



CultivAid  
Knowledge based Development

# Bete Israel of North Shewa Assessment Report

July 2019



**North Shewa Assessment Report:** Project development in agriculture, artisan crafts and community organizations in the North Shewa Zone of Amahra, centered in the city of Debre Brehan.

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## Executive Summary

The following document is an assessment report for North Shewa, based on a desk review and two learning journeys with Israeli experts to the region. The report provides recommendations for the initial phase of establishing a development program in the region.

The Zone of North Shewa in the Amhara region of Ethiopia has been proposed for establishing a community-based Development program focusing on agricultural and artisan craft. The communities of the area have ancestral roots related to Bete Israel communities of Gondar and are related to the Jewish community of Kechene in Addis. The Bete Israel of North Shea are a marginalized populations who face discrimination based on their history and religious differences. This document provides an overview of the program area and insights into the Gedams (holy place used for prayer). Furthermore, it proposes the establishment of a development program aimed to improve the social and economic conditions of the Bete Israel Community of North Shewa that will be leveraged as a mechanism for region-wide development initiatives. The activities in the program will aim to reidentify the Bete Israel community of North Shewa and strengthen their historical ties while improving their economic and social standing.

The program proposes to establish several projects in the realms of agriculture, water, artisanship crafts, education and community organization that will develop regional partnerships with multiple stakeholders. The program's primary stakeholders are the Bete Israel communities of the Gedams (religious centers), Debre Brehan and Kechene. The program will seek to develop multiple stakeholders' partnerships in the region.

The program's establishment will require additional data collection, with precise information of each Gedam that will be included in the program and the Bete Israel communities. The community projects will focus on establishing a community center in Debre Brehan and introducing relief technologies through the Gedams Agricultural projects will focus on fruit tree development, vegetable production, livestock program and capacity building. The Crafts projects will focus on introducing new technologies, improving production and market linkages while establishing Israel-Ethiopia partnerships in design. The document provides recommendations on activities, partnerships and a rough timeframe for initiation. The implementation of the program requires specific staff, which is detailed in the document as well.

The connection to Jewish ancestry in Ethiopia is important for international Jewry, for Ethiopian Jews in Israel and for the establishment of a strong Jewish community in Ethiopia. The history of Ethiopia's Jews and the connection between these communities and Israel is important for establishing strong linkages between the countries and towards understanding our shared



history. The program established serves as a mechanism for promoting and developing Jewish led professional development.

## Introduction

North Shewa is one of 10 Zones in the Ethiopian Amhara Region. The zone takes its name from the former kingdom or province of Shewa. The region's history stretches back to the kingdom of Aksum and to becoming the center for regional kings from the mid-10th century to the end of the 14th century. The area was conquered by Muslim forces from the state of Adal to the east and in the 1800's the kingdom of Shewa regained prominence under the leadership of Melenik II who established the borders of modern day Ethiopia.

The Zone of Semien Shewa in Amhara is bordered on the south and the west by the Oromia Region, on the north by Debub Wollo and on the east by the Afar Region. Towns and cities in North Shewa include Ankober, Debre Berhan, and Shewa Robit. The population of the zone is now estimated between 3-5 million people. The administrative capital of the zone is Debre Brehan, located in Bossena Woreda, is proposed to be the central and initial site of implementation.

Debre Brehan is 120 kilometers north east of Addis Ababa on a paved highway to Dessie. Debre Brehan is located at 9.680 deg latitude, 39.533 deg longitude, and 2,783 m elevation. It was an early capital of Ethiopia, as part of the Shewa Kingdom. The capital was afterwards moved to Ankober and Angolalla. Today, the city is the administrative center of the North Shewa Zone and thus a center of the zonal decision making. Based on the 2007 national census conducted by the Central Statistical Agency of Ethiopia (CSA), this town has a total population of 65,231, with current estimates over 100,000. The Debre Brehan Municipality estimates a total population of 160,000. The city is located at an average of 2750 meter above sea level and classified as Dega-agro-climatic zone. The average temperatures range between 6.5 – 20<sup>0</sup> C and an average annual rainfall close to 1000 mm/yr.

In the North Shewa Zone, a unique group of inhabitants are spread out throughout the area. The community of Bete Israel of North Shewa, known also as Bete Avraham or Bal-Ej are descendants of the Jewish communities that originated from Gondar. The Jewish communities were pressured to adopt the Christian religion, which forced the practice of Judaism to be hidden and secretive. The Bete Israel Community of North Shewa are estimated to include over 150,000 members who have a religious network connected to religious centers dispersed in the zone known as Gedams. The Gedam operates similar to a monastery with an Aba heading the center and elders of the communities spending the last part of their life living in the Gedam with devotion to their



spirituality. The communities in North Shewa are linked to the Jewish community in Kechene, Addis Ababa.

The members of Bete Israel of North Shewa are farmers and skilled craftsmen, producing a great part of Ethiopia's traditional metal works, textiles and pottery. The Bete Israel community has a large population in Debre Brehan as well as in northern Addis Ababa, in the sub-city of Kechene where a synagogue and religious organization has been established with the aim of restoring identity and the practice of Judaism.

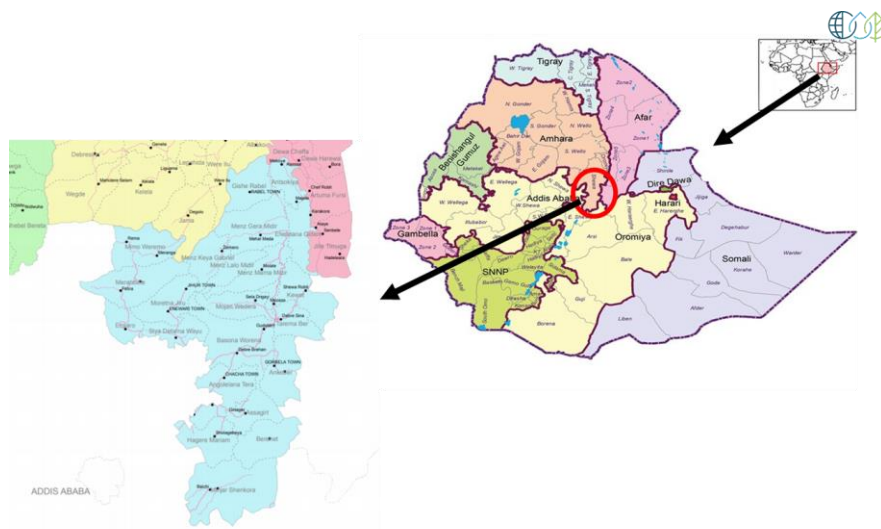


Figure 1: The North Shewa Zone in the Amhara Region of Ethiopia

The following report and recommendations are based on a desk review and two learning journeys with Israeli experts to the region. The report and recommendation utilize the rich experience and Knowledge of CultivAid, an Israeli nonprofit organization, specializing in capacity building and knowledge and technology transfer initiatives with a focus on the agricultural and water sectors. The organization focuses on the construction of local knowledge infrastructures that constitute a mechanism for the self-development of the population, in order to create food security and economic stability.

The recommendations are based on the knowledge and experience of a team of experts which include the following teams and members; Community Dr. Shabtay and Fekadu Gedamo; Crafts, Alon Shoavi and Yaniv Gluzman; Agriculture, Arie Peleg and Ben Cohen. The coordination and



management of the visit along with the document preparation was coordinated by CutlivAid's executive director, Tomer Malchi. The report provides recommendations for the initial phase of establishing a development program in the region based on visits, discussion, research and experience.

### Pathway of Development

Development has many forms and definitions and likewise the proposed program will establish various forms, mechanisms and operate in different professionals' fields with the ultimate goal of improving the livelihoods and economic conditions of the people living in the area. The program proposes to develop initiatives in the realms of agriculture, WASH, crafts and artisanship, health, education, community development, cooperative establishment and more. The program will work together with the communities of the Gedams, Debre Brehan and Kechene. Furthermore, the program will collaborate with multiple stakeholders in the region, such as Debre Brehan University, government agencies, local NGOs and different organizations who have like-minded goals.

### Fields of development

#### Primary Activities:

**Community Development** is a process where community members come together to develop solutions to common problems. Community development seeks to improve quality of life based on mutual benefit and shared responsibility among community members. Through the process community capacity is built. Community can be thought of in geographic terms (city, woreda, zone, region, country) or in terms of cultural heritage, language, and beliefs or shared interests (community of interest). The team will seek to define the different communities of interest within the Bal Ej community and the associated intervention per community.

**Gedams** – 15 Gedams are spread out throughout the Siemen Shewa region in Amhara and Oromia. 13 Gedams are in Amhara and 2 in Oromia. The Gedams operate as types of monasteries that house elderly and orphans. The interventions will aim to support the Gedams by empowering the Gedams and providing technologies that could improve living conditions at the sites. The Gedams are the back bone of the community. Their survival promises strengthening of the community and local identity.

