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Executive Summary

Up to 1991, agriculture was a more productive sector in Iraq, contributing to the wellbeing of the population in the agricultural districts and to the national economy. Due to successive wars and consequent changes in leadership and land administration, agricultural assets and commodities were lost and farmers were forced to migrate leaving their agricultural livelihoods behind and changing their sector of employment. Salaried jobs, including construction and government jobs, became more common and the percentage of people dedicated to agricultural production decreased. State policies incentivising certain types of production such as wheat and barley shifted a lot of the focus from sheep farming, making the sector more fragile. The ongoing conflict has exacerbated this situation further.

The recent economic downturn and the difficulties connected with border closures have however caused the Regional Government of Kurdistan (KRG) and the National Government of Iraq (GOI) in Baghdad to reconsider their development and economic policies and reattribute importance to the agricultural sector in their strategic plans.

One important finding of this assessment is that the agricultural sector continues to exist in the KRI and, although neither efficient nor at scale, it is functional. However, the currently unmet demand for locally produced goods, the existence of producers, businesses, stakeholders and services providers are all encouraging elements that constitute the potential for the rehabilitation of an existing, although depressed, sector.

This report summarises the findings of a market assessment conducted by GOAL and Big Heart in Al Shikhan District in March 2016. The objective of the assessment was to identify key actors, the links between them and existing services, structures and constraints, as well as opportunities, in the current system. Among other towns, Shekhan was selected for this assessment for its relevance to two value chains: sheep (dairy and meat) and hens (eggs). These value chains were previously identified at the regional level by GOAL and Big Heart as those with potential for successful positive change in both economic and social terms. The ultimate objective of the assessment was to learn how the current systems function, understand the context of operation and capture the existing threats and opportunities to inform appropriately designed livelihoods programming in the area.

The research included secondary data research, Key Informant Interviews (KII)s and Focus Group Discussions (FGD) and considered all aspects of both value chains, including mapping of players, inputs, production, processing, marketing, infrastructure, support services and the wider enabling environment.

As a result of our research into the sheep value chain, we know that there is a business case for sheep production and there are opportunities to increase production and restore livelihoods lost due to the conflict. This will have a beneficial impact on local access to meat and milk products for all community members by increasing supply. Programming should tap into existing opportunities by identifying and expanding existing business models with key players as well as supporting
farmers who have lost their livelihoods as a result of the conflict.

Identification of key players should be based on a clear business opportunity and the potential for scale and inclusive growth. Programming should work to reduce the identified constraints, such as low sheep stocks and access to inputs and services for farmers.

The egg value chain differs from the sheep value chain in that there is an opportunity to increase household production to larger scale production, specifically targeting women, who are the current producers. There is demand in the local market for local eggs; however, Household (HH) production is currently operating at sub-optimal levels because of many obstacles including unavailability of services for small scale production, lack of knowledge and costs of increasing the scale of production.

A key finding of this assessment relates to the changing role of women. Women currently represent the majority of the agricultural labour force and their presence is predominant in specific sections of the two value chains analysed, in particular eggs and dairy production. FDGs and KII's point to the fact, however, that women are spending an increasingly higher number of years in formal education, which often results in their departure from the household to seek qualified jobs in the cities. This said, interviewees also indicated that the agricultural sector has become more professional, with the increasing adoption of technologies and market innovation in the sector. This reality in Al Shikhan emphasises the potential role of educated women in a capital intensive agricultural system.

The Recommendations section of the report outlines these findings and conclusions in detail.

**GOAL & Big Heart Organisational Profiles**

**GOAL** is an international non-governmental development and humanitarian organisation, founded in 1977. Over more than 30 years, GOAL and has spent over $1 billion on humanitarian and development programmes in more than 50 countries. GOAL currently works in 19 countries across Africa, Asia and Latin America. In regions of chronic crisis and underdevelopment including conflict affected and fragile states, GOAL implements humanitarian and development programmes aimed at supporting long term positive change for poor, vulnerable and marginalised groups by reducing their economic and social vulnerability and supporting individuals and communities to create their own pathways out of poverty.

