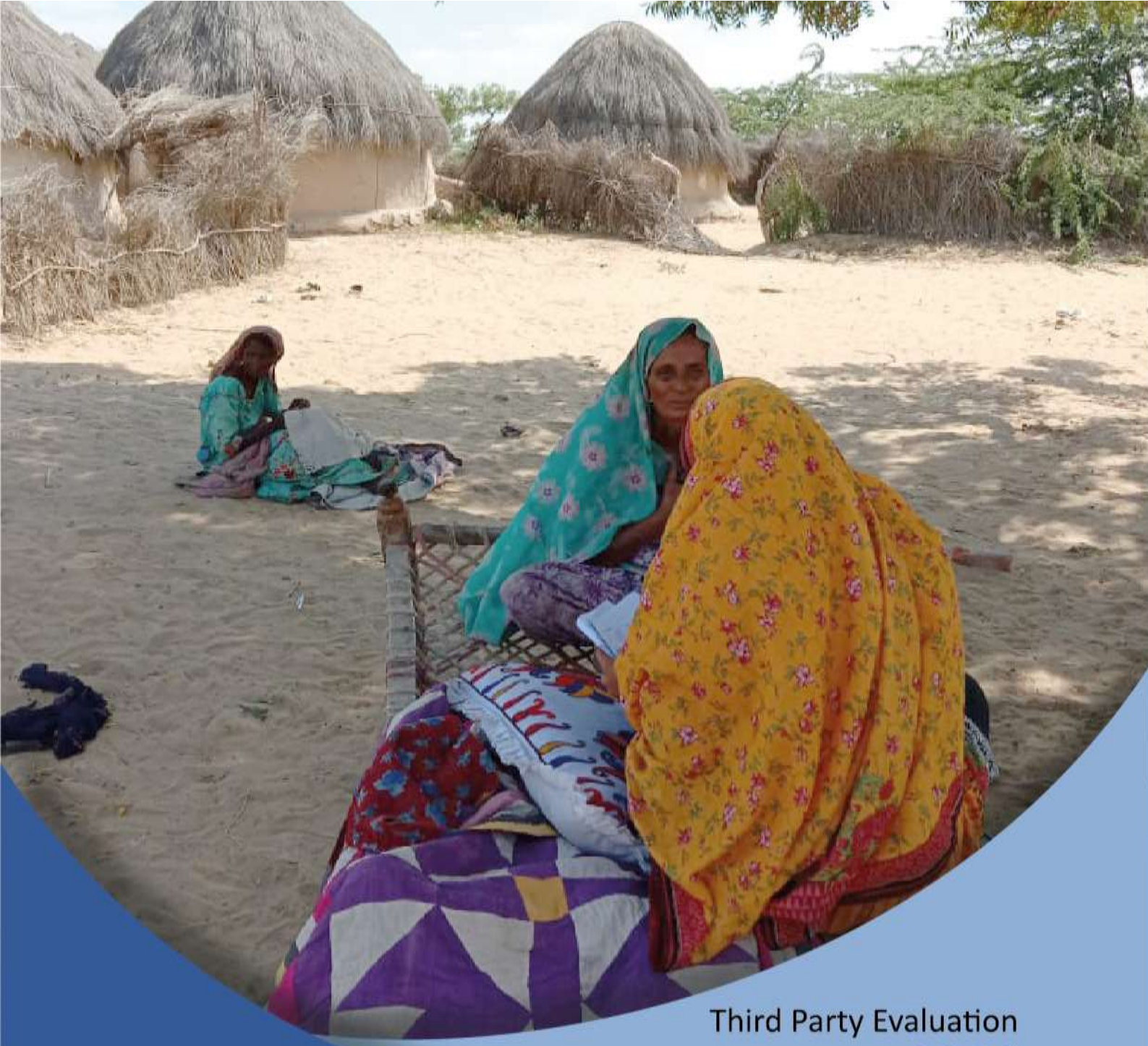

Third Party Evaluation

2021

Locust Infestation Emergency Support Program

Sindh Pakistan

CWS JAPAN Church World Service

community WORLD peace resilience dignity

beyondsolutions

JAPAN PLATFORM

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.

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Disclaimer

Contents

Abbreviations

CHS	Core Humanitarian Standard
CNIC	Computerized National Identity Card
CWS Japan	Church World Service Japan
CWSA	Community World Service Asia
DPP	Department of Plant Protection
EWM	Early Warning Mechanism
FAO	Food and Agriculture Organization
FFS	Farmer Field School
HHS	Household Survey
IDIs	In-depth Interviews
ICM	Integrated Crop Management
IP	Implementing Partner
IPM	Integrated Pest Management
JICA	Japan International Cooperation Agency
JPF	Japan Platform
KII	Key Informants Interview
KP	Khyber Pakhtunkhwa
MoNFS&R	Ministry of National Food Security and Research
NAP	National Action Plan
NDMA	National Disaster Management Authority
NGO	Non-Government Organization
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
VMC	Village Management Committee

Executive Summary

Locust swarms entered in Pakistan in January 2019 through Balochistan from Iran and by 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 r 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). Church World Service Japan (CWS Japan) received funds from Japan Platform (JPF) 330 million Japanese Yen allocated for emergency response under Locust Infestation Emergency Support Program 2020. The main objective of the support was to protect the food security and livelihood of the communities at risk due to the locust infestation.

JPF implemented the emergency response project in two phases in partnership with Community World Service Asia (CWSA) in 49 villages of union council Kaplore in District Umerkot Sindh. The key strategies of the project was to introduce locust control methods and enhance community knowledge and skill. Cash grants for ploughing /tillage & trenches were given to clean the land from locust eggs / breeding through the formation of village level village management committees (VMC), capacity building sessions to strengthen knowledge and skills about integrated pest management (IPM), integrated crops management (ICM), making trenches and pesticides donated to government for spray in infested aeras.

The evaluation was carried out using a mix method approach involving literature review, household survey, key informant interviews and in-depth discussions with subject matter experts, government officials, community members and development partners.

The evaluation findings demonstrated that project design and approach was appropriate, relevant and addressed the immediate needs. The project used a participatory and consultative for the establishment of 49 VMCs comprising of men and women in 49 villages, which allowed the community to take a lead the identification process of vulnerable households for distribution of conditional cash grants for tillage and making trenches. The project successful in clearing 16,193 hectares of land from locust. 1,500 households (5,000 individuals including 2,603 women) were trained on locust controls methods (Ploughing/ Tillage & Trenches) and sustainable agriculture (IPM and ICM) which in the long term will improve their income and contribute towards food security. The project also ensured to program the interventions while aligning itself with the CHS standard. The local communities shared their high level of satisfaction regarding transparency of beneficiary selection processes. More effort was required to mainstream gender within the project though women were part of all the project and also benefitted as indirect beneficiaries.

Furthermore, the project donated 58,502 liters of pesticide (Lambda Cyhalothrin 2.5%) to government of Pakistan for sprays in the affected areas. However, it is pertinent to mention that in Umerkot pesticides were not used because there was no need of sprays as locust swarms were not present in the area during project tenure 2020-21.

