Ecological Organic Agriculture (EOA) Advocacy Workshop
Proceedings Report

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Background

Institute for Sustainable Development (ISD) is a pioneer organization in starting to work with smallholder farmers in Tigray region by selecting self-initiated communities to promote sustainable farming system and improve their livelihoods. In collaboration with the Tigray bureau of agriculture and natural resource, targeted capacity-building activities were employed in the area of soil fertility enhancement using locally available inputs and the restoration of the natural environment by mobilizing community labor and providing technical supports. In the midst of many challenges in Ethiopia, the Tigray project brought hope. ISD launched the ecological agriculture farming system with full consent of the local communities and in agreement with local decision makers with the objectives of supporting communities to be food secure and reviving the natural environment. Its long term and systematic work to develop sustainable farming has returned an area, hit-hard by erosion and droughts, into an agricultural system that generates bigger harvests and greater incomes while improving ground water levels, soil fertility and biodiversity.

After the Tigray project- “Resilient farming against all odds” was implemented, the project impact was visited by the key stakeholders that included local, regional and national level decision makers. The project received international attention. The experience gained from the project is being spread in a growing number of districts in the grain belt of Ethiopia (Goncalves, etal, 2018). Similar interventions have been carried out in other African countries like in Kenya, Uganda, and Tanzania, from East Africa, Benin, Senegal and Mali from West Africa by development partners of the national governments. These agro-ecological interventions are driven by community initiatives. They have led to improving the livelihood of local communities and reviving ecosystems in different zones of Africa. The results are researched and documented by scientists as sustainable farming systems. The impacts and the lessons of similar projects in different African countries, supported by ground evidences, was presented to the meeting of African heads of states. This finally resulted into the continental initiative: Ecological Organic Agriculture Initiative for Africa which has been going on since 2017.

Ecological Organic Agriculture is a holistic production management system that considers the agroecosystem a complex adaptive system in all its diversity. EOA focuses on attaining a balanced food system designed to enhance biological diversity and promotes healthy use of soils, air and water. It relies on renewable resources in locally organized agricultural systems. The EOA continental initiative has been financially supported by the Swedish Society for Nature Conservation (SSNC) with six pillar-based interventions and the Swiss Development Cooperation (SDC) with four pillar-based interventions. Under both interventions, advocacy work is a key component. It is addressed by organizing local and national level workshops, facilitating field visits for knowledge sharing as well as documenting and publishing experiences at the grassroots level to lobby with key decision makers to mainstream EOA.

Accordingly, on December 29, 2022, ISD organized an advocacy workshop with the theme “Perspectives from the Experience of Promoting Organic Agriculture and Climate Resilience of Smallholder Farmers in Ethiopia”.
The workshop targeted relevant directorates from the Ministry of Agriculture; the Environment, Forest and Climate Change Commission; the Biodiversity Institute; partner organizations working on agroecology and related thematic areas; farmers implementing EOA; media; public universities, research institutes, private service providers and representative schools from EOA implementation regions.

The advocacy workshop aimed to increase the visibility of EOA with the objective of promoting a better understanding of the value of EOA to the wider public. In doing so, it will increase policy space and support for EOA as a viable means of ensuring food and nutrition security at national and regional levels. The workshop expected to enhance networking and partnership among different actors (government institutions, private actors, and media) to promote the benefits of EOA, its scaling-out, adaption and eventual mainstreaming into the national agricultural extension strategy.

More specifically, the EOA advocacy workshop sought to creating evidence-based and result-oriented promotion of EOA or Organic Farming (OF) that also address the climate change issues. The platform availed an opportunity for key actors in government, NGOs, networks and community-based organizations to learn from the experiences of organic smallholder farmers and scientific findings with some updated principles and practices. By promoting EOA, the advocacy workshop contributes to the efforts of reducing the pressure of expensive chemical fertilizer, pesticides, etc. imports, and increasing the availability of some organic inputs.
1. Content of the Ecological Organic Agriculture (EOA) Advocacy Workshop

The Ecological Organic Agriculture (EOA) Advocacy Workshop was organized on the 29th of December 2022. It contained speeches by the organizer ISD and Co-Chair of the National Steering Committee of EOA Initiative, presentations from researchers, producers, private service providers and projects of the organic agriculture nature. Organic farmers also shared their stories of challenge and success compounded by discussions on the presentations.

Below are presentations that were shared and discussed during the EOA advocacy workshop:

- Supporting Ethiopian smallholder farmers research in climate resilient and agro-ecology: Promoting the Push-Pull Technology in West Gojam, East Gojam, Awi, North Gonder and East Shewa zones of Amhara Region
- Vermicomposting/Vermin-wash tactics and production
- Effective Microorganism (EM) technology: production in harmony with nature
- The current Ethiopian agriculture strategy and opportunities for EOA mainstreaming
- Agro-ecology for a better food system, resilience & diversity: the case of Arbe integrated ecological farm (ISD’s AVACLIM Project)
- The experience of vegetable & fruits production: a case from smallholder farmers under EOA Initiative
- Reviving farmers’ seed variety for ensuring food security and food sovereignty
1.1 Speeches

The following are welcoming and opening speeches of the advocacy workshop on Ecological Organic Agriculture (EOA) in Ethiopia.

1.1.1 Welcoming speech

Ghebremedhin Belay, Executive Director, Institute for Sustainable Development (ISD)

As presented by Gizaw Gebremariam, Deputy Director and Program Manager, ISD

“Dear Mr Bitew Shibabaw,
Director of the Forest Development Directorate, [Environment, Forest and Climate Change Commission (EFCCC)];

Dear participants of the workshop from various government and humanitarian organisations,
Dear participant farmers,
Ladies and gentlemen,

First of all, on behalf of myself and the Institute for Sustainable Development, I would like to welcome you to the Ecological Organic Agriculture advocacy workshop. Also, I would like to thank Mr Bitew Shibabaw for being among us today.

As you know, it is clear to everyone that the role of agricultural development in Ethiopia is multifaceted and it is the basis of livelihood in general. Therefore, an all-rounded success of our agricultural development is highly expected. From this point of view, our agriculture should develop by preserving ecological balance, at the level of development the world has reached now. Currently, Ecological Organic Agriculture is believed to help this; it has become apparent that it is indeed importance and fruitful.

Dear participants of the workshop,

In the actual situation of our country, it can be said that there is no other competitive sub-economy that can replace our agriculture. Because the development of our agriculture has an important role for the development of other sub-economies. From this point of view, it can be understood that we as agricultural development service providers have a lot of work to do. Therefore, it would be appropriate to point out the importance of promoting Ecological Organic Agriculture. In connection with this, our country faces some of the following problems:

1. Shortage of healthy food; Decrease in soil fertility; the presence and rise of pests and weeds, and the like.
2. Disturbance of ecological balance (drought, landslides, deforestation, loss of biodiversity, etc.)
3. Loss of vitality in the ecosystem; and
4. Mankind's lack of care for natural resources.

The negative impact of the aforementioned problems is high. For instance,

1. In terms of population, it is important to mention that Ethiopia has more than 110 million people; about 25% of the population is below the poverty line, unemployment is increasing, many are vulnerable to food shortage especially during drought, people are increasingly exposed to diseases, etc.
2. About natural resource, Depletion of soil fertility, the prevalence of land erosion, pests, weeds is resulting in reduced yields and higher prices of non-renewable agricultural inputs.
3. Other damages to natural resources, some studies indicate that Ethiopia is,
   ✓ the 5th most vulnerable to drought from 184 countries;
   ✓ the 5th most vulnerable to landslide from 162 countries;
   ✓ 34th in the list of 162 countries vulnerable to flood

I understand that you can mention other similar problems than mentioned. Also, let us think for a moment; how about the clean air we use. If this clean air (oxygen) was bought with money, our life and livelihood would be very difficult. Thank God this is not the case. Also, the role of Ecological Organic Agriculture in solving the mentioned problems is growing from time to time, so it is certain that we will have a better life. Therefore, we have to constantly develop our attitude towards Ecological Organic Agriculture and contribute to reducing the problems our country is facing.

Dear Mr Bitew,

Dear participants of the workshop,

Since organic agriculture or Ecological Organic Agriculture is proved to contribute to healthy food, ecological balance and the like, the aforementioned development direction is gaining traction in some countries. To mention some, the United States of America, Argentina and Mexico from the American continent; India and China from Asia; Spain and Germany from Europe; and Australia are producing organic at a high level. From Africa, the progress that Uganda is showing is not small. In recent years, Ethiopia is benefitting from producing and exporting organic coffee, honey, sesame and some vegetables. But compared to our country's untapped natural resources and problems, it is very limited. By improving and supporting actors in the organic agriculture system, from farm to fork, it is possible to obtain high organic production both in quantity and variety. In this regard, the progress our country is making in implementing the Green Economy Plan is encouraging, but we still have a lot of work to do. This advocacy workshop on Ecological Organic Agriculture is designed to contribute to the rest of the work.
In this workshop, I think we can all agree that it is very important to listen carefully to the stories of farmers who are engaged in Ecological Organic Agriculture as they share their practical experiences and how their livelihoods are improving.

On behalf of the farmers, I would like to sincerely thank SDC from Switzerland and SSNC from Sweden for supporting the advocacy workshop and, in general, the Ecological Organic Agriculture development project.

Finally, I would like to heartly say, “we create a better environment for life”, the motto of the Institute for Sustainable Development which gives us great energy for our work.

Thank you very much for listening attentively.”
1.1.2 Opening Speech

Bitew Shibabawe, Co-chair of EOA National Steering Committee, Director of the Forest Development Directorate, in the Environment, Forest and Climate Change Commission (EFCCC)

“Honorable Gizaw Gebremariam, Deputy Director and Program Manager of the Institute for Sustainable Development

Honorable officials from various governmental and non-governmental organizations, higher education and research institutions and farmers at the forefront of ecological organic agriculture, who are the focus of this workshop, I am honored to welcome you all on behalf of the Ecological Organic Agriculture National Steering Committee (NSC) and myself.

Dear invited guests,

Agriculture, which is the backbone of our country’s economy, is based on the efforts of millions of smallholder farmers. Since the area of land cultivated is not proportional to the population size and is eroded by various human-made and natural causes, we are unable to increase production and productivity. In relation to this, due to the inability to produce enough food crops in our country, we have been unable to ensure national food security in a sustainable manner. In order to solve this problem, the government has been devising and implementing strategies. One of the means the government uses to implement the strategies is the Ecological Organic Agriculture project.

The Ecological Organic Agriculture project is implemented in Ethiopia and other African countries since December 2011 after the African leaders’ summit passed the decision.