GOAL's rationale for supporting a systems approach stems from an appreciation of the importance of inclusive economic growth for poverty reduction. Expanding access to goods and services are critical in developing competitive and inclusive economies. Improving the lives of the poor, stimulating growth and expanding access, means transforming the systems around poor people. In Uganda, GOAL is currently implementing a $20 million agricultural livelihoods programme using innovative systems approaches.

Cognisant of context, GOAL uses a facilitative approach to stimulating and incentivising permanent actors to see and take advantage of opportunities. GOAL's programming seeks to engage and catalyse growth and development, ideally remaining outside the system.

**Big Heart Foundation** is a not-for-profit, non-governmental, non-religious organisation established in June 2013 to provide impartial humanitarian assistance and to prevent and alleviate human suffering regionally. Big Heart specialises in providing impartial humanitarian assistance to highly vulnerable populations living in hard-to-reach, insecure and underserved areas. GOAL has worked in partnership with Big Heart in Syria and together the organisations have a proven capacity to deliver relevant, effective programming.
Agricultural Sector Overview

To address the economic downturn which followed conflict and decreasing oil revenues (down 36% since 2005 according to the WB), the GOI and the KRG have prioritised agriculture in their strategic plans for development and economic recovery.

As recently as 2005, agriculture value-added was key to the Iraqi economy, contributing 30% of the annual GDP. Increased levels of urbanisation, investments in the construction industry and increased average number of years spent in formal education are some of the factors contributing to the transition of the labour force from agriculture to alternative sectors. Reduced focus on agriculture and impacts of the economic crisis, war, displacement and instability, resulted in decreased production of agricultural-value-added industries (World Bank) and increased net imports of agricultural by-products (cheese, yogurt, etc.). Iraq has lost 40% of its agricultural production since IS occupation of the agricultural provinces since 2014. Iraq is currently unable to produce enough food to cover the population’s demand and the country is heavily reliant on imports: 90% of food in Iraq is now imported from neighbouring countries (Regional Ministry of Agriculture).

Although almost 70% of the population of Iraq lives in urban centres, two thirds of the food insecure live in the rural areas. The conflict has resulted in the destruction of rural areas, land rendered unsafe due to remnants of explosives, and the widespread looting of agricultural assets. Those in the farming industry are forced to resort to negative coping mechanisms to meet their families’ needs, including the selling of productive assets (livestock, equipment, supplies). Both host communities and internally displaced persons (IDPs) residing in rural areas are hugely affected by poverty and food insecurity. Women play an important role in the agricultural sector and, according to FAO, the percentage of women comprising the agricultural labour force increased from 42% in 2000 to 53% in 2015.

The agricultural sector in Iraq is not currently meeting its potential in terms of efficiency and productivity. However, the traditional importance of the sector and the existing skills and expertise of the population point to agricultural development as an opportunity to develop businesses, increase income generation and contribute to improved food security levels in the country.
In early March 2016, GOAL and Big Heart released a Market Assessment of the two predominant value chains in Ninewa and Dohuk Governorates, namely sheep (meat and dairy) and hens (eggs). The study focused on Debron and Darkar, in Zakho District, and Rabia, in Tel Afar District.

At the time of the Market Assessment, the most relevant value chains were identified on a regional level via a rigorous system of weighted scorecards that took multiple factors into consideration, including economy, social impact and legal and operational barriers. A score of 1 to 5 was attributed to each value chain, depending on the relevance of the factor to the value chain. Through this process, appropriate value chains, with most potential of triggering a change in the economic conditions of the population, were selected.

Due to the success of the assessment and the quality of the findings, GOAL and Big Heart wished to expand the scope of the study through looking at different geographic areas and investigating different value chains (as appropriate to each location).

Subsequently, in March 2016, GOAL and Big Heart conducted a market assessment in Al Shikhan District, Ninewa Governorate.

Within the District, the assessment concentrated on Shekhan town due to an identified need for livelihoods intervention, the significant presence of IDPs (almost 30% of Al Shikhan District IDPs live in Shekhan) and the strong background in sheep and eggs value chains. Whilst the rest of the district mainly concentrates on vegetable production, Shekhan (together with Baadre at a smaller scale) focuses on milk, dairy, meat and eggs production.

The assessment is based on primary information gathered through FDG and KII, triangulated with secondary data.
Time was a considerable constraint; however sufficient evidence was collected to appreciate key actors, linkages, and market dynamics. In addition, critical data, suitable to inform livelihoods programming in the assessed area, was gathered, providing confidence that this study is a fair representation of the current situation in Al Shikhan.