Overall, the project approach was found effective, sustainable and environment friendly. The project introduced innovative solutions for controlling locust which were matching with local traditions and practices so local communities found them easy and replicable by themselves in the future. Due to open grazing in the area people don't like to use pesticides because the sprays may cause health hazards for the animals as well as for human. Finally, it is important to document and publish lessons learned from this project. For instance, the mechanical method of digging trenches, ploughing and methods of capacity building of farmers and their success rate should be converted into briefing papers and manuals. Such documentations and their availability on websites will become a resource material for any other locust swarm attack in Pakistan or elsewhere.

1. Background & Context

Desert locust is a potential threat that can affect an area of ~16 million squared 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 weeks[1].

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 Africa[2]. 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 2019[3].

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 the 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, locusts were reported in Rahimyar Khan near Cholistan Desert of the Punjab province[4].

Source: https://www.fao.org/ag/locusts/common/ecg/2566/en/SWAC32e

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 "*National Emergency on 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) was 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) is the lead institution tasked with monitoring and managing the Desert Locust threat in Pakistan.

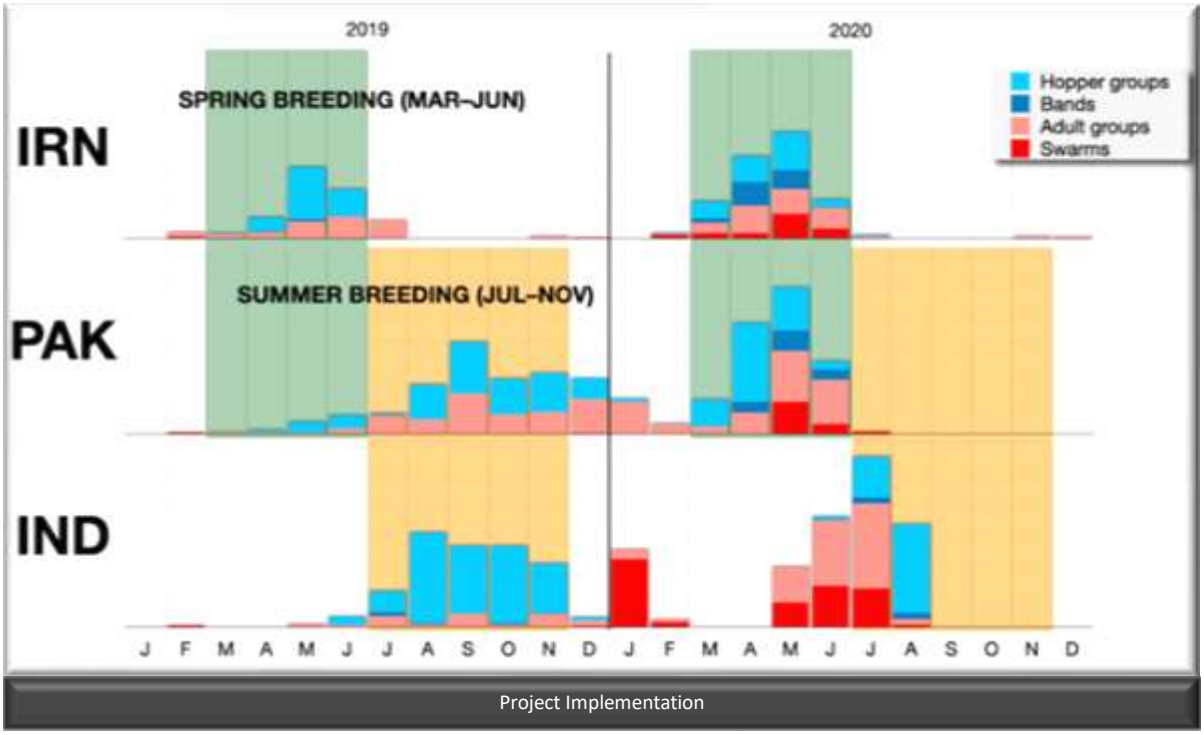
[1] https://www.fao.org/pakistan/resources/in-depth/desert-locust-situation-in-pakistan/en/
[2] https://www.fao.org/pakistan/resources/in-depth/desert-locust-situation-in-pakistan/en/
[3] https://plantprotection.gov.pk/services/aerial-spray/locust-operations/
[4] https://www.fao.org/pakistan/resources/in-depth/desert-locust-situation-in-pakistan/en/

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 lives[5]. The survey highlights the combined effect 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 were observed in Sindh, with 73.7% of respondents having seen locust swarms in their area.

2. The Assignment

2.1 Project Overview

Following the declaration of the national 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 Church World Service Japan (CWS Japan) for a project in district Umerkot, Sindh.



Project Implementation

The project "*Provision of emergency insecticides and cash assistance for livelihood recovery of farmers affected by locust infestation in Sindh Province*" aimed to "*protect the food security and livelihood of the communities at risk due to the locust infestation in district Umerkot*".
The project was implemented in 49 villages of UC Kaplore in two distinct phases by the implementing partner Community World Service Asia (CWSA). In the initial phase, project activities were planned to eliminate the existing threat through eradication of adult locust and prevention of further spread by destroying locust eggs from the breeding areas. This phase was followed by activities aimed at reducing future risks. Both phases had a significant emphasis on capacity building and sustainability of interventions. The logic model of the project is attached as an Annex 1.

[5] ADB Brief 153 http://dx.doi.org/10.22617/BRF200280-2

Phase I: 28th April – 31st December 2020. The first phase of the project contained three aimed at a) controlling the adult locust through application of Pesticides, b) controlling the reproduction of the locust by ploughing the affected land to prevent emergence of new locust generations (Cash grant for ploughing), and c) Capacity building of rural farmers on Integrated Pest Management (IPM) / Integrated Crop Management (ICM).

Phase II: 5th January – 4th June 2021. The second phase of the project focused on further strengthening the capacity of rural farmers in a) ability to build trenches and provision of relevant supplies to respond to future similar events, and b) Capacity building of farmers on Integrated Pest Management (IPM) and Integrated Crop Management (ICM).

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 standard** (including but not limited to CHS) were 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
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 was designed in line with the CHS Framework with an aim to analyze, explore, document, and draw learnings from the project. The evaluation was carried out by assessing CHS standard and criteria pertaining to Relevance (CHS-1), Effectiveness (CHS-2), Impact and Sustainability (CHS-3), and Coherence (CHS-6) 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, CWS Japan, CWSA staff and the literature review of the project and other relevant documents. Subsequently, the processes were 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.

Figure 1: Evaluation Framework

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 are 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 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 was done through conducting field visits to Umerkot. 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 CWSA staff, the structure and the language of tools was also adjusted in accordance with local context and norms.
2. All the selected data collection team members were Sindhi speaking.
3. Primary data was collected from 18th Oct till 22nd Oct 2021 with the support of a trained field team comprising of two members each (one male and one female).
4. IDIs and KIIs were 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 10 villages of Umerkot (20% of the 49 villages targeted by the project). Please refer to above figure and Annex for further details. During the survey, a total of 314 respondents were interviewed.