**Agriculture** - The Agricultural Sector is the backbone and foundation of Ethiopian society and the national economy. Agriculture accounts for almost 50% of the nation's Gross Domestic Product and over 80 percent of exports. Furthermore, over 80% of the labor force is employed in agriculture. Agriculture's central role in the economy, combined with its importance for food



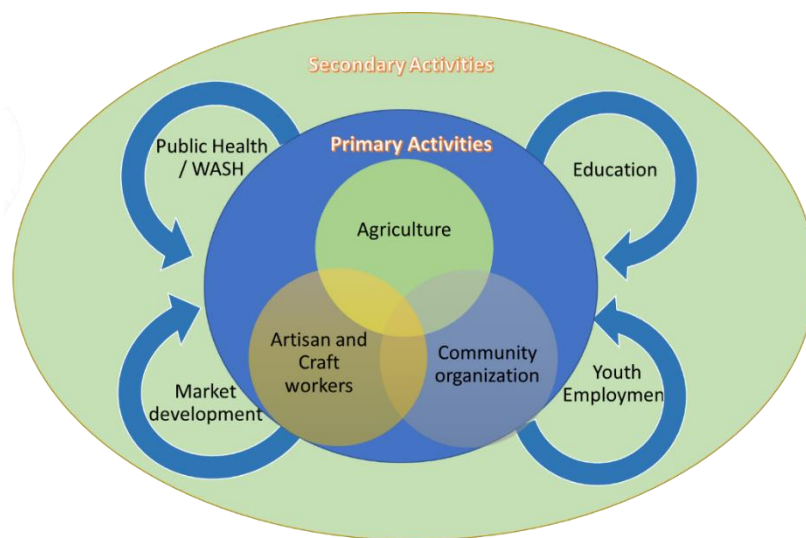


security and nutrition makes the sector a prominent focus of development initiatives. Agricultural interventions must be interlinked with climate change, nutrition, youth employment, gender, education, market development and an implemented through a coordinated effort of multi-sectoral agents that together will be able to create a paradigm shift in the overall well-being of society.

**Artisan Crafts** - Bal Ej literally means Craftsmen in Amharic. In Kechene, Debre Brehan and in Fiche a variety of Artisan crafts are produced by the Bal-Ej Community. The team will focus on understanding the current production methods of blacksmiths, weavers, pottery makers and leatherworkers. The crafts makers mostly work in concentrated “industrial” areas where each person works in individual workshops. The technology being used for the different craft production have different negative health implications due to inhalation of smoke and gas.

The marketing of the products needs to be understood and interventions need to increase the revenue of crafters. Currently, products are sold to dealers who sell to the market often at 30-50% mark-up. The Ethiopian domestic market has a big demand for the traditional crafts and with proper branding and marketing systems the products could be sold with greater income that could support the wider community. Products could also be developed for export-oriented production.

The program aims to establish strong connections between the Bete Israeli community of North Shewa Israel and Jewish communities around the world. The relationship will aim to strengthen the Jewish identity of the communities in Debre Brehan and to establish social and economic linkages.



## Profile of Team

**Tomer Malchi** is the Executive Director and co-founder of CultivAid. He holds a B. Sc in Industrial Labor relations from Cornell University and a B.Sc. and M.Sc. in Soil and water science from the faculty of Agriculture at the Hebrew University of Jerusalem and currently completing his PHD at the faculty. Tomer has been working in the field of International development for the past 8 years with a focus on knowledge-based development in the agriculture, nutrition and water sectors. For the past 20 years, Tomer has been involved in a spectrum of volunteer and activism work ranging from community organizing to union leadership, environmental activism and international development.

**Ben Cohen** is the Chief Technical officer and co-founder of CultivAid. Ben holds a B.Sc., Agr. in Soil and water science from the faculty of Agriculture at the Hebrew University of Jerusalem and a M.Sc., in Desalination and Irrigation from the University of Ben Gurion in the Negev. Ben has extensive experience in agriculture and water management, working and managing agricultural projects for the past 15 years. Ben has been working in the field of development as an agronomist and water expert for the past 6 years, undertaking projects in Ethiopia, Uganda and Israel. As CultivAid's technical manager and Ben has vast expertise in irrigation & water systems, water` treatment, plant nutrition, soil physics and soil chemistry.

**Dr. Malka Shabtay** is an applied anthropologist, working for over thirty-seven years with the Ethiopian Jewish Community in Israel. She has taught at various academic institutes and conducts research, consultancy and training for various organizations. She has published ten books and dozens of articles. Currently she is working at the ministry of education, at the department for children and youth at risk. For the last ten years she has been involved with diverse Jewish communities, especially the Lemba of Zimbabwe, the abayudayaha in Uganda, the hidden Jews of Ethiopia, and the Beni Annussim in Brazil.

**Fekado Gadamo**, is an expert in organization and community development. He has rich experience as the former CEO of "Tene Briut"- A Non-Profit Community Outreach Program of Health Promotion for the Ethiopian-Israeli Community. Today he works as a manager at Enosh - the Israeli Mental Health Association. Fekado originates from Ethiopia, at the age of 12 (1985) he arrived in Israel via Sudan. He has a B.S. in Social Work from the University of Haifa and a M.Sc. in management of nonprofit organizations at the Hebrew University of Jerusalem.

**Arie Peleg** is the chief agronomist for Beresheet, the largest fruit growing company in Israel. He specializes in all aspects of fruit trees cultivation with an emphasis on deciduous trees. He has extensive experience in variety selection, irrigation, pruning and training, harvesting and post- harvest treatments etc. Arie holds a B.Sc. in agriculture from the Hebrew University. He has international experience as consultant in Australia, New Zealand, South Africa, India, Holland, UK and more

**Alon Shoavi** is the owner of Melon Design Studio, a well-established Israeli firm of product design and development. The studio has a record of over 500 world selling products and a customer base of over 150 companies, from entrepreneurs and startups in their early steps to large scale international companies. Alon is a graduate and a former lecturer of the Bezalel Academy of Art and Design in Jerusalem, and a



member of the Israel Community of designers with over 18 years of experience in designing products. He is also an active mentor in 8200 EISP Accelerator, Tech for good Accelerator and the "Junction" in TLV.

**Yaniv Glozman** is an industrial Designer with a degree from Bezalel Academy of Art and Design in Jerusalem. He is currently pursuing an MA in Philosophy. He is the intellectual property director for Bezalel and teaches there "Introduction to metal technologies" and "Technology for Designers" in The Industrial Design department.



## Part I: Community Development

The Bete Israel community of Kechene and North Shewa, also known as Bal Ej, Tebiban, Morete, is a community with its origin related to the Bete Israel or Ethiopian Jewish communities from Gondar and Tigray. The Bete Israel of North Shewa has a long history in the region which has resulted in current conditions of isolation, social and economic persecution and marginalization. Furthermore, these conditions have resulted in the communities being disconnected and separated from the general population of the Ethiopian Jewish community which has been recognized as Jewish by the State of Israel and thus the overwhelming majority have moved to Israel (made Aliyah) during the last 40 years.

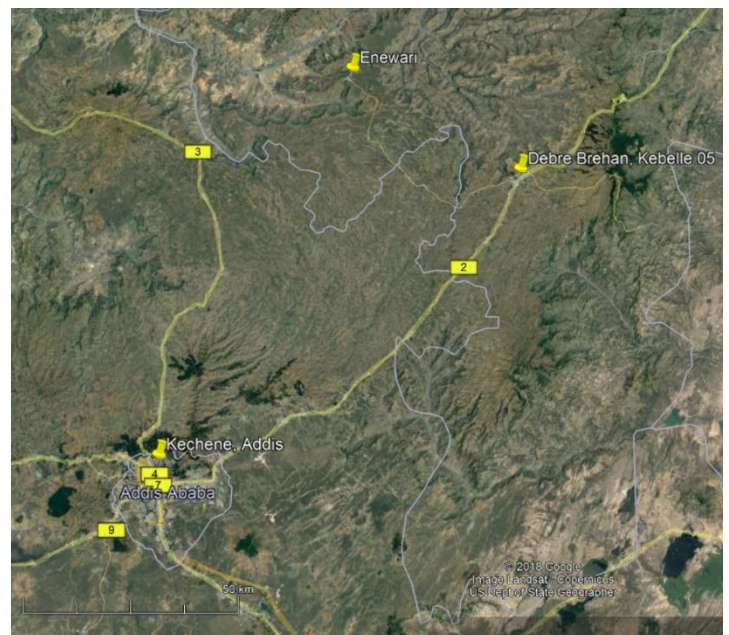
A vast majority of the community, especially outside of Addis Ababa live Christian lives, including wearing cross and decorating their homes and workplace with pictures of Jesus. Although many of attempted to integrate into the Christian communities, they are identified as a district group and neighbors, especially in rural settings see them as “others” who are not accepted into the general society.