An additional constraint was the lack of current, reliable data relating to the value chains analysed. Recent Agricultural Census data is unavailable and years of conflict have resulted in a lack of consistent statistical data across the agricultural sector.

The limited scope of this study did not allow HH level corroboration of the information provided at the expert level for this particular assessment, and further investigation is needed to understand individual economic behaviours.
Al Shikhan is a small District in Ninewa Governorate, with a total population not exceeding hundred thousand people. Shekhan town, also known as Ain Sifni, is the District capital and is one of the major population centres of the Yazidis minority.

Between June and August 2014, Dohuk Governorate and North-East Ninewa Governorate saw an influx of significant numbers of IDPs coming from Sinjar and from other territories occupied by IS. A total of 2,365 IDP HHs (14,190 individuals) currently live in Shekhan town (IOM). Significantly, 28% of IDPs residing out of camps in Al Shikhan District, live in Shekhan.

IDPs come from within Ninewa Governorate, and more specifically from Sinjar, Bartella and Bashiqqa. People from Alqosh moved to Shekhan when the town was under attack, and some of them did not return to Alqosh after its liberation. The vast majority of the IDPs are members of the Yazidis tribe, and it is probable that the geography of relocation has been chosen on the basis of the ethnic/religious affiliation.

Al Shikhan is an agricultural District, with the majority of production concentrating on vegetables. Shekhan town followed a different development path, and concentrated on the production on livestock and associated value chains (meat, dairy and eggs). Before the war in 1991, the agricultural areas across Ninewa and Dohuk Governorates produced vegetables in large quantities, satisfying the domestic demand for fresh vegetables and exporting the excess, in particular to the states on the Arab Peninsula. After the war, most of the agricultural land was destroyed and the successive internal conflict and alteration of power in the region, led to the redistribution of land, divided in lots. Large scale farms were almost non-existent at this point, and production mainly concentrated on subsistence and local markets.
With 3.6 people in Ninewa Governorate, and meat, cheese and yogurt an important part of the daily diet, the significance of the sheep value chain, and the potential for businesses focusing on it, are evident.

**MARKET ENABLING ENVIRONMENT**

- Climate
- Agricultural subsidies
- Agricultural policies
- Insecurity/conflict

**PRODUCERS**

- Large scale farmer
- Small scale farmer

**Distributors**

**Dairy processor**

**Trader**  
* i.e. Butcher, local market trader, supermarket

**Consumer**

**KEY INFRASTRUCTURE INPUTS AND SUPPORT**

- Sheep
- Labour
- Land
- Feed
- Transport
- Extension services
- Credit
- Veterinary services
- Vaccinations
All businesses in Shekhan are small or medium scale businesses, relying on extensive or semi-intensive systems with livestock grazed on stubble grazing and crop residues and with supplemental feed used irregularly and mainly during the winter period.

Sheep production is seasonal and follows the calendar identified below.

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Sheep

In Shekhan, sheep farms are either small (few dozen sheep) or medium (up to one hundred heads) size. In Iraq, there are three main native sheep breeds: the Awassi, Kurdi and Hamdini. In Shekhan, the most diffused breeds are the Kurdi and the Hamdini, local breeds, more adapted to the climate of the North West areas. Farmers have an extensive knowledge of these breeds and the by-products that can be obtained.

The cost per sheep is approximately $150, depending on age and breed. The price per sheep is a significant barrier to entry for new farmers and is considered an obstacle for farmers who want to increase the size of their flock in order to scale up their business and productivity.

Feed

Sheep are principally fed barley, which is widely available on the market. Sheep feed is mainly a by-product of these crops; occasionally, the two production cycles connect and sheep are allowed to graze in the wheat and barley fields in the summer months, after the crops have been reaped. This favours both the sheep farmers, providing sustenance for their flocks, and the crop farmer, the sheep providing fertiliser for the field.

Supplemental feeding is sporadically used; although farmers understand that the use of feed positively enforces productivity, the high price and the limited availability are significant barriers to the daily use of this input.

The price of feed increased in the past few years. This is due to the conflict and subsequent destruction of agricultural land and the consequent impact on supply.