Household Survey		
Total	Men	Women
314	249	65
100%	79%	21%

In-depth discussions were done with village committee members with an aim to understand their role in the implementation and how they are supporting in sustaining the project by working with district government.

In-Depth Discussion (IDIs)		
Total	Men	Women
	8	1

Key Informant Interviews: KIIs were conducted with relevant government institutions e.g., NDMA, Agriculture Department, NGOs and partner organizations to gather insights about the project design and implementation.

KIIs	
NGOs	**1**
CWSA	**2**
Government	**4**

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-brief 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 was 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 Literature review, KIIs and IDIs. All the information was parked, and an internal workshop was conducted to collate, synthesize and review the collected information at the 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 Zettlekasten software and where needed, data triangulation was conducted manually. The synthesis provided material for the report which was drafted, reviewed by the technical experts, and submitted for final approval.

Phase 4: Presentation & De-briefing of Findings

The draft report was shared with JPF, CWS Japan and CWSA to present findings and recommendation from the project evaluation conducted. In a separate debriefing session, the findings and recommendations from all Locust programs were shared with JPF and CWS Japan staff.

3. Evaluation Findings

This section of the report presents findings of the evaluation gathered through literature review, 314 household survey (249 men and 65 women), 9 IDIs and 7 KIIs under the following headings:

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

3.1 Results & Achievements Against Outputs

Output-1: A total of 15,176 hectares of land uncontaminated through tillage process

According to project data, cash grants of Pak Rupees 13,500 were distributed to a total of 1600 HHs for ploughing / tillage of land to clear locust eggs. A total of 16,193 hectares (40,013 acres) of land was cleared[6], which is an achievement above the project target.

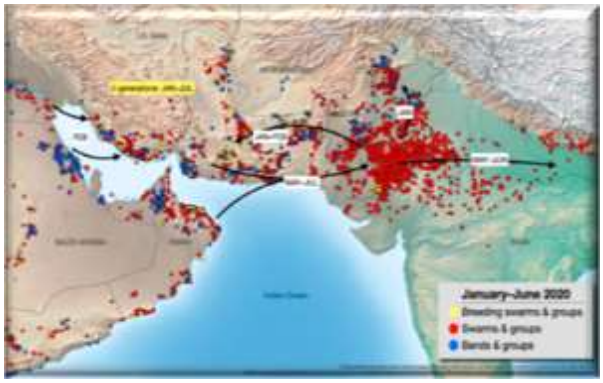
According to technical experts[7,8] ploughing/tillage is a cost effective and useful method for locust control, which can be employed at the stage of locust breeding and is more useful than chemical sprays which can cause health related implications for humans, animals and the environment. They[9] shared that the tillage was effective for eggs destruction with dual benefits of preparing lands for new crops. Consequently, the pre-requisite for implementation of ploughing /tillage technique is the identification of breeding areas at the right time. The process involves the ploughing of the infected land to a certain, carefully calculated depth and exposing the locust eggs to sunlight[10].

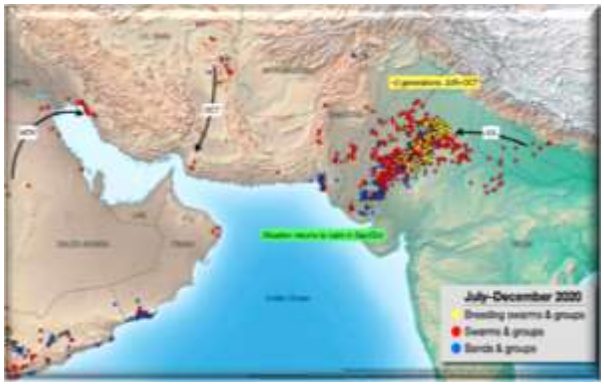
Although the method of ploughing was good for eradicating the eggs of locust yet it also has some limitations, like ploughing was applied in the open lands but could not be applied in bushes. The locust eggs were also there in those bushes and can grow their and enter the agriculture after able to fly. Similarly, the ploughing was not applied in other nearby areas/union councils etc[11].

The Space Application Centre for Response in Emergency and Disasters (SACRED) of the Space & Upper Atmosphere Research Commission of Pakistan (SUPARCO), an UN-SPIDER Regional Support Office, used a space-based information to analyse areas with regards to their suitability as desert locust habitats based on vegetation, soil type and other factors. The results were used in identifying and support surveillance and control operations by helping demarcate locust-prone areas[12].

The two graphs below from FAO[13], show that the locust attack was strongest during the first half of 2020, when the project merely started its first phase. Moreover, the data shows that barring some breeding and egg laying in KP and Baluchistan, most of the breeding happened in India.

[6] Monthly report December 2020
[7] KII - Dr. Salah-ud-din Subject Matter Specialist, AED
[8] KII- Mr. Siddique Deper, Director Arid Zone Agriculture Research Institute (AZARI)
[9] IDI: Community members
[10] KII - Dr. Salah-ud-din Subject Matter Specialist, AED
[11] KII: Mr. Saroop Chand, Assistant Director Social Welfare Department
[12] https://www.un-spider.org/news-and-events/news/suparco-maps-potential-desert-locust-habitats-pakistan
[13] https://www.fao.org/ag/locusts/common/ecg/2566/en/SWAC32e.pdf





Beneficiaries from interviewed households reported the following in relation to this intervention:

- 93.31% of the respondents (n-293 out of 314) including 231 men and 62 women reported that they have knowledge of project beneficiary selection criteria
- 79% were highly satisfied with the selection criteria while 21% reported average satisfaction levels For smooth and transparent process for the cash distribution and monitoring of the ploughing on the target land village management committees comprising of 6-10 members were formed in each village. The project achieved its target of cash distribution successfully and served the purpose of the assistance accordingly[14].
- 313 community members (99.7%) said that cash was given to them for ploughing /tillage and;
- 96.5 % of the respondents reported that they had used the cash grant for ploughing /tillage to clear their land.
- The survey findings indicate that in addition to ploughing/tilling method, 31.85% community members used other methods e.g., beating drums, noise making, fire and smoke.

