


USAID Unsolicited proposal

Institutional

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- **Signature of a person representative:** 

Technical Information:

Title: North Shewa Agricultural Development for Nutrition and Industrialization, Ethiopia

Abstract:

The North Shewa Development program aims to strengthen the economic capability, health and living standards of people throughout North Shewa, Amhara, Ethiopia. The activities of the program focus on capacity building for effective transformation of agricultural and industrial production. The program sets a multisectoral systems-based approach aimed at strengthening the agricultural knowledge infrastructure and private enterprise through expert-driven hands-on training. These activities will be directly related to improvements in health and nutrition by crop diversification and farm to fork science based educational programs. The program aims for sustainable and expansion by promoting private sector development, investment and growth that can capacitate the entire value chain. The program's objectives aim for income generation, job creation, knowledge development and improved nutrition. These objectives will be accomplished through knowledge-based development, and evidence based implementation. The activities of the program are based on CultivAid's vast experience in Ethiopia which is centered on long term placement of Israeli agronomists and engineers, on the ground to work with Ethiopian counterparts in the field. Together with local institutions the implementation will combine agriculture, education and industrial development to strengthen the economy of the zone and improve health through nutrition.

Background:

North Shewa is one of 10 Zones in the Ethiopian state of Amhara. The zone was formerly part of the Shewa province, for which it is named. Shewa's capital city was Debre Brehan which moved to Ankobar prior to being relocating to the modern-day capital of Addis Ababa. Debre Brehan currently serves as the administrative capital of the North Shewa zone. The zone population is estimated to be around 2.5 million, of whom 90% live in rural settings. On average the family income of in the zone is \$500-600 per annum or about \$1.5 a day¹. Over 60% of the population is below the age of 30, with life expectancy of only 65-70 years². Approximate 80% of men and 65% of women are employed in agriculture (cultivation of crops or raising animals)³.

Although the main production system in North Shewa is mixed production of grain crops and livestock, there is high potential for horticulture and fruit tree production due to the agro-ecologies of the zone. However, reports by Africa Research in Sustainable Intensification for the Next Generation (Africa RISING) concluded that farmers' face difficulties in managing high value fruit trees. Africa RISING, a feed the future program supported by the USAID's Feed the Future initiative proposes that scaling-up of high value trees in North Shewa farming requires capacity building and addressing the skills gaps of farmers, development agents and nursery workers in these areas. According to the Federal Ministry of Agriculture, the zone of North Shewa has high potential for livestock and dairy production with the areas around Debre Brehan identified as a Milkshed cluster⁴. The North Shewa zone is characterized as having low production rates of fruits and vegetables, low production and market connectivity of livestock products, reliance on grains and rainfed crops and in general food and nutritional insecurity.

Although there is ample land and water resources for adequate nutrition, a dietary survey from 2018 identified that dietary inadequacy, poor nutritional quality and high risk of micronutrient deficiencies was prevalent throughout the North Shewa Zone. The major dietary patterns composed of cereals (teff, wheat and barley), vegetables (onion, green pepper, tomato and cabbage), legumes (peas, faba bean and lentils), oils (cooking oil) and spices (salt). These produces are usually consumed as injera and shiro. This study concluded that the population of the zone has poor dietary adequacy and nutritional quality with a high-risk deficiency of Vitamin A, Vitamin D and Iron. The study indicated that

30% of the population suffer from malnutrition and close to 50% of children are at risk of stunting due to low dietary diversity³. Hence the improvement in nutrition would dramatically increase the lifespan and life quality.