The learning journey to the region included a community focused team made up of Dr. Malka Shabtay, an applied anthropologist, Fekadu Gedamo, an Ethiopian Israeli community social worker, together with Belayneh Tazebku and Michael Moges, leaders of the Kechene community. The following report on the community is based on the assessment, conclusion and perspective of Dr. Shabtay and Fekadu Gedamo.

### The Bete Israel community

**The Kechene community** – Kechene is a district on the north edge of Addis Ababa. The community is made both on the traditional arts and crafts workers as well as the young generation who is educated, working as professionals in a wide array of disciplines. The community has a synagogue with 3 Chazanim. They observe Shabbat and Jewish holidays based on customs adopted in recent times as well as practice such as songs, traditions and prayers, inherited from their forefathers.

**The Debre Brehan community:** Debre Brehan is located 3 hours north of Addis. This community is mostly concentrated in a specific district of Debre Brehan, Kebele 05. According to a recent baseline survey of the city, the community is characterized as having lower living standards and being overall poorer than surrounding neighborhoods. Children in the community go to school in shifts so they can help their parents work, some do not attend school because of fear from persecution. The community is not organized, while other neighborhoods do have kebele



based community organization. Most of the people have crosses and present themselves as Christians from Jewish origin and identity.

**The community in Moret-Enewari**, Moret-Enewari is located his community is organized and lives together in their own compound mainly for protection, and for dealing with their art and crafts products in the market. There is not enough knowledge on the community and their religious practices, but they are connected to the Gedams nearby and visit them several times a year providing financially support to them.

### The Gedams

There are altogether 15 active Gedams. 9 of them are in the surroundings of Debre Brehan: Gisso, Janbaria, 2 Yelima, Yesha, Liga, Bulga, Mentiq, Keyafer, 2 others are in the Oromia region: Dere, Mugar (which is a cave) and 3 more are in the remote woreda of Merhabete, Quantar, Rimga, Gret. The administrative center of Merhabete is Alem Ketema, a 4-hour drive from Debre Brehan. The access to the Gedams is difficult, with current visits to three of the Gedams, Mentiq, Janbaria and Gisso, some require a full day to reach the Gedam.

The delegation met with Abbas from Gisso and Jambaria in Debre Brehan. The Abas we met described that they suffer anger and hate because they did not approve an agreement with the church like other Gedams. The Abas described that they suffer double marginalization and alienation both from their Christian neighbors as well as from other Gedams members who chose to join the church and avoid the pressures they had being identified as “others”.

Each Gedam has few its own fields and animals to supply their needs. Children (orphans adopted by the Gedam) do most of the daily work to support the Gedams and take care by the elderly. They live in the Gedams until they are 18 and then move to the cities and become part of the community, working in the traditional arts and crafts. Because these children to not attend school they are illiterates and their chances for better life conditions are limited.

During the second visit a meeting with Aba Minas from Janbaria and Aba Firde from Giso in Debre Brehan provided an opportunity to meet and become acquainted with the Abas. In two separate meetings discussions focused on what they would want the program to focus on. There was an emphasis on development and income generating activities. Aba Minas specifically requested agricultural support, energy and educational materials. Aba Minas reiterated his request from the first assessment that activity in Debre Brehan would strengthen the connection to the greater community. He suggested a house be established that could be used for housing for people seeking treatment or for visitors. He also suggested establishing a Gedam in Debre Brehan.

### Mentiq Synagogue and Aba Kidane

The monetary of Aba Kidane is a home for around 80 elderly who work and live in the complex. Around the Gedam are around 5,000 inhabitants households. Community members come to the complex 3 times a year for celebrations. During these celebrations people provide donations to the Gedam. The

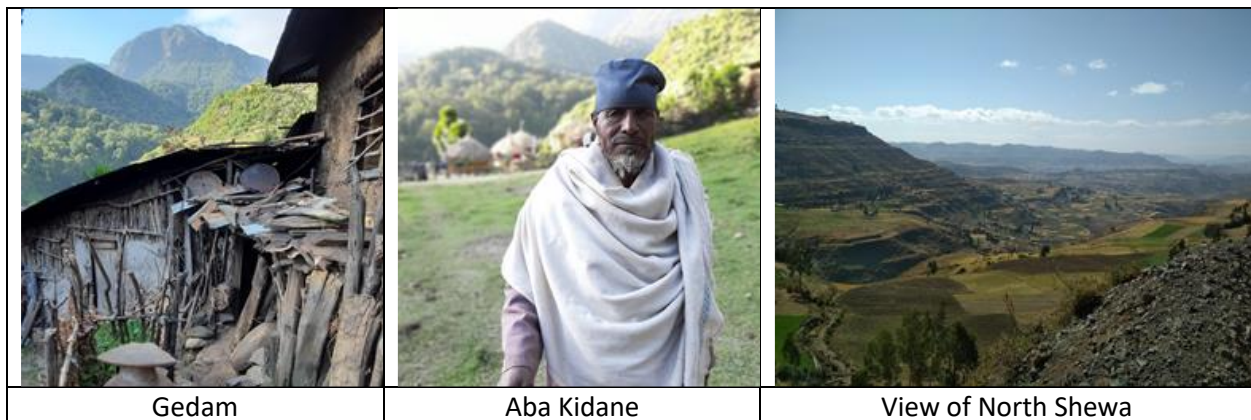


Gedam is also a home for orphans and thus far over 2,000 orphans have been raised under Aba Kidane. Currently there are 5 children in the Gedam.

Everyone has a right to join the Gedam and become a member. The complex has housing for men and women separately. There is an isolation house for women during menstruation. There is a prayer building that has a double wall and inside in the middle a large post. The post symbolized Jerusalem and since the people have lost their way to it than it points up.

The Gedam was formerly supported by the government under the Derg regime. After the Derg regime there was no longer wide government support for the Gedam and today they just get food aid from the government.

The main source of income for the Gedam is agriculture, crafts and a flower mill. The Gedam has around 0.3 hectare of land. There is no access to seeds. The Gedam mostly grows cereals and does not grow vegetables. There is a school nearby that is mixed of Bal Ej and non-Bal Ej children.



The Mentiq Gedam was visited by the husband of former Israeli Ambassador Cherkalem and together with Engineer Terefe (A well-known Engineer and well-respected person in the area) they initiated a flower mill to be installed at the Gedam by organizing first ladies of the Ambassadors' wife. The flower mill was expected to increase the revenues of the community. Currently there is an issue of cash flow and the mill's operating expense and especially the purchase and transport of fuel results in a low profit of the mill and thus it is not used often. There is also a problem in the equipment of the mill and needs repair.

**Jambaria Gedam, Abba Minas**

The Gedam of Jambaria is located about 1-hour drive from the main intersection of Tarmaber and an additional 1 hour walk from the main road. The site is located at the foot of the mountain adjacent to the river. The Gedam houses around 50 elders and 5 orphans. According to Abba Minas the site is over 500 years old. The surrounding community is estimated to be 50 households with 5-6 people per household.



Abba Minas is well known for various activities related to education. In 2012 he had a grant from USAID provided. The site also has some engineering work including a water tank. The site has 2-3 hectares of land, a milking cow (dry) with 3 calves. In general, the Gedam was similar to the Mentiq Gedam in terms of structure and organization. The Gedam also produces pottery.

Abba Minas asked for support in providing educational material to the community and asked that it be done through the Gedam. There is also no direct road to the Gedam and arriving to the site is only by a foot path.

Abba Minas also suggested that activity be in Debre Brehan that could strengthen the connection to the greater Bal-Ej community. He suggested a house be established that could be used for housing for people seeking treatment or for visitors. He also suggested establishing a Gedam in Debre Brehan.



