Proceeding of

A National Dialogue on Ethiopian Food and Agricultural Systems: Policy and Practice



Organized by: MELCA-Ethiopia with Financial Support from Protestant Agency for Diaconia and Development (PADD) (BfW)

Proceeding Compiled by: Mersha Yilma

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Adama

Acronyms

AAU	Addis Ababa University
AGRA	Alliance for Green Revolution in Africa
AE	Agro-ecology
AFSA	Alliance for Food Sovereignty in Africa
CBD	Convention on Biodiversity
CC	Climate change
CRGE	Climate Resilient Green Economy
CSA	Central Statistical Agency
CSB	Community seed bank
EBI	Ethiopian Biodiversity Institute
EOSA	Ethio-Organic Seed Action
EHPI	Ethiopian Public Health Institute
EFCCC	Environment, Forest and Climate Change Commission
EOSA	Ethio-Organic Seed Action
FDRE	Federal Democratic Republic of Ethiopia
GHG	Green House Gas
GMO	Genetically Modified Organism
GTP	Growth and Transformation Program
GR	Green Revolution
IA	Industrial Agriculture
ISD	Institute for Sustainable Development
LUCF	Land Use Change and Ferestry
MELCA	Movement for Ecological Learning and Community Action
MoA	Ministry of Agriculture
MoH	Ministry of Health
NAP	National Adaptation Plan
NDC	Nationally determined contribution
NFSDP	National Food Security Development Program
NNP	National Nutrition Program
TEK	Traditional Ecological Knowledge
WHO	World Health Organization

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Date: 23-24 August 2021

Venue: Rift Valley (Caneth) Hotel, Adama, ONRS

Section I. Introductory Statements

1.1. General Background

MELCA-Ethiopia is a legally registered non-for profit and nongovernmental organization founded in 2004. MELCA means a ford or crossing point on a river in both Oromiffa and Amharic, the two broadly spoken languages in Ethiopia. The name symbolizes the role MELCA plays in revitalizing the interconnection between culture and nature, the youth and elders through intergenerational learning, traditional ecological knowledge and modern scientific knowledge. Although the name is also an acronym for Movement for Ecological Learning and Community Action, its local meaning supersedes in our regular reference to it.

While the organization has a set goal of conserving bio-cultural diversity of local communities in Ethiopia, it envisions seeing healthy and prosperous people that conserve their bio-cultural diversity and works for realization of healthy ecosystems, resilient communities and critical young generation through developing and institutionalizing innovative approaches and experiences. For realizing its vision and mission MELCA has designed and is implementing four broad and complementary programs areas. These are: Agro-ecology, Environmental governance, Youth and children empowerment and Eco-friendly livelihood improvement. The organization also implements Population, Health and Environment (PHE) and Gender sensitivity as cross cutting issues along with its four program areas.

MELCA is implementing its designed programs through the various project interventions it is conducting in different regions of the country. Currently, MELCA has five project areas in four regional states in Ethiopia. These are Bale and Adaba project areas in Oromia Regional State, Sheka project area in Southern Nations, Nationalities and Peoples Region (SNNPR), Majang Project area in Gambella regional state and Wereilu Project area in Amhara Regional State.

1.2. Introduction

Agro-ecology is one of MELCA's program areas. The organization has been working on this program area since 2014. It is a program that works toward thriving sustainable agricultural practices, strengthening farmers' innovation, improving organic soil fertility management, ensuring farmers' seed security as well as nutrition security and food sovereignty for the society in general. Agro-ecology program is designed to address challenges brought by the industrial agriculture system which is influenced and dependent up on heavy external chemical inputs and limited number of improved (hybrid) seeds that are eroding the diversity on farm and resulting in exposure of the smallholder farmers to vulnerability to the effects of climate change and environmental degradation. Agro-ecology is nowadays considered as a positive way to respond to the issues of not only food security but also nutrition security and food sovereignty. It promotes investment in enhancing productivity of farmers' seed varieties through appropriate soil

fertility management practices, support of eco-friendly use of agri-technology and agriculture research that involves the farmers. As such, it is an approach that integrates local traditional knowledge with modern scientific approach for knowledge co-creation and best practices to sustain nature based agriculture. Currently, a momentum is building up in Africa and a coalition of stakeholders is emerging that favor scaling up of agro-ecological principles and practices by strengthening environmentally sustainable and productive agro-ecosystems.

In addition to working with farmer communities on introduction and expansion of agro-ecological farming practices, MELCA-Ethiopia is also engaged in policy advocacy for mainstreaming of agro-ecological and sustainable agricultural practices in government sectors. To this end, MELCA is working in collaboration with its key development partners. This includes organizing national consultative meetings with government policy makers and other non-government partners and preparing policy briefs for consideration by relevant policy makers.

Accordingly, this National Dialogue on Ethiopian Food and Agriculture Systems is organized as a continuation of the effort to further push the idea of mainstreaming agro-ecology in the Ethiopian agriculture and food systems by engaging relevant actors from all sectors. Participants to this dialogue workshop include representatives from relevant government sectors at federal and regional levels, agriculture sector researchers from universities and research institutions, donor organizations, civil society organizations, agriculture experts and the private sector. Hence the dialogue workshop forms an integral part of MELCA's Agro-ecology program focusing on the policy level.

1.3. Objectives of the National Dialogue

A. **General Objective**: To create a forum where stakeholders discuss and identify gaps in policy and practice of food and agricultural systems of Ethiopia and generate appropriate recommendations for consideration by policy makers

B. **Specific Objectives**:
   - Strengthen collaboration among the various government and non-government actors on food and agriculture system and policy gaps
   - Catalyze the policy advocacy for mainstreaming agro-ecology in the Ethiopian agriculture system
   - Identify policy gaps relating to food and agriculture systems in Ethiopia and inform policy makers on measures to address the gaps
   - Generate ideas to address issues relating to sustainable agricultural practices, food security, nutrition security and food sovereignty in Ethiopia

Section II. Proceeding of the Meeting

2.1. Welcome and Opening Speeches

2.1.1. Welcome Speech



Ato Solomon making a welcome speech

Ato Solomon Kebede, Director of MELCA-Ethiopia, welcomed participants to the dialogue meeting. In his welcome speech, Ato Solomon extended thanks to representatives of federal and regional government offices for giving due attention and devoting their time to participate on this meeting. In this regard, he gave special thanks to Dr. Feleke Woldeyes, Vice Director of Ethiopian Biodiversity Institute (EBI), Ato. Muluneh G. Hedeto, Senior Advisor and National Climate Change Negotiator at Environment, Forest and Climate Change Commission (EFCCC) and Ato Abraham Getachew, A public health professional and project management specialist from Ministry of Health (MoH). Ato Solomon also thanked others who were invited to make presentation on this meeting on short notice and managed to make it. Ato Solomon also expressed special thanks to BfW (PADD) on behalf of MELCA and himself for providing the finance required to organize the meeting.

In his opening speech, Ato Solomon further stated that participants of the national dialogue consists of renowned and leading professionals and researchers in the food and agriculture system in Ethiopia, and this will be a huge potential and opportunity to discuss the multi-functionality of the food and agriculture system and generate evidence based and substantive ideas that will be taken up by policy makers to address the policy gaps in the food and agriculture sector of Ethiopia.

