries.

JEN established good working relationships with Department of Plant Protection, Department of Agriculture and Livestock. This will help the organization, stakeholders and affected communities for ongoing and future needs. The project strengthened government efforts to control desert locust, locust surveillance and emergency recovery model for future.

The project has achieved the long-term results due to its relevance with local customs, practices of livestock and agriculture and alignment with geographical locations of the communities. A briefing paper on nature and functioning of EWM should be developed. It will be a resource material for future locust attacks.

¹ A drug used to kill parasitic worms

1. Background & Context

Desert locust is a looming threat that can affect an area of 16 million square kilometers comprising of 30 countries, while another nearly 29 million squared kilometers covering 60 countries are under the threat of invasion. These insects grow and multiply under favorable agro-ecological conditions, and after consuming the vegetation in one area, they migrate to other regions where food is available for them. Swarms of desert locust can be of millions, fly up to 150 kilometers per day, and may travel nearly 2,000 kilometers in their lifetime to find a favorable environment for breeding. They have a life cycle of about 12 weeks, eat up to their own weight daily, rapidly reproduce and eggs which usually hatch after about two weeks².

In January 2019, new waves of swarms formed in the Arabian Peninsula and migrated northwards into the interior of Saudi Arabia and Iran, and southwards to Yemen. Breeding and a further increase occurred during the spring in both areas, causing new swarms to subsequently migrate to India, Pakistan, and to the Horn of Africa³. The immature desert locust swarms invaded Saudi Arabia which migrated from the Red Sea coast of Sudan and Eritrea in January 2019. It invaded Iran in February 2019 and subsequently Pakistan in March 2019⁴.

Pakistan is especially prone as 38 percent of the area of the country (60% in Baluchistan, 25% in Sindh and 15% in Punjab) are breeding grounds for desert locust. In May and June 2019, locust swarms from Baluchistan and the migrating population from Iran invaded the Sindh province in areas around Nara Canal and Khairpur, and thereafter in Tharparker and Umerkot districts. By the end of May 2019, locusts also appeared in the Khairpur district of Nara Desert in the province of Sindh. Later on, desert locusts reported in Rahimyar Khan near Cholistan Desert of the Punjab province they were also seen copulating in Okara district of Punjab and Dera Ismail Khan (DIK) and Lucky Marwat districts of Khyber Pakhtunkhwa⁵. According to NDMA⁶ report 29 May 2020, locust attacks destroyed food crops in 61 districts across the country including 31 districts of Baluchistan, 11 in Khyber Pakhtunkhwa, 12 in Punjab and 7 in Sindh.

In response to desert locust appearing in cultivated areas in the four provinces of Pakistan, the scale of the infestation, and the unusually favorable conditions for breeding, the Government declared a



² <https://www.fao.org/pakistan/resources/in-depth/desert-locust-situation-in-pakistan/en/>

³ <https://www.fao.org/pakistan/resources/in-depth/desert-locust-situation-in-pakistan/en/>

⁴ <https://plantprotection.gov.pk/services/aerial-spray/locust-operations/>

⁵ <https://fscluster.org/desert-locust/document/fao-desert-locust-situation-update-march>

⁶ <https://www.thenews.com.pk/latest/664894-ndma-says-locust-attacks-causing-damage-in-more-than-60-districts-across-pakistan>

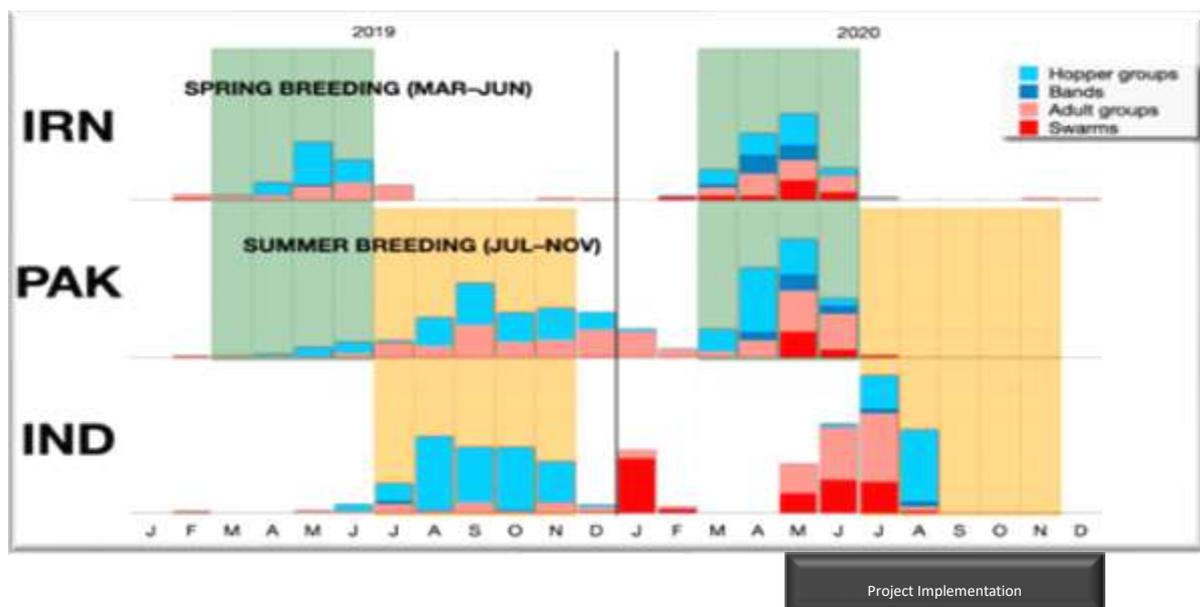
“National Emergency on Desert Locust” upon the advice of the Ministry of National Food Security and Research (MoNFS&R). This brought together the National Disaster Management Authority, Provincial Agricultural Departments, and the armed forces of Pakistan, wherever required, to coordinate and support large-scale locust control operations in Pakistan. Please refer to the website of the National Locust Control Center (www.nlcc.gov.pk) for further details. A comprehensive *National Action Plan for Surveillance and Control of Desert Locust in Pakistan, 2020-21* (NAP-DL-Pak) prepared and adopted by the Cabinet. In February 2020, the first phase of NAP for locust surveillance and control started. The Department of Plant Protection (DPP) was the lead institution tasked with monitoring and managing the desert locust threat in Pakistan.

The Asian Development Bank conducted a survey of more than 400 farmers in Sindh, looking at the combined threat of COVID and locust invasion on their lives⁷. The survey highlights the combined effects of these shocks where more than half of the farm households reported lower food consumption and one-third of them reported lower earnings. COVID lockdowns significantly disrupted food supply chains across all major agricultural products including wheat, vegetables, fruits, and milk with most respondents reporting being unable to market their produce. Tomato farmers faced substantial disruption, with 61% of respondents unable to complete their harvest at the usual time. Severe locust invasions observed in KPK and Sindh, with 73.7% of respondents having seen locust swarms in their area without any prior warning or information by government or any other agency.

2. The Assignment

2.1 Project Overview

Following the declaration of the national locust emergency and provincial desert locust emergency international partners, including Japan Platform (JPF) extended their technical and financial support to Pakistan for the control of the damages caused by the infestation. JPF provided financial support to Japan Emergency NGO (JEN) for a project in district DIK, KPK and Tharparkar, Sindh.



⁷ ADB Brief 153 <http://dx.doi.org/10.22617/BRF200280-2>

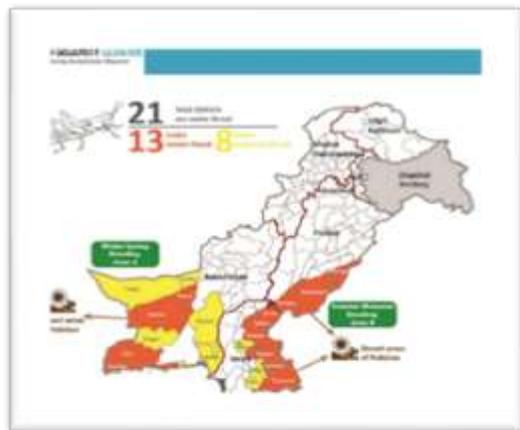
The project called **“A livelihood support project focusing on pest control, monitoring and management for farmers in three worst affected districts of Khyber Pakhtunkhwa province, Pakistan to provide necessary materials to farmers affected by pest damage and create an early warning mechanism against pests to prevent the area from crop damage”**. The project also planned to support the capture, processing, and sale (hereinafter referred to as the pest trade⁸) to contribute towards rebuilding the lost livelihoods

The initial project duration was from 21st July - 30th November 2020 to be implemented in the districts of Tank, Lakki Marwat and DI Khan. However, the project could not start due to delays in acquiring the permission (No Objection Certificate (NOC)) from the government, which led to a delay of 87 days. During this time the locust had moved to Sindh, therefore adjustments made after consultations with the officials of the Plant Protection Department and Agriculture Extension Department. Government also wanted to prioritize the support in Sindh province where the situation was alarming as the migration from India was also happening. The two districts of the project Tank and Lakki Marwat dropped and Tharparkar from Sindh was included. Similarly, the project component 3 which was pertaining to Locust capture/processing/sales (pest trade) was also changed with new component as **“An emergency aid to livestock farmers affected by pest damage, provide fodder, anthelmintic treatment and knowledge of related livestock raising to alleviate the condition of feed shortages that are directly linked to the food crisis”**.

