Rapid Capacity Assessment of Agricultural Extension Workers in Sinjar and Al-Hamdaniya Districts

January 30, 2018
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Acknowledgements:
SREO Consulting would like to express its gratitude to the key informants, agricultural directorate, agricultural department, and agricultural producers who participated in interviews and presented valuable feedback. Finally, thanks are owed to Deutsche Welt Hungerhilfe for their flexibility and guidance throughout the project.

Authors: Chris Ajemian, with Daniel Seckman, and Scott McCoubrey providing edits and revision

Cover photo: A livestock producer tends to her geese and turkey in Al-Hamdaniya; December 21st, 2017

About SREO
SREO is an independent, non-partisan evaluation center based in Istanbul, Turkey. SREO’s team of researchers includes Syrians, Turks, Iraqis and Americans who have all spent significant time in Syria, Iraq and the Middle East. Its researchers speak local languages and are dedicated to providing objective analysis of the issues facing refugees and internally displaced persons around the region.

In addition, SREO provides monitoring and evaluation services along with need assessments and feasibility studies. Together, the SREO team has more than 20 years of experience working in Afghanistan, Pakistan, Iraq, Syria and Turkey.

SREO takes full responsibility for all omissions and errors.

List of Abbreviations
EW Department of Agriculture Extension Workers
CFW Cash for Work Program
DFAT Australian Government Department of Foreign Aid and Trade
FAO Food and Agriculture Organization
FGD Focus Group Discussion
IDP Internally Displaced Persons
IOM International Organization for Migration
IP Implementing Partner
KII Key Informant Interview
KRG Kurdistan Regional Government
PDS Public Distribution System
SREO SREO Consulting
WHH Deutsche Welt Hungerhilfe
# Table of Contents

EXECUTIVE SUMMARY ............................................................................................................. 4
INTRODUCTION .......................................................................................................................... 5
METHODOLOGY .......................................................................................................................... 5
   Data Collection and Timeline ................................................................................................. 5
   Challenges and Limitations ................................................................................................. 6
NINEWEH AGRICULTURAL EXTENSION STRUCTURE ......................................................... 7
   Organizational Structure ..................................................................................................... 7
   Annual Agricultural Plan ..................................................................................................... 8
   Agricultural Planning Cycle ............................................................................................... 9
   Process of Receiving Assistance from EW ........................................................................ 11
   Support to the Department of Agriculture’s Extension Workers (EW) System ............. 11
EXTENSION WORKER SERVICES OBSTACLES .................................................................... 13
   Obstacles for Extension Workers ...................................................................................... 13
   Obstacles for Livestock and Agricultural Producers .......................................................... 14
INTERVENTION STRATEGIES ................................................................................................. 16
   Crops and Livestock .......................................................................................................... 17
   Intervention Demographics and Geographic Targeting ..................................................... 17
RECOMMENDATIONS ............................................................................................................... 18
CITATIONS .................................................................................................................................. 20
ANNEX: MAPPING OF INTERVENTION AREAS .................................................................. 21
Executive Summary

District level agricultural extension workers in Sinjar and Al-Hamdaniya face a litany of obstacles preventing them from providing demonstrative support to agricultural producers on a wide scale. These obstacles stem from two sources: inadequate resource coordination from the Ministry and Departments of Agriculture and repercussions from recent conflict in the Nineweh Governorate. In addition, information and communication regarding the scope of work and capacity of the annual agricultural is not successfully circulated to all EW personnel between the Department and Directorate of Agriculture. District extension workers have numerous shortages: adequate funding, stores of agricultural inputs, updated registries of agricultural producers, transportation, timely compensation, equipment. In addition to these challenges, extension workers face a large bureaucratic process with few feedback mechanisms to address farmers’ needs. Although general agricultural support was satisfactory prior to the 2003 Iraq War and the conflict with Daesh, the large capacity gaps in agricultural households make it imperative to support extension workers and returning inhabitants to their communities.

Local inhabitants face overbearing obstacles and debt due to their low relative productivity and high costs of production. This has made their livelihoods both more risky and difficult to subsist on. Simultaneously, in Nineweh the Directorate and Ministry of Agriculture have targeted the EW resources for only grain and barley producers who are publically registered land holders. Agricultural producers are in need of support for agricultural crops production, livestock production, physical and mechanical infrastructure as well as mechanisms to address ineffective and non-transparent Department of Agriculture protocols. This assessment identified a number of intervention mechanisms to address many of these needs. These include: a voucher-based distribution system of agricultural materials, a Cash for Work program to target damaged or missing infrastructure, and a targeted supply chain intervention. All of these strategies would help alleviate structural issues within the Department of Agriculture’s operations while also bringing higher productivity and improved livelihoods to agricultural returnees and female headed households in both Sinjar and Al-Hamdaniya.