Ecological Organic Agriculture contributes to sustainable input use, especially to protect soil fertility and protect crops from pests and diseases; it does not have negative impact on natural environment and human health and helps smallholder farmers to be resilient to climate change.

Therefore, we have to support this practice with information, technology and value chain and market linkage to benefit our people.

Dear invited guests,

The Institute for Sustainable Development works with partners to coordinate the project based on four pillars: Research and Extension, Information Communication and Extension, Value Chain and Market Development as well as Project Steering and Implementation in
collaboration with Wollo University and PAN Ethiopia. In order to achieve the project goals, a steering committee has been formed including stakeholders; the committee is doing its part by conducting regular meetings and field inspections. In connection with this, the committee believes that the research and technology presentations as well as inputs from participants in today’s workshop have a big role to play to succeed with the project.

Finally, I would like to thank organisers of the workshop, staff of [ISD] and members of the committee. I wish you all a successful workshop and declare that the workshop is now officially open.

Thank you!”
1.2 Presentations, Success Stories and Discussions

1.2.1 Presentations 1, 2 and 3

Presenter #1: Getenet Atanfu (PhD), Debre-Markos University

Title: Supporting Ethiopian Smallholder Farmers Research in Climate Resilient and Agro-ecologically Intensifying Production of Cereals and Legumes for Improved and Healthy Livelihoods

Maize and sorghum are the principal food crops for millions of the poorest people in the predominantly mixed crop-livestock farming systems of Ethiopia. There has been progress in both the production and productivity of these crops through provision of modern inputs- improved seeds, fertilizers, pesticides, and some farm implements. Its production in northwestern Ethiopia is severely constrained by the parasitic weed Striga hermontica, stem borers, and poor soil fertility due to continuous mono cropping.

Africa faces increasingly serious problems in its ability to feed its rapidly growing population, resulting in high hunger and poverty incidences. Growth in agricultural productivity is essential to reduce hunger and poverty and ensure food security. Agricultural growth can be achieved by reducing incidence of the major constraints to productivity such as pests, weeds and degraded soils. These constraints are responsible for the continent’s crop productivity being the lowest in the world (around 1t/ha compared with 2.4t/ha in South Asia, 3.2t/ha in Latin America and 4.5t/ha in East Asia and Pacific), and cause high levels of hunger, malnutrition and poverty.

Stem borer and parasitic striga weeds and poor soil fertility are the three main constraints to efficient production of cereals in SSA. Losses caused by stem borers can reach as high as 80% in some areas and an average of about 15-40% in others. Losses attributed to striga weeds on the other hand range between 30 and 100% in most areas, and are often exacerbated by the low soil fertility prevalent in the region. The soils are highly degraded due to continuous cropping with limited or no external inputs to improve soil fertility. When the two pests occur together, farmers often lose their entire crop. Crop losses caused by stem borers and striga weeds amount to about US $7 billion annually, affecting mostly the resource poor subsistence farmers.
Several control options against Striga and stem borer have been studied from cultural up to chemical measures, but none has been effective for small holder farmers. Pesticides, especially, are not the most sustainable way to fight Striga and stem borer due to

1. Economic and energy costs of developing, producing and applying them
2. Resistance to the pesticides in target pests
3. Disruption of natural control by pesticides
4. Human health hazards - acute and chronic effects - user and consumer risks
5. Pesticides threaten to environmental safety
6. Effects of pesticides on pollinators
7. The pesticide treadmill

This reality encouraged Debre Markos University to study and promote the Push-Pull Technology (PPT) in collaboration with ISD. PPT is an Environmentally friendly pest management options that involves intercropping cereals with a repellent plant, such as desmodium, which repels or deters stem borers from the target food crop. An attractant trap plant, for instance Napier grass, is planted around the border of this intercrop, with the purpose of attracting and trapping the pests. As a result, the food crop is left protected from the pests. In addition, desmodium stimulates the germination of striga and then inhibits its growth. Effective use of PPT helps farmers cope with climate change by providing continuous soil cover by a legume, desmodium, that also increases the nitrogen content of the soil, thus reducing or eliminating the need for use of chemical nitrogenous fertilizer. At the same time, farmers benefited from improved animal forage from the legume and border rows of a grass that ‘catches’ the stem borers.

The focus of this study project was on scaling out of PPT to major maize and sorghum-growing areas in West Gojam, East Gojam, Awi, North Gonder and East Shewa zones of Amhara Region by first evaluating the effectiveness of the technology and investigating its impact on improving grain yield and soil fertility. The process involved local farmers and extension professionals in monitoring farmer adoption of the innovation to their local contexts.

Field experiments were conducted on farmers’ field in 2017 and 2018 cropping seasons at Gozamin, Hult eju enesie and Jabitenan weredas (districts). From 100 farmers from each district, who tried the technology, 6 were randomly selected for the analysis. Each farmer had a set of two treatments (plots) a PPT and a maize monocrop treatment.

Data was collected on damage score by stem borer; the number of emerged Striga hermontica; plant height; grain yield; available phosphorous, available potassium, total nitrogen, organic carbon, organic matter and bulk density in the soil.

The results indicate that there was highly significant reduction in stem borer damage score (1.13) and Striga count (2.73 Striga plants/m²) to maize plants in the PPT plots compared to maize monocrop plots (2.3, 14.53 Striga plants/m², respectively). The maize plant on the PPT plot grew as much as 2.34 meters while on the non-PPT plot it remained at 1.86 meters. In terms of yield, farmers were able to harvest in average 52.53 quintals of maize per hectare.
from their PPT plot which is significantly higher than the 30 quintals harvested from a hectare where the PPT was not used.

We also registered a significantly higher phosphorous (20.06 ppm), potassium (406.86 mg/kg soil), total nitrogen (0.25%), organic carbon, (4.29%), organic matter (7.38%) and bulk density (0.92 g/cm³) levels in soil from PPT plots. This is a moderate to high fertility status compared to monocrop plots that contained phosphorous (11.17ppm), potassium (347.93 mg/kg) total nitrogen (0.16%), organic carbon (2.98%), organic matter (5.12%) and bulk density (0.95 g/cm³) which is rated as low soil fertility level.

The findings suggest that the technology is effective in reducing striga and stem borer infestation which results in better grain yield and soil fertility status. An important spin-off from the project is that the companion crops are valuable forage for farm animals.

At the outset of the study, the research team multiplied the desmodium seed in irrigation sites and Farmers Training Centers by involving fifteen farmers. Although there was market linkage problem, farmers still managed to harvest and sell the seeds. Farmers were very positive about the Push-Pull Technology, even if they may not clearly understand the main achievements. That is why an extra effort is required to work on farmers’ attitudes for the implementation of PPT in the study areas.
I started producing vermicompost and vermiwash in the strawberry farm I work in. I took the initiative to test the technology and bought the vermi-worms with my personal money.

Vermicomposting is a technology of composting various forms of biodegradable wastes with the help of earthworms. This compost is perfectly balanced and good in plants nutrients. It is the practice of using concentrations of earthworms to convert organic materials into usable vermicompost.

Vermicompost is called the “Black gold” as it is the best form of bio-fertilizers that comes from garbage.

Vermicomposting requires earth worm castings, bedding materials as well as organic matter. Vermiculture is where the earth worms breed and decompose complex organic matter by reducing the carbon-to-nitrogen ratio in manure. There are different species of earthworms for vermicomposting like eisenia foetida (Red earthworm), eudrilus eugeniae (night crawler or African nightcrawler) and perionyx excavatus etc. I used red earth worms to produce vermicompost and vermiwash. It takes between 45 and 50 days to produce vermicompost.

Vermicompost can be producing using one of two methods. One is the pit method which is commonly used for small scale production of vermicompost in a pit in the ground. The other method is the bed method where the compost is prepared in a bed elevated over the ground. This method is easy to maintain and practice.

Vermicompost contributes to better plant growth and crop yield by improving the physical structure of soil and enriching it with micro-organisms. It increases water holding capacity of soil and improves root growth of plants. Vermicompost minimizes the incidence of pest and diseases. While it is rich in all essential plant nutrients, vermicompost is free from pathogens, toxic elements, weed seeds, etc. by enhances germination, plant growth, crop yield and the decomposition of organic matter in soil it helps improve soil fertility and protect the environment. Vermicomposting saves money spent on buying synthetic fertilizer.

The dosage of vermicompost used on a farm is based on the crops we grow. For field crops, 5-6 tones/ ha vermicompost is applied. For horticultural crops, it is advised to combine an equal amount of manure with vermicompost. In fruit crops, apply 4-5 kg of vermicompost per plant in the tree basin. Vermicompost can also be used in potted plants.100-200 gm/ pot is the ideal dose for plants grown in pots.
In Ethiopia vermicomposting is widely used by farmers while vermiwash is not common. Vermiwash is a leachate obtained from earthworm excreta during vermicomposting. It can be collected by passing water through the medium of the earthworms. It is a type of liquid bio-fertilizer; it is brown and odorless. It is acquired during the vermicomposting procedure of worms harvesting. As a foliar spray, it was reported to initiate flowering and long-lasting inflorescence. It can also be used as a liquid fertilizer applied to the rhizosphere. Vermiwash

- Increases the rate of photosynthesis in plants;
- Improves soil structure: better aeration and water retention;
- Naturally improves plant health: growth, fertility, yield, fruit taste;
- Boosts chitinase, humus, essential nutrients and minerals in soil; and
- Avails nitrogen, phosphorus, phosphate, potassium, potash, sulfur, magnesium, calcium, sodium, iron, manganese, copper, zinc and boron for the soil.

Vermiwash is also a liquid plant growth regulator which contains high number of enzymes, vitamins and hormones like auxins, gibberellins etc. along with macro and micro-nutrients. It contains plant growth hormones like auxins and cytokinin apart from nitrogen, phosphorus, potash and other micronutrients.

**Production Process of vermiwash**

It is easy to produce vermiwash:

- After 7 to 10 days of adding water, vermiwash can start to produce in a container.
- On 15 days, about 35 to 40 liters of vermiwash can be produced.
- The collected vermiwash must be stored in a cool and dry place.
- The vermiwash can be diluted to 10 to 15% and can be treated as a pesticide or fertilizer on the crop plants or on the soil.
In terms of the use, it is possible to mix one liter of vermiwash with ten liters of water before spraying it on plants. The vermiwash can be used alone or mixed with cow urine to promote excellent plant growth. As a foliar spray, the vermiwash is diluted with water for five times and then sprayed on the crops. It enriches the soil with nutrients and this helps in controlling plant disease. We also use the irrigation system on our farm to deliver the vermiwash solution to plants through the dripline. A third alternative is drenching: the vermiwash is diluted about ten times with water. Then the soil is drenched with the solution to prevent some of the soil-borne pathogens as it has anti-microbial properties.