The knowledge infrastructure (research institutes, Debre Brehan University, training centers, NGOs, experts and technical colleges) of North Shewa is centralized in Debre Brehan, the administrative capital. It is the location of main campus of Debre Brehan University and of the Debre Brehan Polytechnic college. In addition, of the different development organizations (such as Africa Rising and Adheno) in North Shewa, and specifically around Debre Brehan including the surrounding Basona Werana woreda, which together are estimated to include around 20% of the population of the zone. There are also several agricultural related industries such as Walia and Dashen beer and small scale bread production. There are growing diary industries and international companies involved in metals, plastics, textile and pharmaceuticals. The agro-industrial park in Debre Brehan has not been able to attract its full potential in investments. In general, there is a low quantity of products exported outside the zone.

Implemented projects in the zone have not succeeded in achieving the desired results for food and nutritional security. Through two fact finding missions by experts from Israeli in 2019, numerous projects were visited. The different projects had reoccurring problems related to irrigation system being non-operational, fruit trees that were stunted and not growing properly. A prime example is the highland fruit nursery established through the USAID-MASHAV Smallholder Horticulture Project. Similar to other projects, the site lacks optimal results and suffers from non-functionality. Specifically, the irrigation system is nonfunctional resulting in poor irrigation practices and poor growth of the trees. In addition, the seedlings produced are of low quality and the site has a widespread problem of pests

In order to promote economic and social development in the region there is a need to solve challenges related to agriculture, water, health and industrial development. Solutions must address value chains development, build local expertise and establish a knowledge-based infrastructure in agriculture, water, health and industry. **The following proposal aims to establish a powerful knowledge-based infrastructures to address health and nutrition challenges, simultaneously developing agricultural led industrialization to ensure economical changes to the region.**

Objectives

Our objectives are to **strengthen** the economic capability, health and standards of living for the population throughout North Shewa, Amhara, through capacity building and **transformation** of agricultural and **industrial** production.

CultivAid is a not-for-profit organization registered in Israel and Ethiopia. CultivAid specializes in capacity building as well as **knowledge and technology transfer** initiatives with a focus on agricultural, water and nutrition. CultivAid focuses on the construction of local knowledge infrastructures that creates a mechanism for empowerment and self-development of the population, to create food security and economic stability. CultivAid's methodology combines market based, private sector development and social development initiatives. For an overview of CultivAid's activities, visit www.cultivaid.org.

Since 2013, CultivAid operates in the Tigray region of Ethiopia, providing skills-based trainings to thousands of students, training young experts, providing extension services and logistical support to private farms and establishing demonstration and training sites. The organization has developed strong partnerships with local NGOs such as the Tigray Development Association and ElShadai Relief as well as private investors who are operating medium scale farms throughout Tigray. Based on CultivAid's activities the organization was recruited as a technical partner by the Federal Ministry of Health to take part in the Seqota Declaration task force which promises to end child under-nutrition in Ethiopia by 2030. Through the program CultivAid is scaling up its model through the implementation of two university training sites, two medium scale Research and Development farms and supporting implementation of innovation water technologies with the regional governments of Tigray and Amhara. Furthermore, CultivAid is expanding to Tanzania, developing a unique partnership with Don Bosco Technical Institute of Dodoma. The two organizations are scaling up CultivAid's model and establishing a school for agriculture to be supported by revenue generating farms.

To address the above challenges, we hereby propose to empower the local population through educational tools which would result in income generation, job creation and improved health. This will be achieved by utilizing our rich experiences of implementation in Ethiopia to achieve the following objectives:

1. **Strengthen the agricultural knowledge infrastructure through expert-driven hands-on capacity building** that provides young, recent graduates the skills and resources to operate and maintain new technologies. The training program is based on long term training programs conducted by Israeli agronomists and engineers.