Labour

Due to the modest size of existing businesses, sheep production in Shekhan does not currently offer opportunity for salaried work, as it is being predominantly carried out at the HH level. Instead, the potential for income generation comes from the change in the scale of production.

The key informants interviewed noted that although women’s presence in this sector is still high, in particular in dairy production, new generations of women are well educated and seek professional jobs outside the HH. According to the informants, this trend started a few years ago and will result in lower participation of women in agriculture in Al Shikhan District. The trend is enforced by an increasing use of machines and technologies in the sector, which makes the agricultural sector less labour-intensive, particularly at the medium farm level. This finding contrasts with the trends identified in Zakho and Rabia and invites a deeper reflection on technologies and the potential new role of educated women in farms where a higher degree of technology is involved.
Vaccinations/Veterinary Services

Vaccinations and veterinary services are traditionally provided by the state and highly subsidised. Due to the economic downturn, however, the state cannot currently afford to provide regular vaccinations. Vaccinations are still offered by the state, but their frequency and timings are unpredictable. Farmers cannot rely on a fixed number of state provided vaccinations per year and although a few campaigns are always run, they are unpredictably timed throughout the year. As a consequence, the few farmers who can afford it seek services from private providers. Vaccinations services purchased from the private veterinary are pricy and their cost constitute a barrier to increased productivity.

Land/Enclosures

The average price to rent pasture land is approximately IQD 50,000 per hectare per year. The vast majority of host community members own their land. IDPs do not own land, but key informants report that it is not infrequent that land is rented out by the host community to IDPs. Social tensions are a reality in the community, exacerbated by pressure on services, including housing, and the changed demographics of the community. However, IDPs’ access to land, defined as the ability to rent land for income generating activities, does not seem to constitute a problem in this specific community.

Al-Shikhan is a district located in the mountains North/West of the country. Wolves populate these mountains and wolf attacks are frequent; therefore, the use of enclosures is essential. Enclosures are sized between 1.5 and 2 square metres per sheep and can cost $300 - $500 for small scale farms. They are considered a costly investment both for new businesses and for businesses seeking to increase their production through sheep re-stocking.
Shekhan has good access to local markets in the region; the surplus produced at HH level, or the produce of small/medium businesses, is principally sold on local markets (including local shops) and directly to the customer at the informal level. The closest big market is Dohuk, 58 Km North West of Shekhan. The marginal revenue realised by selling the produce on the bigger market does not justify the travel costs, for production on a small scale, which can be easily absorbed by the demand on the smaller, closer markets. This holds true for milk and dairy production, as well as meat production.

Local products can be recognised in the local shops due to the lack of clear marketing (packaging, labels).
The vast majority of local fresh milk sold on the local market in Shekhan is produced at the HH level. Milk costs between IQD 1,500 and 2,000 per litre; however, its price can reach IQD 3,000 at the end of the lambing season, when the production is scarce, and IQD 1,250 when lambing season is at its peak.

There is no processing unit in Shekhan, and all of the cheese and yogurt production happens at the HH level. Women typically are the producers of cheese and yogurt at the HH and small business level. The informants suggest that when the production happens on a larger scale, all of the family is involved in the dairy production, in order to meet the target quantity to sell.

The informants suggest that a business processing milk in Shekhan would help increase the production by providing a large, predictable buyer. The processing unit will buy the milk locally, thus incentivising the current producers to become more efficient and increase production. The dairy processor will sell on the larger market, not on the local one where the HH have their customers, therefore competition is expected to be minimal. The dairy production business could be set up as a cooperative, so that the high starting costs are shared between existing producers. In addition, by achieving a larger scale for production, the business can aim at earning higher income, selling on the large market by achieving high production standard certifications.

Cheese production is viable from an income generation perspective. Producing 1kg cheese, sold at IQD 12,500 on average-, requires approximately 4.5 litre of sheep milk, which can be bought on the market at IQD 8,000.