Although vermicompost and vermiwash have many benefits, I would like to mention one which we struggled with most in our strawberry farm: eradicating pest infestation. We started applying vermicompost because we wanted to reduce the prevalence of pest in the soil at the farm. We also realized it contributes to plant growth and improves the physical structure of the soil thereby increasing production and productivity.

We especially struggled with fusarium, a pest [fungus] that infests strawberry and vegetable plants. It was very challenging to control it at the farm. The vermiwash, particularly, proved to be effective in controlling fusarium. We apply it on the strawberry plantation in the form of a spray.

Vermiwash provides 17 nutrients essential for soil. We have sent vermiwash samples to Kenya to have this checked and approved. I took the personal initiative to try vermicompost and vermiwash in the strawberry farm I work for to do my part to reduce foreign currency spending on synthetic fertilizer and its negative impact on human health. Fusarium and phytophthora infestation are worsened by artificial fertilizer, while vermicompost and vermiwash has the capacity to kill these diseases and other pests.

We also produce avocado, lettuce and broccoli at the strawberry farm. We apply vermicompost and vermiwash on these plants. Now we are selling the seedling to farmers in the community around.

The objective of using and promoting vermicompost and vermiwash is to support the market by providing an alternative to the synthetic fertilizer which has become very expensive. Generally, vermicompost and vermiwash are new versions of bio-fertilizer and the best choice for organic farmers and producers. They can reduce thousand tons of solid waste into organic fertilizer and play an important role in cleaning planet earth.
EM has been discovered by Professor T. Higa of Japan. It was originally aimed at giving alternative to chemical fertilizer. It is now known to be multi-purpose. The principal composites of EM are phototropic bacteria, lactic acid bacteria, yiest and 70 to 80 catalytic microorganisms. Most of these are found in everyday food and drinks (enjera, bread, milk, wine, cheese, yoghout, fresh vegetables, etc.). The technology is certified throughout the world.

In natural environment, harmful and beneficial microbes consist of 5-10%, each, the rest 80 - 90% are neutral. Either microorganism dominate depending on the ambiance (food, temperature…) and by creating environment that is predominantly favorable to them. In disease induced soil, neutral microbes become pathogenic while in healthy soil neutral microbes mutate with beneficial microorganisms.

The Effective Microorganism (EM) Technology contributes to crop production, animal production and environmental management.

EM can be applied to facilitate compost making to produce high quality, odor free compost within a relatively short time. A compost prepared using EM has more available plant nutrients (26% N, 30% P (mg kg\(^{-1}\) soil) and 5% K (mg kg\(^{-1}\) soil)) than conventional compost. It can enrich the population of beneficial microbes in the soil through irrigation to enhance nutrient exchange with plant roots and suppress soil-borne diseases. EM can be used as a foliar feed to boost photosynthesis and plant health.

EM improves livestock growth rate, productivity, health, weaning rate and adult fertility. It is added in feed for livestock or their drinking water to ferment food and improve digestion. EM can be sprayed over cattle and their shed to eliminate foul odor and harmful microorganisms that may lead to epidemics. In addition, it helps convert animal waste into organic fertilizer.

EM adds value to agricultural byproducts for feed by, for example, fermenting wheat bran and boosting its vitality; it turns the feed soft and easily palatable. Fermentation processes by EM™ accelerate the rupture of compounds as proteins, sugars, fats and fibers, promoting the rapid assimilation of nutrients by metabolism. In addition to facilitating fermentation, the technology excludes other harmful microorganisms through the production of beneficial by-products such as enzymes, organic acids, amino acids, hormones and antioxidants that promote the health of and detoxify the environment.
With EM, most crop residues can be turned into feed. As much as 50 kilogram of crop residues can be ready for use to feed cattle after a 24-hour fermentation in anaerobic condition by adding just one liter of EM, one liter of molasses and 18 liters of water. Coffee husk fermented with EM have been found to be highly preferred by sheep and cows. EM is also used in poultries to improve feed intake. Overall, the technology contributes to increasing milk and egg production and profitability.

Now, we are working to ensile harvested cane tops with EM instead of burning it. This way it could be a source of huge quantity of cattle feed and a large sum of income. While cattle fattening could be a prospective sideline enterprise, this process prevents air pollution. There is also a movement to apply EM on invasive water hyacinth of Lake Tana and convert it to animal feed. This is founded on an experience where an evergreen shrub, prosopis juliflora—one of the most invasive species in arid and semi-arid areas, introduced to the Awash area of Ethiopia—was converted to animal feed using EM and molasses.

With the help of EM Technology, an unconventional feed like Taro root was proven to replace maize in poultry feed. Research at Wolaita University showed that Taro root fermentation with EM (45%) minimized the high fiber content and anti-nutrient factors and improved bodyweight with good performance of broiler chicken without any determinant effects.

Another study by Debre Tabor University on EM, crop residue and its effect on milk production demonstrated that feeding of Fogera cows with EM-treated rice straw resulted in significantly higher daily dry matter intake (8.52kg/cow), higher daily weight gain (27.7 g/day), higher daily milk yield (2.82l/day) and highest net income and marginal return rate (MRR) (82.6 and 194%, respectively) when compared with those cows fed on untreated rice straw. Hence, according to the results of this study feeding of lactating Fogera cows with EM-treated rice straw is efficient for both biology and economy compared to urea-treated rice straw.

In waste management, injecting EM into waste separates the pulp. While the pulp will be transported to a compost site the liquid passes to an infiltration basin and then through a vetiver grass to further filter mucilage and let clean water.

EM is also used to treat organic waste in city landfills. Some have successfully produced an odor-free compost in just 8 weeks and were able to get cash from trash. EM can also be used in urban agriculture where it can be used to recycle kitchen waste for gardening.

EM has been studies by the Ethiopian Institute of Agricultural Research and universities. However, a lot awaits to be discovered about the Effective Microorganisms Technology.
1.2.2 Summary of Discussions on Presentations #1, 2 and 3

After the three presentations on the Push-Pull Technology, Vermiwash and Effective Microorganisms, the workshop was open for questions, feedback and discussion.

Bitew Shibabawe, Co-chair of EOA National Steering Committee, began by appreciating the presentations. He asked the presenters about plans to deliver the ecological practices and technologies to the wider community; collaboration with governmental and non-governmental stakeholders; scaling the technologies and the challenges they faced so far.

Berhanu Miressa, a soil health expert from the Ministry of Agriculture, expressed his gratitude for learning two new technologies. He particularly enquired about vermiwash and Effective Microorganism (EM) Technology which he stated were fairly new for the Ministry. Berhanu explained that the Ministry is working to promote soil health and fertility—one of ten major activities identified—by treating acidic soil and promoting organic agriculture. Accordingly, he recognized the role of the two presenters in promoting the organic inputs and asked how they intend to work with the Ministry. He expressed that they are ready to demonstrate and scale it up and promote it for many more farmers.

The issue of scaling the ecological practices and technologies was shared and emphasized by other participants of the workshop such as Tafach Meaza from ISD and Negussie Bekele (PhD) from Ambo University. Dr Negussie also enquired about the adoption of the Push-Pull Technology Debre Markos University is promoting. In addition, he asked if the 100 people sample size was enough to make the conclusion of the study.
Tewodros Ayalew (PhD) from Hawassa University asked about the recommended ratio of 1-liter vermiwash to 10 liters of water Tolossa Tolcha presented. He specifically asked if the dose is tried and tested and can be recommended.

The matter of patenting the Effective Microorganism (EM) Technology was an inquisition made by Kefena Effa (PhD), a researcher from Holeta Agricultural Research Centre. Working very closely with the government is a recommendation he made to the presenters of the ecological technologies.

The presenters responded to the questions on their presentations from the participants. Regarding, the Effective Microorganism (EM) Technology, Gideon explained that his company is always looking to work with the Ministry of Agriculture. Accordingly, he happily received the invitation to collaborate: “the linkage is what was always missing.”

As to the questions regarding patent, Gideon explained that EM has an international patent and is used in many countries: “It is not registered in Ethiopia as there were a few political issues so far. We have a trade license around it which is annually renewed by the Ministry of Agriculture, but there is no patent for EM in Ethiopia.”

In terms of challenges to the ecological Push-Pull Technology (PPT), Dr Getnet explained that promoting the technology was challenged by the shortage of desmodium seed. As to the limited sample of 100 farmers, Dr Getnet explained that this was just an average number. As to promoting other ecological practices and technologies, he stated that universities are the right places to promote research on them at graduate and postgraduate levels. With regards to the question of adoption of the PPT, Dr Getnet stated, “the technology is designed as an extension package to promote it in Amhara Region. However, the adoption
process requires a lot of effort as its introduction is challenged by farmers for many reasons associated with land and land use.”

For the vermiwash ecological technology, Tolosa began by appreciating ISD for providing the platform to share his experience with using vermiwash in the strawberry farm. With regards to the challenges around his experiment Tolosa said it was challenging from the beginning: “it was not easy securing the vermi-worms; I had to propagate and collect them from under a bitter leaf tree with the help of online research.” Tolosa started producing vermiwash after secured additional one kilogram of vermi-worms from a colleague in the farm who is also a farmer that worked with ISD: “I had to hide it from the General Manager and strawberry farm managers for three weeks because I wanted to go to them with results.” Tolosa also welcomed the call for collaboration with the Ministry of Agriculture and any interest to collaborate on scaling vermiwash and marketing it for smallholder farmers. He took the opportunity to invite the various stakeholders in the workshop to find and work with talented youth in farms who are motivated to do their part for their country. On the question regarding the ratio of 1-liter vermiwash to 10 liters of water Tolossa explained that it was acquired through continuous trial and study of various literature on the subject matter.
Extension is nothing but ‘helping farmers to help themselves’ to bringing behavioral change through smooth communications. It is one of the most important tools to attain development goals. Ethiopia has a broad-based extension system where the government has deployed more than 70,000 Development Agents (DAs) and constructed about 14,000 Farmers Training Centers (FTCs) in farming communities. While over 16% of the national budget is also allocated for agriculture, food security still remains to be the major challenges.

That is why the Government of Ethiopia developed the transformative Agricultural Extension Strategy. The strategy aspires to create modern, effective and efficient agricultural extension system through market-oriented, demand-driven and pluralistic extension services with the ultimate goal of integrating modern agriculture with the rest of economy and establishing a wealthy society free from food insecurity and poverty. This will especially be important to promote technologies that farmers want instead of those, we (as different stakeholders), believe will be useful for farmers.