Due to open grazing in the area, people think that sprays are not suitable solution. Natural methods should be used to protect the area from locust breeding. (Male community member)

Post distribution monitoring report findings from the project confirmed that 95% people did not witness any locust swarm in the entire area after the tilling operation. In August and September 2020, small quantities of locust swarm were witnessed in some other parts of the Sindh but not in Umerkot. By October 2020, FAO announced the return of

Besides locust control, cash grant also helped us, poor farmers, to cultivate land because we did not have enough money to plough the land. (Male community member)

Being toxic to nature, spraying must be carried out with utmost care otherwise it can harm humans as well as animals … Ultra-Low Volume (ULV) pesticide formulations are required for desert areas but because they can cause crop burning, emulsifiable concentrates (EC) of pesticides are recommended in cropping areas (Mr. Tariq Khan, Technical Director DPP)

14 IDI Notes

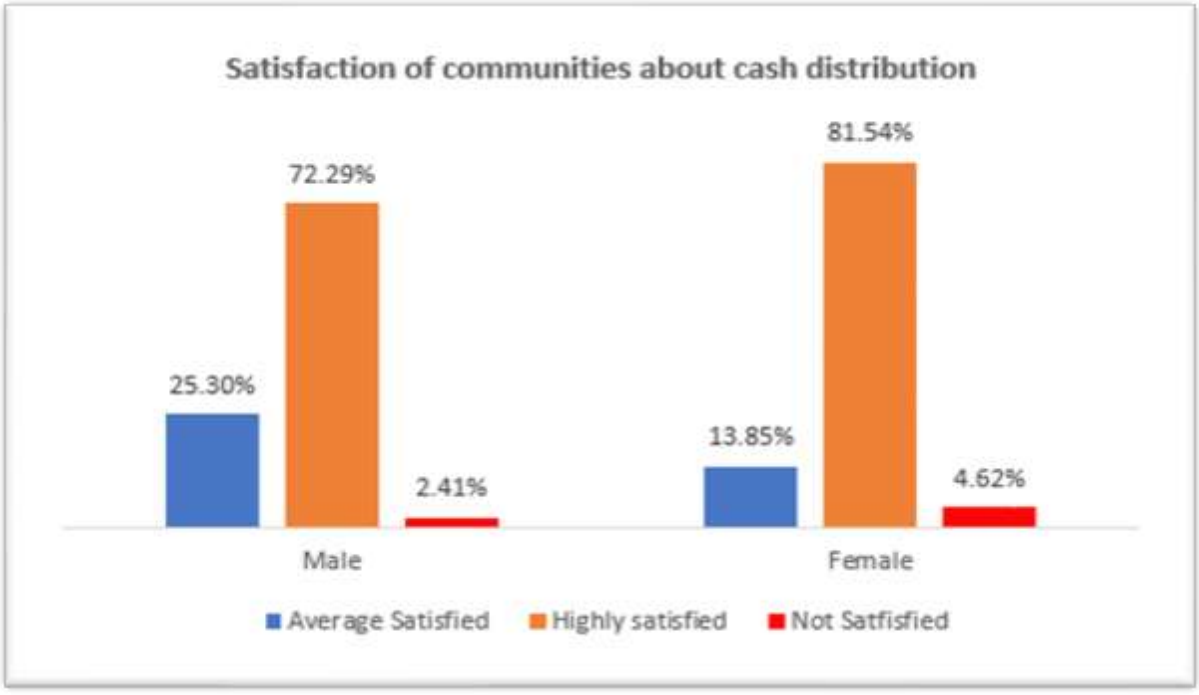
Southwest Asia to 'calm'[15]. The project, during its second phase (January 2021), supplemented the tillage knowledge of the farmers with digging trenches - which causes trapping of immature locust and is another useful control method that can be easily employed locally.

As per the project design, **cash distribution** was meant to target farmers who had 25 acres of land. This was threshold was set to ensure scale and efficiency of the of the intervention. However, the size of the landholding per each farmer in the area was generally smaller. Subsequently, CWS Japan/CWSA team tweaked their implementation strategy and made groups of farmers (clusters); resultantly each group of farmers collectively had landholding of 25 acres. This revision helped the farmers with small landholdings to access cash but created additional programmatic risks for the team.

Successful Practices employed by the project include 'Clustering of farmers' to ensure inclusion of small land holders and engagement of VMCs and cash transfer through mobile phone to enhance transparency.

CWSA gave the cash to "one farmer" within each cluster, and to ensure transparency of the process, the VMCs were involved in the distribution. This lead farmer was then obliged to distribute the cash within his/her cluster proportionately in accordance with the size of the landholding. As per post distribution monitoring report, 83% of the respondents were quite satisfied and happy with process of cash distribution[16]. Also, survey findings revealed that 97% of the respondents (74% highly satisfied and 23% average satisfied) were satisfied of the grant distribution mechanism and no complaints were recorded by interviewees during the primary data collection engagements.

To ensure transparency in the cash transfers; a cellular company was involved. The company would send a verification code to each of the identified farmer, who would then show the code at designated



outlets to receive the cash. Some issues related to the coverage of that company in far flung desert areas were reported by farmers. The cash disbursement was done in Umerkot city area which was approximately 45-50 km away from the settlements of the farmers. In remote areas with very limited and difficult means of transport, travelling to city to get cash proved challenging to the farmers. Many,

[15] https://www.fao.org/ag/locusts/en/info/2094/index.html
[16] M&E Post distribution monitoring report

especially women and elderly, asked their relatives or sent a "representative" to collect the cash for them. Additionally, CWSA team faced challenges in verifying the phone numbers of each farmer. These learnings were successfully used during the second phase of the project through improving the processes and planning. Based on learning project team proactively undertook measures to confirm the phone numbers of each beneficiary which were functional and registered with beneficiary phone name. This ultimately minimized the challenges of non-receiving the SMS which faced during first phase and caused delays in receiving the cash.

Output-2: Pesticides are applied on 9,000 hectares of the affected land

The project successfully procured 58,502 liters pesticides (*Lambda Cyhalothrin* 2.5%). The consignment was donated to National Disaster Management Authority (NDMA) as emergency assistance from Government of Japan in June 2020. It is pertinent to mention that the government conducted its first round of spray in August-October 2019 in Sindh including district Umerkot i.e., before the project initiation in 2020. The only thing happening in the project target area to eradicate the locust swarm was the tilling process mentioned above.

The government used this donation for spraying in locust infested parts of the country in the light of surveillance reports. NDMA officials acknowledged the usefulness of this assistance, and it was also appreciated and recognized by government of Pakistan in its cabinet meeting.

Data from the HH survey shows that only 7 respondents informed that spray was conducted in the district Umerkot. One in four survey participants (79 respondents out of 314) said that spraying was effective in controlling the locust. Communication and mobilization around spray campaign was weak and almost all (98.9%) of the respondents said that they did not receive any information about timing and process of spray conducted by government. According to NDMA focal point, the pesticides were handed over to Department of Plant Protection who implemented the spray campaign.

This component of the project helped CWSA to establish effective working relationships with key stakeholders. As NDMA was central point for locust response nominated by federal government for coordinating with all concerned departments including Department of Plant protection, Arid Zone, District Management, social welfare and agriculture extensions, so CWSA coordination with NDMA provided opportunity to connect to all the concerned provincial and district departments in Punjab, KP and Baluchistan, such as the department of plant protection, agriculture department, agriculture extension department, arid zone research institute and district management. As per discussion[17] with Agriculture Extension Umerkot – Sindh, government had limited field staff which was creating delays because they were unable to reach to the far-flung areas. As per discussion[18] with Agriculture Extension Umerkot – Sindh, the government has very limited field staff so they cannot reach everywhere hence community persons can become strong source of information for them in future.