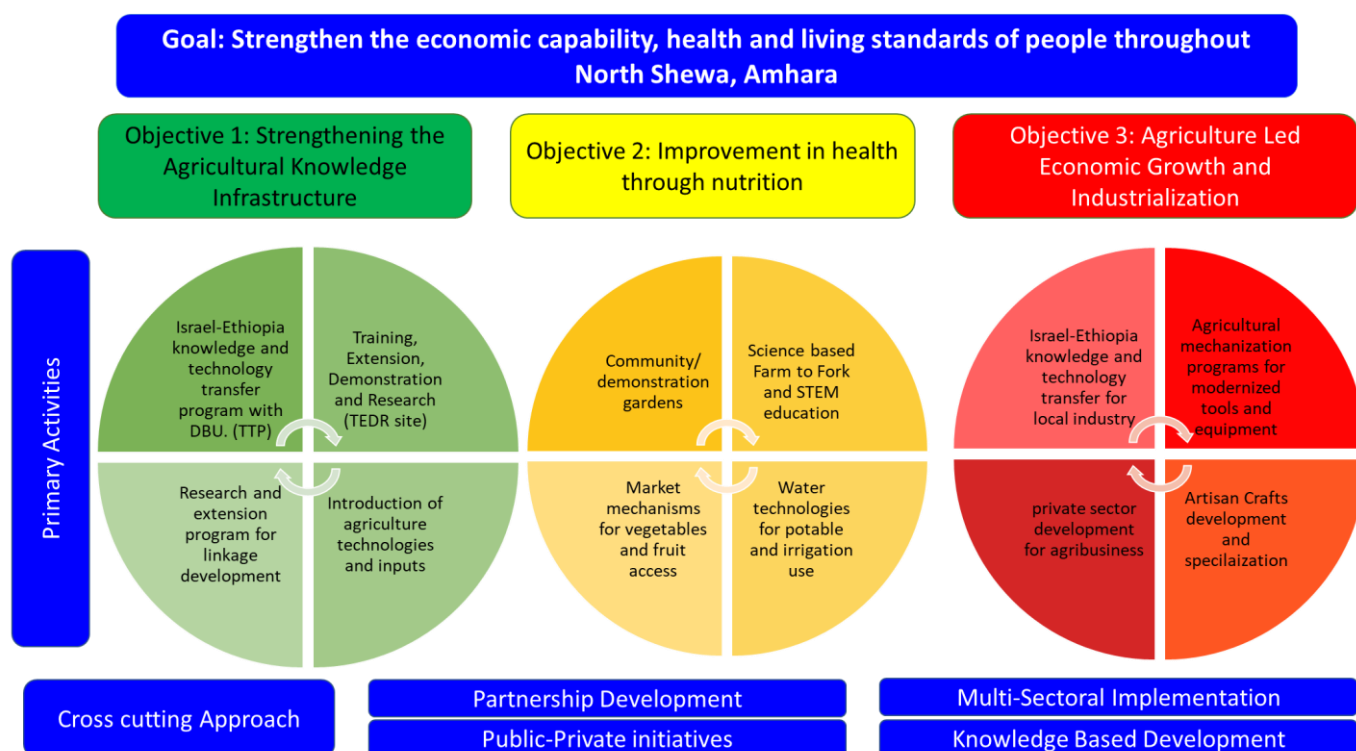
- 2. Development of health and nutrition food systems** through diversification and education programs increase yields while improving water and energy efficiency. From pilot to wide scale implementation, selected technologies with proper knowledge will be spread out throughout the zone.
- 3. Promotion of Private sector development, investment and growth.** CultivAid has developed unique operations with investors in Tigray, demonstrating how proper access to inputs and extension services can promote the transformation of the agricultural sector.

The proposed program aims to implement an innovative, boots on the ground approach to development, whereby Israeli agricultural experts will be in the field working together with their agricultural counterparts. CultivAid has developed an internship program that provides 6 months training to young agronomists, enabling them to gain valuable experience in modern agricultural technologies while adopting cultural norms required for operating and managing these technologies. The approach looks to develop professionalism in the agricultural sector, building experts that can diffuse knowledge and technology to farmers. This method is contrary to other programs in that it seek to combine local knowledge with Israeli knowledge rather than implement western knowledge on locals or fund local programs without the proper expertise, both methods have not succeeded in the region.