The extension strategy seeks to contribute significantly to the attainment of food and nutrition security, poverty reduction and wealth creation in the country through adoption and adaptation of improved technologies and best practices. More specifically, it aims to transform Ethiopia’s agriculture through the implementation of a pluralistic extension system and by providing demand-driven and market-oriented extension services to male, female and youth farmers, pastoralists and agro-pastoralists.

They key guiding principles of the Agricultural Extension Strategy of Ethiopia are:

1. Market-oriented and demand driven extension system
2. Government-led pluralistic extension service
3. Participatory, multiple extension methods and approaches
4. Value chain and agricultural commercialization cluster extension approach
5. Location and agro-ecology specific interventions
6. Gender, youth and nutrition mainstreaming
7. Mainstreaming of environmentally sustainable agricultural practices
8. Competent and skilled human resource
9. Specialization and diversification
10. Process and result oriented extension services
11. Inclusive extension services
12. Integration and harmonization with others complementary services
13. Scaling of best practices
14. Responsibility & accountability

According to these guiding principles, the Ministry has identified the following pillars of intervention:

1. Strengthen FTCs through active engagement of community and capacity building for improved production & productivity
2. Enhance agricultural knowledge management and information
3. Enhance client-oriented and multi actors’ advisory extension services
4. Facilitate market linkage and value chains development
5. Gender, youth and nutrition mainstreaming
6. Enhance environmental management and sustainability
7. Enhance institutional arrangements, coordination and linkages among key agricultural development partners
8. Human resource development and utilization for effective extension service delivery
9. Establish strong and dynamic MELS for continuous improvement of extension services delivery

Out of these pillars, pillars 3 and 6 are suitable to integrate and promote Ecological Organic Agriculture in the agricultural extension system of Ethiopia.

Pillar 3 - enhance client oriented and multi actors’ advisory extension services, aims to make the extension services diverse, client-oriented and inclusive through engaging potential actors in agricultural development. This is a measure against the current limited involvement of stakeholders in providing extension services; low cooperation and collaboration between public and NGOs in extension services; and insufficient involvement of cooperatives and other private sectors (agro-processing companies) in extension services.

As a strategic intervention to the bottlenecks discussed above the Ministry of Agriculture plans to strengthen pluralistic agricultural extension advisory services by identifying competent actors; enhancing coordination between public, private & NGOs extension services; enhancing cooperative-based extension advisory services (market information, supply of farm implements, credit facility, and other inputs) and improving the role of agro-processing and input supplying companies in extension services. Agricultural extension service should not be just the responsible of the government. Although NGOs—due to their limited resources—are limited in a specific area with their intervention, there will be a way to promote promising interventions beyond this limited scope.

Pillar 6 - enhance environmental management and sustainability, aims to integrate environment, natural resource management, and agricultural extension services in sustainable ways. This plan is challenged by poor link of natural resource management extension services
with livelihood strategies; limited capacity on environment and natural resource management; low access to and use of climate-smart agriculture technologies and agro-metrological information; and lack of attention to environment sustainability in the extension advisory service.

As a solution, the Ministry plans to enhance environmental management and sustainability by promoting natural resource management extension services and linking them with livelihood strategies in physical conservation (terrace, gully control and other structures) and biological conservation (improving agronomic practices, plantation on the bund (top of terrace)). It also plans to improve technical capacity of extension staff on natural resource management and environment protection; promote climate-smart agriculture and agro-metrology information; and develop climate friendly technologies.

A very important initiative under this pillar for Ecological Organic Agriculture is mandate zonation. As you are all aware research centers and universities are at the forefront of the technological research work. With mandate zonation the Ministry will be responsible for the promotion of these technologies. It is already introducing various agricultural technologies to farmers based on their suitability for specific agro-ecologies and farmers’ demand. This is especially interesting to the technologies we learned about earlier on ecological organic agriculture, the vermiwash and EM Technologies that can be tested and promoted in the mandate zonations.
The AVACLIM project aspires to ensure food security and sustainable livelihoods while mitigating climate change and restoring land in dryland regions.

The project has four components:
1. Characterizing agroecological initiatives and knowledge sharing,
2. Conduct scientific evaluation of selected initiatives,
3. Advocate on the basis of the scientific assessment, for public policies conducive to agroecology, both at the national and international levels, and
4. Communicate actions in order to disseminate the results obtained.

The project is implemented in seven countries across the world. The results studies under the agroecology project are shared in international summits such as by UNCCD and COP15. In doing so, the project aspires to aggregate focus from countries by presenting a convincing result.

The Institute for Sustainable Development (ISD) is currently evaluating two initiatives by forming a team of three scientific researchers. One of the initiatives is the Arbe Integrated Ecological Farm around Hawassa Town and the other is a vermicomposting initiative around Guder. The researchers conducted a lengthy study on both initiatives and are in the course of completion. We plan to organize a platform to share the results of the scientific research soon.

One of the initiatives, the Arbe Integrated Ecological Farm combines diversity with food security. Farmer Arbe tests agroecological practices on a small plot of land. She diversifies her agricultural production by cultivating Enset maize, pulses, fruits, root and tuber crops and coffee among others. keeping cattle, poultry and honeybees; and producing vegetables and fruit for sale, among others. All these diversified sources of food and income have made it possible for Farmer Abe to support her family. She is committed to continue diversity farming because it not only diversifies family diet and income sources, but also strengthens her capacity to cope with emerging challenges including climate change.

Diversification minimizes the environmental and economic risk like lower market price. It contributes to reducing resource wastage and promotes recycling. It provides a better living condition than a household that depends on sole cropping. Diversification also contributes to
improve capacity for resilience and reduces potential production risks. If one production fails for one reason or another, farmer Arbe has something else to fall back on and sustain her family.

The study on Farmer Arbe’s farm evaluated the benefits she got from applying agroecological practices based on over 140 selected indicators. The initiative has proved to be performing well over 70% while measured for economic performance, wellbeing, diversity and environmental health. This is a promising result which we intend to share as an advocacy position paper for stakeholders.

**Resilience of the production system:** Like other agroecological farms, farmer Arbe stopped using chemical fertilizers and shifted to the use of compost. She has developed her skills and knowledge of intercropping over time. She practices crop rotation by dividing her farm plot into small sections and grows different crop combinations. Farmer Arbe also grows multipurpose forage species and trees for timber production. Farmer Arbe produces most of the feed on her farm.

**Preserving resources:** Farmer Arbe grows different food crops and does on-farm conservation of these resources. The corn residues (the stalks left after harvest) are used as mulch on part of her farm plot. This is because mulching reduces evapotranspiration, prevents wind erosion and increases soil fertility as the leaves decompose on the farm and help to recycle the nutrients on the farm.

**Improved women leadership capacity & Inclusive governance:** The experiences gained from the agroecological initiative i.e., Arbe’s integrated and sustainable farm, made her to be a role model and community facilitator to train her neighboring farmers about her experience. She received trainings to improve her farm management and business skills.

Farmer Arbe runs the family farm business as a source of food and income for her household. She is empowered because she has alternative income sources and meets the cash needs of her family at ease and become successful agroecological woman.

**Improved economic Autonomy:** Woman farmer Arbe has built her self-confidence and has the capacity to make decisions regarding her farm activities and business. She is capable of deciding what she wants to grow on her farm plot and what type of income generating business to do. She can identify her sources of inputs, the clients who buy her products, when and where to sell her products as well as how to use the income generated. Her planned income generating activities enabled her to make profits and use that to educate her children meeting all their needs and also build a new home.

The results of the Arbe Integrated Ecological Farm require the attention of communities and government officials who attend this workshop so to be informed and take appropriate actions for creating conducive policy environment and supporting agroecological initiatives and practices in Ethiopia.

Accordingly, on diversity and greater resilience:
- The government should conduct and share studies on the benefits of diversification and on ecological practices;
- Government should support commercialization: certification costs for organic production and produces are very high (e.g., for coffee producers). Farmers who wish to convert to organic production rarely receive technical or financial support. The focus is mainly on export crop; and
- Government must facilitate the acquisition and use of land for family farming and develop agroecological experimental fields.

On *enhanced technological and financial resources*: The main obstacle to the agroecological transition is often the lack of access to technologies that facilitate agricultural work and financial aid that encourages the ecological conversion of practices. Therefore, Governments must financially support the agroecological transition, access to material resources and banking service.

*Dynamics of the transition to agroecological farming*

Although agroecological transition is practiced in a fragmented manner, estimates show that about 40 million hectares are allocated to agroecological expansion. However, these data are not well documented given the great attention and interest in large-scale industrial agriculture. A range of agroecological systems and practices exist in some territories more than in others. They are more prevalent in lowland and drought-affected areas due to the intervention of some NGOs, promoting climate-friendly agricultural practices. However, the transition is very slow and calls for a concerted and collective advocacy action among actors to bring more farmers into the transition process is paramount.

As the Institute for Sustainable Development (ISD), in addition to the Ecological Organic Agriculture Initiative, the AVACLIM project has produced position paper with advocacy messages based on the experience of Arbe Integrated Agroecological initiative and presented it during the Green Action Week in South Wollo Zone in Amhara Region. ISD has produced a film on climate change. A television and radio program are also produced and broadcasted for local audiences based on the story and experience of our initiative around Hawassa. We have published brochures and presented the project at national events. In addition, we have produced a scientific evidence draft result for advocacy based on the evaluation of the agroecological initiative. Despite all these efforts, promoting agroecological practices can’t be achieved by one organization. Therefore, it requires the collaborative effort of everyone involved.
1.2.4 Success Stories from Model Farmers Who Benefited from EOA Intervention

Worke Shumye, Model Farmer from Holeta

“I was a poor farmer; so poor that I was not able to feed my children. I had land but not knowledge. I had no experience with farming. Holeta Agricultural Research Centre is near our village, but I didn’t know what research was. I stayed home, raised children and relied on my husband to bring the money. That is where I started.

Back then, ISD was working with 15 farmers in our area. I asked one of these farmers—who is my neighbors—to show me how to produce vegetable and feed my family. It was never my plan to make money out of it.

I went to my kebele (local administration) and asked them to include me with the group of farmers working with [ISD and the Korea Project at the Holeta Research Centre]. Although I didn’t know much about farming, I believed I could learn and follow what my neighbors did. Why not! I was able, I can think and I can work. All I was missing was to do what others did.