Ato Solomon finally stated that ideas and opinions generated from this meeting will hopefully help in laying the foundation for sustainable food and agriculture systems in the country and thanked all the participants for showing interest to participate in the meeting and contribute their knowledge and experiences to make a positive change in the food and agriculture system.

2.1.2. Opening Speech



Dr. Feleke making opening speech

Dr Feleke Woldeyes, Vice Director of EBI, made the opening speech. Dr. Feleke started his opening speech by appreciating the diversity of expertise of the participants to the meeting and stated that the forum can be called as a discovery forum. He stressed that the discussion, which will focus on the Ethiopian food and agriculture systems, will be a broad one with diverse experts participating to generate noble ideas on how to improve the food and agriculture systems of Ethiopia.

Dr. Feleke further stated that given the challenges of population pressure, climate change, land degradation and rapid loss of biodiversity we are facing, it is high time that we should make a serious discussion about our food and agriculture systems and inform policy makers on how we can make the food and agriculture systems sustainable. He further pointed out that the efforts so far made in the food

and agriculture sector focused only on increasing productivity, which seems to be not a holistic approach to address other aspects contributing to problem.

He underlined that the approach to addressing issues in our food and agriculture system should be systemic and should give due attention to local contexts than prescribed and imported solutions. So the kind of forum is a good opportunity and potential to come up with such inward looking solutions to address our problems sustainably. Dr Feleke also underlined that the dialogue should focus on economic, social and ecological issues and he stated that he is confident the experts in the room will generate very important inputs for addressing policy gaps in the food and agriculture sector.

Finally, Dr Feleke thanked MELCA for organizing the forum and urged for active participation of all participants.

2.2. Paper Presentations

2.2.1. Presentation 1: Food and Agriculture System Issues and Fundamentals for Change By: Solomon Kebede, Director MELCA-Ethiopia

Solomon started his presentation by describing what a food system is. He stated that a food system refers to all the elements involved in the process of food production and consumption including planting, harvesting, storage, processing, transporting, marketing, consumption and disposal. Food system operates within and is influenced by social, political, economic, and environmental contexts.



Ato Solomon While presenting

He then proceeded to discussing critical issues relating to the industrial agriculture (IA) system. Among these, he mentioned:

- Control of agri-resources by few corporates:
  - 140mln hecs of arable land and 5-68 % of fossil fuel based inputs controlled by 4 companies
  - 65% of seed market controlled by 3 companies
  - 100% of input marketing controlled by 7 companies
  - 98% of global grain trade controlled by 4 companies
- While on the other hand 50-70% of the world's food supply is produced by smallholder farmers who cultivate only 20-30% of the land, use only 30% of the water resource and 20% of fossil fuel inputs)
- IA is also stated as the largest contributor to GHG emission and climate change. In this respect, he discussed that 21-37% of global emission comes from IA. The emission will rise to 30-40% by 2050 unless abatement measures are taken, leading to $ 12 trillion environmental cost of food production per year.

He further discussed that the failure of IA to address the global food insecurity issue despite the assertion of increase in agricultural produce. In this regard it is stated that the prevalence of hunger and malnutrition is increasing from time to time. To mention some data based evidence:

- Close to 12% of the world's population, nearly 928 million people in the world were severely food insecure in 2020.
- 422mln adults are diabetics
- 2bln are obese
- 2bln suffer from micronutrient deficiency

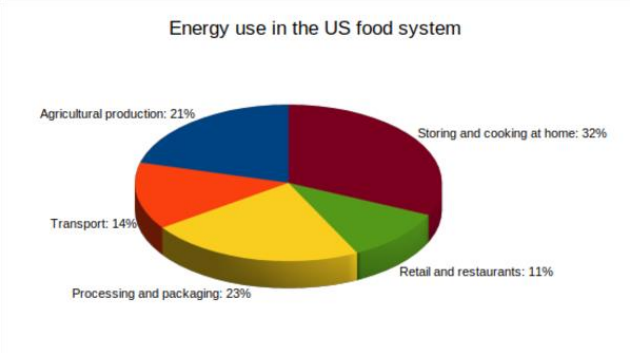
The African perspective is even worse:

- More than 1/3rd of the world's undernourished are found in Africa
- 33mln people were hungry between 2015-2020
- 1/5th of children are undernourished
- Consumption of food overly rich in fat, sugar and salt leading to increase in obesity

So, the trend in the IA so far proves that the system cannot provide healthy, safe, nutritious and culturally appropriate food for the world and particularly regions like Africa.

In general, he discussed that the IA is characterized by its extractive approach, unjust control of resources, focus on increasing productivity at any cost, disregard for local people and their seed and knowledge. As a consequence, IA is responsible for, among others, depletion of soil fertility and water resources, land degradation, loss of biodiversity, erosion of TEK and effects of climate change. Moreover, the IA is responsible for over 1/5th of energy consumption in the food system and 25% of diesel consumption for farm machinery.

Fig1: Share of energy consumption in the US food system



Negative impacts of the industrial food and agriculture system have been summarized as:

- Triple burden of malnutrition (hunger, micronutrient deficiency and obesity)
- Environmental impact
- Social inequalities and neglect of cultural values

Hence, it is high time to join hands to transform industrial food and agriculture system to agro-ecology based sustainable food and agriculture system.

In his presentation, Ato Solomon also discussed the lock ins that need to be carefully analyzed and addressed for an effective and efficient transformation to sustainable food and agriculture system. According to the discussion, there are eight lock ins that promoters of transition should consider. Description of the eight lock ins and suggested ways to change the lock ins in to entry points for transition to sustainable food and agriculture systems is summarized in the following table:

Lock ins	**Description**	**Suggested corresponding entry points**
Path dependency	The tendency to stick to the established IA and food system	Shift public support to diversified agro-ecological production system
Export orientation	Market and profit oriented agriculture	Support short supply chains and alternative retail infrastructure
Expectation of cheap food	Submitting to cheap food w/o nutrition required for healthy living	Use public procurement to support local agro-ecological produce
Feed the world narrative	The narrative that only IA can feed the growing global population	Strengthen movements that unify diverse constituencies around AE
Compartmentalized thinking	None integration of the FS with other social, ecological and economic aspects	Mainstream AE and holistic food systems approach in to education and research agendas
Short term thinking	Not considering sustainability of the food and agriculture system	Develop food planning processes and joined up food policies at all levels
Biased measures of success	Production oriented measures of success externalizing impacts of the IFS	Develop new indicators for sustainable food systems

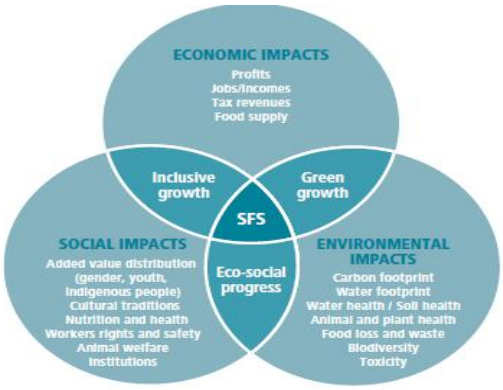
The following are stated as emerging opportunities for transition to sustainable food and agriculture system:

- Increased global recognition of the impacts of IA (MEA, IAASTD, 10YFP)
- Change in policies
- Integrated landscape thinking and food systems science
- Peer to peer action research (CaC, FFS)

The Transition to Sustainable Food and Agriculture System

A sustainable food system (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised. As discussed in the presentation, sustainability in food system can only be achieved through integration of social, economic and environmental issues.