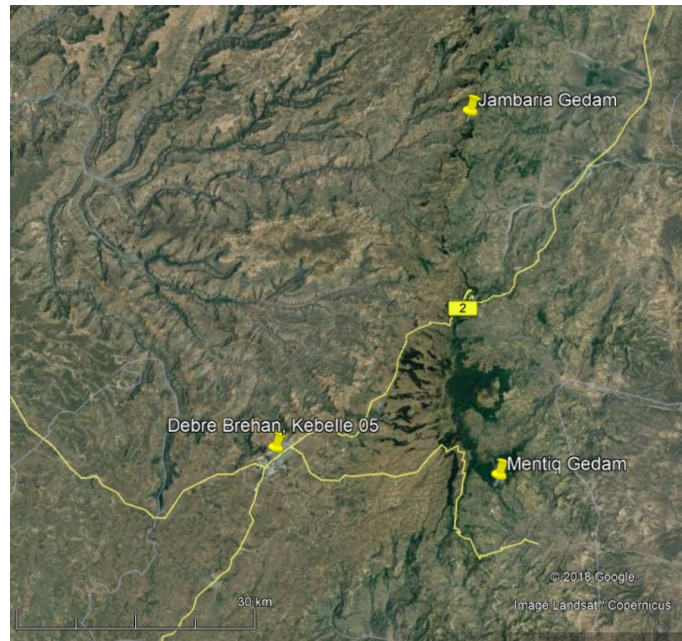


Figure 2 Map of Debre Brehan region and location of 2 Gedams visited

### Meetings and visits during the second assessment by the community team

- 1) **Community meeting in Debre Brehan** – A meeting was conducted with representatives of the community to present the issues and areas of intervention that are being developed. A request was made to have the community organize themselves in order to establish a local partner. The community shared stories of their sufferings and struggles with both neighbors and authorities. There is a wiliness and desire by the community use the internet and other technologies to learn more skills, as well as Judaism.
- 2) **Meeting with the two abas** – A meeting was held with Aba Minas from Janbaria and Aba Firde from Giso who told described their daily life and struggles at the Gedams. The Abas described the orphans who have no opportunities for education. The community has many issues including lack of food (eats once a day), and emphasized their needs for survival, especially for clean water, oxen to work their fields, transportation from their remote living areas and the distance to nearby schools, medical services, etc.
- 3) **Visit workshops in Debre Brehan** – The delegation visited the area where the community works, focusing on pottery and blacksmiths. The site had children working some of who study half day and others do not go to school at all. The work conditions are difficult and seem to be similar to working conditions of medieval Europe.
- 4) **Visit to a compound that can be rented to build a community center and a synagogue** – The delegation visited a compound that belongs to one of the community members. The proposed idea is to build a synagogue, a learning center, rooms to host Abbas and members from the





Gedams. The building could also have rooms to host volunteers. There was discussion on how best to operate such a compound and the possibility of it being a branch for the legal synagogue in have in Kechene. There is a need to negotiate with the owner the costs and conditions to rent the place for the building of the community center in short time.

- 5) **Visited in houses and talking with people** – The delegation visited few houses, saw basic living conditions, met a very old woman who lived few years in the a Gedam but returned to live in Debre Brehan. The delegation talked with non-Jewish neighbors who described how they protect themselves from the evil eye of the Bal Ej who become Hyenas and eat their children. All house has the presence of Christian symbols in the houses.
- 6) **Elementary local school** – The delegation visited a school which is part of teacher’s college. The visit included a few classes and a meeting with the school director, who explained the model of half day learning and half day working with their families and other challenges. The school is capable to accept children from the community and could be a partner for volunteers who could come to work with the community in Debre Brehan.
- 7) **Visit the community near fiche** – The delegation visited a community working with leather production, under old working methods. A lack of time prevented a full discussion with the community, but they are organized and have a committee together with a second community in fiche, which is nearby. One of the community leaders own a hotel.
- 8) **University of Debre Brehan**, the delegation visited Debre Brehan university to get to know the possibilities for cooperation in agriculture. During the visit the university expressed interest in working together with the community on community projects, especially empowerment of women. There are currently projects being implemented with women in kebele 05 and there are additional opportunities that need to be created with the community. The university expressed strong interest in collaboration.
- 9) **Deputy administrator for the North Shewa region**, the delegation met with the deputy administrator and presented intentions emphasizing a focus on the community. The deputy administrator was knowledgeable about the community, the Gedams and their situation. He expressed interest and satisfaction to develop more cooperation for the region with focus on the community.
- 10) **Shabbat services on Friday in the synagogue in Kechene** – The delegation attended Friday service at the Synagogue in Kechene. There were two chazzanim – Tefera and Michael who prayed in Hebrew with Amharic. Following the prayer, a community meal was served.
- 11) **Goodbye party and meeting at Mesfin's house** – The last night of the delegation was the end of Pesach and the delegation gathered together with Mesfin, his family and community members to break Pesach in a meal, singing and praying. The evening had a campfire and discussions on experiences and ideas for activities with the community.



### Important insights and highlights

- 1) The community lives under poor conditions and suffer a great deal of persecution and marginalization both from their neighbors as well as from authorities who do not give them their basic rights.
- 2) Judaism is not yet recognized as legitimate religion in Ethiopia, which creates a lot of pressures for the community to give up their distinct identity
- 3) Buda – the common believes on the "evil eye" and the transformation to hyenas of members of this community, is the major source of suffering, violence and not receiving protection and rights from the state.
- 4) The actual practices as Jews is difficult since most of them are now in the state of a mixed form between Christianity and Jewish identity as developed under its hidden forms.
- 5) Evidences of Jewish practices and internal codes of the community were collected as well as sources from academic research on the history of the Jews in Ethiopia.
- 6) Some of the communities are more organized than the others. But they live in separate villages, they identify their members, they keep the boundaries of the community, they support their elderly and orphans and religious leaders in the Gedams. They share common history and internal codes.

### Professional Recommendations

- 1) **A community center in Debre Brehan.** A center is to be established as a branch for the legal synagogue of Kechene. The compound will be rented from a member of the community at a minimum possible rent for six to 10 years. The compound will include: a synagogue, a learning facilities and rooms for Gedam members to stay. As well as rooms to host volunteers. Most of the work will be led and done the community organization developed.  
The community center will empower the community and change their status within the general society. The center will support and ensure participation of the community in other projects in any fields, such as: agriculture, workshops, education, health, Judaism etc. The center will provide infrastructure, a physical and social space for the different programs to be established with the community and regionally.
- 2) The community center will need support in paying the rent. A proposal with all details will be prepared and presented for **resource allocation**.
- 3) It is recommended to create a formal forum to discuss and lead all our interventions, together with our partners in the USA, Ethiopia and Israel.
- 4) There is a need for **professional guidance** and supervision by an Israeli expert on community development.
- 5) The relationship between the community in Kechene and Debre Brehan needs to be properly defined. There is infighting between the community in Kechene and this needs to be straightened out to provide easier implementation.



- 6) **Education** is an important aspect of development. A clear recommendation and program development need to be established which can support the orphans of the Gedams, improve educational opportunities in Debre Brehan and support the capacity building of the region. Education was not a priority in the initial assessment but following specific site visits it recommended for follow up and development of educational interventions as well.
- 7) The **Gedams require developmental support** to improve the living conditions. The implementation of technologies at the Gedam can serve as a model of demonstration and support wider development initiatives.
- 8) It is also to organize an Israeli team that will be leading and supporting diverse issues and aspects of our work on behalf of this community, such as public awareness, media coverage, government challenges, the Ethiopian community in Israel, and organization of the volunteers work from Israel to the community



## Part II: Agricultural Development

The Agricultural Sector is the backbone and foundation of Ethiopian society and the national economy. Agriculture accounts for almost 50% of the nation's Gross Domestic Product and over 80 percent of exports. Furthermore, over 80% of the labor force is employed in agriculture. Agriculture's central role in the economy, combined with its importance for food security and nutrition makes the sector a prominent focus of socio-economic and health-based development initiatives. Agricultural interventions must be interlinked with climate change, nutrition, youth employment, gender, education, market development and implemented through a coordinated effort of multi-sectoral agents that together will be able to create a paradigm shift in the overall well-being of society.

The visit in April of 2019 was conducted following a desk review and an initial visit to the North Shewa zone by CultivAid in December of 2018. The purpose of the visit was to study the agricultural potential of the region. The visit aimed to conduct numerous field visits focused on the feasibility of growing deciduous fruit trees in the highland of Ethiopia. The team visited farmer sites to understand the current state of implementation and what challenges are at the field level. The team conducted several meetings to explore partnerships with Debre Brehan University, Zonal bureaus, the Polytechnic college, Africa Rising, Adeno, Emanuel Development association, research stations, commercial farmers and nurseries.

The widespread development and adaptation of fruits and vegetable production is critical in order to address issues of food and nutritional security. Fruits and Vegetables are an important source of micronutrients and are essential for a balanced and healthy diet. Diversifying and increasing horticulture production can help overcome malnutrition and poverty by increased household access and consumption and by producing high value, income generating crops. The development of forward and backward linkages for horticulture can create new market access for smallholders and value chains development can offer new income and employment opportunities in the trading and processing sectors. Agricultural production needs to be commercialized and development initiatives must aim to significantly raise the income of farmers in order to improve household nutrition.