Specific agricultural products that are of interest for both local inhabitants and key informants within the extension worker system are: tomatoes, okra, eggplant, cucumber, wheat, barley, chickpeas, kidney beans, lentil beans, onions, watermelons, cotton, sesame, sugar beets, cabbage, cauliflower, potatoes, alfalfa (for animal feed), chicken, cows, eggs, milk, yogurt, cream, cheese, honey, goats, sheep, turkey, geese, ducks, and fresh meats.
Introduction
Sinjar District and Al-Hamdaniya have numerous gaps that inhibit their agricultural value chains: poor resource availability for domestic production, adverse agricultural investment in light of a regional economic downturn, heavy foreign competition from imported items and damages related to the conflict with Daesh.\(^1\) \(^2\) However, positive intervention to address these concerns would require cooperation with pre-existing agricultural extension services in the Department of Agriculture.\(^3\) The Department of Agriculture in Nineweh and locally in Sinjar and Al-Hamdaniya districts have not been effective. District level agricultural extension workers do not currently provide demonstrative support on a wide scale.\(^4\) District extension workers lack adequate funding and agricultural inputs, do not have updated records and registries of agricultural producers, have a large bureaucratic process to address farmers’ needs, and a lack of transportation equipment.\(^5\) \(^6\)

Methodology
This assessment provides a rapid capacity assessment of Agricultural Extension Workers in Sinjar and Al-Hamdaniya Districts. Its aim is to identify gaps in the agricultural extension system and provide recommendations for programming that would improve the quality and availability of that system to assist returnee households. A specific focus was placed on the area of Sinuni, in Sinjar district during the data collection phase. Information about assistance to returnee households was also emphasized. After collecting data from local Key Informants and Focus Group participants, this assessment focused on identifying potential areas of intervention that could be operationally feasible in Welt Hungerhilfe’s (WHH) future implementation.

Data Collection and Timeline
SREO Consulting began the Rapid Capacity Assessment after the inception meeting on 9th of November, 2017 with Uwe Hermann and Christina Lundt from WHH. In that meeting, it was decided that SREO Consulting would conduct a desk review and key informant semi-structured interviews (KII) with individuals who have detailed knowledge of: local agricultural extension services, directorate level agricultural planning, and Department of Agriculture institutional training. In addition, SREO would conduct a site visit to the town of Sinuni, Sinjar and Al-Hamdaniya district to conduct gender balanced Focus Group Discussions (FGD) and take photos.

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\(^6\) Hadi, Murrad. KII: Murrad. 2017. telephone.
A SREO researcher and an interpreter conducted the semi-structured key informant interview via telephone. The SREO researcher took notes and recorded audio for later review. In addition, two FGDs were conducted in both Al-Hamdaniya and Sinjar. These FGDs were conducted by a SREO field researcher with only participants that derived their livelihoods from agriculture. The FGDs’ participants equally sampled males and females. Details of both key informants and FGDs can be found in Table 1 below.

### Table 1: Interview and FGD Reference

<table>
<thead>
<tr>
<th>Key Informant</th>
<th>Institution/Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barakat Isa Azer</td>
<td>Head of Agriculture Department of Planning within Sinuni Center</td>
</tr>
<tr>
<td>Hadi Murrad</td>
<td>Agriculture Department of Prevention within Sinuni Center</td>
</tr>
<tr>
<td>Eng. Rami</td>
<td>Agricultural engineer, farmer, and member of the Agricultural Committee in the Local Council of Qaraqosh</td>
</tr>
<tr>
<td>Ahmed Sakee Mohsen</td>
<td>Head of Agriculture Department for Al-Hamdaniya District (based in Bartella)</td>
</tr>
<tr>
<td>Eng. Faysal</td>
<td>Head of Agriculture Department for Lands Al-Hamdaniya District (based in Bartella)</td>
</tr>
<tr>
<td>Madyan Ghanim</td>
<td>Duty Head: Department of Lands for the Nineweh Agriculture Directorate</td>
</tr>
<tr>
<td>Dr. Meeayzer M Aziz</td>
<td>Mosul University Professor: PHD field crop production in agriculture and forestry. Trained EWs in Mosul University</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FGD Location</th>
<th>FGD Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al-Hamdaniya</td>
<td>Six (6) total participants with livelihoods based in Agriculture</td>
</tr>
<tr>
<td></td>
<td>Three (4) female participants</td>
</tr>
<tr>
<td></td>
<td>Three (2) male participants</td>
</tr>
<tr>
<td>Sinjar</td>
<td>Eight (8) total participants with livelihoods based in Agriculture</td>
</tr>
<tr>
<td></td>
<td>Four (4) female participants</td>
</tr>
<tr>
<td></td>
<td>Four (4) male participants</td>
</tr>
</tbody>
</table>