However, the eggs and bands were present which would hatch in 2-3 months. NOC was issued to JEN on 15th October 2020; leaving only 47 days to roll-out the planned intervention as compared to the original plan of 133 days. JEN contract expired for DI Khan on 23rd December and the new contract was issued for 34 days on 26th January 2021 till 15th March for critical activities. The Office of the Deputy Commissioner District Tharparkar granted permission to work from the second week of December 2020.

Additionally, during this time there were restrictions on travel and public gatherings due to COVID19.

The project was implemented in 30 worst affected villages of six union councils in two districts Tharparkar (Sindh) and DIK (KPK) between 21st July 2020 and 10th May 2021 with an aim to support farmers affected by pest damage, provide necessary materials and create an early warning mechanism against pests to control crop damage in the region. At the same time, emergency assistance was provided to livestock farmers affected by pests to rebuild their lost livelihoods. Livestock are the main food source and livelihood of the target area, and the livestock food is completely dependent on pasture. As a result of the government's pest control operations on crop farmlands, pests moved to pastures and ate up grass, which is the food for livestock. Due to the lack of grass, livestock were lean, susceptible to disease and parasites. As a result, the degree of distress among livestock farmers increased and the project design was changed to address this need by including emergency aid activities for livestock farmers⁹ affected by pest damage i.e., the provision of fodder anthelmintic treatment and



⁸ Pest Trade: This component of the project replaced with livestock support component due to changing situation of locust in the target areas. So as per revised project design a new component i.e. An emergency aid to livestock farmers affected by pest damage, provide fodder, anthelmintic treatment and knowledge of related livestock raising to alleviate the condition of feed shortages that are directly linked to the food crisis.

⁹ Page # 55, table 3.1: Livelihood's objective # 2 of LEGS (a set of international guidelines and standards for designing, implementing, and evaluating livestock interventions to help people affected by humanitarian crises - <https://www.fao.org/resilience/resources/resources-detail/en/c/177304>)

vaccination¹⁰ and knowledge of related livestock raising to alleviate the condition of feed shortages that are directly linked to the food crisis. The planned number of LCGs¹¹ was initially 150 but this was reduced to 68 due to the revision in the initial plan of project.

The beneficiaries of the project comprised of 80% males (n-3737) and 20% females (n-943) were 4680. and 68 Locust Control Groups (LCG) (DI Khan: 20 & Tharparkar: 48) were formed having an average 12 members in Tharparkar and 10 members in DI Khan in each group. The districts-wise breakdown of beneficiaries was 820 beneficiaries i.e., 18% (Males: 685 and Females: 135) in DI Khan and 82% i.e., 3860 beneficiaries (males: 3052 & females: 808) in Tharparkar.

For immediate reference, three outputs of the project are described below in table 1 and the complete logic model of the project with detailed indicators is attached as an Annex 1.

Table-1: Project Beneficiaries				
Project sites	Females	Males	Total	%
KPK - DI Khan	135	685	820	18
Chowdhwan	64	346	410	
Daraban	71	339	410	
Sindh- Tharparkar	808	3052	3860	82
Bapuhar	353	1247	1600	
Bhakuo	184	349	533	
Jhirmrio	215	1231	1446	
Posirko	56	225	281	
Grand Total	943	3737	4680	100%

Table -1: Project Outputs	
Output-1	Crop damage is minimized in the 30 most affected areas identified for locust egg hatching, herd formation, and locust outbreaks.
Output-2	The locust invasion early warning system and locust monitoring and control system have created an early warning mechanism against pests in the least implemented and most affected areas affected by pest damage, and the role, monitoring and control mechanism of LCG and the Agricultural Bureau are strengthened
Output-3	As an emergency aid to livestock farmers affected by pest damage, provide fodder, anthelmintic treatment and knowledge of related livestock raising to alleviate the condition of feed shortages that are directly linked to the food crisis.

2.2 Objectives of the Evaluation

The evaluation aims to document the progress and learnings from the project in Pakistan, specifically looking at the following aspects:

1. Levels of achievements against the planned outcomes and outputs;
2. The extent to which humanitarian principles and standards (including but not limited to CHS) incorporated during the implementation phase.
3. To assess the levels of satisfaction of the project beneficiaries with project results;
4. To document the key effects of intervention around recovery assistances and capacity development;

¹⁰ Table 5.1 Advantages and disadvantages of veterinary support intervention options

#P# 110 LEGS: Technical standards for veterinary support (<https://www.fao.org/resilience/resources/resources-detail/en/c/177304>)

¹¹ According to initial plan, project planned to select and train five LCGs for each union council to work for control and surveillance of desert locust in 25 union councils (125 LCGs). Project also planned additional 25 LCGs work for desert locust capture and trade (125+25=150 LCGs).

5. To document and extract lessons learnt, best practices, challenges, assistance gaps, and to provide robust recommendations to improve future projects.

2.3 Evaluation Methodology

The evaluation designed in line with the CHS Framework with an aim to analyze, explore, document, and draw learnings from the project. The evaluation carried out by assessing CHS standards and criteria pertaining to Relevance (CHS 1), Effectiveness (CHS2), Impact and Sustainability (CHS3), and Coherence (CHS6) as they were applied to project design and during implementation. The execution of the assignment benefitted from the guidelines provided during the inception phase by JPF, JEN staff and the literature review of the project and other relevant documents. Subsequently, the processes reviewed, contextualized, and adapted according to the needs of the assignment and ground realities in Pakistan, especially in relation to regulatory processes of the government regarding travel and data collection and COVID-19.

Details pertaining to the methodology, including data collection approaches, tools, sampling techniques and inclusion criteria etc. were spelled out in the inception report for this assignment (attached as Annex 2). These details not repeated here and interested readers are requested to refer to the annex.

2.4 Evaluation Phases

Phase 1: Inception

Key milestones of the inception phase include:

- An in-depth briefing of the evaluation team by JPF covering the project, the assignment, and the setting up of communication protocols for coordination.
- Meeting with the implementing partners and subsequent sharing of project reports, data and other relevant information.
- A comprehensive literature review of project documents and other online sources that guided the refinement of methodology and tools. List of documents reviewed is attached as an Annex 3)
- Initiation and follow up of the processes pertaining to permissions (No Objection Certificates) and liaison with relevant district authorities to ensure that data collection process was executed smoothly.

The finalized methodology, tools, data collection plan and workplan was shared as an “inception report” (Annex 2) which was reviewed, approved and the next phase of data collection was initiated.

Phase 2: Data Collection

The review of the literature related to locust infestation, its impact on life, livelihoods, and impact on communities (especially on women farmers) continued through this phase as well. Primary data collection through household survey, in-depth interviews and key informant interviews carried out through conducting field visits to Tharparkar and DI Khan. Following aspects of the data collection planning and execution need special emphasis:

1. Thorough training of the field teams on tools and methodologies and critical topics such as ethical guidelines, safeguarding mechanisms and data protection in alignment with JPF policies. During the training, with support from JEN staff, the structure and the language of tools also adjusted in accordance with local context and norms.
2. Four data collectors comprising of two males and two females selected in Tharparkar who can speak Sindhi and Urdu language and two data collectors from DI Khan comprising of one male and one female who can speak Pashtu & Saraiki. The data collectors were oriented about the JPF

organisation as donor and JEN as an implementing organisation for this project, they were given the training about data collection methods, tools, guidelines, COVID SOPs.

3. Primary data was collected from 23rd Oct till 27th Oct 2021 in Tharparkar and 1st Nov till 3rd Nov 2021 in DIK with the support of a trained field team comprising of two members each (one male and one female).
4. IDIs and KIIs conducted with the support of a notetaker to ensure that all the information is documented and no data is lost.