[17] KII: Mr. Hussain Bux, Additional Director, Agriculture Extension Umerkot – Sindh
[18] KII: Mr. Hussain Bux, Additional Director, Agriculture Extension Umerkot – Sindh

Output-3 Capacity Building of 1500 HHs on Integrated Crop and Pest Management Practices

Integrated Crop Management (ICM) and Integrated Pest Management (IPM) capacity building sessions were delivered in the target communities during both phases of the project. The intervention primarily focused on the following topics and was designed as 4-sessions:

1. IPM for locust control
2. Locust Control Methods – ploughing and digging trenches
3. Locust Control Methods – nets & production technology
4. Crop Management – organic farming, pest scouting and monitoring

Training Material Developed by Project

In addition, the working of VMCs and Complaint Mechanisms were also discussed during the training sessions along with health and hygiene sessions.

The project team trained 5000 farmers, of which 2,603 (52%) were women participants.

CWSA technical teams conducted meetings with communities and agriculture experts to finalize the training manuals. The additional director agriculture extension in Umerkot acknowledged that he was consulted during the development of the training content for IPM and ICM. The training manual "*Promoting Sustainable Agriculture Practices to Improve Food Security and Livelihoods of Vulnerable and Marginalized Farmers*" was taught to farmers in Farmers Field Schools (FFS), which were established by the project to conduct the trainings at field level. The curriculum is integrated and each training session was planned for around 80 minutes and sessions were delivered over a period of time and planned according to the availability of the communities as well as the staff.

Household survey results show that:

a. Almost all (92%) of the survey respondents confirmed that they participated in training sessions.
b. 88% of the respondents said that they were consulted before trainings sessions for selecting the content of trainings about agriculture and pest management.
c. 89% of them found the trainers to be highly knowledgeable and effective.
d. 98% of community members shared that they would like to use the methods in future.
e. More than half (54.27%) of trainees reported that they attended a training session of less than one hour.
f. 97.5% (n=306) of the respondents said that orientation about locust control was very helpful and they have confidence to tackle the locust in the future.
g. 94% of the women shared that they received orientation about locust.
h. 89% of women participants reported that their knowledge about IPM/ICM increased.

It is important to note that the assessment could not find specific measures to ensure that all participants are trained on all sessions, and it seems that there has been an overlap or gap among the trainees and the sessions attended by them. The time allocated for Complaint Redressal Mechanism and VMCs was around 10 minutes each; way too less as downward accountability is an integral part of the humanitarian

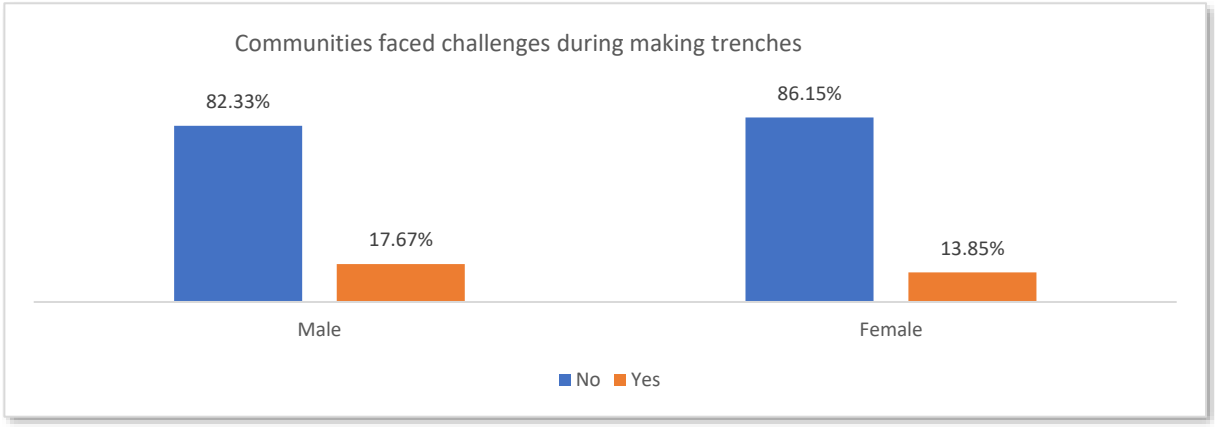
The project has enhanced our skills about various methods of controlling the locust, so now we can initiate locust control in future on our own. (Community member)

principles. Moreover, since these topics were discussed only once, those absent from that session would not know about it ever.

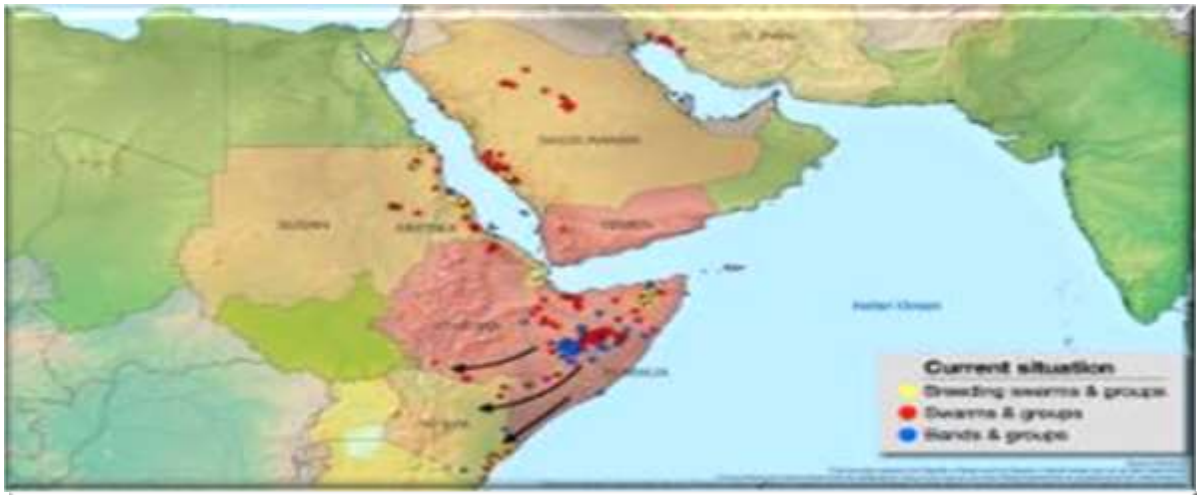
The HH survey also showed that around 226 community members were aware of the complaint mechanism and only 9 of them ever complained. The complaints were supposed to be launched through a mobile phone mechanism which is restrictive for the majority of people especially women as either they do not have literacy skills, or they don't own a mobile. Moreover, the coverage of cellular network in the area is scanty.

Output-4: Digging Trenches and distribution of nets / plastic

The evaluation team assessed this component at output level through in-depth discussion with technical experts, community members and documents review. Trenches are considered as a good method to contain the locust attack by destroying them at an early stage of their life cycle before they get mature and threaten food security and livelihoods. It is important to note that 97.4% of the respondents said that they find this technique very useful and that they can use it in the future because by the time this intervention took place, locust was already eradicated from the area. Likewise, nets and plastic sheets were distributed after the locust attack was over, hence were not used.



According to technical experts ploughing / tillage and trenches are good strategies to eradicate *and destroy the locust at very early stage*. Ploughing/tillage method is applied for egg removal while trenches used to restrict the flying forms at early stage when they start crawling and moving in bands. The farmers are thus encouraged to use nets and plastic sheets to collect and destroy locusts.