### Challenges and Limitations

There were some challenges in site visits for the FGDs. Security checkpoints in Al-Hamdaniya intermittently permitted SREO’s FR to pass. This made it difficult to arrange a date in advance to coordinate the FGDs and delayed data collection. Additionally, some data from the International Organization for Migration (IOM) database for returnee populations is updated to October 31st, 2017. It is possible that more migrations of returnees both to and from Al-Hamdaniya and Sinjar may have occurred since that time. In addition, it was difficult to specifically outline quantitative metrics for the effectiveness of agricultural extension workers or quantitatively evaluate their needs without conducting household level surveys. Finally, without a larger sample size of agricultural households in both locations, it is difficult to specify qualitative information regarding the amount of material inputs, training, or investment are required for implementing programming with total confidence.
Nineweh Agricultural Extension Structure

Organizational Structure
In Nineweh governorate, the Department of Agriculture and the Nineweh Directorate of Nineweh are below the authority of the central Ministry of Agriculture. The structure of Directorate and Department of Agriculture, along with estimations of full time personnel can be found below (Figure 1). Each department at the district level Department of Agriculture level reports to their corresponding department in the Agricultural Directorate. Within the Agricultural Directorate, a departmental focal point reports to the Head of the Directorate as well as a financial oversight Branch that supervises each Department. Staff recruitment eligibility requires prior certified experience in agriculture as well as vetting from the Agricultural Directorate’s Department of Finance and the Oversight branches.

Figure 1: Organizational Structure of Nineweh Agricultural Directorate

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8 The number of full time staff is based from key informants’ self-reported estimations

Table 2: Outline of Department of Agriculture

<table>
<thead>
<tr>
<th>Department</th>
<th>Task/Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department of Lands</strong></td>
<td>Measures, registers, and maps lands in the district for the agricultural plan through EW. This information is then used to inform both the agricultural plan and the Department of Agriculture’s internal records.</td>
</tr>
<tr>
<td><strong>Department of Livestock</strong></td>
<td>Provides materials, technical assistance and support to fish and livestock producers through EW.</td>
</tr>
<tr>
<td><strong>Department of Planning</strong></td>
<td>Provides localized planning, coordination for technical assistance/machinery while maintaining a database of specific needs and registries for producers. EW and staff coordinate with the relevant department to provide support to producers depending on the technical needs of the producer. In addition, they allocate the work stipulated in the Ministry of Agriculture’s development plans.</td>
</tr>
<tr>
<td><strong>Department of Human Resources</strong></td>
<td>Department responsible for coordinates hiring, protocols, and procurement. Although, hiring allocations are also made by the Department of Finance through a centralized recruitment process.</td>
</tr>
<tr>
<td><strong>Department of Finance</strong></td>
<td>Responsible for recording, organizing, and administrating internal finances.</td>
</tr>
<tr>
<td><strong>Forestry Department</strong></td>
<td>Provides support, technical assistance, and materials to fruit, and vegetable groves through EW. The Forestry Department works closely with the Production Department.</td>
</tr>
<tr>
<td><strong>Production Department</strong></td>
<td>Provides support, technical assistance, and materials to grain and legume producers. The Production Department works closely with the Forestry Department.</td>
</tr>
</tbody>
</table>

Annual Agricultural Plan

Nineweh’s agricultural extension system is designed to implement the Ministry of Agriculture’s agricultural plans locally. Extension workers (EW) are coordinated at the district level in both Sinjar and Al-Hamdaniya through the Department of Agriculture. Their work is also dependent on annual plans received from the Ministry of Agriculture through the Directorate of Agriculture. Each year the Ministry of Agriculture outlines an agricultural plan that allocates available resources to producers. These resources include salary payments, fertilizer and seeds – provided at the Ministry of Agriculture’s Office of Seeds. In addition, district level offices have dedicated technical departments to address individual issues or technical requests (see Table 2). This plan is circulated among the producers through the extension workers. The plan is subject to change based on the needs of the producers and the availability of resources.