Household Survey: The survey was conducted in 6 villages of two union councils in Tharparkar and 3 villages of one union council in DI Khan. Please refer to table (a). During the survey, a total of 341 respondents were interviewed including 116 women and 225 men

Table (a): Household Survey					
Sr.	District	Village name	Women	Men	Total
1	Tharparkar	Booli	11	27	38
2		Gara Khan Wala	13	15	28
3		Kirri Bakhtiyar	9	16	25
4		Mohallah Malla Khail	8	9	17
5		Paneli	6	51	57
6		Senhar Nangar	23	40	63
7	DI Khan	Taho Bheel	17	20	37
8		Tooh	27	24	51
9		Vee Bheel	2	23	25
Grand Total			116	225	341
			34%	66%	100%

In-depth discussions were carried out with LCGs members with an aim to understand their role in the implementation and how they were supporting the sustainability of the project by working with the district government. The details given in table (b) below.

Table (b): In-depth Interviews				
S#	Name	Village Name	Union Council	District
1	Ghulam Mustafa	Paneli	Jirmiryio	Tharparkar
2	Narain	Vee Bheel	Bapuhar	Tharparkar
3	Mor Ji s/o Jhodo Ji	Taho Bheel	Bapuhar	Tharparkar
4	Hot Chand	Senhar Nangar	Bapuhar	Tharparkar
5	Ghulam Mustafa	Paneli	Jhirmrio	Tharparkar
6	Umar Farooq	Mohalla Mola Khail	Daraban	Dera Ismail Khan
7	Abdul Wahab	Kirra Bakhtiyar	Daraban	Dera Ismail Khan
8	Dil Jan	Gara Khan Wala	Daraban	Dera Ismail Khan

Key Informant Interviews: KIIs were conducted with relevant government institutions e.g., Agriculture Department, Department of Plant Protection, Ministry of Food, Livestock, Nutrition / Food security private livestock, community activist and partner organizations to gather insights about the project design and implementation. The detail mentioned in the table (c).

Table (c): Key Informants Interviews			
Sr. No.	Name	Designation	Department / Organization
1	Dr. Mohammad Khurshid	Ex. Joint Secretary	Ministry Food Security
2	Dr. Johar Ali	Ex-PARC Islamabad	Nutrition/ Food Security
3	Dr. Salah Ud Din	Subject Matter Specialist	Agriculture Extension Department- D I Khan
4	Mr. Vijay Kumar	District Director Agriculture	Agriculture Extension Department, Tharparkar
5	Dr. Falak Naz	Ex. DG Plant Protection PK	Department of Plant Protection
6	Dr. Tariq Marwat	Senior Veterinary Officer	Livestock Department D I Khan
7	Mr. Nadar Khan	Field Assistant	Agriculture Extension Department-D I Khan
8	Mr. Nakhat Singh	Community Activist	Private/ Livestock
9	Mr. Azmat Ali	Country Head Pakistan & Afghanistan	JEN Head office Islamabad
10	Muhammad Shaukat	MEAL Officer	JEN Head office Islamabad

Quality Assurance of Data Collection: During the data collection phase, major steps and minute details were planned and discussed with teams, where QA processes and roles were clarified. Below is a list of measures introduced and implemented:

- daily de-briefing sessions with field teams
- field level quality checks through supervisory visits
- 20% of household survey forms were again verified by the Beyondsolutions QA staff
- transcriptions entered in SPSS by a highly trained core staff with oversight from the statistician
- written consent obtained from all the respondents and before taking any photographs

Phase 3: Data Cleaning, Synthesis, Analysis & Reporting

The review conducted through a pre-defined thematic focus, derived from the CHS framework and relevant material was transported and synthesised using qualitative data software.

The notes were gathered from all data sources namely the literature review, KIIs and IDIs. All the information parked, and an internal workshop was conducted to collate, synthesize and review the collected information at Beyondsolutions office in which all team members involved in the evaluation participated.

The analysis of findings was done after the data from the field was digitalized which allowed a thematic analysis-reference. The key themes were drawn based on insights and understandings in line with the evaluation priorities. The analysis process also used QDA Minor lite and Zettelkasten software and

where needed, data triangulation was conducted manually. The synthesis provided material for the draft which was reviewed by the technical experts, and submitted for final approval.

Phase 4: Presentation & De-briefing of Findings

The draft report shared with JPF and JEN to present the findings and recommendations based on the project evaluation. In a separate debriefing session, the findings and recommendations from all locust programs shared with JPF and JEN staff.

3. Evaluation Findings

This section of the report presents the findings of the evaluation gathered through literature review, household survey, KIIs and IDIs and organized under the following headings:

- Results and achievements against outputs
- Adherence to Core Humanitarian Principles
- Sustainability
- Gender and Inclusion
- Commentary on the progress towards the project goal

3.1 Results & Achievements Against Outputs

Output-1: Crop damage is minimized in the 30 most affected areas identified for locust egg hatching, herd formation, and locust outbreaks.

According to project reports, the 30 villages¹² in districts DIK and Tharparkar were selected through consultation with Agriculture Livestock Department, Agriculture Extension Department and community elders. 68 Locust Control Groups (LCGs)¹³ were established in the same villages. The members of LCGs selected after a thorough consultation with government departments and community elders. They were involved in the project after proper orientation trainings, their roles and responsibilities were defined and assigned. LCGs played an active role in the identification and selection of vulnerable¹⁴ households in the affected villages for project assistance, distribution of fodder, animal vaccination, anthelmintic treatments, capacity building and establishment of Early Warning Mechanisms.

According to discussions with government officials from livestock department, JEN consulted them for different components of the project such as the development of training content for pest control and participation in the sessions. JEN staff conducted briefings about the establishment of EWM and explained to the government officials about the system and LCGs' involvement in the locust surveillance. The project provided to LCG members spraying machines, and protective equipment (masks, gloves, glasses, hats)¹⁵.

According to the project progress reports, 68 LCG members were provided spray pumps and protective equipment and 20 government employees working in the project areas were provided with protective

¹² Monthly report JEN 1st June 2021

¹³ As per initial plan LCGs consisting of 450 people from 13,860 households in three districts Tank, Lakki Marwat and DI Khan. Due to delays in NOC the project design and location was changed and number of LCG reduced to 68. DI Khan (20 LCGs and Tharparkar 48).

¹⁴ Vulnerable: People especially susceptible to the effects of natural or man-made disasters or of conflict

¹⁵ Ibid

equipment. The discussion with LCG members during in-depth interviews revealed that they received the supplies of good quality, they used these machines and equipment for controlling of other pests as demonstration, because of the non-existence of locust in the area. 73.33 % of the surveyed members thought that these machines and equipment will be helpful in the future in case of any locust invasions.

88 persons including 68 LCG members and 20 government departments officials working locally in project areas were trained on on-site pest control, monitoring and coordination processes with locust control room established in the offices of Agriculture Department¹⁶. 93% (n-14 out of 15 including 1 woman) respondents (LCGs) informed that they participated in different trainings. 87% of the LCG members think that these trainings were quite useful for them. The discussion with LCGs members as well as the joint trainings sessions brought community and government department close to each other.

3.2 Output-2 The locust invasion early warning system and locust monitoring and control system have created an early warning mechanism (EWM) against pests in the least implemented and most affected areas affected by pest damage, and the role, monitoring and control mechanism of LCG and the Agricultural Bureau are strengthened.

The documents review revealed that project managed the delivery of planned targets successfully. The LCGs and Agriculture Bureau created an early warning mechanism both at DI Khan and Tharparkar districts.

For the purpose of EWM establishment 68 LCGs members were selected in close consultation with government departments and community elders in the selected villages and identified farmlands for pest monitoring. The project capacitated 88 people, including 68 LCGs members and 20 Agricultural Bureau staff. Project linked LCGs with all relevant stakeholders to create early warning mechanism to control desert locust in different life stages; including eggs, young hatched nymphs, metamorphosed moving hopper bands and mature flying swarms of desert locust while catering livestock emergency health affected due to desert locust attack. These people were trained for mechanical and chemicals control as well as EWM processes including survey of the area to collect information on desert locust and share information for rapid control by using of E-Locust, WhatsApp groups, telephone while monitoring pest sites.