The main objective of the visit was to assess the agricultural potential of the zone and to identify strengths and weaknesses in the areas of agriculture and water with a focus on fruit trees and in particular apples. The agricultural team sought to understand the current implementations of apples in the region, challenges and what type of interventions should be implemented to strengthen the sector with a focus on knowledge development and technology transfer.

**Deciduous fruit trees** are often grown in temperate climate zones where different varieties have different chilling requirements. Chilling requirements are measured in chill units (CU) which are the number of hours when temperatures stay 0-7 Celsius. These chill hours are prompted by longer nights and lower temperatures in the fall and early winter. This period of time is critical for apple trees and is when the hormone responsible for dormancy breaks down. This allows buds to develop into flowers as the weather warms up.



In Ethiopia, apple trees were introduced to the southern mountains (2700 Meters above sea level) in the 1960's (Besufkad, 2018). In North Shewa the most common type of apple varieties seen were Israeli low-chill variety Ana and its pollinator Dorset Golden. In the nurseries, most of the production was of apple trees (Ana, Dorset golden) on MM106 (Hashabi) rootstocks. There were also a small number of peach, nectarine, plum and pear trees.

There area of Debre Brehan has issue related to the temperature requirement for apples. Apples require a cold season as described above. The area is cold but during the day time, temperature reach up to 20 degrees Celsius even during the cold season, canceling the chilling effect. There is an additional challenge of pests and disease related to a lack of chemical agents required for plant protection.

The major limiting factors for successful apple production are 1) Lack of knowledge or tradition of growing orchards; 2) Lack of data on the climatic conditions (temperatures, rainfall, wind etc.); 3) Lack of access to agro chemicals (pesticides, fungicides, fertilizers). 4) Poor irrigation infrastructure.5) Drainage and water logging.

### Debre Brehan and surrounding agricultural sites

**Government owned Apple Nursery** was established in 2014 by **MASHAV** (Israel's development agency) and includes 4 hectares of agricultural land. The site has an apple mother tree site, a nursery site and a demonstration site for highland nectarine and peaches. A team of experts from Israel had previously identified a strong potential for deciduous crops in North Shewa with an emphasis on apples, peaches, nectarines, plums and apricot. The site's trees are 4-year-old with Hashabi rootstock and Anna Scions. The mother trees are from Tesler's farm in Ramat Ha Golan. Seedling production is done at the site. The apple tree seedlings are sold for 100-150 birr per seedling, in comparison to avocado seedlings which are sold for around 30 birrs. The site produces 500-2,000 seedlings per year.

The site has an irrigation system that operates on a diesel generator. The irrigation system includes drip and sprinkler irrigation. The irrigation system is currently nonfunctional resulting in poor irrigation practices and poor growth of the trees. The site has a wide spread problem of pests. The site has structures that were intended to be used for training purposes.

The site had the objective of establishing a center of excellence for apples but has become non-functional. The site was supported by MASHAV and Israeli experts, included Yoram Peretz who has a fruit tree farm in Huleta, Ethiopia. The site also has pear and plum trees situated next to the apples. The pear and plum trees looked better, with better vegetative development and less plant protection issues. According to MASHAV, the activity stopped due to inadequate support from the local government. According to the regional government, the failure of the site is due to inadequate skilled professionals.



		
<p>Mr. Arieh Peleg in the Mother site for Hasbi root stock</p>	<p>4 year old anna variety</p>	<p>Entrance sign to site</p>

**Government Nursery** site is located north of Debre Brehan. The site grows 3 apple varieties, Anna, Jonagold, a cross between Jonathan and a Golden Delicious and a mutant of the Jonagold known as Jonagored. The Jonagold and Jonagored are not suitable for the climate and require greater chilling units. The mother site MM-106 for rootstock which is a semi-dwarf rootstock and is sensitive to overirrigation and water logging resulting in crown and root rot problems.

		
<p>Plum trees</p>	<p>Seedling site after grafting</p>	<p>Rootstock mother site MM-106</p>

**Debre Brehan Polytechnic college** has a plot of land near the MASHAV nursery. The site is around 11 hectares of land divided into two, half of which is under farmer cultivation. The site lacks proper infrastructure and the college does not have the resources to develop the land. There are shallow boreholes on site that is used for irrigation using a channel system. In order to access deeper groundwater, there are requirements for drilling a deep borehole. The site has potential to operate as a training and demonstration site, however additional data is required to evaluate the suitability of the site and avoid issues related to drainage waterlogging which might be a problem.

At the main campus of the college there is practical training for various trades. There is an agricultural department which operates a small demonstration site at its main campus. The site is about 20X20 and could be used as a very small site for practical demonstration and training.





**Model farmer** located near the nursery site was visit. The farmer has Anna variety that sits on Hashabi root stock. Out of the original 50 trees that were planted in 2016 only 20 survived. The site has poor agronomic practices and a lack of fertilizers, irrigation and chemicals for pest control. The farmer practices intercropping between the trees and during the visit was growing carrots.



**Private Farm – Abiye** has an apple farm south of Debre Brehan. The site has commercial apple production, seedling production and Abiye provides extension services to farmers. The farm is around 3 hectares with drip irrigation, growing mostly apple and some pears. The apple trees are Anna and Golden Dorset on M7 rootstock. The site has waterlogging issues resulting in poor growth of tree. The trees are around 8 years old and produce around 8 kg per tree which is considered low compared to over 40 kg per tree.

**Debre Brehan University's** agricultural plot is divided into six blocks that are used by different departments for practical learning and by research students. The University has a focus on barley and beer related cereals that could supply local beer manufactures. There are 2-3 hectares of land behind the agricultural college and an additional 10 hectares adjacent that are designated to establish a center of excellence in highland fruit. The university needs finance to establish the sites.



The agricultural plot is based on flood irrigation or the use of a hose. There is no infrastructure. There was an attempt to establish drip irrigation, but it failed.

The apple site are 4 years old, health trees of Anna and Dorset variety. The irrigation is by a hose manually. The site was by far the best seen through the tour. There seems to be a lack of knowledge regarding pest control.

At Debre Brehan we had the chance to meet with Almaz the VP of research. She is originally from Gondar and connected to Fekadu.



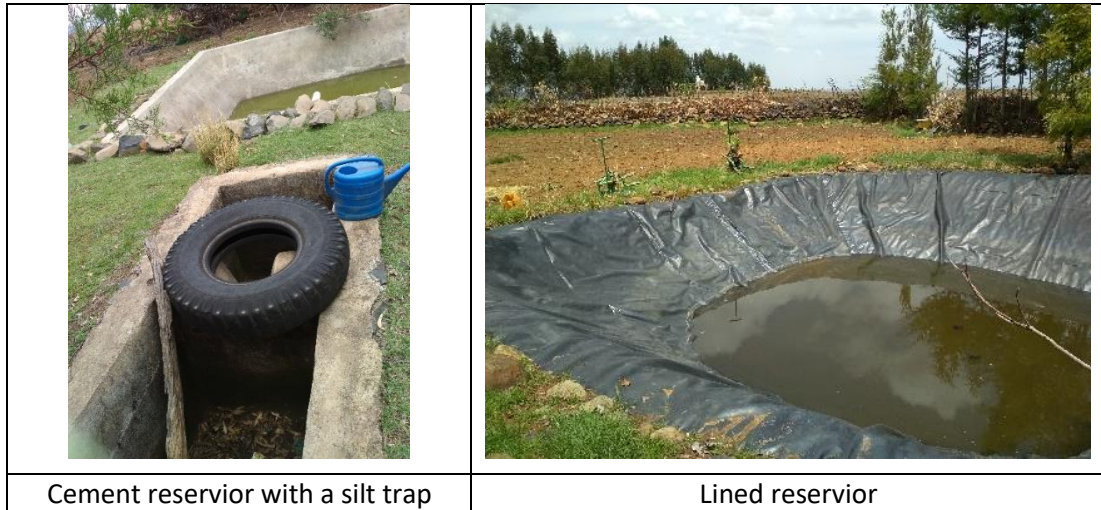
#### Adeno project in Gosh-bado woreda

The field visit was with Eysaus, the regional coordinator of Adeno. The visit focused on deciduous trees that were planted as part of their programs. The program included 24 farmers who were given trees and some training. The organization expected that following the demonstration of tree cultivation that the ministry of agriculture would take up the idea and scale up.

Two farmers were visited. Each received 20 trees that were grown either at a local nursery or from Arba Minch. The farmers were provided with a reservoir (either cement or liner) and a peddle based pump. The pumps were not operational. 99% of the trees were either dead or removed without any harvest. The farmers complained that there was no technical or extension support for the program. There is concern for pest and disease. The project failed.