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11 Key informants from Sinjar referred to this specific department as the “Guidance Department”
Welt Hunger Hilfe. Agricultural Sector Assessment Iraq With a Focus on Nineweh And Dohuk
during the autumn planting season – August through September. However, for Nineweh Agricultural Directorate, the Ministry of Agriculture lists barley and wheat as strategic crops. These crops are agreed upon by the Ministry of Agriculture and the Ministry of Trade as they are important for the Public Distribution System (PDS) and Iraqi food security. Nineweh EWs do not directly administer the PDS distributions or purchase agricultural products. Nevertheless, they do promote the production of crops that are later sold to the distribution system. Effectively, the agricultural plan for Nineweh only seeks to ensure that wheat and barley production is adequate among certified holders of public lands. It also prioritizes landholders with less rainfall or soil fertility. This plan is informed by registries provided through the district level Department of Agriculture workers as outlined below.

Agricultural Planning Cycle

Upon receiving the agricultural plan from the Directorate of Agriculture, the Nineweh Department of Agriculture in Nineweh allocates seeds and fertilizer to registered holders of public lands growing barley and wheat. If producers have additional problems such as plagues, seed selection, machine harvesting and tillage, the Planning Department and the relevant technical department (see Table 2) arrange capacitation training with the land holder. The land holder then cascades those trainings to others in their community. These trainings are done

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infrequently; according to one of the key informants in Al-Hamdaniya, these trainings are done only once (1x) per week in the entire district. Their subject material is dependent on the needs of producers.\textsuperscript{13}

The Department of Agriculture and the Nineweh Directorate of Nineweh are divided into the following departments:\textsuperscript{14} \textsuperscript{15}

**Table 3: Outline of Department of Agriculture**

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<thead>
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<td><strong>Department of Human Resources</strong></td>
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<td><strong>Production Department</strong></td>
<td>Provides support, technical assistance, and materials to grain and legume producers. The Production Department works closely with the Forestry Department.</td>
</tr>
<tr>
<td><strong>Prevention Department</strong></td>
<td>Provides support, technical assistance, and materials to combat pests, plagues, fungi, and risks to crops.</td>
</tr>
</tbody>
</table>

\textsuperscript{14} Mohsen, Ahmed Sakee. KII: Mohsen. 2017. telephone.

\textsuperscript{15} Key informants from Sinjar also referred to the Department of Planning as the “Guidance Department”

\textsuperscript{16} These registries do not include market information such as prices, production quality or volumes for local producers and consumers.
Process of Receiving Assistance from EW

15 16

Producers must directly contact the Department of Agriculture requesting technical assistance and/or support. Outreach activities are also conducted for certain crops or livestock according to the agricultural plan for the year. All contact with the Department of Agriculture must be made in person.

The Planning Department coordinates with the relevant agricultural department - depending on the type of assistance needed - to visit the location.

Agricultural producers are given technical knowledge and/or subsidized materials (fertilizer, seeds, herbicides, pesticides, veterinary medicines). Vouchers for cheaper fuel were also provided prior to the conflict.

Producers must often acquire and transport the materials themselves - bearing associated costs. These materials are located in far areas of the country (i.e. Kirkuk, Mosul), which are dangerous to travel for commerce.

Support to the Department of Agriculture’s Extension Workers (EW) System

Largescale support for the Department of Agriculture, and the EW system, is not functional. 17 18

Before the 2003 Iraq War, EW received more adequate support from the central Iraqi government and other development actors. However, political crisis such the ongoing discord between the KRG and Iraqi government has made it harder for farmers to access support from Extension Workers and the Department of Agriculture. 19 20

Difficulties for EW and producers to access materials and support have been especially challenging for districts such as Sinjar since it is geographically separated from the rest of the KRG by the Tigris River and travel is difficult to areas held by the Iraqi government.