When I observed the farmers in the Korea project, I saw they were applying chemical fertilizer and pesticides. I knew this has side effects and I also didn’t know how to apply them. My husband is a health extension worker and he wasn’t able to help me with applying chemicals. I could have tried but I didn’t know the exact amount of chemical to mix with water nor could I read the expiration date. It was all confusing for me.

Potato was the first crop I ever planted. It was destroyed by aphids because I couldn’t find someone who can spray pesticides. I thought that was the end. But I didn’t give up, I saved some money from what my husband brings home, sold cattle and decided to try again. That is when someone in my village convinced me to work with ISD. I wasn’t optimistic at first but I went to the training anyway. From the first day, I felt like they were talking to me directly. I started implementing immediately: on the evening of the first training day, I and my husband lit up a touch and dug a compost pit. I took the rest of the training for two more days and completed burying my compost.

In the meantime, I was also working with the Korea project. Since they encouraged applying fertilizer and spraying chemicals, I had to say no when they advised me to do the same on my farm. They said I didn’t know any better and I should let them help with the chemical application. I knew better and I rejected their proposal! The first crops I planted are vegetables like collard greens, spinach and lettuce which are managed easily. I sold the first harvest and started saving.
The Korea project built me a greenhouse and a chicken coop and gave me 10 chickens. I raised 10 to 20 and to 30 chickens. They still had their doubts about how I control disease on my farm without chemicals. I explained how I use various organic pesticides which I prepare from plants such as garlic and nettle. Over time, I proved how my method works and the researchers [in the Korea project] started appreciating it.

ISD facilitated a market linkage for my produce. I started bringing my produce to [Addis Ababa] and sold directly to consumers. That was the biggest contribution from ISD.

After I started working with ISD’s project and converted to organic, I produce different types of fruits, vegetables and herbal plants. Ever since, I never went to market to buy food. On occasion, when my husband buys vegetables from the market, even my children started to notice it is not organic just from the smell after dipped in water.

The point is that I have been able to feed my family. The Korea project has also put me in charge of leading 300 farmers for effective integrated farming. By using the vegetables biproduct as chicken feed and the chicken feces as manure for the vegetable, I save the money I spend on chicken feed while collecting quality egg and meat. My customers line up to buy the eggs I bring to market [in Addis Ababa]. This tells me that, if customers want the produce so much, there is no limit to how much we should produce.

After I took the responsibility of leading 300 farmers, they come to me for advice and guidance. The Holeta city administration was not initially informed about my work. However, later they also recognized me for the exemplary work. The administration brough over 200 women to my farm to learn from my experience in urban agriculture. Working hard has led many to knock on my door and look for me.

Money keeps knocking on our doors, we have to know how to open our doors and let it in. Thank You!”

Kebede Seid, Model farmer from South Wollo

“First of all, I would like to thank ISD for letting me be part of this workshop.

I used to be a fisherman. I had no experience with vegetable production and I had no land. I had a water pump, so I got into a contract with a landowner around the lake [Lake Hake] and I started producing vegetable as I saw fit. Back then, I wasn’t working with ISD.

When the first harvest came, I wasn’t sure how to sell it. With the little knowledge I had, I took
pictures and tried promoting my produce over Facebook. As a result, a wholesaler from Dessie came and collected the produce. That was an eye opener. After sharing the income with the landowner, I found it lucrative and decided to continue producing vegetables by renting land.

A youth group working on a nearby plot invited me to join a training by ISD. At first, I was not convinced; I thought it would be a waste of time. But then I went for a two-day training. Although I had no education, I was able to retain the training. After that, I participated in an experience sharing visit and received training on marketing including in Wollo University. I gradually increased my production by saving money and renting more land. Now, I have bought my own land. I keep buying land to produce more and more vegetables. I am sending my children to school and supporting my family.

Thanks to ISD, I am leading my life. It is all a result of their help. I will be happy if donors can keep supporting ISD so they can expand their work.

I am very happy to be here and thank you!”

Wondwossen Alemu, Model Farmer from Holeta

“My name is Wondwossen Alemu. As a first born, my mother gave me the name in memory of her beloved brother who died when I was an infant. I was born in Wolmera Choke Kebele (sub-district) in Wolmera Wereda (district) in Holeta. I grew up playing with mud and keeping cattle for my family like any ordinary son of a farmer. My Godfather put me through primary school.

We had many problems in our village. But it was also rich with natural resources: we have conducive environment, clean surface water and fertile land. You can plant and grow anything. However, people overlooked all of these gifts and fought over what we didn’t have; they still fight and live a low life. I grew up watching this and many problems in my family. When I graduated to high school, I needed pen, pencil and exercise books; the school was also 5 kilometers away, so I wasn’t able to attend high school. My father was addicted to liquor, so it was our mother who sacrificed a lot to raise us. They had everything but she was a daily laborer; they didn’t know better. I couldn’t work on my family’s land because my father contracted it and used the money. That was a very big challenge for me and my mother. So, I was forced to quit school.
After that I started daily labor work. I could do any work, but because I was very young, people wouldn’t hire me. The first time, I had to work for free and get paid later to convince them that I was capable to do the labor work. They appreciated my hard work and hired me. After some time, I saved some money, came to Addis Ababa, bought carrot seeds and started production. Then the war [civil war in 2020] started and I couldn’t continue producing on my family’s land. Then, I rented land and gradually increased my production. I also went back to school.

Our family land was rented to contractor farmers. It was eventually unable to produce any crop because the soil was eroded by water. The family was hungry and it was going to be worse. My mother carried the burden and I felt sorry for her. So, I decided to relieve my mother and left school. I started working on the land; I had no money or capacity but I had an idea; a dream and a belief that I can. I had a possible dream and trusted God to help me with my plan. He was ahead of me in every step of the way.

I started collecting chicken feces for compost. It was smelly, especially when wet, and many people criticized me about it. My plan was to revive my land and become independent from chemical fertilizer. I wanted to contribute to reducing the foreign exchange burden my country had to endure to import chemical fertilizer. The land gradually improved. I treated a dead land and eventually succeeded in producing Teff without chemical fertilizer. My family was full.

Then I produced potato, carrot and cabbage. The vegetables were so big in size. The laborers I hired were so impressed and happy that they wouldn’t take their 200 Birr per person daily fee. This was a great motivation for me.

I got better income. My family ate better. My mother was relieved. I covered the family expense and took care of them, although I was not married. I had to quit school but I sent my younger brother to school. I managed to do all of this in just a year after I started producing vegetables. I started getting as much as 50,000 Birr a month. I got 250,000 Birr net profit in just four months and 500,000 Birr in total. My older sister used to work in a construction material shop in Addis Ababa. We pulled resources, raised money from a youth-fund by the government and opened her own shop around Alem Bank (Addis Ababa) at a cost of 200,000 Birr. I started sending my brother to Unity University, a prestigious college in Addis Ababa.

Then, last year in 2022 [because of the economic stress] it all failed. I was hopeless and also worried about the loan we took from the government. That was when I learned about ISD.

When the government was encouraging farmers to produce wheat, development agents came to our local administration asking farmers to produce wheat. I agreed and the following day they came to check my land. I had carrots, lettuce and cabbage on my farm and they were very happy with what they saw. They advised me to work with ISD so they can facilitate market linkage for my produce. Shortly after, I received trainings and started adopting technologies such as vermicomposting. I immediately prepared a vermicompost pit measuring 18x3.5m, the biggest in nine years since ISD started working in Holeta.
For the first time, I produced wheat without chemical fertilizer, by using compost. I got 40 quintals of wheat from one hectare of land. It was an exemplary result. My achievement was recognized by both the wereda (district) administration and zonal administration. I was nominated as a model farmer; the wereda awarded a certificate and the zone a golden medal. I will work hard to be recognized at continental and international levels.

After the wheat harvest, I was able to pay off the loan. I work with youth and women in my area promoting [ecological] technologies as an extension agent. In my role I earn 4,000 Birr every month. I continue producing may kinds of produce. I am constructing my own greenhouse. As organic producers trained by ISD, we have formed a legalized association to secure better income for the members and promote organic produce. We want to maintain our health, that of our society and eventually secure dollar [foreign exchange] for our country. I am the Chief Executive Officer of this association. We are producing vegetables and other crops and we plan to include fruits.

I would like to take this opportunity to announce that we have a Telegram group; through this group, I ask you to support organic produce and keep yourself and our country healthy [by using organic produce]. Help us, farmers, achieve our dream and get better income so we can support ourselves by reproducing our own inputs such as seeds.

Thank you ISD for letting me share my experience and introducing me to so many admirable experts and authorities of my country.

Thank you very much!”
1.2.5 Presentations 6 and 7

Presenter #6: Ghebremedhin Belay, Institute for Sustainable Development (ISD)

Title: The Experience of Vegetables and Fruits Production by Smallholder Farmers by the Ecological Organic Agriculture Initiative

The Institute for Sustainable Development (ISD) was established in 1996 when Dr Tewolde Berhan Gebre Egziabher and his wife, Sue Edwards, were asked by the Ethiopian Government about alternatives to expensive external inputs, particularly chemical fertilizer, for smallholder farmers to enhance the productivity of their land.

ISD envisions to contribute towards an Ethiopia that is free from hunger and poverty. It is on a mission to promote sustainable ecological and social development and raise the importance of using sustainable knowledge, practices and innovation.

ISD builds the capacity of smallholder farmers with the best indigenous and modern knowledge especially around promoting Ecological Organic Agriculture (EOA). It operates in Amhara, Oromia, SNNPs regions. Its donors are the Swedish Society for Nature Conservation (SSNC), Swiss Agency for Development and Cooperation (SDC)/BvAT, Global Affairs Canada/ SeedChange Canada, European Commission, GEF/FAO/FEEM/CARI & Bread for the World/African Biodiversity Network (BfW/ABN).

ISD implements projects with partners such as Wollo University, PAN Ethiopia and PELUM Ethiopia.

There are enabling policy frameworks that help in tackling the problems in Ethiopian agriculture particularly by promoting Ecological Organic Agriculture. At national level the Ten Year (2021-2030) Development Plan for the Agricultural Sector promotes agro-ecology, organic fertilizer, rehabilitation of degraded land and nutrition sensitive agriculture. There are also specific Policy documents for that directly support Ecological Organic Agriculture (EOA): GTP-II Policy Document (2016-2020) [2015], Seed Proclamation No. 782/2013 [2013], Ethiopia’s Climate Resilience Green Economy (CRGE) Strategy [2011], Ethiopia Biosafety Proclamation No.655/2009 [2009], Ethiopian Organic Agriculture System Proc. No. 488/2006 [2006], Plant Breeders’ Right Proclamation No. 481/2006 [2006] and Agriculture & Rural Development Policy and Strategy (2003). At a continent level, it aligns with the African Union (AU) Department of Rural Economy and Agriculture (DREA) agenda, the Comprehensive Africa Agriculture Development Programme (CAADP) results framework, the Malabo Declaration and Agenda 2063. It also supports at least 8 of 17 United Nations Sustainable Goals at an international level; it feeds into the goals to end poverty and
hunger, ensure healthy lives and sustainable consumption and production as well as protect, restore and promote sustainable use of the ecosystems.