The great amount of imported food on the Iraqi market is the result of the current gap between demand and supply at the Regional/National level. Milk and milk by-products imported on the market are usually cheaper compared to the local produce. The reason is mainly imputable to the lower quality of the product, and when this is the case, people generally appear willing to pay a premium to buy the higher quality items; for example, the cost of powdered milk is a fraction of locally sourced fresh milk, but the latter is preferred. The demand for that type of milk is still much higher than the supply, and we believe that the demand for cheaper substitute would significantly drop if the local alternatives were available to the quantity desired. Another factor indicated by the informants is that in some countries, such as Iran, Turkey and Saudi Arabia, the cost of the inputs is lower, and therefore their products are more competitive.

A key reason for the market failure to satisfy the internal demand can be traced back to the Public Distribution System (PDS), a food security system which provided Iraqis with staple items. PDS relied on an economic system made of state owned factories, which sold all their produce to the government which was then distributing to the population. The production concentrated on a few raw items (wheat, barley, milk, etc.), transformed at the state level into by-products (cheese, yogurt, etc.) and distributed as part of the food basket, together with a few imported goods. Due to war, insecurity and the economic downturn, this system has become increasingly unsustainable with irregular and unpredictable distributions and procurement of food ration content outside of Iraq.
Local consumption of meat is significant, and increases during the picnic season (spring and early summer) and during the Eid celebrations. Both sheep and lamb meat is consumed. A lamb is ready for slaughter within 4 months of the lambing season; each lamb produces between 15kg and 20kg of meat and the cost of lamb meat per kg is higher than the cost of sheep meat, selling at an average price of 10,000 – 15,000 IQD/kg.

Lamb meat sold in a butcher shop in Shekhan before Newroz.

In Shekhan, meat is produced on a small scale, with the majority of the produce being sold on the local market. Farmers sell live animals to the local slaughterhouse, or directly to the butcher.

Imported meat is available on the market, imported from Turkey, Syria or Iran. The local informants also note that meat is often illegally imported from India and Brazil. Despite being cheaper, imported meat is not preferred to the local one, which is trusted to be fresher, free of diseases and halal certified. The higher consumption of imported meat is mainly due to reduced purchasing power and limited availability of the local product.
Farmers in Al Shikhan feel that the state could do more to protect the local businesses, creating a more favourable normative environment for developing and expanding businesses. Most of the people recognise that the government, both at central and regional level, does not have the resources appropriate to directly stimulate the economy with subsidies. Nevertheless, they would like to see more involvement from the state at the legislative level, through measures protecting the local economy. This includes establishing or increasing import taxes and a control of the illegally imported items – in particular meat from India and Brazil, smuggled across porous borders.

Al Shikhan is one of the agricultural districts in Northern Iraq and the importance of the sector has always been recognised by the state, which used to provide all type of services, from information regarding techniques, innovation and technologies, to insurance, to training. In Shekhan, a government office is still providing these services, although their availability and quality has been affected in recent times.

Key informants in Shekhan, including agricultural experts, are confident that the office has still an important role to play, despite the reduced scope of activities and services provided. From the HH surveys conducted by GOAL and Big Heart in Jan 2016 (Market Assessment, 2016) it emerged that although extension services are still available to some degree, HHs mainly rely on advice from friends and families. It can be concluded that HHs greatly felt the reduction of services, and only partially rely on the state-provided service.

Northern Iraq is characterised by a semi-tropical climate, with two cold winter months and extremely hot summers. Sheep productivity is recognised to be correlated to climatic extremes, and this is particularly true when use of shelter for the animals and supplemental feeding is limited.

In order to keep productivity high during the colder and hotter months, farms are expected to undertake a further investment in animal housing and feed. Small and medium sized farmers, however, do not always understand the correlation between climate and productivity, and can fail to attribute the right importance to this investment. Also, as previously mentioned, the cost of housing and feed is high, and some small businesses might be unable to afford it to re-start or scale up their businesses.
During prosperous times, the government in Iraq used to provide highly subsidised credit to farmers through State Agricultural Banks. Credit was invested to escalate productivity by increasing the size of the farm, improve efficiency and investing in technology and innovation. Because of the current troublesome state of the economy, State Agricultural Banks no longer provide financial services to farmers, and the demand for credit rests on the private sector. Due to government intervention, private banks were never competitive in providing services to small and medium scale farms, and always focused on larger enterprises. The result is that financial services are not adapted to the needs of the small farmer, and can only be accessed by the large businesses.