Support for training programs is generally lacking. EW recruitment training and educational access are: not uniformly available in most areas of Nineweh governorate, not structured through a formalized curriculum provided by government agricultural institutions and not mandatory for directorate or district level workers to attend. Prior to the conflict with Daesh, non-mandatory

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trainings were conducted at Agricultural Universities in Nineweh Governorate. One such program was implemented for five (5) years for over two-hundred (200) students with the support of the Ministry of Agriculture, FAO, DFAT, and Mosul University. Training curriculum were created by Mosul University and emphasized skills such as: seed selection, animal husbandry, basic veterinary care for livestock, agricultural pest treatments and irrigation methods for agricultural workers and producers. Many current EWs were trained before the current conflict with Daesh through educational programs like this and prior agricultural work. One key informant who trained EW staff in Mosul University explained that staff at the directorate level had the lowest level of experience and training since staff sometimes begin their careers in areas unrelated to agriculture.

Key informants in Sinjar and Al-Hamdaniya reported cases of localized assistance for the Department of Agriculture. For instance, the Ministry of Agriculture has begun to pay back debts for wheat and barley purchased before the conflict with Daesh. Furthermore, the FAO is currently providing animal fodder to over seven hundred eighty-eight (788) livestock producers in Al-Hamdaniya and ninety (90) livestock producers in Sinjar. In addition, there was a program by an NGO referred to as “AHP” in Sinjar to create solar-powered submersible pumps to retrofit irrigation boreholes that provide water to around sixty (60) Dunnam each. Costs of water to local inhabitants without this irrigation method are estimated to be a costly 320 $/Dunnam per year. This project was unable to be implemented due to geopolitical disruptions resulting from the Kurdish referendum process. FGD participants in Sinuni described efforts by development organizations to support chicken farms, and bee hives. However, the bee hive project was reportedly not properly implemented since little guidance was provided to the project’s beneficiaries.

Photo 2: Unused materials from a solar-powered irrigation project; Sinuni 18 December, 2017

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25 No additional information was found through KIIs. This work was possibly not implemented with the Department of Agriculture.
Extension Worker Services Obstacles

Obstacles for Extension Workers

Extension workers in both districts faced large and pervasive obstacles that prevented them from effectively providing services. These obstacles stem from two sources: inadequate resource coordination from the Ministry and Department of Agriculture as well as repercussions from the recent conflict in the Nineweh Governorate. EW describe that the process of providing both coordination and resources is dependent on a bloated bureaucratic structure, which delays assistance and information from being disseminated.27 Interviews with district level extension workers and the Agricultural Directorate reveal a discrepancy between their perceived and actual roles.24, 27, 28 District level extension workers outlined their responsibilities and assistance to various crops and livestock producers, while information from the Agricultural Directorate reported assistance was coordinated only with registered wheat and barley producers. 27 Information and communication regarding the scope of work and capacity is not successfully circulated to all EW personnel implementing work on behalf of the ministry of agriculture at both, governorate or district levels.

Generally, extension workers in Al-Hamdaniya and Sinjar have not been properly supported, leading to a regressive trend of effectiveness. Key informants were asked for this assessment “how they would rate the capacity of EW to adequately assist agricultural producers before and after the conflict.” Key informants stated that on average capacity dropped by over half (50%). Currently, they are fulfilling around one third (35%) of their needed capacity.29 EW in Al-Hamdaniya have experienced infrequent delays - up to three months at times - for salary payments in both Sinjar and Al-Hamdaniya. 30 EW lack transportation adequate materials to distribute and office facilities. This has made it difficult to plan, communicate with, reach and support the populations they are required to assist. 31 As a result, many EW work from their homes using their personal vehicles to work in rotations since they lack transportation, fuel, and funding. 31 This has led to a decrease in the capacity for EW to visit producers, maintain land registries, and follow up on consultations.32

Furthermore, especially since the conflict with Daesh began, there is a lack of materials available for EW to distribute. One key informant in Sinjar described how registered grain producers are only able to receive around twenty percent (20%) of required seeds to plant their fields. Of the