LCGs and agriculture department jointly established EWM for locust monitoring and controlling. Selected LCGs and the agriculture departments officials trained about the surveillance and control system. The monitoring system works through the coordination among LCGs and Locust Control Room through different tools such as mobile phone, WhatsApp groups, E-locust, SMS, and hard copy of the format for data collection. According to evaluation survey findings, 100% of LCG members (n:15) said that they received an orientation about the EWM mechanism. All LCG members received trainings on on-site pest monitoring implementation and on-site pest control trainings in DI Khan and Tharparkar. According to project documents review¹⁷ findings 91% of LCGs members said that the early warning mechanism is an effective system. However, 7% suggested that regular refreshers in the surveillance training needed to monitor the desert locust effective in their areas.

Project introduced three channels of communication and updates sharing between agriculture department and LCGs members under early warning mechanism;

¹⁶ ibid

¹⁷ Component monitoring report

- 1) WhatsApp and E-locust at areas where LCGs can use smart phones and run E-locust.
- 2) Telephone and project-based performance at areas where there was neither internet service nor the LCGs members can use smart phones.
- 3) Telephone based communication in case of emergency for LCGs. The contact number of agriculture department was shared to communicate in case desert locust swarms or any other life phase is crossing controllable limits beyond locals' capacity.

The main process of communication includes that LCG members will be focal point from project areas / sites who will conduct monitoring and report to EWM office established in the Agriculture Department. Both government officials and LCG members were trained on E-locust and can communicate through WhatsApp and telephone. The agriculture department contact numbers were shared with LCG. According to the survey findings, 66.7% of LCGs members (10 out of 15) stated that telephone is very useful for information sharing while 26.7% (4 out of 15) find SMS useful. As the majority of the community members are illiterate and cannot read the messages. As per survey findings only 17% of the community respondents (60 out of 341) said that they could read the message in the local language, whereas others could not. During the IDIs, they stated that other effective sources for information sharing are announcements done through mosque loudspeakers, police stations and radio¹⁸.



According to reports¹⁹, officials of the district agriculture extension department received updates through WhatsApp group for locust control and surveillance. Some LCGs were located in areas where there was no access to the internet, therefore they reported the locust control and surveillance situation through submitting reports on a prescribed format in hard copy. The EWM (Hard Form) was tested during the project in areas which are located to very distant and don't have internet. Normally the people do not come to the urban center unless they have some emergency situation like health conditions etc. JEN provided hard forms to utilize when they sense the risk of locust only. The reason is that they cannot afford to come to the Locust Control Room (LCR). However, they will fill out the forms and bring it to the LCR or call to LCR when the problem happens.

LCG members are linked with Agriculture Department and are mostly using WhatsApp groups to share surveillance and also upload information on E-locust. this will contribute for early detection of locust and planning actions. At D I Khan LCG members are part of Farm Services Centers which is a permanent setup of the government to assist and collaborate with farmers.

According to the interview with the technical expert²⁰, early warning mechanism is also established to ensure a sustainable approach and for the control of locust at the earliest possible stage and on an immediate basis. Emergency contacts numbers were provided to the LCG members in the affected community for communication and sharing updates regarding the locust specific issues and updates about actions. The technical expert suggested that agriculture department needs to update the early warning system on a regular basis.

¹⁸ IDI Notes

¹⁹ Monthly report

²⁰ KII: Dr. Tariq Marwat, Senior Veterinary Officer, Livestock department

According to the interview with the field assistant, agriculture extension department, EWM would sustain. He suggested for more trainings for the farmers and employees of the relevant departments.

One of the limitations of EWM was that its catchment area has limited internet access.

3.3. Output 3: An emergency aid to livestock farmers affected by pest damage, provide fodder, anthelmintic treatment and knowledge of related livestock raising to alleviate the condition of feed shortages that are directly linked to the food crisis.

According to TPE findings locust created sever threats for livelihood and livestock in project communities to survive post havoc occurred in the areas due to locust invasions. As agriculture and livestock are the major source of livings in the areas, so local people were feeling serious nature of threats and were in troubles because of losses of agriculture crops and destroyed grazing pastures. The survey data shows that 99% of the targeted communities had livestock including goats /sheep, cows, buffaloes, donkeys and camels (figure 1). 59% of the respondents said that locust affected all animals. More than 93% of the respondents shared that locust destroyed the pastures (Figure 2). Due to locusts, fodder shortage was a major challenge in both districts. (Figure 3). As most people in the deserts depend on animals, it was alarming situation for them to manage the livestock fodder.

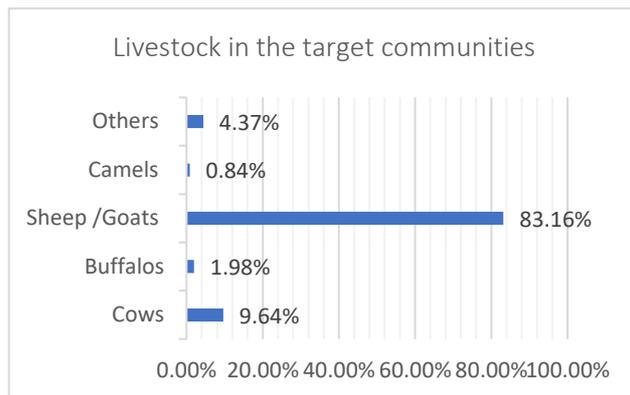


Figure 1: Livestock holding status

JEN adopted FAO guidelines LEGS21 for working with livestock keepers and farmers in emergencies. Project designed interventions include not to harm animal health care, livestock feed and water, shelter, destocking and restocking, crops, vegetable, fruits and fodder of the project area. The project provided fodder (Wanda)²² which was decided by livestock experts to affected farmers. The project hired livestock assistants who provided parasite and anthelmintic treatment to the livestock and trained farmers on livestock management²³. According to the desk review, 3280 HH in Tharparkar and 820 HH in DIK were identified as per beneficiary selection criteria for provision of livestock fodder, anthelmintic treatment and vaccinations²⁴ and successfully achieved the target by exceeding 580 additional households

21 Livestock Emergency Guidelines and Standards 2nd-Edition-Reprint-October-2015-reduced-locked

22 Reference Table 6.1; Advantages and disadvantages of feed provision options (1. Emergency feeding in situ) Page #156 Technical standards for ensuring feed supplies (LEGS).

23 Monitoring report JEN component 3

24 Monthly progress reports JEN

According to the discussion with the field assistant of livestock department²⁵, there was a high degree of distress among the local communities because farmers in the area rely on open grazing and due to the shortage of fodder, the livestock was getting thin and susceptible to illness.

The livestock department²⁶ and agriculture extension department provided technical guidance and suggested the multi-nutrient fodder (Wanda) and treatment of worms. The vaccination and deworming were highly essential for the improvement of animal health. Mr. Tariq Marwat-Senior Veterinary Officer Livestock Department told LCG members to disseminate the information to the community, “they can visit my office any time and I will be available to solve their issues”. He also shared the cell numbers of local field officials and urged LCG members to contact them for any related issue.

A community member shared that locust invasions created setback for poor livestock owners as every green thing including agriculture crops, grass and tree leaves were completely destroyed. Locusts did not spare their crops and fodder for livestock. According to a community member, his family has about 10 sheep and goats and camels. Animal’s fodder is obtained from the crops waste and trees leaves. The locusts did not spare the grass and leaves of trees in the grazing ground. Poor livestock farmers cannot afford the price of fodder, an average market rate for 40 Kgs was PKR 1000.