Access to credit for small producers is mainly reliant on informal systems. Due to the economic crisis, credit providers are currently affected by delayed repayments and are highly unlikely to offer credit to vulnerable individuals. Community-based savings groups, which used to be active before the crisis, have stopped working, and both host community and IDPs are accessing credit exclusively through family and friend networks (Oxfam, 2016).
Poultry production at HH level is traditional in rural areas of Iraq, and has historically provided meat and eggs at the subsistence level. Commercial production is relatively new, having been introduced in the 1960s and incentivised through a series of state policies in the 1990s. With the cut of subsidies, due to the war in 1991, the newly born firms could not stand the pressure of the market and went out of business in a relatively short time.
Production

In KRI, poultry production is either at the HH or at the commercial level. The difference between the two is significant. Small scale, HH production is characterised by low inputs and low production. The HH normally owns between 10 and 20 birds and they are normally fed scrap. At this level, animals provide subsistence to the family and are both used for meat and eggs. The only income potentially generated at this level derives from a few excess eggs, sold informally on the local market.

The only breed available on the local market is the local breed, more resistant to climate and diseases, but significantly less productive. Imported, more productive breed are available in Iraq, but are sold in bulk and therefore are accessible at the commercial level only. The cost per hen for the local breed is between $8 and $12; the international breed costs slightly more, ranging between $9 and $15. It is important to note that the cost per hen provided above refers to the price paid by the large business which, buying great quantities, benefits from economies of scale. It is assumed that, if the international breed was available on the market, small producers would probably pay a higher price per hen due to the smaller amount bought. Whilst the local breed produces approximately 50 eggs a year, the international breed, which can come from Iran, Turkey, or Europe, lay between 250 and 350 eggs a year. In addition to high productivity, the commercial level is also characterised by high inputs: these include supplemental feed and high infrastructural investments.

In Al-Shikhan district, commercial production is virtually non-existent; the businesses this assessment will focus on are small businesses, which show the potential for professionalization and a scale up in larger scale production. Current producers are mainly women, and any potential programmatic intervention should have a strong gender component.

Feed

The feed comes from feed mills in Dohuk or Erbil. Feed composition varies, but it is generally a mixture of wheat, barley and soybeans. Soybeans are not produced internally, but imported. The price of the feed depends on the availability of soybeans, which is irregular due to border closures. On average, price of feed fluctuates between $550 and $650 per tonne. According to local informants interviewed in Shekhan town, feed constitutes an important cost barrier for current HH producers, representing 60% of the running costs of businesses using it consistently.

If feed was used on a daily basis in the current HH production, this could effectively increase and reach levels which are appropriate for a small business aiming at selling its produce on the local market on a regular basis.
As wolves’ and foxes’ attacks are frequent, housing is essential to protect the animals. Attacks usually happen at night; although at the HH level hens are exclusively free-range, simple cages are used to keep the birds at night. These basic cages, made of wood and other available materials, are usually manufactured by farmers, with materials already available in the HH or buying supplies on the local market.

On the other hand, housing is one of the biggest initial costs for the commercial production. In fact, at this level, housing is a proper building protecting the animals from the elements. The housing will have temperature control systems, and provide waste and ammonia disposal, moisture control and ventilation. Housing is probably the most important barrier to start a commercial business, and one of the most important reasons provided for the lack of a commercial level production centre in Shekhan.
Eggs produced in Shekhan are almost exclusively sold on the local market, which not only is able to absorb the excess production, but demands higher quantities. Currently, the exceeding demand can only be met through imports. Imported eggs are generally considered to be of lower quality and people are sceptical of their freshness and production methods.

Local production is sold on the local market, either to small shops or directly to the customer, and although it lacks any form of branding or free-range labelling, locally produced eggs are recognised from their colour, brown, contrasting from the white eggs, generally imported from Turkey. It is generally agreed that 30 eggs can sell for an average of IQD 6,500. The experts agree that the demand in the local market is high enough to justify business cases for small enterprises to expand their production.
Current incentives to poultry production are currently nil and the subsidies provided in the past were not enough to make the domestic egg production competitive in comparison to the external producers.

People involved in poultry production would benefit from stricter rules regarding illegally imported goods and asking for taxation on imported eggs to protect local producers. These policies, combined with investments (either public or private), could increase the scale of domestic production significantly.