Locust Forecast Spring/Summer 2021
Source: FAO SWAC

3.2 Adherence to CHS and other International Standards

Core Humanitarian Standard	Assessment
Humanitarian response is appropriate and relevant:	• The response met the immediate needs of the farmers as their standing crops were destroyed and they were facing liquidity issues, hence cash grant helped them to meet their need of preparing for the next crop as well as eradicating locust. • The response was well aligned with the steps taken by the government to stop locust and support farmers through direct support to NDMA in the form of spray. • The area i.e., Umerkot selected for the response was badly affected in 2019 and 2020; being a desert area it was one of the most favourable spots for locust breeding. • The project used an adaptive learning approach and adjusted its implementation accordingly to respond to the emerging challenges and needs of the people. • The four-pillar design of the project has not only responded to the immediate crisis but also built the resilience of the local communities while using the indigenous methods, community structures and local language. • The cash grants helped the people to plough their land and ploughing / tillage process is the most appropriate solution and can be easily replicated without external guidance and would help in sustaining and managing future breeding and invasions. • Project trainings about integrated crop management and integrated pest management enhanced the capacity of the local farmers.
Humanitarian response is effective and timely	• Like all other emergencies, time of the response was highly critical; speed of delivery was very effective though operational challenges delayed the intervention but the chronology of events indicates that response was done timely e.g., pesticides were provided to NDMA during locust peak time i.e., June 2020? • The project has achieved all its targets in an effective manner especially cash grants and procurement of spray.
Humanitarian response strengthen local capacities and avoid negative effects	• Training and orientation have increased communities' knowledge and community ability to cope with the future challenges. 91% have successively applied gained knowledge in ploughing / tillage methods.

	• In the project area, 5000[19] individuals received trainings about sustainable crop management and pest management that will contribute to improving their livelihood and ensuring food security. • The community village management committees are local forums and can communicate with government departments. • About 63% of the project participants said that they contacted village committee members for queries. • The project has not been able to fully respond to the needs of women farmers; however as indirect beneficiaries it has contributed towards restoring the livelihood of the most deprived community.
Humanitarian response is based on communication, participation and feedback	• The beneficiary's selection criteria which was part of the project design, by default excluded majority of women farmers and tenants whose voice and rights are least prioritised in policies and development schemes. Women do not own the land because of socio-culture norms and values due to which their role in agriculture farming is hugely under-represented. • Likewise, they were under-represented in the VMCs – only 71 women were part of the VMCs that hugely under-utilizes their potential. They were significantly low in numbers in the project interventions and their role was highly marginalized in the VMCs and women voices were not effectively reflected in the project design. • 88% of respondents (54 women and 224 men) shared that they were consulted about the time and the venue of the trainings.
Complaints are welcomed and addressed	• The complaint mechanism was not communicated effectively during the training workshops or otherwise as 28% of the survey respondents were not aware of it. • It is very critical for any complaint/feedback mechanism to be effective that it is accessible, easy to use and ensures appropriate feedback; this in the absence of a comprehensive social mobilization was not possible. • The VMCs were providing the interface, who themselves were the power holders within the same community.
Humanitarian response is coordinated and complementary	• CSWA had strong relationship with Social Welfare Dept at the district level. NDMA was effectively

[19] Project progress report_ December 2020

	involved that supported the integration of response within the wider response happening at that time. • Strategic partnership and technical support were made available by the Agriculture Department that helped in ensuring that relevant capacity building was rolled out through Farmer Field Schools. • Agriculture departments, DPP, Arid Zone Research Institute, District Social Welfare department and NDMA were involved in the design, planning, action and evaluation. • Coordination with district level local NGOs and CSOs remains missing.
Humanitarian actors continuously learn and improve.	• Working in collaboration with government departments provided the opportunity to member NGO to take advantage of technical expertise of departments. • The project cash distribution during first phase was quite difficult and challenging because mobile number verification process was proving to be challenging due to which they were not able to receive the system generated secret code for receiving cash grant. • The team overcame this challenge during second phase by introducing mechanisms such as the validation of cell number for instance, active Computerised National Identity Card (CNIC) etc.
Staff are supported to do their job effectively, and are treated fairly and equitably	• The project field teams shared that communication was managed and responded for field action in a timely manner. • Project staff were provided with COVID 19 specific orientations, safety equipment and measures taken, CWS Japan policies and child safety guidelines orientations.
Resource are managed and used responsibly for their intended purpose	• Cash grant conditional for ploughing /trenches to eradicated the locust • Provision of nets and plastic sheets for future usages may be wasted.

3.3 Sustainability

Although the project focus was mainly to respond the immediate needs of targeted communities, however, the community-based structures (village management committees) 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 local relevant authorities mainly with agriculture extension departments& social welfare departments can be helpful to continue support after the project interventions.

The discussions with government departments show that they would like to continue the communication with the communities. According to them, the government has 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 the communities is critical as they can play a pivotal role in monitoring the locust in remote deserted areas. Government officials noted that they remain in touch with community representatives through WhatsApp and shares updates with them about latest crops and livestock management related information from time to time.

The project also helped CWS Japan/CWSA to establish functioning partnerships with several government agencies and with communities. These linkages will help the organization to respond to ongoing and future needs in a collaborative fashion.