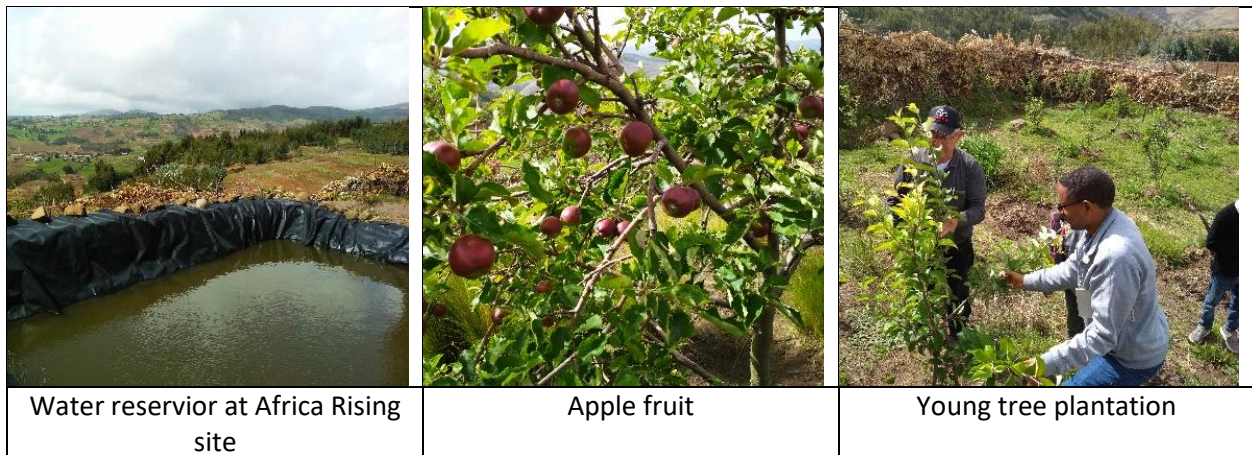
**Africa Rising – Farmer project**

The site visit was led by Temesgen who the regional coordinator for Africa Rising is and sits in Debre Brehan. The main focus area for the organization is 1.5 hours’ drive north of Debre Brehan, an area at 3,200 MASL the has greater Chill Units.

Three farmers were visited. The trees were planted near the house where water is accessible. Initially the program included 50 farmers, where each got 20-40 trees. There were plum and apple trees. Today the project has about 15 farmers.

**Issues identified**

- Varieties are not known
- practice of pruning not known
- Problems related to pest management and lack of use of proper chemicals
- The higher elevation and colder temperatures seems more appropriate for apples
- The plum trees had less pest related problems



**Debre Brehan Agricultural research Institute**

The Research Center is located 5 KM south of Debre Brehan. The visit was led by the director of the institute, professor Abiy along with two younger researchers, Fesseha and Tsiget. The center has good research taking place that includes testing varieties, root stocks and scions. There is high potential for joint research and activities with the institute which could strengthen the capacity of the entire fruit tree sector.

**The institute has several types of crops: Apple, Plum, Pear, Peach and Nectarine**

- The site produces seedlings and has a mother site for root stock and scions
- Testing several types of scions - M109, M111, M27, M9, M106
- There is a need for greater knowledge and to support the center
- There is a lack of data collection

**Potential areas of collaboration**

- Establishing a testing site for plums and pears
- Establish a meteorological station for data collection
- Capacity building of young researchers at the site



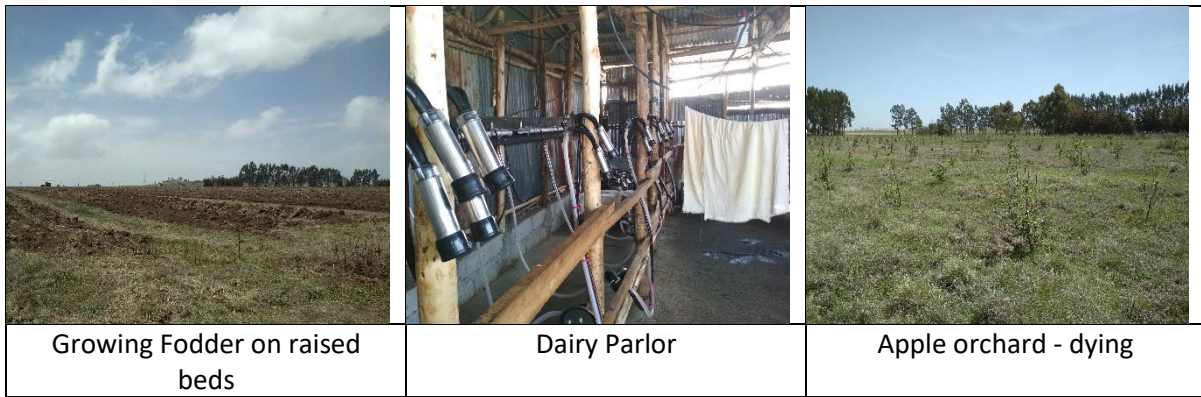
**TIRET farm**

TIRET is an endowment company affiliated to the Amhara National Democratic Movement (ANDM). The company’s objective is to stimulate economic and social development and eradicate poverty, in the Amhara National Regional State in particular and Ethiopia in general. The company has recently been investing in milk processing. They promote foreign direct investment. The new director of TIRET, Dr. Amlaku was in Israel as part of CultivAid’s tour.



The 133 hectares of farm owned by TIRET is 1.5 hour’s drive south of Debre Brehan. There is a failed apple orchard on site. 32 ha of land allocated for forage development (oat and vetch). The site has a dairy farm and according to the farm manager, the farm aims to invest in livestock.

The farm has feed storage, calf pen separately, maternal pen, milk cow barn, isolation room and milking house using machine. The farm has a total of 79 dairy cow ( 44 milking cows, 1 bull, 36 heifer) and the breed type of HF cross breed with fogra breed (50% HF with 50% fogra). A total of 4 professional staffs in diploma, BSc, DVM, MSc level in field of Animal Health, Animal Science and Animal Nutrition. The farm’s annual budget is 5 Million ETB. They produced about 550 L/day and plan to install a processing machine with a capacity of 20,000 L/day.



**Yoram Peretz’s farm**

The Farm is located near Huelta which a 40-minute drive without traffic is. With Traffic the drive could be over 2 hours. There area is agricultural developed and has foreign investors. The farm is a nursery site for Apple with Anna and Dorset scion varieties. The rootstock is most likely Hashabi. The farm also has seedlings for Avocado, peach, nectarine orange, grapes and pomegranate. .



## Potential partners in Implementation

Education / research centers	NGOS	Government	Private Sector
Debre Brehan university	ADENO	TVET bureau	Abiy's farm
The Debre Brehan Polytechnic	Africa Rising	Bureau of Agriculture	TIRET
Agricultural Research Institute	Emmanuel Development Association	Agricultural research Institute	Yoram's farm
MASHAV established nursery site	The Community project		

## Professional Recommendations for the apple production in the region.

The following recommendations are based on Arie Peleg's experience, insight and observation.

1. **Collecting meteorological data**, mainly temperatures, at the potential sites for planting. It can be done by finding this kind of information from local meteorological stations or placing small data loggers (HOBO type) at the relevant sites. It seems that apples will do better at higher altitudes – 3000-3200m, while plums, peaches and pears can grow well also at lower altitudes – 2800-3000m. The adjustment of species and varieties to planting sites can be done only after getting this basic information.
2. It seems that low winter chilling is a limiting factor (as it is in Israel and other warm countries). Therefore, **low- chill varieties** should be selected for test plots. Apart from Ana, there are now in Israel additional low- chill apple varieties, mainly from the breeding program of Ben Dor. There is also large selection of low-chill plum, pear and peach varieties that should be evaluated at the local conditions.
3. **The MM106 apple rootstock is not suitable for the local growing conditions.** It is sensitive to water logging and to Phytophthora root rot that develops under these conditions. Also, the M7 rootstock that we saw at Abi orchard and nursery has poor performance. Although it is water logging tolerant, it has dwarfing properties such that the trees on it do not grow to the required size. At this stage the MH (**Hashabi**) rootstock seems to be best. Also, MM109, being vigorous, should be examined. For peaches and plums, the GF 677 rootstock should be planted, as it is vigorous and relatively resistant



to water logging. Pears are the most resistant to water logging, and the preferred rootstock is *Pyrus Betulifolia*.