Fig2: Sustainability in the food system



Source: Adapted from FAO, 2014.

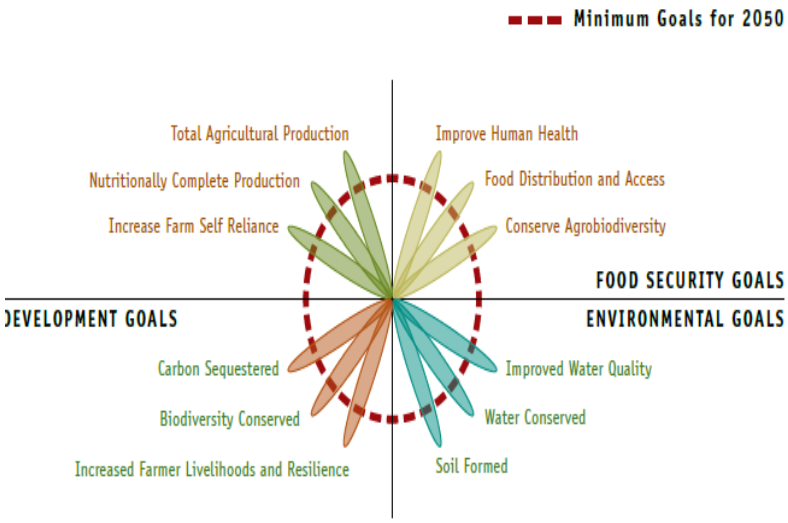
The paper discussed six pathways to follow toward food systems transformation. A successful transformation can only be achieved by integrating the six pathways and applying them as package. These are:

1. Integrating humanitarian, development and peace building policies in conflict-affected areas;
2. Scaling up climate resilience across food systems;
3. Strengthening resilience of the most vulnerable to economic adversity;
4. Intervening along the food supply chains to lower the cost of nutritious foods;
5. Tackling poverty and structural inequalities, ensuring interventions are pro-poor, and
6. Making it inclusive and strengthening food environments and changing consumer behavior to promote dietary patterns with positive impacts on human health and the environment.

Features of a sustainable food system are described as follows:

- Provides healthy, safe and affordable food
- Local market oriented and fair price for producers
- Soil fertility management through organic matter recycling
- Minimal GHG emission
- Based on agro-ecological production practices
- Land and other resources governed by farmers
- Promotes synergies among the various biological entities

Fig3: The multifunctional goals of sustainable food systems



Sustainable food systems Food System and Food Sovereignty

Sustainable food systems and food sovereignty are complementary concepts that go hand in hand. Food sovereignty is an element that strongly supports the transition to sustainable food systems. Sustainable food systems are systems that are:

- Productive and prosperous
- Equitable and inclusive
- Respect food producers and empower them
- Resilient to shocks
- Regenerative
- Healthy and nutritious

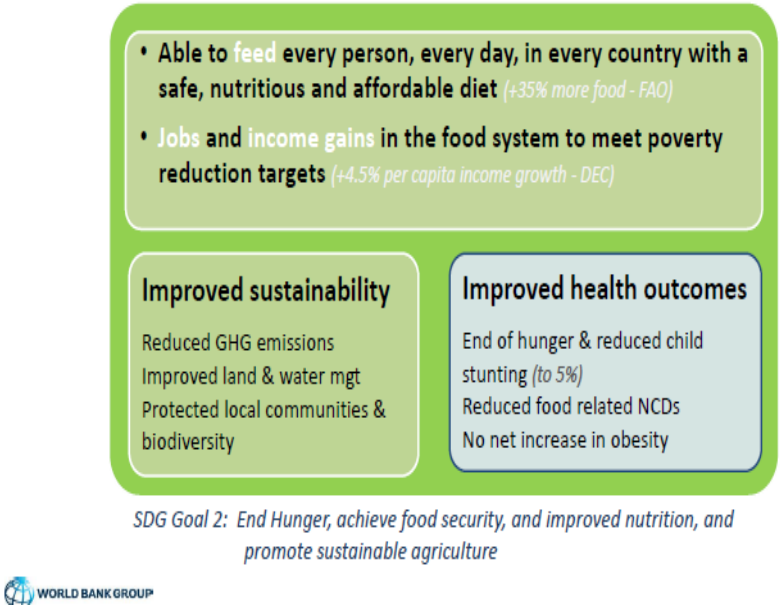
Food sovereignty is a manifestation of sustainable food systems. It refers to ensuring access to healthy, safe and culturally appropriate food for all. Food sovereignty is described as an approach that:

- Focuses on food for the people
- Value food producers
- Localize food systems and marketing
- Places control over resources at local level
- Promotes knowledge and skill and
- Works with nature

2030 Vision for the Global Food System

The global food system of 2030 should be one that will be able to provide, healthy, nutritious and affordable food for everyone every day.

Fig.4. 2030 vision for global food system



Recommendations:

The following were recommended as key elements in the transition to sustainable food and agriculture system:

- Develop new indicators for sustainable food systems
- Raise awareness and shift public support
- Strengthen partnership and collaboration
- Engage policy makers
- Promote circular food economy

2.2.2. Presentation 2: Some Critical Issues in Food Systems in Ethiopia
By: Dr. Tsedeke Abate, Founder and Leader of Home Grown Vision and Senior Leader and Researcher

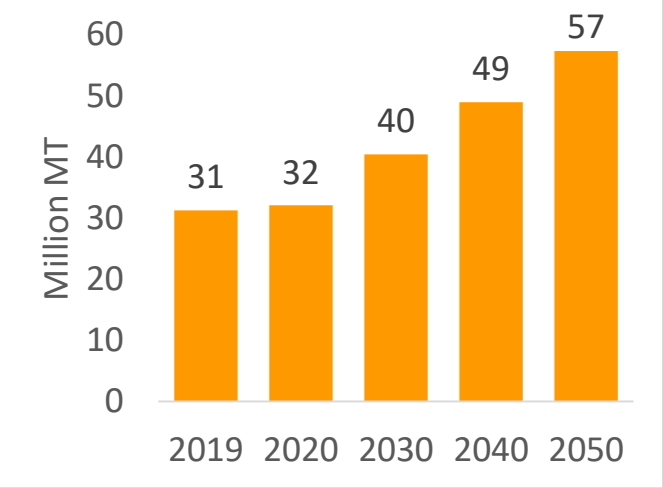
Dr Tsedeke started his presentation by giving a general background on the Ethiopian context including the demographic and agricultural production trends. As discussed by Dr Tsedeke, while the total population of the country about six decades back was 19 mln, the urban population constituted only 5% of the total. Then in 50 yrs time (in 2000) the population reached 66mln while the percentage of urban dwellers rose from 5% to 15%. Based on this demographic trend, it is assumed that the projected total population in 2050 will reach 205mln while the urban population will constitute 36% of this. He then underscored that this trend will compel all concerned to raise the key question


Dr. Tsedeke While presenting

of ‘How to provide basic necessities like food, shelter and other amenities while conserving the natural environment in a sustainable manner?’