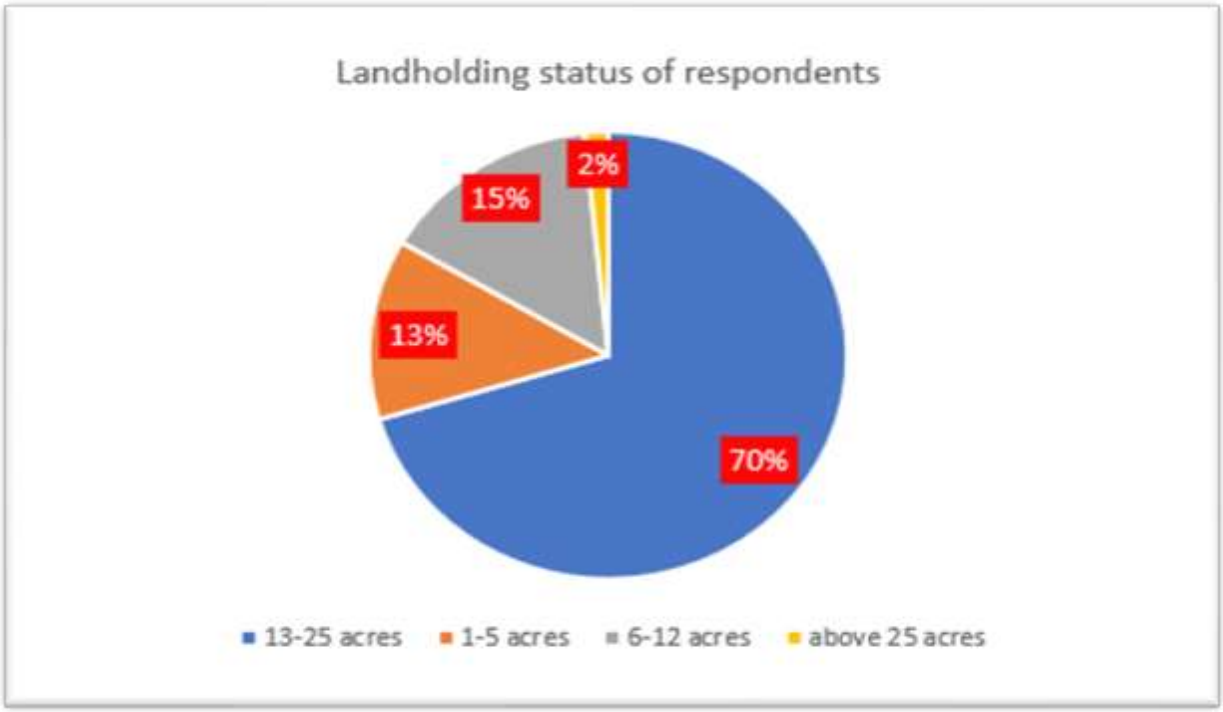
3.4 Gender & Inclusion

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's role in agriculture sector keeps them as "*family-laborer*" without recognition or access to control and use of resources (primarily land and finances) [20].

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, the 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 (discussed in detail above and not repeated here) through applying this lens at all stages - from design to the conclusion of the project.



[20] Status of Rural Woman of Pakistan. UNWOMEN 2018.

The project selected the beneficiaries based on the size of landholding i.e., ranging to 25 acres (10 hectares) for giving cash grant. Many landowners became project beneficiaries, however, tenants who were mainly involved in the agriculture labor got excluded from the project support.

3.5 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 diet[21]. All the feeding 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 as has covid 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 and ICM and IPM are the methods that have the potential to move the farmers towards that direction. Using chemical spraying was not found to be sustainable to the environment, human, and animal health. Therefore, ploughing and digging trenches are the most user-friendly methods to evade the risks of locust in the future.

Likewise, evaluation findings shows that the project approach was more effective towards achieving the long-term results because of its relevance with local customs, the practices of agriculture and alignment with geographical locations of the communities. Ploughing and tillage skills are easy to practice and can be replicated by the farmers themselves.

The key matter is to take decisions at the right time, which was taught during the project trainings. According to technical experts, the project used environment friendly practices at community level which is highly recommended and applied in the world. The use of trenches, ploughing and tilling has also improved the health of the land which will support the farmers in their next crop.

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

[21] Country Profile – Pakistan. World Food Program

4. Discussion

4.1 Key Findings

Strengths

- Locusts have a distinct attraction towards the desert because such areas provide favourable breeding conditions. Therefore, the project area of Umerkot - due to its location in Thar desert - stands out for this project.
- The eradication of eggs in breeding grounds helped control the menace in this area and its further spread to other areas, where locust could travel to incur crop losses.
- The project reached far flung areas of Umerkot district, which is also included in "Crisis Food Insecurity Phase[22]" because of recurring drought and poverty leading to malnutrition and health related issues; and faced huge destruction in the hands of locust[23].
- Emergency support in the form of cash grant provided immediate relief to farmers. The cash was used to hire tractors / machinery for ploughing / tillage.
- The ploughing contributed to preparing the land for cultivating for the next crops, which was not easy for the farmers due to their weak economic conditions.
- The locust control methods used in the project were technically sound and reliable, and aligned with the indigenous methods.
- The project worked in close collaboration with technical experts from the government departments namely Agriculture Extension department, Arid Zone Agriculture Research Institute, partner organizations and communities; thus, building ownership and coordination among all relevant stakeholders.
- Commitment to coordination helped in getting the spray done in the project areas which was an initiative of the government.
- Consultations with communities in relation to trainings, establishing FFS mechanisms and VMC helped in meaningful community participation.
- Training materials were developed in local languages.
- The use of technology in the form of cash transfers strengthened transparency

Areas of Improvement

- The project involved and supported 1600 beneficiaries and among them only 61 were women. Also, in the village management committee's (VMC) 71 women were present that constitutes around 15% of the 476 members.
- 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 resilience[24]. For future projects, a more strategic focus in project design and implementation is needed to ensure the inclusion of women.
- The project selected the beneficiaries on the basis of size of landholding i.e., ranging to 25 acres (10 hectares) for giving cash grant. Many landowners became project beneficiaries, however, tenants who were mainly involved in the agriculture labor got excluded from the project support.
- Locust infestation affected adjacent Union Councils and Districts as well but they were not part of the project which caused un-rest among the communities especially after the distribution of cash grants[25].

[22] https://resourcecenter.nhnpakistan.org/phocadownload/INGOs/research/Presentation%20on%20IPC%20Acute%20Analysis-Final%20Results-%2025%20July%202017.pdf
[23] http://web.ndma.gov.pk/SITREPPIA/july/Sitrep%2006%20July%202020.pdf
[24] CWSA Report. https://communityworldservice.asia/umerkot-celebrates-the-invaluable-contribution-of-rural-women-to-development/
[25] KII with Social Welfare Department.

- The capacity building intervention happened in intervals and designed to ensure that timings and venues are responding to the needs of the communities, however the absence of training evaluations (pre & post), consequential elements of training agenda with different people led to weaknesses in the capacity building process.
- Indigenous practices such as drum beating, smoke etc. are not considered to be effective [26]. The project introduced effective measures in the form of tillage and digging trenches. However, the community mobilization messages to discourage the ineffective practices were not so pronounced.
- From a technical perspective, ploughing and digging trenches must be timed when the locust groups lay eggs and when young hopper emerge. This emphasis did not come strongly in the discussions with the communities.

4.2 Good practices

- Projects interventions sustain and produce results more effectively and efficiently if community mobilisation is strong, interventions have relevance and match with existing knowledge and skills of the community.
- Community engagement in developing locust control plan, monitoring and execution of control plan is important due to the nature of locust swarm attack. It is important to build community capacity on understanding and monitoring of egg laying processes. So that they are able to trigger the egg destruction measures through ploughing in a timely fashion.
- The setting up of village committees is useful in providing continuous support to community once the project staff is away from the field, however the inclusion of women needs to be focused from design phase onwards.
- Gender/social inclusion assessment of the project design is needed for each project.
- A continuous flow of information is needed during the emergency situation; therefore, the establishment of helpline is always helpful.
- Disbursement of Cash grants has multiple benefits in the disaster-stricken communities. Affected community gets immediate financial support for essential daily expenses. Moreover, the cash circulation can trigger a chain of economic activities in the areas which usually come to a standstill due to emergency situation.
- Diverse project approach is key in any emergency. In this project support to government by timely provision of pesticides helped to control locust in large, infested areas. Government procurement procedures take longer time, which is against the timely handling of emergency situation.