Vaccines for the poultry business are exclusively provided by the private sector and exclusively available to commercial producers.

Extension services can include information on how to keep the birds healthy, what the possible diseases are and what prevention and cures are available, as well as sharing information regarding innovation in the poultry sector. Currently, extension services are only available to large scale businesses; HHS mainly rely on family and friends for advice and this is identified as a possible cause of stunted production, responsible for outputs below efficiency levels. The Office of Extensions in Dohuk can also provide consultations and training courses, but HHS with limited connections in the city are less likely to be aware of these services or to seek advice through this channel.

Climate is directly correlated with productivity: not only does it impact the number of eggs laid, which sometime drops to zero due to the extremes, but also the health of the animal, sometimes causing its death.

Commercial producers rely on complex and costly equipment to contrast the effects of the climate. These are not viable to the small business and the most common copying mechanism is egg incubation and production of chicks during the summer months.
Findings and Recommendations

Sheep Value Chain Findings

Market environment

- Sheep farming is an indigenous multi-commodity business, with sheep raised for both meat and milk production; production of both commodities is seasonal.
- There is an existing market for the sheep products, but it is depressed due to poor local supply and imports of cheaper commodities.
- High initial investment costs make it difficult for existing sheep farmers to re-stock lost assets, buy inputs and services (feed, vaccinations, extension services, transport, cold storage etc.), and increase production.
- Animal feed is expensive and used on an irregular basis. Sub-optimal animal feeding reduces productivity.
- Local supply of both milk and meat is not able to meet demand for locally produced meat and dairy products in local markets.
- Imported meat, milk and dairy products are available in the local market. Local products struggle to compete on price.
- Sheep milk is in high demand due to its use in cheese and yogurt production.

Enabling environment

- Women make up the largest section of the agricultural labour force.
- At the HH and small business level, roles are traditionally divided along gender lines, with women in charge of dairy production and men responsible for the meat production cycle.
- Changing trends have been registered, including mechanisation of the agricultural tasks and increased number of years women spend within the formal education system.
- The regulation environment imported goods and regulators currently do not incentivise local production nor de-incentivise smuggled goods in the market, although new regulations have been announced.
- Host community farmers are land owners whilst IDPs rely on land for rent. Although tensions have not exploded in Shekhan, they are a constant threat given the high pressure on services and resources.
- Most producers do not have up to date information/knowledge, most get from family and friends.
- Agricultural extension services have been impacted by the conflict.
- Communities have little access to formal financial services, informal financial services are more common. As a consequence, farmers struggle to restock lost assets or grow their business.
Sheep Value Chain Recommendations

Market environment

- Develop a business case for sheep production with existing sheep farmers who see the opportunity to increase production for the local market.
- Support farmers in the initial scale up phase. This can include financial support to re-stock sheep and buy down the cost of some inputs and services.
- Develop a business case with existing providers of goods and services (i.e. feed, vaccinations, extension services, transport, cold storage, extension, information etc.), to increase access for small and medium sheep farms. This could include buying down some costs of inputs and services, but the focus should be on sustainable business models. Identification of existing businesses willing to take a risk will be key in leveraging early successes.
- Identify existing financial service providers and link sheep farmers to their products where appropriate.
- Stimulate existing meat and milk value addition businesses to increase their demand for raw commodities. This can include facilitating the development of a cooperative business to scale up production of both raw milk and by-products and increase economic returns, while at the same time sharing initial costs and risks among members.
- Identify and work with existing sheep value chain input suppliers (e.g. feed, vaccines and information), and service providers (e.g. extension, transport, cold storage), to increase demand for inputs and services, that support increased production. Initiatives should target goods and service providers willing to embed essential services e.g. extension services. Programming could initially buy down some of the costs, but initiatives should be based on more sustainable business models.