Through the development of experts and establishing an ongoing training program, this program aims to train a critical mass of experts who will be an available resource for public and private sector entities of North Shewa and Ethiopia at large. The newly developed agriculturalists will enable widespread application of scientific research and new knowledge to agricultural practices through application of high quality extension services to small and medium scale farms, institutions, government programs and NGOs operating in the zone. The program will develop strong partnerships with local, regional and international organizations to ensure maximum impact and extensive adaptation of the knowledge and technology. The model developed will be enable scaling up of the knowledge and technologies beyond North Shewa throughout the region, country, Africa and beyond.

The program will encourage private sector growth and investment in agribusiness, manufacturing, industrialization and services sectors, creating new employment opportunities for youth and strengthening the agricultural value chain. The program will promote transforming the agricultural sector away from subsistence agriculture and towards professional growers and industries.

The proposed program aims **to strengthen the economic capability, health and living standards of people throughout North Shewa, Amhara through capacity building and transformation of agricultural and industrial production.**



Objective 1: Strengthen the Agricultural Knowledge Infrastructure

An agricultural knowledge Infrastructure is composed of the people, organizations and how they interact within a region to facilitate access, dissemination, exchange, and/or use of evidence-based knowledge. This includes agricultural practices, businesses/cooperatives, government agencies, research institutions, extension services, supply chains, value chains and all parties involved in the production, transport, marketing and processing of food, the food system. As existing programs have not resulted in a major change to the zone, we now propose to develop **new** sustainable knowledge infrastructures through a systems approach that will bridge the gap between science and practice. The activities of this objective include establishment of various types of agricultural sites with multiple partners, strengthening farmer activities, empowering the private sector, conducting research, job creation, income generation and food and nutritional security for the zone. We do not believe that implementation of an external program on local population will be as successful as working with the local population on finding the best methods to increase productivity in agriculture, industry and economics, all resulting in the increase in health (objective 2). Therefore, the program will be operated through a field staff of Israeli and Ethiopian agronomists and engineers who will be on site with boots on the ground.

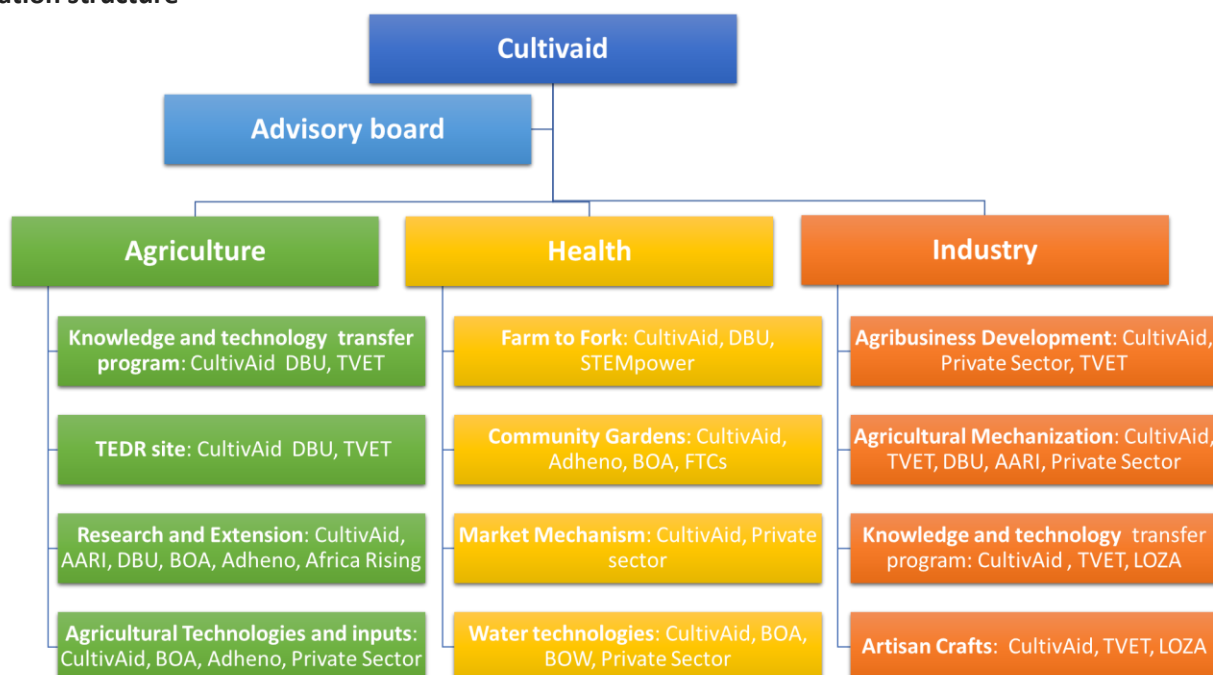
Objective 2: Improvement in health through nutrition across the zone.