Dr. Tsedeke then proceeded to discussing the agricultural production capacity of the country to feed the increasing population by citing production of major crops like wheat, maize, sorghum, teff and barley in 2019. According to Dr. Tsedeke, despite the fact that there is a significant expansion of agricultural area in the past three decades, production is still less than the national demand and the country is importing food grains to fill the gap. He stated that in 2019 alone the country imported 1.6mln MT of grain at the cost of USD 610mln.

Fig.5. Expected increase in population and corresponding food production trends over the next 30 years



As indicated in the graph above, food production has to almost double from where it stands at 31mln MT in 2019 to 57mln MT in 2050 to meet the increasing demand along with the population rise that will become almost double by 2050. So he again stresses on the question of how to get there without causing significant harm to the environment.

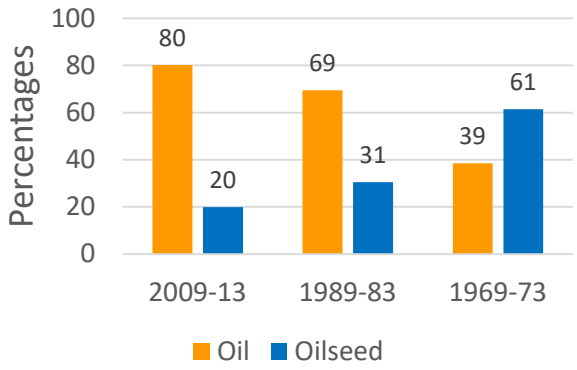
Dr. Tsedeke further discussed trends in dietary energy, dietary protein and fat supply in Ethiopia and stated that although the country has achieved the dietary energy recommendation of WHO, the food supply is complex carbon dominated and low in protein, fat and mineral diversity. Consequently, 51%, 40% and 12% of children under age 5 are stunted, underweight and wasted respectively.

In a related issue, he also discussed relative contribution of selected crops to dietary energy supply in Ethiopia. According to the discussion, the dietary energy contribution of maize, wheat and sorghum has increased in the past four decades while that of teff has decreased and that of Enset has not shown much change. This shows the low level of attention given to crops like teff and Enset despite the fact that they are rich in important food nutrients.

Then Dr. Tsedeke further proceeded to showing proportion of oil seeds and manufactured oil in the dietary fat supply during different periods. In this regard, he revealed that the proportion of oil seeds in

the dietary fat supply has declined while that of manufactured oil has increased significantly during the past four decades.

Fig. 6. Proportion of oil seeds and manufactured oil in the dietary fat supply from 1969-2013



The data clearly indicates that the country is exporting nutritious oil seeds and importing manufactured oil which is mostly palm oil and this is contributing to the food nutrient deficiency and related health problems prevailing in the country.

In summarizing his discussion, Dr. Tsedeke emphasized on the following key points relating to the food and nutrition trends of the country.

- Ethiopia has made substantial progress in the past two decades in terms of increasing production of cereals and grain legumes. However, this is achieved at the cost of environment and biodiversity loss.
- There is little or no change in enhancing productivity of oilseeds, other crops and livestock
- Opportunities for exploiting full potential of indigenous crops missed due to heavy emphasis on cereals.
- Energy requirements met but dominated by complex carbohydrates
- Low in protein, fat, minerals, and diversity
- Substantial changes witnessed in consumption trends
- Hence, need for revisiting national priorities

Recommendations:

- Ensure sustainability of productive systems
- Revisit priorities
- Harness full potential of indigenous/traditional crops like *Enset,* Oilseeds (Ethiopian mustard, safflower) and Coffee (decaf, normal)
- Expand systems approach

2.2.3. Presentation 3: Due Consideration for Underutilized Food Crops within the Ethiopian Ecosystem

By: Professor Sebsebe Demissew, Researcher and Educator, Addis Ababa University, Recipient of the 2021 Jose Cuatrecasas Medal for Excellence in Tropical Botany

Professor Sebsebe started his presentation by discussing the population, cultural and biological diversity of Ethiopia. He stated that Ethiopia is a country with a population of around 117mln, more than 80% of whom are agrarian and with diverse ethnic groups and language (85 languages) and having a topography ranging from 125 – 4533mts above sea level. He also stressed that it is a country endowed with varied agro-ecological zones that have contributed to its being labelled as a center of diversity. Statistical data in this area shows that the country has 243 plant families consisting of 6027 species out of which 647 are endemic.



Prof. Sebsebe while presenting

Fig.7. **A glimpse of Ethiopia's Habitat Diversity**



Ethiopia is also known as one of the ancient countries who have started plant domestication and it has also been labelled as center of origin of cultivated plants by the Russian scientist Vavilov. While the country is a center of origin for a number of domesticated crops, cereals, pulses and legumes, some of these are: Abyssinian hard wheat, poulard wheat, emmer, Polish wheat, barley, grain sorghum, pearl millet, African millet, cowpea, flax, teff, sesame, castor bean, garden cress, coffee, okra, myrrh and indigo.

Although there are more than 50,000 edible plants in the world, 2/3rd of global plant derived food is provided by three major cereals: maize, wheat and rice. This dependence on only a few crop species limits the capability to deal with challenges posed by the adverse effects of climate change and the consequences of dietary imbalance. Emerging evidences suggests that climate change will cause shifts in crop production and yield loss due to more unpredictable weather patterns. A solution to such problem is to diversify farm crops and promote wider use of underutilized crops to diversify agricultural systems and food sources.

There are a number of underutilized but nutritious crops in Ethiopia. Some of them are lowland cereal crops like sorghum and millet, highland cereal crops and legumes such as teff, Noug and Deqoqo, root crops like Enset and Yam, and Gums, Resins and Yeheb nut.

Professor Sebsebe stressed the fact that little or no attention has been given to develop and promote these crops despite the fact that scientific analysis of their content shows they are rich in food nutrition needed for healthy growth. He mentioned, for example that dried pea seed of pisum sativum (Deqoqo) is very rich in protein, starch and fibre content and a similar argument can also apply for root crops like Enset and Yam. Yams for example remain one of the most reliable sources of starch in most parts of SNNP region due to their adaptation to local seasonal climates. Nevertheless, their cultivation and role in assuring food security for subsistence communities appears to have been given relatively little attention. Till now, it is not clear whether there is an institution at national or regional level taking the responsibility to continue the RD on Yam and Enset.

In a similar manner, Yeheb nuts, crop plants that grow in dry lands, contain 11% fat, 13% protein, 24% sugar, 37% starch, and they also contain various minerals. Yet this plant is not only given less attention but also threatened with extinction from its habitat. Thus it is high time concerned government and non-government sectors and researchers should join hands to collaborate on studying and developing these neglected but nutritious crops and highlight the importance of these resources for the economy of the country in general and the rural communities in particular.