**About Ecological Organic Agriculture – Initiative (EOA-I)**

The overall goal of the EOA-I is to mainstream Ecological Organic Agriculture into national agricultural systems by 2025 in order to improve the quality of life for all African citizens. Among the core values of the strategy are biodiversity, respect for nature and sustainable development, the promotion of family farming cultures, indigenous knowledge, cultural practices, and wisdom, embracing fairness and justice to the ecosystem and promoting safe, nutritious and healthy food.

EOA project is implemented in three weredas of Oromia Region (Oromia Special Zone), four weredas in South Wollo Zone of Amhara Region and six weredas of Tigray Region.

**EOA-I Intervention Pillars**

**The Initiative has the following six priority areas.**

Pillar I: Research, Training, and Extension (RTE)- this pillar targets to increase productivity of selected crops; improve and maintain soil structure & fertility; promote effective water harvesting and improved irrigation systems; and increase income stream of disadvantaged, particularly women-headed, households with the help of research, training and extension.

Pillar II: Information and Communication (IC)- this pillar seeks to strengthen the capacity of Farmers Training Centers (FTCs) with electronic media and printing materials for EOA knowledge & practice dissemination.

Pillar III: Value Chain and Market Development (VC&MD)- this pillar targets to increase the productivity of selected crops by linking and facilitating market access for EOA produce.

Pillar IV: Networking and Linking (N&L)- under this pillar organic movements and partners such as governments, farmers, private sector, civil society, etc. are engaged to maximize impact, mobilize experiences and expand geographic reach and influence of EOA.

Pillar 5: Policy and Programme Development at local levels- under this pillar empirical data is packaged into appropriate formats especially for lobbying and advocacy efforts and persuade governments to develop and implement enabling policies and programs in support of EOA.

Pillar 6: Institutional Capacity Development- this pillar entails establishing, developing, strengthening and supporting the organizational capacities of institutions in EOA-I and also equipping their professionals with skills and competencies to promote EOA in Africa.

Under Pillar I – RTE, ISD trains farmers with and promotes intercropping and diversification of vegetables with fruit seedling; sorghum and sesame with haricot bean; Teff with sorghum and tomato; mung bean and Ethiopian Kale (mustard) under fruit plantation and cowpea and haricot bean under sorghum. Farmers have been able to harvested 3 to 4.5 qt/ha additional
yield from the intercropped crop (cowpea, haricot bean). Integrated pest management, integrated soil moisture and fertility management, improved fruits and vegetables and improved irrigation are also tried, tested and promoted under this pillar. Farmers are also trained to produce/prepare and apply organic fertilizer such as compost, compost manure/green manure, bio-slurry, vermi-compost and bokashi. These farmers received additional production attributed to the organic fertilizers. For example, farmers that applied compost on maize secured average additional yield of 5.5 qt/ha.

Under Pillar II – IC, ISD has so far strengthened the capacity of 22 FTCs of which 14 are in good conditions. The FTCs provided service for 250 farmers each (visitors) every year.

Under Pillar III – VC & MD, ISD works to increase the production, productivity and quality of selected crops under EOA practices and link access to market. Providing training on EOA production system from seed preparation to post harvest and processing; organizing farmers’ learning meetings and field days; supplying input/material support for EOA; publishing technical leaflets and awareness creation; and providing training on farm planning, budgeting and documentation are all part of ISD work in Pillar III. While, providing training on entrepreneurship and marketing skills; creating market linkages for EOA products through “Open Market Days”; and developing good publicity through promotion of EOA products are essential project activities of Pillar III. So far, ISD facilitated 212 open market days in Addis Ababa and Haike involving a total of 50 farmers (27 of which are women). In Addis Ababa, Natani Café and Restaurant around Bole and Oro Fresh Market around Sar Bet, Mekanisa are the main locations for the market days. During the open market days, 15,692.5 Kg of vegetables, 384 Kg of fruits, 336 Kg of herbs, 5,496 farm eggs, 195.5 Kg of cottage cheese, and 45 Kg of honey were sold. The market day organized together with Natani Café takes up 96.5% of the sale.

Over the years, ISD learned that intercropping and diversification in vegetables or fruit production provides more yield/unit of land. With regards to seed and seedling, smallholder farmers are producing some organic seeds such as potato and they establishing their own nursery sites for seedling propagation and sale. Model farmers are good instruments to scale up and out technology while poor farmers & women headed households adapt better to diversifying cropping pattern. In terms of knowledge sharing FTCs are very instrumental; while events are good means of sharing experiences and inspiring farmers from each other.

While it is encouraging to see the progress made in promoting Ecological Organic Agriculture, there are still some challenges. Shortage of organic farm inputs (seeds/seedlings, fertilizers, bio-pesticides, etc.; the limitation of certification system and poor progress in establishing a Participatory Guarantee System (PGS), instead, as well as the continued impact of global climate change, among others, all still remain a challenge.
Presenter #7: Bayush Tsegaye (PhD), Community Agro-biodiversity Management Expert and Independent Consultant

Title: Reviving Farmers’ Seed Varieties for Ensuring Food Security & Food Sovereignty

Agriculture is the mainstay of Ethiopia’s national economy. It is characterized by small scale subsistence farming. Nearly 85% of the population derives its livelihood from agriculture. Ethiopia is one of the eight global centers of diversity. It has rich diversity for Tef, sorghum, durum wheat, barley, lentils, linseed, Enset, Coffee, etc.

The formal seed sector is not as widespread as the farmers’ seed system which involves millions of small-scale farms. Farmers produce seeds for diverse food crops (cereals, pulses, oil crops, vegetables, spices, root & tuber crops, fruits, herbs, medicinal plants, etc.) which are locally adapted. Seed saving is an age-old practice and farmers’ seeds are passed down from generation to generation. About 80% of annual seed demand is met by farmer varieties while the remaining 20% is met by improved seeds coming from the formal sector. Varieties developed by the formal system have limited life span (4-5 years mostly; hybrid maize is good for only one crop season).

The Ethiopian Seed Enterprise (ESE) is the formal institution mandated to deliver high quality seeds to farmers on commercial basis. It multiplies and processes seeds from breeder seeds acquired from national agricultural research centers. ESE’s capacity is limited and every year the seed supply falls short of demand as there is land shortage to multiply seeds. The formal seed system focuses on reproducing a few major commercial crops. There is inconsistent seed quality and a poor regulatory system. The private sector is barely involved in seed production.

The industrial agriculture approach in Ethiopia which focuses on high external inputs limits the choices of farmers on a few seed varieties. It creates dependency and increases vulnerability to various shocks. This erodes the resilient capacity of farmers and has so far failed to ensure national food and nutrition security under growing and unpredictable challenges of climate change.

While farmers seed varieties require relatively less input and are more resilient to challenges brought by climate change, they are increasingly endangered with displacement by new improved high-input varieties. Lack of incentives (e.g., access to finance, market linkages), absence of extension support, introduction of invasive weed species and negative attitude towards farmer varieties also threaten the informal seed system.
Reviving the diversity of farmer seed varieties ensures food security and sovereignty. Food security is about continued production for the long term and without creating dependency on external sources (including short-lived, high-input seed varieties) and without compromising the potential for the future generation. The concept of food sovereignty is the right of peoples to have healthy and culturally appropriate food and their right to define their own food and agriculture systems. This also implies local control of productive resources such as farmer seed varieties to ensure sustainable food production.

At a global level, achieving the Sustainable Development Goals (SDGs), particularly the SDG 2: Zero Hunger, is difficult without farmer varieties. Promoting farmer varieties contributes to achieving food security, improving nutrition and ensuring sustainable agriculture.

Therefore, revitalizing local crop types and varieties increases on-farm diversity and choices. This is crucial for strengthening the informal seed sector and feed the national population. Strengthen the informal seed sector through community seed banking scheme will help to maintain genetic resources, promote resilience and attain food security under the growing challenges of climate change. It is essential to promote agroecology which is a set of practices and a social movement that seeks to have sustainable food production systems that are culturally appropriate, promote local control, do not harm the environment, ensure food and nutrition security and food sovereignty. Moreover, it is important to support participatory variety selection and on-farm seed multiplication. Facilitating intergenerational learning and knowledge transfer regarding farmers’ seed diversity and sustainable food systems is also at the heart of revitalizing local seed varieties.

In conclusion, to achieve sustainable food production and ensure food sovereignty, having a wide range of diversity (including seed diversity), engaging women and youth, and focusing on agroecological practices are prerequisites. Diversity is also vital for ensuring nutrition security under diverse growing conditions.
1.2.6 Summary of Discussions on Presentations #5, 6 and 7 and Way Forward

After the three presentations on ISD’s AVACLIM project, the experience of vegetable and fruits production under EOA Initiative and reviving farmers’ seed varieties for ensuring food security and food sovereignty, the workshop was open for feedback and discussion on way forward.

Tegegne Daniel from the Southern Nations Nationalities and Peoples Region, Bureau of Agriculture was the first to appreciate the presentations and the platform. He recognized the new agroecological practices he learned about during the workshop. Tegegne admitted: “organic agriculture is barely promoted although we know its benefit for human health and the environment. As government, we have to scale the works of such as ISD.” Tegegne admired the testimony of farmers, especially that of Worke, who emphasized that we are keeping the potential to make money knocking on our door by choosing not to exploit the potential in organic agriculture: “What I recognized in the three farmers that shared their experience is the change in mindset and perspective. ISD has helped them bring about this shift in paradigm. That is the source of the change in their life. These farmers are models to others and will keep moving forward. I believe many will change their lives by looking at the lives of these farmers. The testimony was very touching. This is what we should all work towards: changing the mindset of our smallholder farmers. I thank ISD. All the presentations are useful and require further study and practice from us. We should really promote organic agriculture; the government has also given attention to this following the synthetic fertilizer shortage we faced last year. This project has gone a long way in the right direction. As someone in agriculture, I would really like to appreciate this. We should continue down this line in alliance with the agriculture strategy which was presented to have many opportunities [for organic agriculture]. Thank you very much.”