99.71% of the respondents i.e., 340 out of 341 said that they received the fodder for livestock. 92% of the respondents stated that the quantity of the fodder was adequate. 75.1% respondents said that the quality of the fodder was good. More than 72% persons stated that they received prior information about the distribution venue and time. Fodder provision²⁷ was much appreciated by the targeted communities both in D I Khan and Tharparkar. In Tharparkar the participants shared that although the fodder was of good quality but our livestock were not used to it so they were not eating it well. According to in-depth discussion findings they

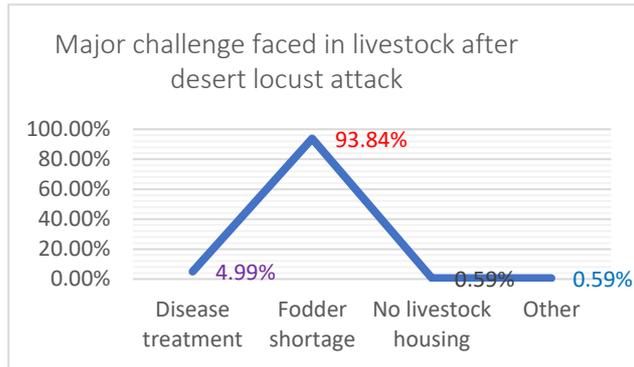


Figure 2: Challenges faced due to locust attacks

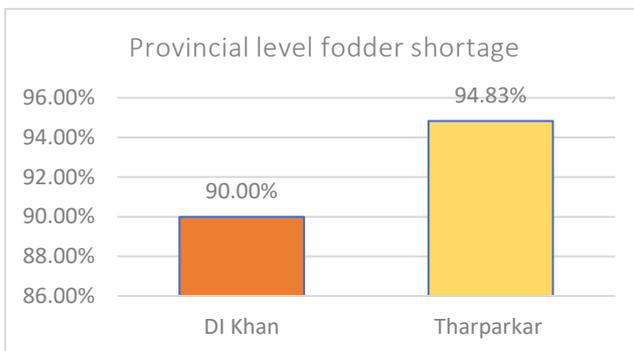


Figure 3: Provincial level Fodder Shortage

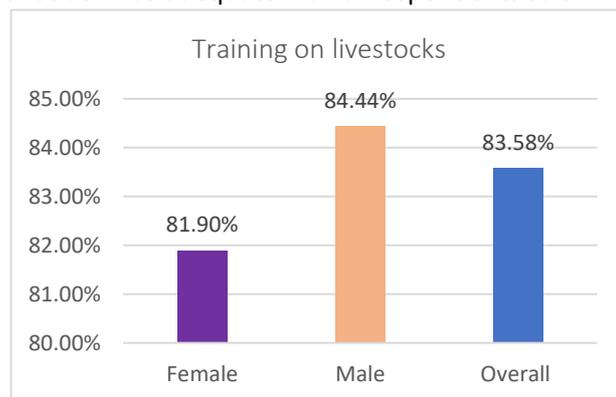


Figure 4: Trainings on Livestock

²⁵ KII: Nadar Khan, field assistant, livestock department, DI Khan

²⁶ KII: Dr. Tariq Marwat, Senior veterinary officer

²⁷ IDI with community members

were mixing it in small quantity with other fodder. Usually, our livestock eat the fodder made from locally resources.

So as the livestock department and agriculture extension department were consulted for technical guidance and selecting the multi-nutrient fodder (Wanda), it is suggested based on community feedback that the community members themselves should also be consulted to decide on the fodder to be distributed.



Figure 5 Fodder distribution in Tharparkar

The project conducted capacity building sessions about the use of Wanda, livestock anthelmintic treatment, vaccination and management for the LCG and other community persons. For anthelmintic and vaccination of animals and farmers orientation about livestock management technical staff was hired by project.

According to the survey, 83% of the respondents including 84% men and 82% women said that they received trainings about livestock management (figure 4). 62% of the respondents (63% men and 61% women) told that these trainings were highly useful. 37% of the respondents ranked average for usefulness.

The project interventions including vaccination, multi-nutrient Wanda, deworming has contributed to improving the health of livestock. More than 88% of the respondents including 103/116 women and 200/225 men interviewed during the survey said that the support provided by the project improved the animal health thanks to the distribution of fodder, anthelmintic and deworming. 92% of the survey respondents shared that due to animal health improvement milk production increased (figure 6). The trainings about livestock management were useful; as per survey findings around 73.9% of the respondents applied the knowledge and skills for livestock management.

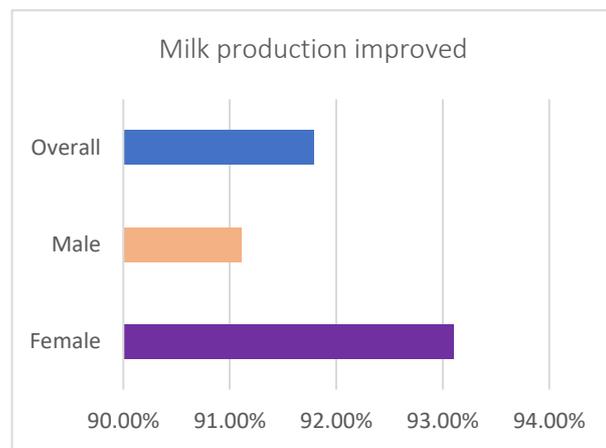


Figure 6: Milk Production Improved



Figure 7 Data collection (Interviews) with community members

3.4 Adherence to CHS and other International Standards

Core Humanitarian Standards	Assessment
Humanitarian response is appropriate and relevant:	<ul style="list-style-type: none"> • The response met the immediate needs of the farmers as their standing crops were destroyed and fodder for animals was not available. The project catered for the livestock related needs of the people in an appropriate manner. The survey data shows that animals' health improved and milk production increased. • The area i.e., DI Khan and Tharparkar selected for the response were badly affected in 2019 and 2020; • EWM mechanism established in collaboration with the community and agriculture department will help in on-site pest control and early monitoring in the future. • The project used an adaptive learning approach and adjusted its implementation accordingly to respond to the emerging challenges and needs of the people, for example, project focus was shifted from pest capturing, trading to animal fodder and livestock management. Similarly, geographical location was changed according to changing situation of locust in the areas. • Project trainings about on-spot pest control and monitoring enhanced the capacity of the LCG local farmers.
Humanitarian response is effective and timely	<ul style="list-style-type: none"> • Like all other emergencies, the timing of the response was highly critical; the speed of delivery was very effective although operational challenges especially getting NOC delayed the intervention but the chronology of events indicate that the response was carried out timely.
Humanitarian response strengthen local capacities and avoid negative effects	<ul style="list-style-type: none"> • Training and orientation have increased communities' knowledge and community ability to cope with future challenges. The locust control groups are connected with relevant departments through EWM and joint training sessions. Hence, these actions have strengthened coordination between community and line department which will help to avoid negative effects of emergencies in the future.
Humanitarian response is based on communication, participation and feedback	<ul style="list-style-type: none"> • In the beneficiary selection criteria, priority was given to households whose crops, feed and vegetables have been completely damaged including households with many children, women as the head of a family, people with disabilities or illnesses, elderly people, households with orphans etc. • As per survey sample, it can be said safely asserted that the project followed the selection criteria, the surveys interviewed randomly 341 community persons which consist of around 50% (n-168) with different forms of vulnerability such as 50 widows, 24 landless, 18 disabled, 42

	<p>elderly, 16 people in debt, 6 orphans and 12 others including psychosocial distressed.</p> <ul style="list-style-type: none"> 61% of the survey respondents were satisfied with the beneficiary selection process for the components of the project.
Complaints are welcomed and addressed	<ul style="list-style-type: none"> As per project complaint records, three types of facilities were introduced: phone call, complaint box and visits of the offices at both sites. During the project implementation period, time 26 complaints (10 in DI Khan and 16 at Tharparkar) were received, analysed and addressed). The main types of complaints were about the exclusion and approaching the JEN office for inclusion in the project. There is a need to publicize the mechanism effectively during the training workshops or otherwise as 75% of the survey respondents were not aware of the complaint mechanism. It is very critical for any complaint/feedback mechanism to be effective that it is accessible, easy to use and ensures appropriate feedback; this was not possible in the absence of a comprehensive information sharing and social mobilization. The LCGs were representative of their communities, hence they are providing the interface between project office and community.,
Humanitarian response is coordinated and complementary	<ul style="list-style-type: none"> 97% of the survey respondents said that project staff treated them with dignity and respect. JEN had a strong relationship with agriculture extension and livestock departments at the district level. Livestock department recommended deworming, multi-nutrient fodder and vaccination to JEN, accordingly the communities were provided with animal fodder and treatment for the animals in collaboration with the relevant departments. Strategic partnership and technical support were made available by the Agriculture Department and livestock department that helped establish the EWM and determine the quality of WANDA, vaccination and treatment of animals for affected farmers. Agriculture departments, DPP, District livestock department were involved in the design, planning, action and evaluation. Coordination with district level stakeholders including government departments remain good during the project implementation.
Humanitarian actors continuously learn and improve.	<ul style="list-style-type: none"> Working in collaboration with government departments provided the opportunity for JEN member NGO to learn and change the geographic area of the project and design of activities accordingly.