Way forward (Recommendations)

- Identification of crops that have been domesticated in Ethiopia and cater for the conservation of such crops before they disappear from farmers homestead and possession
- Establishment of Centers of Excellences for both the major crops and crops that are underutilized and/or neglected
- Improvements in the synergetic collaborative efforts between institutions – rather than being fixated with mandates in Ethiopia
- International collaboration with known centres/ Centres of excellence
- Incorporate such ideas in national and regional policy relevant documents and proclamations

2.2.4. Presentation 4: The Contribution of Enset based Farming System to Food Security and Sustainable Development: A Review of Production Trends, Multiple use Value, Challenges and Future Strategy

By: Dr Zerihun Yemataw, Senior Researcher at SARI, Hawasa Agricultural Research Center

Dr. Zerihun started his presentation by providing an introduction to the indigenous food plant called Enset. He described Enset as a herbaceous perennial plant that belongs to the family of banana. Enset grows in altitudes ranging between 1200-3100masl with rainfall ranging from 1100-1500mm/yr and mean temperature of 16-20^{o}C.



Dr. Zerihun while presenting

In terms of contributing to food security, it is stated that a family having 6-7 members can live on 50-60 enset plants for a period of one year. He further stated that enset is a multipurpose crop that everyone of its part has some use. Enset can be used as animal feed, source of fibre, wrapping material and traditional medicine. About 1/4th of the population in Ethiopia depend on it for living. Despite all these qualities the crop received very little research attention in the past as compared to cereals.

Fig. 8. Enset Production trend (2012-2020)

Production year	Total area coverage (ha)	**Number of harvested trees**	**Production in million quintal**			**Yield (quintal/tree)**		
			Amicho	**Kocho**	**Bula**	**Amicho**	**Kocho**	
2012/2013	318454	114.00	10.94	12.99	0.46	0.10	0.11	0.00
2013/2014	537511	130.63	1.14	4.72	1.23	0.01	0.04	0.01
2014/2015	346,736	98.00	22.93	26.22	1.02	0.23	0.27	0.01
2015/2016		112.52	23.82	28.33	0.95	0.21	0.25	0.01
2016/2017	417,617							
2017/2018		127.24	29.31	34.78	1.02	0.23	0.27	0.01
2018/2019	368,789	136.09	34.47	38.47	1.16	0.25	0.28	0.01
2019/2020	390,149	157.71	44.09	48.94	1.48	0.28	0.31	0.01

The above table shows statistical data obtained from the Central Statistical Agency (CSA). The data shows that the area covered by enset plant and yield production has increased over the past 7-9 years. However, Dr. Zerihun stated that there are researchers questioning validity of the data for various reasons. One of these is that there are studies showing farmers perception as area covered by enset and enset production decreasing. The disparity could also be partly attributed to a proportional reduction of enset land area per person, as enset agriculture fails to keep pace with population growth. Hhowever, this is unlikely to be the case for overall yield. Thus an empirical evaluation of hectares in production, the number of harvested plants and overall yield is key to monitoring enset's role in providing food security.

Enset Genetic Resource Management

Enset is a plant that is rich in genetic diversity. The presentation affirmed that hundreds of varieties have been reported by various researchers.

The following table shows number of enset farmer varieties recorded by different researchers in major enset producing areas.

Number of farmers' varieties	Study sites	Information source
76	South Omo (Ari)	Shigeta, (1990)
158	Dawro, Gamo Goffa & Wolaita	Alemu and Sandford (1991)
146	Keffa-Sheka, Sidama, Hadiya & Wolaita	Negash (2001)
166	Hadiya, Sidama & Wolaita	Tsegaye (2002)
79	Sidama	Tesfaye (2002)
111	9 different geographical sites (Wolkite, Setunae, Seltae, Bonga, Shonae, Worka, Answae, Wondo, Chencha)	Birmeta (2004)
42	Kaffa	Tsehay and Kebebew, (2006)
218	7 different zones (Dawro, Gamo Goffa, Gurage, Hadiya, Kembata Tembaro, Sidama and Wolaita)	Yemataw (2014b)
67	Wolaita	Olango (2014)
312	8 different zones (Dawro, Gedeo, Gurage, Hadiya, Kembata Tembaro, Sidama, Silte and Wolaita)	Yemataw (2016a)

In addition to these in-situ conservation areas, efforts are also being made to conserve enset varieties ex-situ. These include enset gene banks at Areka research center, Hawassa University, Wolkite University, Arbaminch University and EBI.

Economic and Ecological and Cultural Importance of Enset

Economic importance:

- Source of food (food security)
- Source of fibre to make sacks, ropes, sieves and mats.
- Amimal feed
- Medicinal value
- Enset starch used in pharmaceutical industries as a tablet binder and disintegrant
- Construction

Ecological importance:

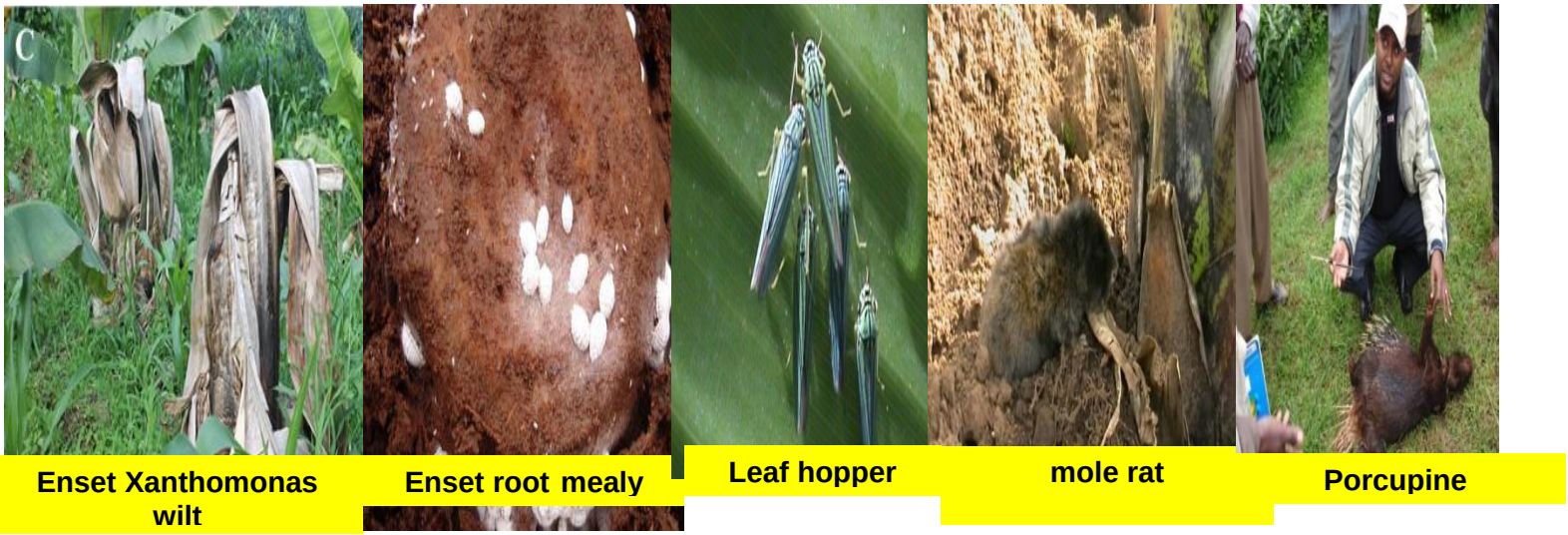
- Its extensive plant canopy intercepts rainfall: thus limiting soil erosion
- The deep roots increase water infiltration and decrease surface runoff
- Builds soil organic matter and soil fertility
- Leaves used for mulching, enhances organic matter and soil protection
- Shade to coffee plant