4. Any trial plot or commercial orchard should be planted in **well- drained soils**, preferably on slopes. The combination of summer rainfall and poor drainage is a lethal combination for the trees, even with tolerant rootstocks. It is recommended to plant on ridges.
5. The **plant protection** problems, especially the fungal diseases, are similar to the once that are known in Israel and elsewhere: Powdery mildew, Scab on apples, Leaf curling and powdery mildew on peaches etc. Any plantation has to be equipped up front with 1-2 basic fungicides and insecticides, and with basic spraying equipment – it can be manual back sprayer or small motor sprayer with long hoses and spraying guns. Sprayers driven by tractor are best, but good control can be done also with the other basic equipment. Many of the trees that we have seen during the visit were retarded or destroyed due to the absence of pest control facilities. A clear pest control protocol and spraying program should be applied at any new plantation.
6. Good **irrigation practice** is very important. A reliable and stable water source should be part of any plantation.
7. **Mineral nutrition** is very important for the development of the trees, especially in the first years. Fertigation is best, but it is technically complicated, and requires liquid or soluble fertilizers. Non-leachable K and P fertilizers should be applied at planting, in the planting hole, mixed with the soil and farm manure. It will be sufficient for the first 2-3 years and can be added later on by spreading once a year around the trees. The N fertilizer (can be Urea) can be spread around the trees 2-3 times a year during the rainy season. Foliar nutrition can also be very good solution for mineral nutrition with macro and micro elements and can be combined with pesticide sprays.
8. The **seasonal behavior of the deciduous species at this latitude should be studied**. The understanding of the seasonal cycle of dormancy, flowering, fruit set, fruit maturity etc. is very important and can be manipulated, if needed (defoliation, dormancy breaking etc.), for good results as far as yields and fruit quality are concerned.
9. Any new plantation should **be planted at higher density compared to the existing once**. As there is no need at this stage for the passing of machinery, the distance between the rows can be 3.5m. and 1.5m between trees in the row (1,900 trees/ha.). The training will be to central leader and each tree will be supported by wooden post. It will allow the trees to fill up their allotted space a lot earlier and bring the orchard to commercial production faster. Peaches and nectarines should be pruned to vase shape and planted 4.0 m between rows and 2.5 m between trees in the row, with no need of support.
10. It is important that the **nursery products** (young plants) will be of good quality – caliper of at least 12 mm., height of at least 1.5m., and well-developed root system.



11. A **detailed protocol** for the stages of the establishment and the maintenance of the orchard in the first 2-3 years should be written, and it must include all the essential equipment and chemicals that have to be there, before starting.

### Agricultural development

In order to improve productivity, there is a dire need to modernize the agricultural sector. Technologies are required to help solve the various problems faced in the region. Solutions related to irrigation technology, protected agriculture, seedling development, postharvest solutions and mechanization need to be implemented and enhanced. New technologies must be accompanied by proper extension services and knowledge-building efforts in order to increase the capacity of the agricultural infrastructure and to develop local experts and professionals. Skilled professionals are required to install, operate and maintain these technologies, who need to be developed through practical hands-on trainings and provide the human capacity to ensure long-term functionality. Specialization in specific crops and technologies is recommended for distinct agroecological zones enabling areas with a comparative advantage to focus on harness their advantage.

The different interventions will aim to address the following challenges

**Knowledge gap:** Development Agents, field-level extension workers, lack the required agronomical knowledge and experience for proper vegetable and fruit tree cultivation and marketing. The knowledge gap needs to be addressed through proper hands-on trainings for agricultural students, extension workers and researchers with the objective of development a strong knowledge based agricultural infrastructure.

**Low Adaptation of Technologies:** Despite the best efforts of the National Research Institute there is limited outreach to farmers on adoption of technologies, either for better productivity or better postharvest handling. Technologies that are ripe for testing and utilization include pressurized irrigation, mechanization, tunnels and greenhouses, shade nets, mulching, and plastic field crates, as well as field level tools and equipment for production and precision agriculture.

**Lack of access to agricultural inputs:** The seed, fertilizer and chemical provision currently available through the Bureau of Agriculture and through cooperatives is insufficient, market linkages are required to enable the private sector to promote access of agricultural inputs.

Addressing these challenges will occur through a multiple stakeholder, multiple site development program that includes the following guidelines.

- 1) Agricultural interventions should aim to incorporate the Bete Israel Community into the programs, providing a mechanism for sustainable community based regional growth.



- 2) The beneficiaries of the program will be both Bete Israel communities, education and research institutions, government agencies, NGOs and the millions of farmers throughout North Shewa zone.
- 3) The interventions for the Agriculture component should aim to develop knowledge, introduce new technologies, empower the extension services and support social and economic growth through agricultural development.
- 4) The program should provide emphasis on training and capacity building to enable large scale implementation of modernized agricultural technology, knowledge and techniques. The establishment of sustainable program should emphasize partnership development, extension services, training and capacity building and the development of a strong knowledge based agricultural sector.
- 5) The interventions should focus on fruit tree and vegetable sector through a knowledge-based development methodology.
- 6) The agricultural component should focus on 2 sectors:
  - a. introduction of deciduous tree production such as apples, nectarine, pear, plum, peach, as well as vegetable production.
  - b. Egg layer production
- 7) The program will emphasize that Improvement in agricultural productivity need to be driven by two factor, income generation and nutritional security and stress the need for strong organization of stakeholders. All programs will aim to develop demand-based growth in agriculture.

## Part III: Artisan Craft Development

The main objective of the assessment visit was to assess the technological level and manufacturing abilities of the Bete Israel community of the North Shewa Zone in the Amhara region located north of Addis Ababa, Ethiopia.

The focus of the crafts team was to learn and identify strengths and weaknesses in the areas of artisan craft production with a focus on the ceramics and metal processing. The evaluated methods have been practiced by the community for centuries. The status quo represents a starting point of intervention and determines the process of interventions to support modernize design and manufacturing processes.

The assessment was conducted to determine what type of interventions could be introduced that would support the development of knowledge, technology transfer and establishment of market linkages with the objective of an improving workflow, product quality, production efficiency and profitability.



The team arrived to evaluate and familiarize with the technologies, products and work environment and propose how to improve the profitability of the products being produced and thereby improve the socio-economic condition of the community. Furthermore, the team developed an understanding of the social context and the importance of identity of the community.

### Debre Brehan

The visit to Debre Brehan focused on blacksmith and ceramics workshops with an emphasis on learning the processes of production, material and tools used and the organization of production. The review also examined the local marketplace in order to understand the competition, profit and value of products.

#### Metal workshops

The metal workshops are located in Kebele 05. The workshops are arranged in a row on the same street which are adjacent to the ceramic workshops and at the outskirts of the housing area of the Kebele. All workshops have a similar structure and setup. The metal workshops contain an anvil, an open stove that is fed with wood charcoal and an electric bellows. The oven is hewn in stone and designed as a "side blower". The work process is entirely manual, and each blacksmith has an average of five strikers who hammer the metal.

The raw materials come from construction iron or disassembled truck leaf suspensions. Carbon steel having 0.90 to 1.0% carbon. The cutting of the raw material performed by hot cutting with a chisel, mechanical cutting was observed sporadically, mostly for Rebars

The labor is done manually by men with simple hand tools, lacking basic working conditions like proper shelter, ventilation and ergonomic working conditions. The product range is limited and includes axes, plow blades, curved knives, crowbars, and pickaxes. The work process consists of several stages similar for the range of all products. This includes the following work process:

- Annealing the metal by heating in the oven the area designated for shaping.
- Hammer and anvil are used for shaping of structure.
- Finally, the tool is sharpened manually with a file.

When not striking, the workers perform additional tasks such as cutting wood for the knife handles or sharpening of knives.





Heating of metal

Sharpening of tools

Metal readying for shaping

**Ceramic workshops**

Two types of Ceramic workshops models were visited, an individual model and a collective model. The workshops consist of the clay preparation area, the product preparation area, the firing and blackening area, and the finishing area. In the workshops several types of common cultural cookware were produced such as Dist (Cooking pot), Jebena (Coffee pot), Insira (Water pot) and matesha (use to burn incense during coffee ceremony). Most of the pieces are burnished and finished with a black color and sometimes reddish brown.

The work in Kebele 05 is done by women who are organized into two cooperatives one having 20 members and other one 10 members. Additional women create pottery in workshops in between the metal workshops but are not members of the cooperative. In addition, there are women who prepare ceramics in their homes. It is not known the number of people working in the sector in kebele 05.

The raw material for the work is local sand and clay. The combustion is based on low-temperature, incineration of eucalyptus leaves and dung. The work process include:

- Separation of clay particles and hydration
- Mixing and kneading the clay manually (stepping).
- Preparing of clay productions on a manual hand wheel.
- Air drying of products .
- Firing and blackening.
- Coating.

			
Shaping of clay	Firing and blackening	Coating	Household production

**Market**

The Debre Brehan Market is located in the northern part of the city, Kebele 04. The open market has stalls for selling of agricultural products, wood works, animals, metal products, tools and processed goods. The major weekly market day is Saturday while Wednesday and Friday are also the minor market days. Market attendees arrive from the entire area surrounding Debre Brehan. In addition, the market has a small section for metal workers who have similar set ups as Kebele 05 and an area of knife sharpening.