The connection between total family income, access to a variety of foods to one's health has been well established³. Therefore, better agricultural practices (objective 1) will result in a change to the local personal income as well as to a diverse healthier diet. The transformation of the agricultural sector must promote nutrition sensitive agriculture and ensure crop diversification, increased fruit and vegetable production and promotion of protected agriculture technologies. The activities of this component will develop community-based demonstration sites and establish science based educational nutrition programs with Debre Brehan university's STEM center. The component recognizes the detrimental effect on health due to lack of clean water and will implement water and solar technologies throughout the zone. The objective will also adhere to a food systems approach and establish market mechanism for efficiency and inclusivity of the food system.

Objective 3: Agriculture Led Economic Growth and Industrialization

The transformation of Ethiopia's economy requires skilled experts to build the nation. The component will work together with TVETs to Empower and build capacity of skilled workers with a focus on cottage industries, agro-processing and local industry. The component will focus on the transformation of craft workers through labor specialization, organization development and market linkages. New technologies and organizations of production will be introduced, promoting agricultural machinery, agro-processing, assembly, manufacturing and operation of equipment. The component will support private sector development and stimulate investment in the zone.

Organization structure



The implementation of the program will be managed by CutlivAid and implemented together with an array of local/regional organizations and private sector entities.

Educational institutions: Debre Brehan University – DBU ; Debre Brehan Polytechnic college – TVET; STEMpower

Governmental institutions: Amhara Bureau of Agriculture – BOA; Amhara Bureau of Water – BOW; Amhara Agricultural Research Institute – AARI; Farmer Training Centers – FTCs.

Non-Governmental Organizations - Integrated Rural Development Association – Adheno; Africa Research in Sustainable Intensification for the Next Generation - Africa Rising; Lovers of Zion Association – LOZA

Private sector entities

In total, our proposal fits the development objectives that USAID set out in the 5-year program⁵. Our approach is a holistic approach whereas each objective of the program is both an independent objective, but also fits within the whole project influencing other objectives. For example: producing a variety of agricultural products will have both an impact on economic growth (objective 3) as well as health (objective 2). The proposed program is a unique program as it is not designed to implement programs on the local population, it is not designed to supply immediate needs, but rather for capacity building programs that combine local knowledge through local institutions together with CultivAid expertise. The program is designed together with local institutions and combines agriculture, education, industry all resulting in increasing the economic strengthen and improving health related challenges in Amhara. This program can then be scaled up and adapted to other regions in Ethiopia as well as any location were such holistic needs are eminent.

Total budget for 5-year program

Item	Costs
Facilities	1,350,000
Equipment	1,430,000
Materials	690,000
Personnel resources	2,450,000
Overhead	888,000
Total budget	6,808,000

The total 5 year budget for the program is 6,808,000. The requested budget from USAID for 5 years equates to \$5,000,000 and the participation in project of CultivAid and additional partners will be equal to \$1,808,000 Land will be provided by Debre Brehan University and the Debre Brehan Polytechnic college.