	<ul style="list-style-type: none"> • The project activity of catching locusts to use for animal feed was dropped because locusts destroyed by chemical sprays are not suitable as animal feed. • Project geographic location was changed based on the assessment that Tharparkar district was at more risk of locust attacks than Tank and Lakki Marwat as locusts moved away from these areas.
Staff are supported to do their job effectively, and are treated fairly and equitably	<ul style="list-style-type: none"> • The project field teams explained that communication was managed and responded for field action in a timely manner. • Project staff was provided with COVID 19 specific orientations, safety equipment and measures, JEN policies and child safety guidelines orientations. • JEN staff arranged online training sessions for the LCG members.
Resources are managed and used responsibly for their intended purpose	<ul style="list-style-type: none"> • The project faced many changes and challenges with regards to NOC, renewal registration process, area accessibility and the changing locust situation and COVID 19 hurdles. The project managed the changes accordingly and used resources responsibly on pertinent matters. • The protective equipment provided to government which can be used in other areas if locust invasions do not take place in next two to three years in the project areas. However, the LCG members may use the spray pumps for controlling the other insects.

3.5 Sustainability

Although the project focus was mainly to respond to the immediate needs of targeted communities, the community-based structures (Locust Control Groups) were established and the farmers learned skills about sustainable agriculture & pest management practices. Capacity building can be useful for local communities which can be replicated in the future. Similarly, the community's linkage building with the local government departments can be helpful to receive continued support after the project interventions. The EWM establishment in the office of the agriculture departments will sustain as the government has resources to manage by themselves and LCGs members will continue information sharing through e-locust and WhatsApp and telephones.

The discussions with the government departments show that they would like to continue the communication with the communities. According to them, the government have limited human resources for surveillance, monitoring in the remote areas and spraying vehicles so they cannot reach and access the remote areas. Hence, coordination with communities is critical as they can play a pivotal role in monitoring the locust in remote deserted areas. Government officials said that they are connected with community LCGs members through WhatsApp and share updates about latest crops and livestock management related information from time to time. Although, it has been observed that in the working community's internet facility is very limited and literacy rate among people is very low. So, to ensure the active role of LCGs in the EWM, the project identified the people from the respective communities who qualified with certain criteria including has telephone, basic communication skills and voluntarily basis available. The list of people shared with government department and selected

through consultative process. The other important aspect that will contribute for sustainability of EWM is that awareness about locust is critical need of the people that will be a factor to connect with government. Furthermore, their orientation about the mechanism also enhances their capability to monitor and control the locust by disturbing eggs, nymphs and bands (hoppers) handling by digging trenches and burring with soil as well as capturing of adult locust and trade carried out by project.

Ninety-five (95) % of households share to continue coordination with the livestock department²⁸. Project arranged trainings for livestock farmers in collaboration with livestock department, so LCGs linkage established with government hence the communities can avail these sources to communicate their issues. A senior veterinary officer Livestock Department told LCG members to disseminate the information to the community that they can visit my office any time and I will be available to solve their issues. He also shared the cell numbers of local field official and urged LCG members to contact them for any related issue. So, people can contact livestock through provided phone numbers. The project also helped JEN to establish good working relationships with several government agencies including Department of Plant Protection, Ministry of Food and Agriculture. These linkages will help the organization to respond to ongoing and future needs in a collaborative fashion.

3.6 Gender & Inclusion

Unequal rights, responsibilities, resources, and opportunities between genders crosscut the disparities in age, disability, ethnicity, religion, caste, and class. These result in disparities in power, privilege, asset ownership, the burden of risks, and the distribution of opportunities for different groups of women, men and other gender identities. The impacts of these intersectional inequalities on basic rights like food, water and income security are often acute.

In Pakistan, masculinities across institutions (households, community, local to global markets, state, and civil society entities) often lead to exclusionary decisions. The invisibility of women role in agriculture sector keeps them as “*family-laborer*” without recognition or access to control and use of resources (primarily land and finances)²⁹.

The projects which are linked with land, food security and rights can help “reveal” the role of women more vividly and bring them within the main discourse. Without visibility, structures of inequality can be willingly or inadvertently allowed to persist. Likewise, people with disabilities need to be focused and prioritized.

The project could have strengthened various aspects of gender and inclusion by developing gender specific indicators that are part of the monitoring system as well. Also, the project could improve its gender responsiveness by working with gender just organizations (discussed in detail above and not repeated here) through applying this lens at all stages - from design to conclusion of the project. Project planning and implementation followed LEGS standards catering gender aspects as well. However ideal gender mainstreaming was not carried out because of project scope.

3.7 Progress Towards Project Goals

Over the years, food insecurity has become an increasingly critical concern in Pakistan, especially after the national nutrition survey of 2018. This survey showed that 36.9 percent of the population faces food insecurity. Primarily, this is due to limited economic access by the poorest and most vulnerable groups of the population – particularly women – to an adequate and diverse diet³⁰. All the feeding

²⁸ Monitoring report JEN Component 3

²⁹ Status of Rural Woman of Pakistan. UNWOMEN 2018.

³⁰ Country Profile – Pakistan. World Food Program

indicators for children are far below the acceptable levels; the situation is gravest in the province of Sindh and Balochistan. Repeated disasters including droughts and floods due to climate change and locust attacks of 2019 and 2020 have worsened the situation. The geographical terrain of Pakistan has made it more prone to locust invasion and Covid-19 has complicated the situation.

The country is bracing to adapt to the climatic changes, the brunt of which is faced by the small farmers. It has been repeatedly emphasized that more sustainable use of resources will reduce the risks. Early warning system has the potential to enable the farmers to take action by seeking support from concerned authorities. Therefore, on-site pest control and monitoring related capacity building of LCGs will evade the risks of locust in the future. The WhatsApp groups will share the updates on a regular basis with the people. Project was able to strengthen government efforts to control desert locust as well as provide sustainable joint platform for desert locust surveillance and control as well as emergency recovery model for future.

Likewise, evaluation findings shows that project approach was more effective towards achieving the long-term results because of its relevance with local customs, practices of livestock and agriculture and alignment with geographical locations of the communities.

The key matter is to take decisions at the right time, which was taught during the project trainings. According to technical expert's regular animal health assessment, vaccinations and deworming in highly essential so they project make them learned to manage the livestock accordingly. The project support to vulnerable farmers in terms of capacity building about livestock management, linkage building with livestock department and Agriculture department will contribute for increasing community resilience. They will be able to sustain and tackle the emergency in effective manner based on learning from the project.

As mentioned above, during the process, JEN established valuable linkages which relevant stakeholders that can help integrated programming in future.

4. Discussion

4.1 Key Findings

Strengths
<ul style="list-style-type: none"> • Locusts have a distinct attraction towards the desert because such areas provide favourable breeding conditions. Therefore, the project area of DIK and Tharparkar - due to its location in Thar desert - stands out for this project.
<ul style="list-style-type: none"> • The project reached far flung areas of DIK and Tharparkar district, which is also included in "Crisis Food Insecurity Phase³¹" because of recurring drought and poverty leading to malnutrition and health related issues; and faced huge destruction in the hands of locust³².
<ul style="list-style-type: none"> • Although the COVID 19 situation was alarming during the project duration, the teams ensured the safety of community and staff in carrying out the activities mainly trainings and distributions.

³¹<https://resourcecenter.nhnpakistan.org/phocadownload/INGOs/research/Presentation%20on%20IPC%20Acute%20Analysis-Final%20Results-%2025%20July%202017.pdf>

³² <http://web.ndma.gov.pk/SITREPPIA/july/Sitrep%2006%20July%202020.pdf>

<ul style="list-style-type: none"> The project design and shape were evolved according to the changing locust situation in the project districts and as per needs of the population.
<ul style="list-style-type: none"> The project established EWM in collaboration with agriculture department involving local communities. This will contribute to the early detection of locust and taking action on time. The community's capacity to conduct on-site control and monitoring will generate the evidence based real time information.
<ul style="list-style-type: none"> The project worked in close collaboration with technical experts from government departments, namely Agriculture Extension department, livestock department, social welfare department, plant protection department and communities; thus, building ownership and coordination among all relevant stakeholders.
<ul style="list-style-type: none"> The project catered for the real needs of the local population pertaining to livestock by providing them with multi-nutrient fodder, vaccination and deworming of animals, capacity building for livestock management.
<p>Areas of Improvement</p>
<ul style="list-style-type: none"> The project time suffered due to the late issuance of NOC by the relevant authorities. JEN should improve the liaison with concerned authorities for getting advance approvals for accessing sensitive areas.
<ul style="list-style-type: none"> JEN and CWSA were coordinating from very start of project at project level but could have done better at operational level with all stakeholders. It is suggested to build synergy for exchange of learning, tackling challenges and impact creation based on learning from each other.
<ul style="list-style-type: none"> Women account for a substantial proportion of the agricultural labor force, including informal work. They make significant contributions to agricultural production, food security and nutrition, land and natural resource management, and building climate resilience³³. More strategic focus in project design and implementation was needed to ensure inclusion of women and creating an avenue for them that could facilitate in terms of accessing the resources and meaningful engagement in project interventions.
<ul style="list-style-type: none"> Although project established complaint mechanism which was used during the project implementation, however, TPE findings indicate that 75% of survey respondents (n-255/341) were still not aware about it, as gathering of people restricted during project activities implementation due to Covid -19 restrictions. It is advised that aggressive strategies to socialize the complaint mechanism be placed in the future.