Cultural importance:

- Farmers in Kaffa Zone (SNNPR) are aware of, and cultivate, a number of different varieties specifically in relation to myths, poems and beliefs about their medicinal and ritual significance.
- Songs and rituals associated with specific aspects of enset in the Sidama culture.
- The Gurage people, to whom enset is an important staple, label themselves the "people of enset"

Research and Technology Development Challenges facing Enset

Fig.9. Some examples of threats facing enset plant



Technology development challenges

- Limited work on Agro-processing and value added product
- Limited work on Biotechnology research
- Ineffective quarantine/regulatory system and surveillance

Recommendations:

- Expansion of the existing field gene bank at AARC, in combination with appropriate biotechnological approaches (*In vitro* conservation)

- Improving the available technologies for expanding the enset economy
- Development of economically viable Enset farming system (System intensification)
- Strengthened integrated management of Xanthomonas wilt (EBW) and other diseases
- Modernizing enset food and fiber harvesting and processing
- Standardization of the fermentation process with selected culture strata.
- Advancing microbiological research in collaboration with universities and other stakeholders.
- Eco-tourism oriented food and fiber processing micro-industries

2.2.5. Presentation 5: Keynote Remark on Food and Agriculture System: Continental and Global Perspectives

By: Million Belay (PhD), General Coordinator of AFSA

Dr. Million started his presentation by discussing the present and future challenges of the global agricultural system. He stated that some of the key challenges are:

- Population pressure
- Land and forest degradation
- Erosion of bio-cultural diversity
- Unplanned urbanization and
- climate change



Dr. Million while presenting virtually

Then he proceeded to discussing the kind of agricultural system that can address the challenges faced. In this respect, he mentioned that the available options are:

- To continue focusing on producing more food (maintain the status quo of IA)
- To produce more healthy and nutritious food
- To produce more food which is nutritious and healthy food without affecting the biosphere

Out of these three options, the first one is the one being applied by the green revolution (GR) and we are witnessing the consequences of the approach. So it is not a viable option.

The GR approach is that more food can be produced to meet the demands of increasing population. It asserts that it can succeed producing more food and feeding the global population through:

- Use of new seed varieties that respond to agro-chemicals
- Application of agri-technology (irrigation, machinery, chemicals and GMO)
- Focusing on increasing productivity of few market value crops
- Application of new knowledge on farming techniques

Following these path, however, the GR resulted in serious negative impacts that affected human, animal and environmental health, among others. On the other side, it has many social, economic and ecological limitations. Some of the limitations of GR are:

- It favors rich farmers who can afford agro-chemicals and machinery
- It leaves indebted poor farmers without property
- New mono-crops are less resistant to disease, weeds and pests
- Caused ecological disasters
- Caused nutrition and health crisis
- Resulted in cultural erosion

When it came to Africa, the GR came with wrong narratives. These include

- Giving priority to business to produce more and feed Africa/Land must be given to those who can make it productive
- Replacing farmers' seed with improved (hybrid) seeds
- Prescribing more calorie as a solution
- Science as the only source of knowledge
- One size fits all solution

The Alliance for Green Revolution in Africa (AGRA) was founded in 2006 and started its business in Africa with USD 1bln funding. 2/3rd of this comes from Melinda & Gates Foundation. It had a set goal of doubling production and income in Africa by 2020 and reduce food insecurity of 3omln farmers.

However, evaluations of progress of AGRA so far show that:

- About 1/4th of population in the continent is still food insecure
- No evidence of 100% increase in productivity
- Increased human and environmental health impacts

Historical analysis of increase in agricultural productivity, however, shows that productivity was increasing even before the beginning of GR. This implies that Africa should get rid of the unjust and exploitative agricultural system and shift to a more sustainable and healthy food production system: an agricultural system that works in harmony with nature. Key measures that should be considered for the transition to a more healthy and sustainable food production include enhancing agro-biodiversity and addressing problems in power relations through coopting alternatives and lobbying policy makers.

The other catalyzer of the transition should be ensuring food sovereignty. Food sovereignty focuses on both self-sufficiency ad local control over production resources. Food sovereignty is different from the concept of food security in that it is neutral to power, regards not only on productivity but also on where and how food is produced as well as its cultural appropriateness for the consumers.

Case studies of application agro-ecological practices in various African countries have shown that healthy, safe, sufficient, affordable, ecologically sound and culturally appropriate food can be produced by African smallholder farmers.

Following conclusion of the presentation by Dr. Million, participants were given the chance to ask questions for more explanation or clarity as he was presenting virtually. Accordingly, the following questions were forwarded to Dr. Million:

- The forum was discussing about expansion of crops like enset to other parts of Ethiopia and intercultural exchange of food. How does this align with the idea of culturally appropriate food in the food sovereignty concept?
- How do you think the agro-ecology advocacy in Africa will bring change in light of bureaucracy and resisting corporate hands?
- How can we integrate biotechnology in our agro-ecology practices?
- How can urbanization be a challenge to food security?
- How shall we react to the introduction of fast foods like MacDonald in Ethiopia.

Dr Million's responses to the foregoing questions are summarized as follows:

- Food sovereignty doesn't contradict with the idea of intercultural exchange of food. The various cultural groups in Ethiopia have been exchanging food for time immemorial and that will continue in the future. The idea of cultural appropriateness in the food sovereignty concept refers to imposed foods and not the context of intercultural exchange
- Regarding advocacy in Africa and Ethiopia, there are practical examples that we can use to convince policy makers
- Agro-ecology is not against bio-technology in general. What it objects is modern bio-technology like GMO
- Urbanization is a challenge to food security only if it is unplanned. Otherwise it may contribute to food security
- Fast foods like MacDonald are not healthy. So we better resist their introduction.

2.2.6. Feed Forward/Plenary discussion

Following Dr. Million's presentation and question and answer session, the floor was opened for plenary discussion to give participants to reflect on the subjects under discussion, contribute their experiences and challenge ideas raised if needed.

Accordingly, major points raised and reflected during this session are summarized as follows:

- ✓ The narrative being propagated by those promoting the industrial agriculture is that the Ethiopian population will rise to 250mln by 2050 and it is not possible to feed such a big population without use of modern agricultural technologies. This narrative is, however, only about ensuring food security. Yet food security should be aligned with nutrition security. It is only through diversifying our food production and providing nutrients required for proper growth that we can avoid stunting, underweight and wasting. This is only possible through diversification not specialization.
- ✓ GR tells us that science is the only source of knowledge. But I don't think science can deal with traditional knowledge of indigenous communities. So we as promoters of local knowledge should start by giving recognition for traditional knowledge and belief systems of communities.