Supporting Information:

- Proposed estimated cost; Proposed price or total estimated cost for the effort, in sufficient detail for meaningful evaluation;

	Year 1		Year 2		year 3		year 4		year 5	
Objective 1	facilities	272,141	facilities	258,717	facilities	76,548	facilities	291,811	facilities	181,983
	materials	39,753	materials	79,506	materials	60,579	Irrigation technology	-	materials	53,215
	personnel resources	272,959	personnel resources	342,469	personnel resources	355,502	materials	200,351	personnel resources	399,599
							personnel resources	424,098		
	Total	584,853	Total	680,692	Total	492,630	Total	916,260	Total	634,797
Objective 2	facilities	67,500	facilities	112,500	materials	18,000	materials	22,500	facilities	40,500
	personnel resources	89,245	personnel resources	100,765	personnel resources	100,765	personnel resources	193,371	personnel resources	62,297
				-	Technical visits	-	Technical visits	-	Technical visits	-
	Total	156,745	Total	213,265	Total	118,765	Total	215,871	Total	102,797
Objective 3	facilities	44,874	facilities	13,462	facilities	250,000	materials	60,263	materials	60,263
	materials	26,608	materials	13,145	materials	60,263	personnel resources	258,088	personnel resources	258,088
	personnel resources	189,493	personnel resources	189,493	personnel resources	189,493				
	Total	260,974	Total	216,100	Total	499,756	Total	318,351	Total	318,351
	Total	1,002,572	Total	1,110,057	Total	1,111,151	Total	1,450,482	Total	1,055,945
	Overhead	200,514	Overhead	222,011	Overhead	222,230	Overhead	290,096	Overhead	211,189
	Total	1,203,086	Total	1,332,069	Total	1,333,381	Total	1,740,579	Total	1,267,134

2. Proposed duration of activity;

The program's initial phase is set for 5 years after which a local staff will be developed. The establishment of a local team of experts will enable ongoing activities that aim for self-sufficient operations with the goal of establishing a long-term market based development.

3. Type of contract preferred: Grant Agreement

4. Brief description of organization's previous work and experience, both functionally and geographically.

CultivAid is an Israeli not for profit 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. CultivAid's holistic methodology combines market-based approaches together with social interventions, combining agro-business and rural development initiatives.

Our objectives:

- Developing and upgrading the agricultural practices through training and extension services, joint R&D, efficient water management, and better access to agricultural technologies.
- Reducing the disease and health issues through regional food security and economic empowerment for farmers.
- Development of an international internship program for international and local agronomists, engineers and professionals. In order to build the new generation of international experts.
- Promoting sustainable value chain oriented development programs
- Strengthening the connection between Israel and the rest of the world, with the emphasis on developing a network of professionals, export of Israeli technologies and academic relations for joint research.

Locations

To date, most of the organization's activities are focused in Ethiopia, where the organization is active in over 20 different projects. CultivAid maintains a professional team of agronomists and engineers deployed in Tigray and seeking to expand to multiple sites in Amhara. There are additional programs being developed in Tanzania as the organization seeks to expand to additional countries in the coming years. In Israel, the organization's internship program is collaborating with the Hebrew University of Jerusalem to promote international agricultural development.