29 During the semi-structured interview participants were asked to rate on a scale of 1-5, one being no capacity and five being fully capable. Responses were self-reported and then aggregated during analysis.
few who can receive the wheat seed, the informant reported only 4kg/Dunnam was provided for each 30kg/Dunnam required. The Nineweh Department of Agriculture's only source of subsidized fertilizer is from the Ministry of Agriculture's Office of Seeds. The only storage sites for wheat seeds are in Kirkuk; barley seeds are stored in Mosul. Therefore, it is extremely difficult for agricultural producers to assume expenses and risks to obtain and transport agricultural inputs. This issue was highlighted in both FGD sessions and by key informants. FGD participants in both Sinjar and Al-Hamdaniya reported that prior to the conflict with Daesh, agricultural producers would receive vouchers that would enable them to buy materials at a discount price. However, these vouchers are no longer implemented. Direct effects of the conflict have also directly impacted the effectiveness of EW. Fifty percent (50%) of agricultural producers from the Sinuni remain IDPs and have not returned to their lands. Daesh destroyed, stole or burned around eighty-five percent (85%) of vehicles, machinery, agricultural records, beehives, and chicken farms. In Sinuni it was reported that over two hundred forty (240) small-scale irrigation systems were destroyed.

Obstacles for Livestock and Agricultural Producers
Agricultural households have unmet needs and persistent obstacles. Due to the conflict in Nineweh, an average sixty-eight percent (68%) of acres dedicated to wheat cultivation were lost. Likewise, fifty-seven percent (57%) of the acres used for barley were completely destroyed. The large remainder of these arable were left unfertile or damaged. Furthermore, around eighty percent (80%) of sheep and goats and almost half (50%) cows were lost in many areas of Nineweh. Poultry suffered the highest average mortality rates at about 90%. Only ten to twenty percent (10-20%) of livestock shelters remained intact after the conflict with Daesh. Many of the main livestock products; meat, milk and eggs, lost between thirty to fifty percent (30-50%) of production. Access to medicine, high-quality animal fodder, vaccines and other veterinarian services are especially difficult to access for households dependent on livestock. Furthermore, imported products from foreign countries and large production costs have made local farmers non-competitive when compared to larger agricultural markets. Consequently, this first lowers producers’ prices to a level where they cannot produce and, second, makes producers dependent on imported goods for their own consumption.

Multiple FGD participants explained they cannot afford to support themselves due to large costs of agricultural materials and utilities, leading to a cycle of debt. Producers do not have access to agricultural banks or credit sources, resulting in large financial risks to their livelihoods.

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33 1 Dunnam is equal to .1 hectares of land
Investments and crop diversification are difficult and risky for producers to take. One participant in Sinuni stated “we cannot do our jobs because frankly, we cannot afford the money to buy all the necessary supplies. I have land but I cannot use it... One (50kg) bag of fertilizer costs 50,000 IQD, but when we sell tomatoes, we have to sell 50 boxes to meet the price of one bag of fertilizer”. FGD information from Sinuni and Al-Hamdaniya highlighted similar obstacles for producers. Both focus group discussions and informants highlighted a severe lack of supplies: seeds, fertilizers, herbicides, pesticides, electricity, tractors and gasoline - for tractors, generators and equipment. These materials constitute some of the main expenses for agricultural households. Water needs for irrigation were particularly cited in Sinuni by FGD participants and key informants. Training regarding seed selection methods highlighted by FGD participants in Al-Hamdaniya.

In addition to the underlying lack of capacity of agricultural households, structural issues prevent EW services effectively from reaching them. FGD participants in Al-Hamdaniya did not know how to contact the Department of Agriculture extension workers and have never made contact with them since the arrival of Daesh years earlier. This may be due to the low capacity of the Department of Agriculture, and the lack of communication channels at their disposal. In Sinuni, FGD participants complained of favoritism and a need to pay for services from EW. “We go there, but they do not help us at all... Each of our families spent 20,000-30,000 IQD on our papers at the Agriculture Department, but in the end, they said this area does not need seeds or chemicals.” They gave these materials to whomever they wanted and they sold them at commercial prices: the amount was in the thousands.” Despite this, inhabitants of both Al-Hamdaniya and Sinjar said they would like to work with EW support systems. Key informants also said local inhabitants understand why the current capacity for assistance is not available and appear capable of collaborating amicably.

Photo 2: A field of okra lacking adequate irrigation; Sinuni 18 December, 2017

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41 No further information was found regarding what these families needed to pay for in the Department of Agriculture
Intervention Strategies

Improvements desired by Agricultural Department Extension Workers & Producers

Improvements desired by EW and FGD participants can be divided into four categories: inputs for crops, inputs for livestock, infrastructure for agricultural and livestock production, and improvements to the internal Department of Agriculture protocols. These intervention methods can be seen below in Table 3.