Tewodros Ayalew (PhD), a researcher from Hawassa University recognized the comprehensive presentation Ghebremedhin made about ISD’s work. On the point of intercropping from that presentation Dr Tewodros stated that it is good to carefully consider the recommendation and practice of using tomato as an intercrop as opposed to teff and sorghum: “as tomato is a vegetable it requires a different intensity of management unlike cereal crops. Whenever we think about intercropping, we think about intercropping with legumes. So, it is better to focus on these crops instead of vegetables.”
On the presentation of promoting farmer varieties by Dr Bayush, Dr Tewodros challenged the statement that the formal seed sector covers for 20% of seed supply in the country: “I doubt the formal seed sector even covers 10% of the seed supply. Sometimes it is even less. The lands we used to reproduce improved seed varieties on are now used for a different purpose. This is one contributing factor for shortage of improved seed varieties. That is why I believe 20% may be too much.” On the point of promoting farmer varieties, Dr Tewodros confirmed that it is essential to strengthen the informal seed system especially for medium and long runs. However, as a researcher, Dr Tewordos stated, “As farmers can be resistant to introductions to improved seeds, it is important to encourage them to choose between their variety and improved seeds based on a comparison.”

On the point of collaboration with the Ministry of Agriculture, Berhanu Miressa from the Ministry said, “From the presentation, Mr Ghebremedhin showed us that ISD has done a lot. This was also clear from the testimony of the farmers who are owners of the work and result. The other presentations also proved to show organic woks. Organic fertilizer is now a big issue with the Ministry; there is a national taskforce on organic fertilizer and many of the members are charity organizations. So, it would be good if you [ISD, Push-Pull Technology, EM Technology, Vermiwash] can also join the taskforce to work on organic soil fertility which is the base for food security and nutrition security. You should also involve the ministry in the preparation of such events and in farm assessments so the results could be a mutual effort. This goes out to ISD, Mr Gideon and Mr Tolosa so the technologies can be scaled out. Working with the government is also a way of securing policy support. Keep up your work and the support [to the Ministry]. Thank you ISD for inviting us.”

Daniel Bekele, a teacher from Wonago Secondary and Preparatory School in Southern Nations Nationalities and Peoples Region appreciated ISD and the organizers of the advocacy workshop. He requested the presenters of the different technologies and projects to promote the ecological practices to farmers in the Southern region through trainings and extension. More specifically Daniel urged that EOA practices should be promoted in schools so they can flow over and out to the community: “schools can be a means to introduce the ecological technologies to students who come from farming communities far and wide. ISD should consider supporting schools further so they can also promote awareness for farmers to keep useful ecological practices. Thank you.”
Solomon Kebebe, Director of Melka Ethiopia congratulated ISD for the organizing an inspiring workshop, facilitating a practical learning opportunity especially from women and young farmers: “I am impressed by the testimonies of female and young farmers which implicates the future. They are change agents for ecological organic agriculture.” Solomon indicated that, moving forward, scaling the research results and ecological technologies into the agriculture system and research, presenting it to acquire policy support and institutionalizing the initiative should be considered: “ISD can’t keep demonstrating [ecological practices]; it is up to the government the scale. Therefore, I call upon representatives of the Ministry of Agriculture in the workshop to take up the promising work [ecological practices and project results] in order to attain food security as well as food and seed sovereignty. I hope the encouraging results can be used to draft supportive policies. I have heard the design of the agriculture policy is close to completion. It would be useful to reevaluate this policy and see if it was informed by what we have discussed today [Ecological Organic Agriculture].” As a Non-Governmental Organization working on agro-ecology, Solomon explained that Melka Ethiopia recently discussed an alternative agroecology policy with the Ministry of Agriculture. Given the positive feedback, he encouraged others to collaborate with the Ministry.

Worke Shumye, a model female farmer, appreciated ISD on the successful event. She asked representatives of the Ministry of Agriculture to consider organic seed and vegetable production as one production sector. She invited the different stakeholders to a field visit to her and her fellow farmers’ farms where they could test the fruits of organic production.

Lakew Habtemariam, an M&E expert for projects from the Amhara finance and economic cooperation bureau, appreciated ISD and the presenters: “It was quite an attractive testimony we heard from the farmers especially from Holeta. I am Impressed by the female farmer [Worke] who has managed to penetrate the market and deliver her organic produce [to customers directly]. It is a big achievement that she managed to teach and graduate her children just from the income she gets from farming. The young farmer [Wondwossen] is an exemplary youth for changing his life from farming in times when youth are only interested to migrate and move to cities and abroad.” While Lakew is optimistic about the [organic vegetable] production scheme where youth are organized in groups and produce vegetables around Lake Haike, he called for a discretion towards using the water from the lake to save it
from drying up. He appreciated the work of ISD, particularly for presenting an alternative to synthetic fertilizer which is both harmful to human health and becoming increasingly unavailable.

Melese Bedane (PhD), from the Ministry of Agriculture pointed out how it has become difficult to supply synthetic fertilizer to smallholder farmers in the current production season. He explained that the ministry has considered to address this problem in the 10-year plan. Addressing the question Solomon from Melka raised on whether organic agriculture is factored into the new agriculture policy and that of Worke about considering organic seed and vegetable as a priority sector, Dr Melese said that the new policy covers organic agriculture and prioritizes seed and vegetable production. In light of collaboration with the Ministry, Dr Melese declared that the Ministry would take the initiative to invite the actors [for further discussion and synergy on ecological agriculture principles and practices].

After inputs from the participants, the presenters Bayush (PhD) on farmers’ seed varieties, Ghebremedhin on behalf of ISD and Bitew for the National Steering Unit of the EOA Initiative and took the stage to address open questions and conclude the advocacy workshop on Ecological Organic Agriculture (EOA).

Dr Bayush shared the insight of Dr Tewodros regarding the deteriorating share of the formal seed sector given that lands dedicated for seed propagation are now either resident areas or just empty: “the major issue I wanted to indicate, so we can recognize it, is how farmers’ seed varieties account for the majority of seed supply and feed the population.” On the point of farmers’ seed varieties and food security, Dr Bayush explained that there are many improved seed varieties of various crops that are not widely used despite having been proved to be effective by agriculture research centers: “since the varieties fail to address the needs of the farmers, they resort to using their own varieties. That is why research should factor in the multi-purpose benefit farmer wants to get out of the crop beyond increasing productivity.”
Dr Bayush explained that although farmers lack the skill to provide scientific explanation and evidence, they are well informed about the benefits of specific crops and their purposes: “there are social values behind every seed the farmers choose to use. Beyond improved productivity, farmers associate and choose their seeds to how resilient they are to difficult [climatic] conditions, soil types and agroecology. Improved varieties may not survive these climatic challenges and diversities. Therefore, it is wrong to assume farmers’ varieties can’t lead to food security.”

Ghebremedhin Belay, Executive Director of ISD recognized the need to examine the science behind using tomato for intercropping as opposed to the commonly used legumes. However, he explained that, in any case, farmers were able to secure three to four more quintals of crop. On the point of promoting organic fertilizer as an alternative to expensive synthetic fertilizer Ghebremedhin called for a policy support [powered by the Ministry of Agriculture] to a relatively limited proof a small NGO such as ISD presented that organic soil enhancement techniques work: “ISD and other organizations [such as Melka Ethiopia] are happy to present our experience to the Ministry to securing the policy support. We hope the suggestions proposed during this workshop can be taken into advisement to inform the policy already under work. We will be happy to provide additional input.” For this purpose, on the point of a strong collaboration with the Ministry of Agriculture, Ghebremedhin explained how ISD works closely with the extension system, particularly experts at grassroots level to train and support farmers; however, he admitted that the collaboration can be better at a federal level. With regards to the request for ISD to extend its projects to different parts of the country, Ghebremedhin stated that ISD has a limited funding capacity to go everywhere: “the best we can do is share the lessons in such platforms so they can be replicated.” Ghebremedhin explained about the back to Root and cultural biodiversity programmes of ISD where the organization works with high schools across the country to promote indigenous knowledge, cultural exchange, tolerance and peaceful co-existence for youth. On the invitation to join the taskforce by the Ministry of agriculture to explore ecological technologies for soil fertility, Ghebremedhin expressed that [ISD] is happy to join the taskforce.

As a concluding remark, Bitew Shibabaw, Co-Chair of the National Steering Committee for Ecological Organic Agriculture dubbed all the ideas shared during the workshop useful to ensure the success of the Ecological Organic Agriculture (EOA) project. While Bitew appreciated the exchange between farmers, research centers and other stakeholders of ecological agriculture, he shared his concern about limited collaboration between the actors: “the need for collaboration is more theoretical than practical. We have to really commit to cooperate to bring about the change we want.” With regards to sustainably promoting ecological technologies, Bitew called for the stakeholders [Ministry of Agriculture and government partners] to formulate best practices and scale them up through the extension system. In addition, Bitew requested ISD to promoting the good work and the results and mobilize the knowledge and research on ecological practices and technologies from different research centers, farmers and experts. Bitew asked representatives from the Ministry of Agriculture to also consider working in the areas of organic certification, organic markets and value addition so farmers can benefit from their hard work. Finally, on behalf of the EOA
National Steering Committee, Bitew thanked the presenters, participants, facilitator and organizers of the advocacy workshop: “A special thanks goes to farmers. I was very happy to hear your stories. Keep up the good work and inspire many more like you so we can become food secure. On behalf of the National Steering Committee, thank you all for coming. I officially declare this workshop closed!”