Overview of Activities

Our activities on ground started in **2012-2013**, when the organization's founders initiated a long-term agricultural development program in the Tigray region in Ethiopia. To date the organization has initiated over 10 different sites and activities in the Tigray region together with private and public sector partners. **Since 2016** CultivAid has been a technical partner of the Federal Government of Ethiopia as part of the **Seqota Declaration**. The declaration aims to end child under-nutrition in Ethiopia by **2030**. Through the Seqota declaration CultivAid is multiplying its interventions to additional parts of the country, organizing tours to Israel to promote relationship between Israeli and Ethiopian officials and experts and developing a wide range of trainings. In **2017-2019** CultivAid supported JDC as a technical organization providing professional consultancy and field support for establishing the TOV project (Tikun Olam Venture). **In 2018**, CultivAid supported a new program with the Beta Israel community in Siemen Shewa that aims to support development in agriculture, artisan crafts, education and health. **In 2020**, CultivAid will be establishing training sites with Ethiopian universities and scaling up the model developed in Tigray to other areas on Ethiopia. Furthermore, CultivAid is focusing more and more on private sector collaboration, providing technical and market support to medium scale farmers in the Raya Valley.

Field implementation

The organization's activities are diverse and carried out through various programs. In order to build local knowledge, there is a need for both infrastructures such as demonstration and training farms, and educational activities which focused on capacity building of the society. Our activities aim to institutionalize training programs and create skilled young workers who can solve the challenges facing their region. Our efforts are also strengthening the relationships between Israeli Ag-Tech and WaTech industries to potential stakeholders in Ethiopia and Eastern Africa.

Below is a representative list of the organization activities in the past five years:

A. Construction of two AITEC Farms (Center of Excellency):

The Agricultural Innovation and Technology Centers (AITEC) are medium scale modernized farms that aim to operate as a central mechanism for introducing new technologies, developing innovative interventions, trainings and a research farm. The AITEC farms is one of CultivAid major type of intervention throughout the years, as it gives a stable and long-lasting base for additional satellite projects in the surrounding areas. The AITEC introduces and demonstrates new crop varieties, use of fertilizers, promotes efficient irrigation and water conservation and introduces new agro-technical methods. The center serves as a training, research and demonstration center. Along with horticulture and water managements AITEC farms specialize in various livestock components such as dairy production, goat herding, aquaculture, poultry and egg production.

- **Kallamino AITEC** in the city of Mekelle, Ethiopia was established in 2016. In this project our partner organization is the Tigray Development Association (TDA), a local NGO.
- **El-Shadai, Wurko AITEC** in the city of Wukro, Ethiopia was established in 2017. In this project our partners are Elshadai foundation (local NGO) and MASHAV. In addition to its goal as a training site, the farm supports 160 orphaned and abandoned children, 1,000 economically disadvantaged children and 36 students in universities and colleges. A second farm is being developed with ElShadai in Mekelle and CultivAid will be providing technical support to ElShadai in programs in Afar and Gambella.
- **El-Shadai, Mekelle AITEC** in the city of Mekelle a second farm is being upgraded together by CultivAid and El-Shadai. The farm will support educational and skills building programs and enable the institute to be self-sufficient.
- **2 more AITEC Farms** are now under development in Amhara and Tigray regions as part of CultivAid's role as the technical partner in the 'Seqota Declaration' program delivery unit.

Nutrition-sensitive agriculture activities:

Nutrition-sensitive agriculture is a health-based approach to agricultural development that puts nutritionally rich foods and dietary diversity as a priority in support of overcoming malnutrition and micronutrient deficiencies. CultivAid's nutrition-sensitive approach focuses on conducting dietary assessment and evaluating the nutritional requirements of a specific population. Our in-house nutrition experts provide an in-depth analysis of the food consumed and recommendations of how to improve the diet. In turn our agricultural programs consider these recommendations in developing the seasonal planning and which crops to demonstrate and introduce to a specific region.

At 3 of the schools where CultivAid is operating, nutritional analysis of diets was conducted and determined vitamin deficiency in their diet. CultivAid developed a school agricultural program that ensures year-round production of nutrient rich crops for consumption by the students.

Capacity building activities:

At the core of CultivAid's philosophy is providing practical hands on trainings in order to build local tacit knowledge. Our goal is to enable agronomists, water expert, university students and farmers to attain the required experience and to develop modern skills. For the past three years we provide free trainings in our projects across the country. Every year we train and host at our open days hundreds of farmers, students and professionals in various courses on agriculture, water management, child and mother nutrition and more.