Table 3: Areas of Intervention

<table>
<thead>
<tr>
<th>Category of Intervention</th>
<th>Requested intervention (FGD participants and Key Informants)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support for Agricultural Crops</strong></td>
<td>- Provide Seeds</td>
</tr>
<tr>
<td></td>
<td>- Provide Training on seed selection and tillage</td>
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<tr>
<td></td>
<td>- Provide Fertilizer</td>
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<tr>
<td></td>
<td>- Provide Herbicides</td>
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<tr>
<td></td>
<td>- Provide Pesticides</td>
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<tr>
<td></td>
<td>- Provide Greenhouses and/or materials</td>
</tr>
<tr>
<td><strong>Support for Livestock Production</strong></td>
<td>- Provide Animal fodder/feed</td>
</tr>
<tr>
<td></td>
<td>- Provide access to veterinary vaccines</td>
</tr>
<tr>
<td></td>
<td>- Provide access to veterinary medicine</td>
</tr>
<tr>
<td></td>
<td>- Provide repairs to chicken farms and/or materials</td>
</tr>
<tr>
<td><strong>Support for Physical or Mechanical Infrastructure</strong></td>
<td>- Repair irrigation boreholes (small scale and solar-powered)</td>
</tr>
<tr>
<td></td>
<td>- Improve local access to electricity</td>
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<tr>
<td></td>
<td>- Provide fuel or access to fuel</td>
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<tr>
<td></td>
<td>- Provide Beehives (with capacity building training)</td>
</tr>
<tr>
<td></td>
<td>- Provide structural facilities (storage facilities, greenhouses, processing facilities and maturation houses)</td>
</tr>
<tr>
<td></td>
<td>- Provide and/or repair heavy machinery (tractors, harvesting equipment)</td>
</tr>
<tr>
<td><strong>Department/Ministry of Agriculture Protocols</strong></td>
<td>- Improved communication channels between EW/Department of Agriculture and local producers</td>
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<tr>
<td></td>
<td>- Improve access to financial credit for producers</td>
</tr>
<tr>
<td></td>
<td>- Create feedback from EW</td>
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<tr>
<td></td>
<td>- Update agricultural registries</td>
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<tr>
<td></td>
<td>- Provide EW agricultural materials in more accessible locations</td>
</tr>
<tr>
<td></td>
<td>- Improve the highly bureaucratic system of coordinating assistance based on a universal agricultural plan of Iraq</td>
</tr>
</tbody>
</table>

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SREO Consulting. WHH: Rapid Capacity Assessment of Agricultural Value Chains In Northern Iraq. SREO Consulting, 2017, p. 2
Crops and Livestock

Specific types of Crops and livestock referenced by sources of particular interest can be found in the chart below.44

<table>
<thead>
<tr>
<th>Category of Product</th>
<th>Grown, Desired or Previously Produced Products (FGD participants and Key Informants)45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant Based Crops</strong>46</td>
<td>Tomatoes, Okra, Eggplant, Cucumber (Spider Variety), Wheat, Barley, Chickpeas, Kidney Beans, Lentil Beans, Onions (not clear if sweet, yellow, or red onion variety), Watermelons, Cotton, Sesame, Sugar Beets, Cabbage, Cauliflower, Potatoes, and Alfalfa (known as Al-Jat, this is grown for animal feed)</td>
</tr>
<tr>
<td><strong>Livestock or Animal Based Products</strong></td>
<td>Chicken, Cows, Eggs, Milk, Yogurt, Cream, Cheese, Honey (Bees), Goats, Sheep, Turkey, Geese, Ducks, and Fresh Meats</td>
</tr>
</tbody>
</table>

*Many dairy products in Hamdaniya are processed at factories in Mosul city for later sale.