Enabling environment

- Incentivise initiatives that support social cohesion between host and IDP communities and build social capital.
- Reinforce women’s roles in the agricultural sector and work to increase their decision making in household and business financial decision making e.g. farming as a family business.
- Further investigate the potential new and enhanced role of educated women within the agricultural sector.
- Liaise with local government and reinforce their strategy and intended intervention to provide a secure environment for sheep farmers and to reduce access to smuggled goods in the market thorough policy and taxation rules.
- Prioritise joint initiatives with suppliers of goods and services who understand that developing relationships with their bottom of the pyramid producers makes good business sense and support them to embed information and extension services into their business model.
- Improve access to credit through links with formal financial services where possible or consider the possibility of (re)establishing informal networks similar to community saving and loan groups.
Hen-Eggs Value Chain Findings

Market environment

- Household production of hens and eggs is commonly undertaken by women and children for household food security, with selling of available surplus. There is very little commercial production and most hens are indigenous and free range at household level.
- Limited knowledge of feeding practices, and the high cost of supplemental feed, lead to sub-optimal utilisation of fee, negatively affecting productivity.
- Egg production at HH level requires few inputs. At the commercial level various and costly inputs are required. Knowledge of use, cost, quality and availability of inputs are constraints to increased production.
- Locally, egg producers use indigenous breeds, which are more resilient to disease, but less productive than commercial breeds. Findings suggest that only local breeds are available in the market.
- Feed producers rely heavily on imported commodities and the supply chain is often interrupted by border closures causing price fluctuations.
- Lack of access to vaccines and veterinary services at the HH level is a constraint to reducing disease and increasing production.
- There is local market demand for locally produced eggs, for which the market will pay a premium.
- The local supply does not currently meet the demand.
- Most household produced eggs are sold in the informal market.

Enabling environment

- Extension services are limited with most egg producers getting their knowledge from friends and family.
- Due to current lack of tariffs on imports and regulation of smuggled produce, legally and illegally imported good are impacting the local egg market due to their low cost.
Market environment

- Work with existing egg producers (mostly women), to demonstrate a business case for more market facing egg production.
- Work with local feed producers to find alternatives to imported commodities for commercial feed and elaborate and affirm a viable business model for same.
- Link networks of small scale egg producers for aggregation, access to inputs at scale and access to commercial buyers/retailers e.g. supermarkets.
- Increase production to meet market demand.
- Liaise with local government to encourage the recently announced plans of increasing tariffs on imported eggs and prevent smuggled produce reaching the market.

Enabling environment

- Identify and work with existing providers of chicken vaccination services and link to egg producers.
- Work with existing input and service providers to embed extension services within their business model.
- Reinforce women’s new roles in the agricultural sector through advocacy and work to increase their decision making in household and business financial decision making e.g. farming as a family business.
- Improve access to credit through links with formal financial services where possible or consider the possibility of (re)establishing informal networks similar to community saving and loan groups.
## Annexes

### Annex 1: List of people interviewed and participating to the FDG exercise.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Title</th>
<th>Location</th>
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<tbody>
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<td>Dr. Vahel Jaladat</td>
<td>University of Dohuk</td>
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<tr>
<td>Mr. Lazgen</td>
<td>Extension Office Shekhan</td>
<td>Extension Officer Shekhan</td>
<td>Shekhan</td>
</tr>
<tr>
<td>Mr. Merkhan Mizuri</td>
<td>University of Dohuk</td>
<td>Animal Production Expert</td>
<td>Dohuk</td>
</tr>
<tr>
<td>Mardan Ahmed</td>
<td></td>
<td>Farmer (medium scale)</td>
<td>Shekhan</td>
</tr>
<tr>
<td>Abdulaziz Shfiq</td>
<td></td>
<td>Agricultural Market expert</td>
<td>Zakho</td>
</tr>
<tr>
<td>Deshal Dosky</td>
<td>Animal Production Office</td>
<td>Animal Production Expert</td>
<td>Dohuk</td>
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<tr>
<td>Ghafar Dosky</td>
<td></td>
<td>Livestock trader and farmer</td>
<td>Dohuk</td>
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<tr>
<td>Jaladet Mustafa</td>
<td></td>
<td>Agricultural Market expert</td>
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<tr>
<td>Dr Kamal Noman</td>
<td>Agriculture College</td>
<td>Agricultural expert</td>
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</tr>
<tr>
<td>Dr Yosif Ali</td>
<td>Agriculture College</td>
<td>Agricultural expert</td>
<td>Dohuk</td>
</tr>
<tr>
<td>Mohammad Barwary</td>
<td></td>
<td>Expert in agricultural extensions</td>
<td>Dohuk</td>
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