4.2 Lessons Learned

Good practices

- Desert locust come into notice when the swarms are formed and infestation level increased cannot be control. Locust biology, life cycle and important phases were not known to community and even to junior staff of government departments. Likewise, how to work as team during and after

³³ JENA Report. <https://communityworldservice.asia/umerkot-celebrates-the-invaluable-contribution-of-rural-women-to-development/>

emergency was never tried in case of Desert Locust attack anywhere in Pakistan. LCG models and other intervention pioneered in Pakistan. Plant protection bureau collect information from E-locust and other information sources and pass it to locust control rooms in both districts. In case of need, locust control room will further pass this information to LCGs and community members for emergency locust control.

- Flexibility in the project design helped to cater for the specific needs of the people as incorporating livestock department's suggestion e.g., deworming, nutrient based fodder, vaccination provided much needed relief and rehabilitation for targeted community.
- Working and consultation with technical experts and government departments helped in addressing the real needs in an appropriate manner.
- The establishment of locust control groups was a useful intervention in terms of community engagement and providing continuous support to community once the project staff is away from the field.
- Gender/social inclusion assessment of the project design is needed for each project.
- Effective and efficient complaint redressal mechanisms is essential for humanitarian response for accountability.
- For any NGO, building and nurturing relations with local government departments is an important program strategy. If such working relations are put in practice in normal days, they can develop quick and effective program ideas in case of emergencies.
- Use of digital technology like WhatsApp adds enormous value in the humanitarian projects. For instance, real time communication between community and project team and between community and government departments helped during the response and will sustains beyond the life of the project.
- It's appreciative of the livestock department to remain engaged with community after the project, they provided their phone number to community for contacting them for guidance and assistance.
- Collaboration with local government and other stakeholder is crucial while reviewing project plan. JEN's approach to involve livestock department, agriculture extension and community elders ensured successful shift in project design towards livestock related support.
- Locust Control Group has proved to be an effective initiative to solidify projects grounding in the community. It contributed towards project design and implementation.
- EWM related survey indicates that direct and voice-based communication was more effective as compared to reading based SMS. This may be linked with the literacy rates among community members.
- Women engagement in livestock and agriculture related trainings yield higher degree of community benefits. This is evident in the case of health and milk production improvement in the project.
- Complaint mechanism is a crucial part of rights-based strategy. However, the popularisation and roll out of complaint mechanism using effective and suitable communication means is much more important.
- Given the pandemic challenge of COVID19, it was important to conduct online inception workshop for some related organisation staff. This shows importance of acquiring such institutional capacity and integrating with humanitarian work.
- Timely response is highly needed in emergency

What to do differently in the future

- Create early warning mechanism and controlling desert locust in different life stages is much easier, practical and cost effective than battling flying Swarms only. If eggs are disturbed at early stages, young hatched nymphs or metamorphosed moving hopper bands are either dump with soil or buried in trenchers is fast and quick mechanical control. Likewise capture / processing / sale of desert locust is possible and profitable. All such methods require no pesticides and no harm to

nature. Project designs of early and accurate detection of desert locust population and life stages is fundamental in sustainable control of desert locust in Pakistan and other countries where desert locust infestation is a major problem.

- Locust swarm is a fast-moving phenomenon. Once entered a country, development of a response plan may already be late. Therefore, it is important for relevant department and authorities to monitor the situation in east Africa and Middle East. By utilizing e-locust (FAO centred Locust related early warning and rapid detection system) the parties concerned can obtain information on foreign countries.
- Projects interventions sustain and produce results more effectively and efficiently if community mobilisation is strong. The evaluation findings revealed that people were not properly aware about beneficiary selection criteria, LCGs members' role and responsibilities which indicate that community mobilisation was weak.
- Including voices of and concerns of marginalized communities, especially women need particular focus. This is possible only when the representatives of marginalized groups have a seat in the decision-making body. Inability of doing so leads to a deepening of marginalization during emergency situations.
- Internet based EWS is only effective in the areas where net is available widely. This basic point should be foremost consideration for any EWS. For other areas that are deprived of internet facility, other effective and innovative EWS approaches for farmers should be explored.
- Involving women, as key beneficiaries, in agriculture related humanitarian response is fundamental. Missing them would mean ineffective design and incomplete execution of the project.
- Coordination and liaison with humanitarian actors, state actors and public authorities should be strengthened for ensuring timely access and permission processes.

4.3 Limitations of the Evaluation

- During data collection in the field, it was observed that cellular services in the field of Tharparkar were either not available or it was very weak, hence the pocket survey tool, which the team planned to use could not be used in many instances.
- Due to ongoing harvesting of Millet crop, respondents' availability at home was big challenge and the teams struggled to find the right persons for the survey. To ensure the availability of the respondent, the research team coordinated in advance with village focal points. In some cases, desired family head for interview was not available at home so survey team conducted interview with other adult and informed family member from the same household.
- In case of unavailability of the required number of respondents identified for household survey in one sampled village, the team, in consultation with the M&E expert, completed the required number in the subsequent village.
- The registration renewal of NGOs and expiry of NOCs in DI Khan and security situation in Tharparkar halted the field operations. COVID 19 imposed restrictions on public gathering and travelling of the staff, so project staff conducted training sessions remotely.

5.1 Recommendations for Member NGO

- Since locust swarm is a fast-moving phenomenon, it is important for relevant authorities and humanitarian NGOs to monitor continuously situational updates from East Africa, Middle East and South Asia. This must be coupled with emergency preparation before the actual attack of locust.
- The project should conduct stakeholder mapping to develop collaboration at an early stage of design so that timely accessibility and permission can be obtained.
- Although the Fodder quality was decided in consultation with livestock technical experts and it

was much appreciated by the targeted communities both in D I Khan and Tharparkar. However, in Tharparkar the participants shared that although the fodder was of good quality but the livestock were not used to it so they were not eating it well. It is suggested that community consultation should be done at the start to assess the conditions for planning the matching support intervention.

- The issue of locust swarm has distinct characteristics that separates it out from other pest attacks. In the South Asian context, it usually occurs after a long time but incur huge losses. As a result, the capacity of government departments and staff as well as farmers and civil society organizations remain inadequate to face the locust swarm. Therefore, it is important for JEN to document and publish lessons learned from this project. Such documentations and their availability on websites will become a resource material for any other locust swarm attack in Pakistan or elsewhere. Moreover, these briefing papers and manuals will also be useful against the attack of other insects.
- Early warning systems are an integral part of any disastrous situation. JEN should document in detail a briefing paper on nature and functioning of early warning system developed for locust control in collaboration with the agriculture department.
- In addition to briefing papers, JEN may also develop a short video on the success factors and lessons learned from this locust control project. Such audio-visual products amplify the dissemination outreach Pakistani and global audience.
- Based on the learnings, locust surveillance and reporting is very critical; hence the project design should have an exclusive component for early warning systems, linkages establishment, and stakeholders' capacity building.
- JEN established good working relationships with government departments and can facilitate communities' linkages with government, which will help in the long term. The coordination between JPF funded organisations will also help in building synergy and working coordination with all stakeholders including government and communities.
- Early warning systems should include more direct and audio-based methods such as phones, announcements through loudspeakers or voice messages. SMS and other methods that are suitable to literate population can be used as supplementary method instead of primary one.
- JEN should document in detail the nature and working of EWM. This document including pictorial illustration should be publicised widely through the internet and other sources. This would help other organizations and departments against future locust and other pest attacks. Working relations among the community, LCG and relevant departments, established during the project should be kept alive even after the completion of project. JEN may come up with innovative ideas to convert this relation into an institutionalized set up for Locust Control Groups services to the community and use it as preparation for any unforeseen humanitarian challenges.
- The women representation in 68 LCGs is only 7, so more women should have been included in the Local community groups. The incorporation of voices of marginalized communities is possible only when the representatives of marginalized groups are empowered and have a seat in the decision-making body.
- The roll out and orientation of the complaint mechanism should have high priority in any future plans. Such roll-out and orientation should be ensured in the local language through community-based and effective communication means such as announcements in mosques, mobile announcements through speakers, police stations or radios.
- The relations established with government departments in normal circumstances help in emergency situations. Given the delays in approval by PDMA, JEN should map out all such departments that are crucial for humanitarian situations and start developing relations for usual development work but more importantly for unforeseen emergency situations.
- WhatsApp is an important communication mechanism between local departments and the community. However, JEN should discuss additional options with the staff of departments to interact regularly with farmers who do not own smart phones. Moreover, possible options should also be explored for distant technical support for women farmers.