Intervention Demographics and Geographic Targeting

WHH specified that criteria for future programming would highlight returnees and female headed households.47 In order to adequately target these demographics, attention must be paid to specific products that are produced by women. These include products such as: poultry, dairy products (milk, yogurt, cheese, cream) eggs, goats, sheep, turkey, geese, ducks, wheat, okra and barley production.48 Specific locations in Al-Hamdaniya and Sinjar for intervention identified by the IOM as areas with the most returnee households are listed below and also visually mapped in the Annex attached to this report:49

<table>
<thead>
<tr>
<th>District</th>
<th>Names of Towns/Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Al-Hamdaniya</strong></td>
<td>Qaraqosh</td>
</tr>
<tr>
<td></td>
<td>Khazna Tappa</td>
</tr>
<tr>
<td></td>
<td>Ali Rash Village</td>
</tr>
<tr>
<td></td>
<td>Bartalla center</td>
</tr>
<tr>
<td></td>
<td>Mnara Shabak Village</td>
</tr>
<tr>
<td></td>
<td>Bashbita Village</td>
</tr>
<tr>
<td><strong>Sinjar</strong></td>
<td>Bashbita Village</td>
</tr>
<tr>
<td></td>
<td>Sinjar</td>
</tr>
<tr>
<td></td>
<td>Borak</td>
</tr>
<tr>
<td></td>
<td>Sinuni center</td>
</tr>
</tbody>
</table>

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44 This assessment could not verify these self-reported crops and/or their varieties without household level sampling and data collection.
46 Although much growing is seasonal and dependent on the local conditions, planting in Northern Iraq often takes place after heavy winter precipitation (April-May)
47 Hermann, Uwe & Lundt, Christina: WHH Inception Meeting. 2017. In Person
48 These products were cited by FGD participants in Sinuni and Al-Hamdaniya as agricultural areas where women are especially active
Recommendations

Recommended Intervention Strategies

The below list displays the recommendations informed by the findings from this report, and are listed in no particular order: Although future implementation will depend on financial resources available for implementation, these recommendations would address many of the negative factors affecting both EW and agricultural households but require household level beneficiary selection. These recommendations are not mutually exclusive and could be implemented in parallel with one another.

1. Voucher Based Distribution System of Agricultural Materials
A voucher-based distribution system would address the majority of crop based and livestock-based interventions requested (see Table 3) while also addressing some structural issues of EW. This approach is scalable based on the capabilities of the funding agency. It also provides dedicated communication channels for EW and implementers to follow up with beneficiaries and provide further assistance if necessary. Furthermore, it improves the capacity of EW to later assist these beneficiaries since they are registered into the Department of Agriculture’s official registry.

Vouchers will be distributed to agricultural households that consist of: returnees, female household heads, and large amounts of children and/or elderly.

Implementing organization will provide vouchers (value in accordance with the IPs capacity) with coordination from the Department of Agriculture.

To receive the voucher the household must also register in the Agricultural Department’s registry.

IP will provide localized distribution, storage and training information on materials (see Table 3) - with coordination from EW providers.

*If the planting/livestock and implementation schedule do not align precautions must be taken

IP and EW can monitor progress with an established communication mechanism (phone hotline in the agricultural department & radio outreach)

Producers will be registered to monitor longterm technical visits and any future support.

2. Supplementary Cash for Work (CFW) Rehabilitation Program
A CFW implementation would complement ongoing and completed work by WHH in Sinjar while also providing much needed infrastructural improvements for agricultural producers. CFW would enable both higher agricultural productivity, but more importantly it would enable producers to have lower production costs giving them additional financial independence and more flexibility in future crop rotations. Ideally, a
local level needs assessment of producer infrastructure should be undertaken with beneficiary surveys to prioritize specific bottlenecks that raise production costs for agricultural households.

3. Targeted Supply Chain Intervention

This intervention allows for concentration on specific products. Agricultural producers, consumers, and EW have numerous structural obstacles their affecting operational effectiveness. Many do not have large-scale production and have higher individual costs for transportation and production. These challenges are particularly difficult since EW lack the capability to improve agricultural yields and producers face large costs and high debt. Simultaneously, agricultural prices remain high for consumers and are dependent on imported products. Ideally, a local level needs assessment of producer and consumer networks should be undertaken with beneficiary surveys to organize value chains of locally produced goods into effective business networks. Extension workers would spread awareness for key business indicators (prices, quantity demanded, quality demanded, location). A network between producers and consumers could reallocate materials more efficiently through product collection points, the distribution market information and bulk transportation. This would be ideal for female headed households since many traditional products, such as dairy, have working factories in Mosul. Areas such as Baratalla, Hamdaniya, and Mosul could also provide marketing channels to optimize production and household incomes.
Citations


Hermann, Uwe & Lundt, Christina: WHH Inception Meeting. 2017. In Person


SREO Consulting. WHH: Rapid Capacity Assessment of Agricultural Value Chains in Northern Iraq. SREO Consulting, 2017,


Annex: Mapping of Intervention Areas