- ✓ We should start by coming to consensus on the concept of agro-ecology. Each of us has differing conceptions about agro-ecology (AE). For me AE encompasses a range of practices from seed, soil fertility management, and ecosystem conservation to knowledge management. We need to work closely with farmers and listen to them on what they say about AE. Regarding the need for policy changes, I think the problem lies in mixing systems with politics. Agriculture policy making should be the business of agriculture experts, not that of politicians. So we should be bold enough to tell our politicians what is right in making development related policies and guide them.
- ✓ I agree to the idea of agreeing on the definition of AE. AE is a complex concept. So PELUM-Ethiopia is producing a training material together with MoA and GIZ to come up with a simplified version. The fact is that the practice of AE is not something new. It has been there for a long period of time and it is still being practiced by millions of smallholder farmers. We need to think of how we can scale up the practice to the expanding urban areas as urban agriculture.
- ✓ Researchers and experts should work hard to promote the value of neglected crops like enset and convince policy makers. They should become research agendas in universities and research institutions. They should take the initiative of going to the policy makers with research evidences and inform them. Using the media to promote the right direction and mobilizing stakeholders like farmers is also a viable approach to influence policy makers. If researchers and policy makers fail to influence policy makers, then it means that there is another problem we need to solve.
  In addition, our researchers should lead in inventing viable technologies that can make use of neglected crops easier. We should not sit hands folded and see while our resource bases are being destroyed by foreign companies and their imposed ways of doing business.

- ✓ In addition to addressing the policy gaps, we need to also revise our school curriculums and university courses in such a way that we start engaging the youth on our food and agriculture system issues. We should start looking inward for innovative solutions to our problems.
- ✓ Stakeholder engagement in such forums is critical. So we need to create mechanisms to bring all relevant stakeholders on board.
- ✓ As both ADLI and AGRA seem to have failed, we don't even have a living policy to practice in relation to our food and agriculture system. We also need to well address livestock issues to make our AE forum a complete one.

Following reflections and comments by the participants, paper presenters responded to some of the concerns reflected by the participants. Their responses are summarized as follows:

1. Dr. Zerihun
   Regarding guiding policy related to neglected crops, Dr. Zerihun explained that a policy brief on enset is underway. Likewise, he also mentioned that there are initiatives to revise university courses to well integrate the issue of such crops. He further mentioned that some institutions are working to make value additions to enset. Yet the initiatives seem fragmented.

2. Ato Solomon

   Regarding the gap in bringing all relevant stakeholders on board, At Solomon stressed that MELCA has made all efforts to bring relevant government institutions like MoA and Ethiopian Public Health Institution (EPHI), but the heads and experts of these institution did not give due attention to the forum. He also stressed on the idea of making AE a shared agenda and play a complementarity role in promoting it. Ato Solomon commended the initiative by MoH to prepare Nutrition Sensitive Agriculture Policy and urged other government sectors to follow the example of MoH.

   Regarding agriculture commercialization and technology Ato Solomon stated that AE promotes a localized fair agricultural marketing that benefits the producers and also promote the use of environment friendly agricultural technologies. He further argued that AE is an interdisciplinary approach that integrates practice, movement as well as scientific and local traditional knowledge. Effective promotion of AE requires giving due attention to the farmers, making them benefit from the practice and also making it gender sensitive to maximize women's participation. Finally, he explained that MELCA has already prepared a policy brief on mainstreaming of AE and is liaison with policy makers for its take up.

3. Dr Tsedeke

   In the reflections, we are basically raising some ideas that should be raised during the way forward session at the end of the forum. So I will not respond to them. But regarding AE and modern agriculture, I think they are not mutually exclusive. We should think of how we should make them complementary.

   Regarding the concern related to livestock, nationally 92% of the total dietary energy is generated from plant based food. Animal based food covers only 8% of the dietary energy 17% of protein and 31% of fat. I think this implies why less attention is given to the animals.

   In relation to influencing policy makers, I think we have no problem of knowledge and expertise. Our problem is related to presenting our ideas in a coherent and compiled manner. We tend to deal with issues in a fragmented way and so we fail to attract the attention of policy makers.

4. Dr. Feleke

   He responded to the concern regarding why researchers are bold enough to influence and guide policy making. In this regard, he stated that the practice has global nature and not limited only to our country. To solve this problem, an intergovernmental science policy platform on biodiversity and social is created to bridge the gap between scientists and policy makers. It is an international initiative that also has presence in Ethiopia.

   Regarding the concern about genetic erosion, he stated that the western world is working to totally displace our national genetic varieties but we should all be cautious of this move and resist it. Finally he stated that women are knowledge holders of most local crops and they should be taken as the main contributors to our effort to conserve our genetic diversity.

2.2.7. Presentation 6: Environment and Climate Change Policies to Food and Agriculture System

By: Muluneh G. Hedeto, Senior Advisor and National Climate Change Negotiator, EFCCC

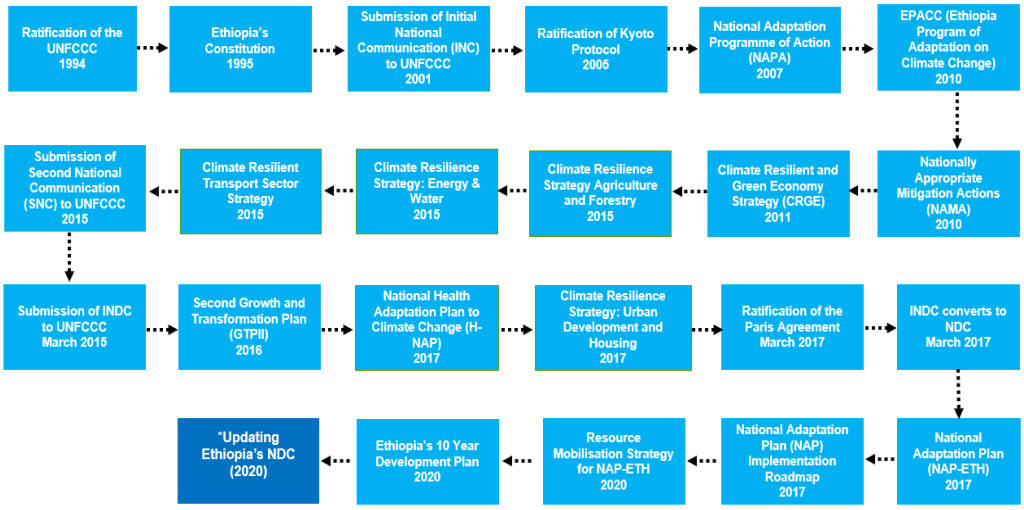


Ato Muluneh while presenting

Ato Muluneh started his presentation by asserting that Ethiopia has ambitious vision to achieve green economy over the next few decades and has set laudable policy frameworks to that end. He further claimed that the policy frameworks include objectives on food and nutrition security, agricultural growth and development, and climate change and biodiversity. Some of these goals and objectives are set out in the country's existing Climate Resilient Green Economy (CRGE), Growth and Transformation Plan (GTP), 10 years development plan, National Adaptation Plan (NAP), National Forest Sector Development Plan (NFSDP) and the National Biodiversity Strategy and Action Plan (NBSAP).

Food, agriculture, biodiversity and climate change related policies, strategies, international agreements, action plans and reports made by the country since 1994 are illustrated in the figure below.

Fig.10. A map of food, agriculture, biodiversity and climate change policies, strategies, international agreements, action plans and reports.