5.2 Recommendations for JPF

- The *Core Humanitarian Standard* on Quality and Accountability are very effective in designing and implementing community centred and rights-based humanitarian responses. JPF, based on learnings from the locust project, may promote and roll out these standards with government departments, donors and civil society organizations in Pakistan and in other parts of the world. The findings and lessons from the projects in Pakistan can contribute to the designing of such an initiative.
- JPF should support the organization of a national seminar to share the success and learnings of this locust control project. Other donors and organizations who contributed towards locust control should be invited for wider learning and sharing. Such a seminar will add significant value in consolidating experiences on locust control.
- Japan Platform may approach other key donors such as Japan International Cooperation Agency (JICA), Bill and Melinda Gates Foundation, USAID, UNFAO and The World Bank to develop an international program for concerted efforts against the risk and control of locust swarms and for developing surveillance strategies through community surveillance measures.
- As locust is a cross border phenomena, inter-country coordination and sharing needs to strengthen and JPF should support such initiatives in future.
- In Pakistan locust catching and using for source of protein in animal feed has been experimented by DPP, this experiment can be applied in African countries for further testing.
- Biopesticides should be encouraged as a method of locust control to reduce the chemical use in agriculture areas.
- Gender/social inclusion assessment of all projects should be done at the design phase. Capacity building in the form of gender/inclusion strategies and frameworks and staff trainings need to be planned and implemented before the emergency occurs.
- Delays in the approval of the project compromised nation's ability to respond to a national emergency of locust swarm. It is important for JEN and Japan Platform to find innovative ways to highlight this challenge with the government of Pakistan, particularly National Disaster Management Authority. Among other possibilities, one option is to organize a meeting with NDMA chairman for overall sharing of contribution against locust swarm.
- Locust attack is usually referred to an emergency about crop production. The evaluation highlights that livestock is also a major indirect victim of locust swarm. Therefore, JPF and JEN should communicate to NDMA, PDMA and NGOs, the importance of including livestock and all kind of animals while designing any humanitarian response.

6. Case Study

6.1 Rebuilding livelihoods:

Bhoro is 41-year-old small farmer who lives in the village of Senhar Nangar in Tharparkar with his family. His family consists of his wife and their 3 children. He has around 6 acres of land on which he grows rain-based crops once in a year in the summer. He also has around 10 goats which is his second source of livelihoods. The whole agriculture in his village is based on rainwater. The people in his village grow millet, beans, mustard and vegetables once in a year in the summer when the monsoon season starts. The agriculture products are usually stored at homes for the use of the household. Keeping livestock including goats, sheep, cows, camels and donkeys is the second large income source of the residents of the village. Fodders for livestock are also dependent on adequate rain and agriculture. Some people from the village also go to big cities to find work and earn their livelihoods in the city.

Bhoro said: "I had invested my limited savings in agriculture as usual and was left with nothing. The locust destroyed all the crops and greenery which ultimately resulted in food as well as fodder shortage. I had to graze my livestock all day long in the desert to collect tree leaves for them as there was no fodder.

I had no money to cover my family's expenditures but I could not go to city to look for work without arranging fodder for my goats. I requested a loan from friends and relatives but they could not help. I intended to sell out all my goats but due to the locusts' consequences and COVID, there was no good demand.

While I was in this critical situation, the JEN team visited our village and started their project for the support of locust affected farmers and families. Along with other assistance, they provided fodder for our livestock. With the provision of fodder, I became able to go to the city for laboring to earn livelihoods for my family. Although I and my family went through tough times yet, I regain to some extent. I am thankful to JEN for this kind assistance which helped me in rebuilding my livelihoods."

7. Annexures:

Annex-1 Logical Framework JEN PK JPF project

Annex-2 Inception report LCST _ JEN _ BSPL

Annex-3 List of documents reviewed

Annex-4 List of sampled villages

Annex-5 Tender_Dossier_JPF-LCST-21-001

Annex-6 Data collection tools final 211021

Annex-7 Key informant interviews

Annex-8 IDIs - Extracted points

Annex-9 Survey pictures and documents

Annex-10 IEC material

Annex-11 Desert Locust surveillance and control poster

8. IEC material

آفات یا ناگہانی حالات میں مال مویشی کی ہنگامی دیکھ بھال اور حفاظت

1- خطرے سے دو چار غریب ترین خاندانوں کو سرکاری و نجی اداروں کے ذریعے، بحالی کے منصوبے میں شامل کریں۔

2- آفت میں مویشیوں کیلئے محفوظ جگہ کی نشاندہی، خوراک و صاف پانی کا انتظام کریں۔

3- کبری اور بھیڑ کو 400 سے 500 گرام اور گائے اور بھینس کو 800 سے 1000 گرام آوندہ دن میں خوراک کی کمی کے دوران دیں

4- پیٹ کے اندرونی کیڑوں کیلئے نلزان پلس (Nilzan Plus) کو چینی یا گڑ کے پیسے شربت میں کس کریں۔ جانور کے سر کو اوپر کر کے باندھیں اور منہ میں مٹھول کو آہستہ آہستہ گن (آلے) کی مدد سے ڈالیں۔ چھوٹے جانوروں کو 15 سی سی اور بڑے جانوروں کو 75 سی سی دوا پلائیں۔

5- جانور کے بیرونی کیڑوں کیلئے 7 سے 15 دن کے بعد درمیان ورک (Wormec) کا ٹینڈ لگائیں۔ بڑے مویشیوں کو 6 سی سی اور چھوٹے مویشیوں کو 1 سی سی کا ٹینڈ لگائیں۔

6- مندرجہ ذیل بیماریوں کی علامات کے ذریعے بیماریوں کی شناخت کریں اور متاثر مال مویشی کی نشانیوں کے مطابق بیمار جانوروں کی تعداد اور متاثر گھرانوں کی فہرست سرکاری و نجی اداروں کو دیں۔

6.1- منہ کھر (FMD): پاؤں، زبان، دندانوں اور منہ کے اندر سرخ دانے نظر آتے ہیں، جانوروں کو تیز بخار ہوتا ہے اور وہ کھانا پینا چھوڑ دیتے ہیں۔

6.2- پھوڑا (Anthrax): جانور اچانک مرتے ہیں اور جسم کے تمام سوراخوں سے خون نکلتا ہے اور ہمتا نہیں ہے۔

6.3- آنتڑیوں کا زہر (تھری) (Enterotoxemia): جانور پیٹ کے بل زیادہ اٹھتا بیٹھتا ہے، تکلیف دہ آوازیں نکالتا ہے جلاب اور چیخ بھی ہو سکتے ہیں۔

6.4- گل گھولو (HSS): گلے کا سوجنا، سانس کی دشواری، ناک اور منہ سے پانی نکلتا، بخار اور جانوروں کی بے چینی ہوتی ہے جس کی وجہ سے جانور حرکت نہیں کر سکتا ہے۔

6.5- پیٹ کے کیڑے (Worms): جانور زبان سے ساری چیزیں چاٹتا ہے، چارہ کم یا زیادہ کھانے کے باوجود کمزور نظر آتا ہے اور کھال کے رنگ میں پیلاہٹ ہوتی ہے۔

7- متاثرین گھرانوں کی امداد جاری رکھیں۔ آئندہ کیلئے بہتر منصوبہ بندی، رابطہ کاری اور رہنمائی جاری رکھیں۔ سرکاری و نجی اداروں کو مسلسل اطلاعات دیں اور مشترکہ کوششیں آگے بڑھائیں۔









9. Desert locust surveillance and control poster

حکومتی اداروں اور عوام کی شراکت سے ٹڈی دل کی نگرانی اور بچاؤ کے طریقے

مقامی گروپ بنائیں

تربیت دیں

ٹڈی دل کو بچائیں

متاثرہ علاقوں کا سروے کریں

سب کو اطلاع دیں

محفوظ طریقوں سے ٹڈی دل کو ختم کریں

حفاظتی تدابیر اختیار کریں

نگرانی اور تدارک جاری رکھیں