During the EOA Advocacy Workshop farmers displayed a sample of their assorted organic vegetable produce.
Annexes

Annex 1: Workshop Timetable

<table>
<thead>
<tr>
<th>Local Time</th>
<th>Agenda</th>
<th>Responsible persons &amp; Organization</th>
<th>Facilitator</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 - 3:00</td>
<td>Registration of workshop participants</td>
<td>Kidst Degefa, Bezuayehu Gugesa, ISD</td>
<td>Yenesew Alemay</td>
</tr>
<tr>
<td>3:00 - 3:05</td>
<td>Agenda introduction</td>
<td>Wibishet Fessha, Facilitator</td>
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<tr>
<td>3:06 - 3:25</td>
<td>Participants introduction</td>
<td>Workshop participants</td>
<td>Wibishet F.</td>
</tr>
<tr>
<td>3:26 - 3:31</td>
<td>Welcome speech</td>
<td>Ato Ghebremedhin Belay</td>
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<td></td>
<td></td>
<td>Executive Director, ISD</td>
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<tr>
<td>3:31 - 3:35</td>
<td>Opening speech</td>
<td>Ato Bitew Shibabawe, NSC Co-chair</td>
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<tr>
<td>3:36 - 4:00</td>
<td>Supporting Ethiopian smallholder farmers research in climate resilient and agro-ecology</td>
<td>Dr Getenet Atnafu</td>
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<td></td>
<td>Debre-Markos University</td>
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<tr>
<td>4:01 - 4:20</td>
<td>Vermicomposting/Vermin-wash tactics and production</td>
<td>Ato Tolossa Tolcha, Holeta Strawberry Farms</td>
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<tr>
<td>4:21 - 4:40</td>
<td>Effective Microorganism (EM) technology: production in harmony with nature</td>
<td>Ato Gideon Shone</td>
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<td>Weljeejii Agricultural Industry Plc.</td>
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<td>4:41 - 5:00</td>
<td>Health break</td>
<td>NEXUS Hotel</td>
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<tr>
<td>5:00 - 5:50</td>
<td>General discussion and reflections</td>
<td>Workshop participants, presenters</td>
<td>Gizaw G., ISD</td>
</tr>
<tr>
<td>5:51 - 6:10</td>
<td>The current Ethiopian agriculture strategy and opportunities for EOA mainstreaming</td>
<td>Ato Yaregal Yesuf</td>
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<td></td>
<td></td>
<td>Ministry of Agriculture</td>
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<tr>
<td>6:11 - 6:30</td>
<td>Agro-ecology for a better food system, resilience &amp; diversity: the case of Arbe integrated ecological farm</td>
<td>Ato Tekalign Ayise</td>
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<td>AWAACLIM Project, ISD</td>
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<tr>
<td>6:30 - 7:30</td>
<td>Lunch</td>
<td>NEXUS Hotel</td>
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<td>Yenesew + Nigussie</td>
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<tr>
<td>7:35 - 8:00</td>
<td>Success stories from lead farmers who benefited from EOA intervention</td>
<td>Farmer Worke and Farmer Wondwosen from Holeta &amp; Farmer Kebede from South Wollo</td>
<td>Wibishet F.</td>
</tr>
<tr>
<td>8:00 - 8:20</td>
<td>The experience of vegetable &amp; fruits production: a case from smallholder farmers under EOA Initiative</td>
<td>Ato Ghebremedhin Belay</td>
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<td>ISD</td>
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<tr>
<td>8:21 - 8:40</td>
<td>Reviving farmers’ seed variety for ensuring food security and food sovereignty</td>
<td>Dr Bayush Tsegaye</td>
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<td>Community Agro Biodiversity Consultant</td>
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<tr>
<td>8:41 - 9:00</td>
<td>General discussion and reflection</td>
<td>Workshop participants and presenters</td>
<td>Gizaw G., ISD</td>
</tr>
<tr>
<td>9:00 - 9:30</td>
<td>Health break + Film</td>
<td>Nexus Hotel + ISD</td>
<td>Wibishet F.</td>
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<tr>
<td>9:31 - 10:30</td>
<td>Way forward and wrap up</td>
<td>EOA NSC chair and Ato Ghebremedhin</td>
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<td></td>
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<td>Gizaw G., Wibishet F.</td>
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# Annex 2: List of Participants of the Ecological Organic Agriculture (EOA) Advocacy Workshop

**Government Ministries and Stakeholders**

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Organization/Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bitew Shibabawe</td>
<td>Director, Forest Development Directorate, in the Environment, Forest and Climate Change Commission (EFCCC) (Co-chair of EOA National Steering Committee)</td>
</tr>
<tr>
<td>2</td>
<td>Berhanu Miressa</td>
<td>Soil Fertility Expert, Ministry of Agriculture (MoA)</td>
</tr>
<tr>
<td>3</td>
<td>Yaregal Yesuf</td>
<td>Extension Expert, Ministry of Agriculture (MoA)</td>
</tr>
<tr>
<td>4</td>
<td>Atlaw Anbelu</td>
<td>Desk Head, Ministry of Agriculture (MoA)</td>
</tr>
<tr>
<td>5</td>
<td>Dawit Mesfin</td>
<td>Executive Director, Ministry of Agriculture (MoA)</td>
</tr>
<tr>
<td>6</td>
<td>Melese Bedane (PhD)</td>
<td>Ministry of Agriculture (MoA)</td>
</tr>
<tr>
<td>7</td>
<td>Addisu Bezabeh</td>
<td>Ethiopian Institute for Agricultural Research (EIAR)</td>
</tr>
<tr>
<td>8</td>
<td>Amsalu Andarge</td>
<td>Swiss Agency for Development Cooperation (SDC)</td>
</tr>
<tr>
<td>9</td>
<td>Solomon Kebeda</td>
<td>Melka Ethiopia</td>
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<tr>
<td>10</td>
<td>Solomon Gurumu</td>
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<tr>
<td>11</td>
<td>Addisu Bezabeh</td>
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</tr>
<tr>
<td>12</td>
<td>Daniel Bekele</td>
<td>Wonago Secondary and Preparatory School</td>
</tr>
<tr>
<td>13</td>
<td>Tegegne Daniel</td>
<td>Southern Nations Nationalities and Peoples Region, Bureau of Agriculture</td>
</tr>
<tr>
<td>14</td>
<td>Demelash Girma</td>
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<tr>
<td>15</td>
<td>Lakew Habtemariam</td>
<td>Amhara Region Finance and Economic Cooperation Bureau</td>
</tr>
<tr>
<td>16</td>
<td>Tadios Temtios</td>
<td>Sidama Region, Bureau of Agriculture</td>
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**Civil-Society Organizations**

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<tr>
<th>No.</th>
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<tbody>
<tr>
<td>17</td>
<td>Ghebremedhin Belay</td>
<td>Institute for Sustainable Development (ISD)</td>
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<tr>
<td>18</td>
<td>Gizaw Gebremariam</td>
<td>Institute for Sustainable Development (ISD)</td>
</tr>
<tr>
<td>19</td>
<td>Azew Worku</td>
<td>Institute for Sustainable Development (ISD)</td>
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<tr>
<td>20</td>
<td>Tekalign Ayisse</td>
<td>Institute for Sustainable Development (ISD)</td>
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<tr>
<td>21</td>
<td>Asrat Mengesha</td>
<td>Institute for Sustainable Development (ISD)</td>
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<tr>
<td>22</td>
<td>Shimeles Tegegne</td>
<td>Institute for Sustainable Development (ISD)</td>
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<tr>
<td>23</td>
<td>Yosef Garedew</td>
<td>Institute for Sustainable Development (ISD)</td>
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<td>24</td>
<td>Tafach Meaza</td>
<td>Institute for Sustainable Development (ISD)</td>
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<tr>
<td>25</td>
<td>Endris Mohammed</td>
<td>Institute for Sustainable Development (ISD)</td>
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<td>26</td>
<td>Alemu Asfaw</td>
<td>Institute for Sustainable Development (ISD)</td>
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<td>27</td>
<td>Adnew Abate</td>
<td>Institute for Sustainable Development (ISD)</td>
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<td>28</td>
<td>Andargachew Detebo</td>
<td>Institute for Sustainable Development (ISD)</td>
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<td>29</td>
<td>Nigussie Hailemariam</td>
<td>Institute for Sustainable Development (ISD)</td>
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<td>Yenesew Alemay</td>
<td>Institute for Sustainable Development (ISD)</td>
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<td>31</td>
<td>Selam Yilma</td>
<td>Pesticide Action Nexus (PAN Ethiopia)</td>
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<tr>
<td>32</td>
<td>Teshome Abuna</td>
<td>EPA, Ethiopia</td>
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<tr>
<td></td>
<td>Name</td>
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<tr>
<td>33.</td>
<td>Alem Tsegaye</td>
<td>PELUM Ethiopia</td>
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<tr>
<td>34.</td>
<td>Emibiel Serqaelem</td>
<td>Youth Network for Sustainable Development (YNSD)</td>
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<tr>
<td>35.</td>
<td>Azeb Kelemework</td>
<td>Ethiopian Women Charitable Associations (UEWCA) (NSC Member)</td>
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<td>36.</td>
<td>Meseret Tadesse</td>
<td>MLWDA (NSC Member)</td>
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<td>37.</td>
<td>Yonas Gebru</td>
<td>Consortium for Climate Change Ethiopia (CCC-E)</td>
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<td>38.</td>
<td>Amsalu Tadesse</td>
<td>FNO</td>
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<td>39.</td>
<td>Haymanot Desalegne</td>
<td>ENDA</td>
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<td>40.</td>
<td>Getnet Atnafu (PhD)</td>
<td>Debre Markos University</td>
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<td>Nigussie Bekele (PhD)</td>
<td>Ambo University</td>
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<td>Ashetu Getachew</td>
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<td>43.</td>
<td>Faris Hailu (PhD)</td>
<td>Wollo University</td>
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<td>44.</td>
<td>Tewodros Ayalew (PhD)</td>
<td>Hawassa University</td>
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<td>45.</td>
<td>Kefera Erfa</td>
<td>Holeta Agricultural Research Institute</td>
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<td>46.</td>
<td>Getachew Chile</td>
<td>Holeta Agricultural Research Institute</td>
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<td>47.</td>
<td>Shimelis Geleta</td>
<td>Holeta</td>
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<tr>
<td>48.</td>
<td>Temesgen Tsegaw</td>
<td>Haile Technical and Vocational Education and Training College</td>
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<td>49.</td>
<td>Anbelu Abe</td>
<td>Kosober Secondary School</td>
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<td>Gemsisa Hundessa</td>
<td>Geresu Secondary School</td>
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<td>51.</td>
<td>Alemseged Gebrekidan</td>
<td>Ethiopian Honey &amp; bees wax Producers and Exporters Association</td>
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<td>52.</td>
<td>Tolossa Tolcha</td>
<td>Holeta Strawberry Farm</td>
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<tr>
<td>53.</td>
<td>Kebede Seid</td>
<td>Model farmer</td>
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<td>54.</td>
<td>Mohammed Ali</td>
<td>Model farmer</td>
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<td>55.</td>
<td>WoldeAmanuel Feleke</td>
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<td>62.</td>
<td>Bayush Tsegaye (PhD)</td>
<td>Consultant</td>
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<td>63.</td>
<td>Gideon Shone</td>
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<td>Ahadu Radio and Television</td>
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<td>Yohanna Mekonnen</td>
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<td>Wibishet Fessha</td>
<td>Facilitator and Proceedings Writer</td>
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Ecological Organic Agriculture (EOA) Advocacy Workshop
Workshop Facilitator and Proceedings Writer: Wibishet Fessha Assefa
December 2022