- 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.
- The project supported the beneficiaries in terms of cash for ploughing with the objective to destroy the eggs of the locust in phase I and for digging trenches and purchasing nets in phase II. For this purpose, the partner organization contracted a service provider i.e., a cellular company. As in majority of the project targeted areas, there was no coverage of the cellular network, therefore, the service provider was unable to disburse the cash at field level (door-step). Consequently, the beneficiaries had to travel to the town i.e. Umerkot city for receiving the assistance. These trips costed additional expenses of travel (PKR 200 – 300 on both sides) for each beneficiary along with a working day time. Cumulatively, each beneficiary lost one day wages (PKR 400-500) and travel cost i.e. approximately PKR 600 – 800 (200-300 +400-500). Travelling to town for receiving the cash assistance was particularly challenging for elderly and women.

[26] https://reliefweb.int/report/pakistan/locusts-deal-severe-damage-crops-sindh-southern-punjab

4.3 Limitations of the Evaluation

- During data collection in the field, it was observed that cellular services in the field 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 the ongoing harvesting of Millet (Bajara) crop, the 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 the survey team conducted the interview with another adult and informed the family member from the same household.
- As the spray component was not directly implemented by the project hence many respondents were not able to provide responses to this component.
- 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.

5. Recommendations

5.1 Recommendations for Member NGO

- The issue of locust swarm has distinct characteristics that separate 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 CWS Japan to document and publish lessons learned from this project. For instance, the mechanical method of digging trenches, ploughing and methods of capacity building of farmers and their success rate should be converted into briefing papers and manuals. 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.
- The setting up of village committees is useful in providing continuous support to community once the project staff is away from the field, however the inclusion of women needs to be focused from design phase onwards.
- Gender/social inclusion assessment of the project design is needed for each project.
- Humanitarian program design should build in inclusions of women and all marginalized groups. It is important for CWS Japan to develop a humanitarian specific framework to integrate women, transgender, elderlies concern at designing and implementation stages.
- Early warning systems are integral part of any disastrous situation. CWS Japan should document in detail a briefing paper on nature and functioning of early warning system developed for locust control.
- In addition to briefing papers, CWS Japan 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 to the 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.
- The projects introduced ploughing / tillage and trenches for locust eradication in the communities. Such interventions are environment friendly, so learning and sharing processes can be useful for other stakeholders to replicate the model. The implementing partner is suggested to document the process of ploughing / tillage and share with government policy makers.
- While collecting contact details from the community for cash transfer or other support, it is important to check the validity of contacts (phone numbers etc) at the time of collecting the details. Otherwise, the invalid and non-functional numbers create hurdle and delays at the time of cash disbursement.
- Establishment of complaint mechanisms is essential for humanitarian response. Such facilities avoid panic in community when they require any information but more emphasis is needed on its socialization.
- CWSA established good working relationships with government departments and can facilitate communities' linkages with the 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.
- Locust can be used as source of protein for animal feed. The Plant protection department conducted successful experiments in district Okara (South Punjab), where a team of experts experimented through community engagement. According to Dr. Khurshid, locust cannot fly before dawn due to wet feathers hence they can be easily collected and processed as raw protein for chicken feed. Such experiments in the future can be scaled up and promote through developing supply chain system. Public-private sector model can be developed for such initiatives. This will also discourage / limit the need to use spraying as the feed has to be safe for chicken (and

ultimately human) consumption.

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 learning from 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. Findings and lessons from projects in Pakistan can contribute in the designing of such initiative.
- JPF should support the organization of a national seminar to share the success and learning of 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.
- Involvement of relevant government departments add value to the humanitarian projects. This helps in leveraging technical expertise of staff from various department, linking community and government departments as well as scalability of initiative through government programs.
- Biopesticides fungus, ploughing / tillage and trenches experiments were effective and environment friendly if used in timely manner on right locations. These methods need to be promoted and encouraged by involving farmers communities.
- 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. This may start with a collaborative national conference to share lessons learned during locust control. Such cross sharing would provide compendium of locust control related lessons learned from government, donors and NGOs.

- 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 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.

6. Case Studies

6.1 Learning from Disaster

Mr. Bachar is 45 years old farmer with 25 acres of land that supports his living in a far-flung village Bhadi of Union Council Kaplore, Umerkot, Sindh. He has a family of eight members and his income source is agriculture and livestock. His village is located in the desert region with no irrigation system thus the agriculture depends on rain water only.

Bachar grows millet, beans and vegetables etc. in small quantity once in a year when the Moon-Soon rains start in the months of Jun/July and for the rest of the year he earns his living through looking after his livestock which include goats, sheep and cows. His wife works with him in the farms and looks after the livestock at home. His only source of income is through selling of livestock. The milk they get from goats is only used for family and it is not sold.

He told, "*In 2019, I was hoping a good crop because there were adequate rains but all of a sudden locust invaded the area. It destroyed all the crops and fodder for the livestock. It was shocking for me and all our community and no one knew how to cope with this calamity*".

During this tough and tense time, CWSA started a project with the funding support of JPF in the area to provide emergency support to the farmer community including cash assistance and trainings; *"I received cash of PKR 13,500 which I utilized for ploughing my land to eradicate the locust eggs. This ploughing had dual benefit, on one hand it helped in eradicating the locust eggs while on the other hand it helped in preparing my lands for new crops*".

"*In the second phase, I received training on making trenches for catching locust along with receiving nets, plastic sheets and PKR 10,000 as cash grant. I attended two training sessions on locust control through trenches and nets; seed treatment methods and land preparation methods etc. These trainings were very good as these were easily understandable and relevant to our agriculture practices. Now I am able to preserve the seeds and to get good production from my lands*". He added that he is very much satisfied regarding the usefulness of the knowledge he gained in the training sessions and thankful to CWSA for their support in the tough times.

6.2 Resilience of Kavita.

Ms. Kavita is a 39 years old housewife with 6 children. They are living in their bushes and a hut made up of mud in village Amrihar Meghwar in union council Kaplore, district Umerkot. She owns ten acres of land and as usual like other people of the village, her family is keeping livestock including goats and sheep as well. She and her husband are working in the farms but they have agricultural activities once in a year starting from June/July till October/November. Therefore, when the agriculture season ends, her husband goes to city (Karachi/Hyderabad) to seek work as a daily laborer and comes home once in a month for few days. During her husband's absence, she looks after the livestock and children.

She shared "*I did not know about the locust before the attack as I have never seen it before. We just get the information a few hours before its arrival in our village. There was huge number of locust attacking our area. The people were helpless as these were too much in numbers and there was no way to control, however few were beating the drums, shouting and clapping to disburse them from their farms but it was uncontrollable and scary*".

"*This was like a calamity and it destroyed all our crops and greenery. We were much disappointed because of the destruction of our crops and fodder for our livestock. This year, there was no job opportunity for my husband as well, because of the Corona lockdown. Because of this destruction, we did not had seed and thus my husband has borrowed it from another farmer*".

In the meanwhile, the team of CWSA visited our village. They started their project for helping the farmers. The village committee listed my name for the support. After few weeks, they communicated that we can collect cash from the city. "*I received PKR 5400*" she informed. They also provided nets and plastic sheets with trainings on making trenches for controlling the locust and another installment of the cash was given i.e., PKR 4,000. "*I gave this money to my husband for returning to the shopkeeper from whom, he borrowed the seed and I was very relieved after paying the loan*" she said.