**The Market has several issues that need to be considered**



- 1) the area becomes muddy during rainy season seriously affecting the marketing;
- 2) mobility and exchange of goods is not efficient;
- 3) There is no proper shedding,
- 4) There are no differentiated/separated staying place for the market attendees and animals.

Furthermore, the **ceramic** cooperatives in Kebele 05 used to have a stall for directly selling the goods they produce at the market. They currently do not have a storage and stall and are unable to sell their products directly. Hence they sell their products on the side pavement or in-directly from their workshops, forcing them to reduce prices due to costs of “distributors” instead of selling directly to the end consumer. Ceramics and household shops sold mostly locally made produces with some imported (China) goods. The difference in price is high, 30/150 Birr, respectively.

For **metal products**, the local market sells locally made products. At the metal shops, most of the products were similar to those manufactured in workshops with almost no imported products. Some of the most commonly available products in the market are plough, knives, pick-axe blades, slaughtering knives and axes.



### Potential partners in Implementation

**The Debre Brehan Polytechnic** – The dean of the college, Bashaw provided a thorough tour of the different departments. The facilities include a vast amount of modern equipment, but many are not functional. The visit included a tour of the industrial design, wood working, textile, manufacturing and architecture departments.

There is a wide range of electric machines including a CNC machine. Despite the variety of tools, according to work presented to us and conversations with faculty, it seems that most of the machines are disabled or don't reach maximum potential. There seems to be a need for knowledge and experience in operation and maintenance.



### Mekdim

In Debre Brehan there are more modern workshops using better quality equipment and innovative solutions to missing supply of parts and machines. Mekdim is a teacher at the polytechnic college and has been working with different NGOs as well as “The community project” to provide solutions for various challenges.

The Community project is located on the eastern section of Debre Brehan. The site is near a former Habitat for Humanity project that built houses in the city. The project was founded by Colleen Kaleda and Angelique Kidd Smith and has partnered with 4 USA - Engineers Without Borders chapters from Oregon, Maine and Colorado. In Debre Brehan there is collaboration with the major and a community development committee has been established. The project is managed by Mekdim a researcher from the local TVET. Mekdim also owns his own workshop.

The project is still at an early stage and intends to establish a K- 8th grade school. There is one school building and a playground. The site has established a workshop to create soil-based bricks and a small garden for bamboo. The project is working in collaboration with Debre Brehan university in particularly regarding the bamboo production.

The site is situated near the Barressa river and has access to water year-round. The school has land but there is a current issue regarding compensation for farmers from who the land was purchased. Until the land issue is resolved, farmers are growing crops on the school's fields.

The school aims to establish a football field, there is a basketball court under construction and four additional school builds will be established. There is possible funding from Nike to establish some aspects of the fields.

The school has a brick making machine that was developed by Mekdim and could enable low cost production for buildings. Mekdim has several additional inventions such as a pottery wheel.



	
<p>Description</p>	<p>Description</p>

## Gedam

The visit to Mentiq Gedam provided insight into the makeup and operation of the Gedams. The community in the Gedam consists mainly of elderly people coming to the Gedam as a last stop in life in a remote and secluded place. The artisan crafts at the Gedam is at a very low scale of production.



## Additional sites

**Addis Market and surrounding workshops:** The sites had machinery tools and goods. The produce were more diverse but in general similar goods and work processes as in Debre Brehan.

**Addis Ababa university of art and design:** The industrial design department is 30 years old, with four years program, an average of 6 students each year. the students trained in industrial processes, electronic prototyping and interior design, although only 6 students graduate each year. most of them work as graphic designers more than in product design. The faculty is equipped with CNC, 3D printer, wood and metal workshop, electronic prototyping and a jewelry workshop. There is interest from the department to be part of the program being developed.

## Concurrent research

### Metal workshops



In addition to exploring Ethiopia, visits to workshops in Israel were conducted to provide greater comparison with a focus on combustion material and furnace design, raw material, new products to provide the following insights.

- 1) **Combustion material** will be expensive for the type of tools produced and may lead to fatigue of personnel due to increased work rate. Subject of Work speed in Manual blacksmithing labor is a significant issue due to the physical workload.
- 2) The **change in the furnace**, without any change in the combustion material, will not be significant or qualitative.
- 3) The **raw materials** is related to variety of dimensions and quality of steel. Common solution in modern blacksmithing is solved with “blacksmith welding” which is not possible in charcoal-based ovens. The introduction of new products using thicker raw material is subject to supply of raw material. The use of improved, more durable steel requires higher processing temperature.

### Ceramics sector

- 1) The ceramics department at Bezalel has an ongoing program in Uganda.
- 2) There are several lessons regarding use of the "kiln".
- 3) The main focus areas take into consideration raw materials, daw and glazing, and the work process.
- 4) In consultation with the department recommended areas of interventions should focus on raw material and furnace structure. Unlike metal works, improvements in kiln design and raw material will lead to better quality ceramic products.
- 5) Additional lessons needs to be understood based on the innovative solutions to solve the problem of glazing material price and for charcoal glass burner development.

### Professional Recommendations

The Crafts team recommends that the main focus of the interventions relate to quality, working conditions, safety and capacity of craft workers in Debre Brehan and Kechene. The interventions should introduce new technologies, develop new products and development changes in work environment win order to improve the profitability of the products being produced and thereby improve the socio-economic condition of the community. Furthermore, the interventions should aim to improve the reputation and identity of the community.

The interventions developed need to ensure sustainability through partnerships between the implementation with the community and relevant stakeholders, such as the polytechnic college, Debre Brehan university and Addis Ababa University. Partnerships will enable programs to build the capacity of the various partners in terms of training, practical hands on work and supporting current projects. Ensuring strong partnerships should be with relevant Israeli Institutions such as Bezalel Academy of Arts and Design and the Technion. Together with partners the programs will work towards developing a mutual understanding of the community, production, processes and design.



For the pottery programs it is recommended to focus on Improving the work processes and raw material related to production. Specifically, the program should introduce new technologies for production with a focus on the oven as well as the process of producing the ceramic products. The program should aim to improve the working conditions of the women involved in pottery production at the communal workshops and at individual production methods. The intervention should examine how to improve the profitability of the products being produced and to develop new products that can be introduced. The partnerships may enable the programs to develop new concepts of design based on local knowledge and local design.

For the Metal works it is recommended to focus on creating new products that can be made by the craft workers. This process could be initiated through Bezalel Academy of Arts and Design's metal courses which are instructed by team member Yaniv Gluzman. Through the course, new technologies for production will be examined and introduced. The program will work towards improving the profitability of the products being produced and to develop new concepts of design based on local knowledge and local design. The program should analyze the current methods of production in order to improve safety and working conditions.

Interventions should also support organizational development of craft workers to empower the sectors through mutual aid. It is recommended to develop structural improvements to the organization of the workshops through which workers can achieve higher returns. It is recommended to establish an organization of the workshops which can provide a mechanism for decision making that will work together with the community center being developed.



## Conclusions and Next steps

Based on the assessment report, key findings and discussions of the group the next requirement is to develop a proposal based on the recommendations of this document. These recommendations will aim to integrate the three components into a development program that can bring meaningful change through empowerment of the community. The program will aim to incorporate all three primary beneficiaries, the Gedams, the Debre Brehan Community and the Kechene community. The program will establish a field staff of Israel and Americans in Debre Brehan that can provide professional support in all three fields. The program will establish collaboration with various Israeli institutes in order to build a bridge between the communities in North Shewa and Israel. The program sets to establish a community-based program that emphasizes regional development. Based on these underlying principles a program development proposal has been established to request the required resources for establishing the different compartments of the program.

### **Community:**

The proposed intervention for the community component aims to improve the quality of life for members of the Bete Israel community living in North Shewa. The program will develop a community-oriented development project that supports a marginalized population that faces discrimination. The program will strengthen the community through local organization and enable it to address and tackle issues related to discrimination and poverty.

### **Agriculture**

The proposed interventions for the Agriculture component aims to foremost develop knowledge, introduce new technologies, empower the extension services and support social and economic growth through agricultural development. The interventions aim to develop the fruit tree, vegetable and livestock sector through a knowledge-based development methodology. The agricultural interventions will aim to incorporate the Bete Israel Community into the programs, providing a mechanism for sustainable community based regional growth.

### **Crafts**

The proposed intervention for the craft workers aims to improve the quality, working conditions, safety and capacity of craft workers in Debre Brehan and Kechene. The proposed technologies, products and changes in work environment will aim to improve the profitability of the products being produced and thereby improve the socio-economic condition of the community. The interventions will support community-based organization for establishing a strong knowledge development in the different crafts and technological adaptation. The interventions aim to improve both the reputation and identity of the community.