During the past 3 years, over 20,000 students, farmers, investors, experts and extension workers have been exposed to technologies and practices through trainings, open days and visits to CultivAid's project sites. In addition, Over 500 experts have been trained in 5-7 days trainings and over 1,000 students have participated in practical trainings.

Internship program:

CultivAid's international internships program is creating a new force of skilled Israeli and local agronomists and water technicians who emphasize the need to be in the field. The 6-12 months internship program provides practical experience for young professionals in the implementation, operation and maintenance of the technologies being introduced in our projects. Local interns work side by side with their Israeli counterpart on the implementation of year-round operations. Our program presents a different path of developing a more experienced type of agronomist which will spread out their knowledge and capabilities around the county and to different parts of the world.

To this date, **CultivAid has placed over 50 Israeli interns and 60 Ethiopian interns** for periods of 3-9 months. Prior to the internship period in Ethiopia, our Israeli interns graduated from the Hebrew university's faculty of agriculture, Ben-Gurion university (Sde boker), Tel-Hai college and more. In Ethiopia our interns come mostly from TVETs, universities or colleges in Tigray and Amhara as the program is being expanded to include agronomists from additional areas in Ethiopia.

Seqota declaration:

In July 2015, the Government of Ethiopia renewed its commitment to nutrition when it unveiled the Seqota Declaration. The declaration promises to end child undernutrition in Ethiopia by 2030 by implementing a three-phased multisectoral plan. The declaration aims to "to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture" in order to enhance development. This will be achieved by integrating climate- and nutrition-smart agriculture into program interventions to achieve the goals of the Seqota Declaration and promote nutrition security in food insecure areas of Ethiopia. CultivAid role in the task force include the development of; two more AITEC farms, a bank of water technologies and solutions and other technical assistance required. CultivAid has also been organizing tours to Israel to promote relationship between Israeli and Ethiopian officials and professionals, introducing new Israeli technologies and creating new linkages between Israeli and Ethiopian enterprises. In 2017-2018, As part of work with the Ethiopian government, we have hosted in Israel two groups of high level representatives including four federal ministers (Water, Agriculture, Livestock and Health) and two regional presidents. In 2019, technical design has been developed for establishing university training sites, AITEC farms and introducing new water technologies to the region. In 2020, a pilot water treatment program was installed that aims to introduce new filtration technology to the region.

Working with Small holder farmers:

Over the past five years, the organization has been involved in the development and implementation of plans to work with small holder farmers. In every area where there was activity, it was implemented together with the local Ministry of Agriculture and local partners. CultivAid's role included identifying the proper technologies, irrigation system and other agriculture inputs to be supplied for small holder farmers, delivering of equipment from Israel to Ethiopia, conducting training programs for the successful adaptation of technologies, and providing on the ground logistical and professional support.

Private Sector:

In the past year, CultivAid has placed more emphasis on private sector development. Investors throughout Raya have approached CultivAid, requesting technical support and extension for their medium scale farms. CultivAid has initiated program to support these farms through market access to agricultural inputs and has conducted several learning visits to understand the challenges of these farmers. Current efforts are underway to support organizing these farmers and establishing a Private-Public Partnership.

Science, Technology, Engineering, Mathematic (STEM) Education

Since 2014 CultivAid has been working together with **STEMPower (NGO)** to implement different types of applied science activities for high-school students. The collaboration with the STEM center aims to provide students with scientific experience through hands on work. CultivAid has developed is currently implementing curriculums in “Water and Earth Science”, “The science of Agriculture” and “Chemical Engineering”.

5. Other statements, if applicable, about organizational conflicts of interest, security clearances, and environmental impacts;

CultivAid is registered in both Israel and Ethiopia and has no conflicts of Interests.