Food and Agriculture Related Provisions in some of the policies and Strategies

A. Climate Resilient Green Economy (CRGE) Strategy of 2011

Agriculture sector is identified in the strategy as one of the pillar sectors to work on for abatement of GHG emission. To this end, the CRGE introduces lower emitting cultivation techniques such as conservation agriculture. Watershed management, nutrient and crop management, agricultural intensification, cultivation of new agricultural land in arid areas through irrigation are some other techniques for enhancement of agricultural products in the strategy.

B. Climate Resilience Strategy: Agriculture Sector 2015

The agriculture sector climate resilience strategy underscores the need to build adaptive capacity through:

- Capacity-building and institutional coordination; information and awareness;
- On-farm crop and water management; livestock management; value chain and market development;
- Sustainable agriculture and land management; natural resources conservation and management; disaster risk reduction;
- Social protection for high-priority groups including women and children

C. The National Adaptation Plan of 2017

While adaptation option one in the NAP emphasizes enhancing food security by improving agricultural productivity; the third adaptation option states strengthening sustainable natural resource management through safeguarding landscapes and watersheds.

D. The Nationally Determined Contribution (NDC)

The NDC also states the GHG emission projections in BAU, including the in LUCF, livestock and soil management sectors.

Conditional and unconditional pathways to GHG emission projection in BAU are illustrated in the table below.

Fig.11. Mitigation potentials by sector and conditionality

Sector	BAU emission projection (Mt CO2e)		Unconditional mitigation potential (Mt CO2e) (Mt CO_2e)		Conditional mitigation potential (incl. unconditional) (Mt CO2e (incl. unconditional) (Mt CO_2e)	
	2025	2030	2025	2030	2025	2030
Industry	12.7	26.1	-0.2	-1.2	2.5	3.5
Energy	14.4	20.0	1.7	5.1	4.0	10.5
LUCF	133.8	140.2	21.2	48.4	112.3	240.1
Livestock	169.5	194.8	0.8	1.8	6.7	14.8
Managed Soils	8.1	11.0	0.0	0.1	0.1	0.3
Waste	10.3	11.5	0.9	2.0	4.3	8.6
TOTAL (Mt CO_2e)	348.8	403.5	24.5	56.2	129.9	277.7

E. Policy Interventions in the Land use, Climate and Forest sector

- Promoting sustainable agriculture
- Grassland improvement
- Reducing residential biomass use
- Reforestation
- Restoration

F. Policy interventions in livestock sector

- Enhancing efficiency and productivity in the livestock subsector
- Agriculture mechanization
- Increase in the share of poultry
- Oilseed feeding

Finally Ato Muluneh stressed that the targets objectives set in the various policies and strategies demand a fundamental transformation of the economy to address interconnected sectoral challenges such as boosting agricultural productivity while at the same time increasing forest area, ensuring food and nutrition security, shifting future protein supply to poultry, promoting sustainable land and water management, and advancing renewable and cleaner energy for urban and rural communities.

In conclusion efficient and at a full scale implementation of the ambitious pathways set in the policies and strategies require:

- Integration and collaboration of the concerned sectors.
- Removing institutional and policy bottlenecks that stymie actions at local, regional, and national levels.
- Developing innovative partnerships that leverage the innovation and resources of the private sector.
- Securing innovative financing and investments that can help achieve these targets at greater speed and scale and in a more integrated way

2.2.8. Presentation 7: Overview of the Ministry of Health Perspectives on Nutrition By: Abrham Getachew, Public Health Professional and Project Management Specialist, MoH



Ato Abrham while presenting

In his introductory section, Ato Abrham started by stating that Ethiopia has made in reducing the rate of malnutrition in the past decade; yet the need to invest in improving national nutrition level still remains high considering the significant malnutrition baseline to be addressed.

To this end, the MoH has established a nutrition case team tasked to work on designing strategies to address the high malnutrition rate in the country and overlooking its implementation. Aims of the case team include:

- Coordinating and guiding nutrition specific interventions being implemented by the decentralized FMOH structures and

- Supporting the coordination of nutrition sensitive interventions being implemented by National Nutrition Program (NNP) implementing sectors
- Coordinate and comprehensively address the health and nutrition related problems of the county.

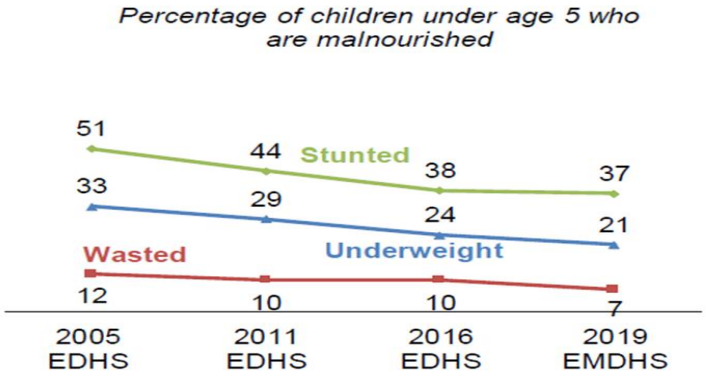
According to Ato Abrham, the national nutrition target gives special consideration for maternal and small children nutrition. Some of the reasons why reproductive mothers and children are given special nutritional attention are:

- Almost half children under 5 deaths are caused by malnutrition
- Appropriate nutrition at infant age is required for lifetime physical and brain development
- Avoid irreversible stunting
- Lack of adequate and appropriate nutrition for pregnant mothers result in inadequate weight gain for the new born, anemia and iron deficiency, increased risk of death at delivery due to excess bleeding and blood pressure disorders.
- Late recovery from child birth

Nutrition Trends in Ethiopia

The trend of malnutrition in Ethiopia since 2005 is illustrated in the graph below.

Fig.12. The trend of malnourishment for children under 5 (2005-2019)



As can be seen from the graph, the rate of stunting, underweight and wasting has declined from 51%-37%, 33%-21%, 12%-7% respectively. However, the figures tell us that the country has still far way to go to eliminate prevalence of stunting, underweight and wasting in children under age 5.

National Food and Nutrition Policy of Ethiopia

- Endorsed by the council of ministers in 2018
- It is based on the global conceptual framework for nutrition security as a change model to address the existing causes of nutrition insecurity at various levels.
- The policy framework focuses on short, medium and long-term strategies in an integrated way to address the different layers of nutrition problems in the country.

Major objectives of the policy are:

- Ensure the availability and accessibility of adequate food to all Ethiopians at all times.
- Improve accessibility, and quality of nutrition and nutrition smart health services at all stages of the life span in an equitable manner.
- Improve consumption and utilization of a diversified and nutritious diet that ensures a citizen's optimal heath throughout their life cycle.
- Improve food and nutrition emergency risk management, preparedness and resilience systems.
- Improve food and nutrition literacy of all Ethiopians.

Policy guiding principles:

- ✓ Accommodates lifecycle approach with special emphasis to the first 1000 days nutrition.
- ✓ Access to adequate, safe, high quality and nutritious food is a human right and ensures the right to informed choice of food based on trustworthy data/information and policy framework.
- ✓ That food and nutrition issues are cross-cutting in nature and that effective multi-sectoral coordination is encouraged.
- ✓ Sustainable food value chain is encouraged and dietary practices of the community are improved through the promotion of the indigenous knowledge on food and dietary practices and sharing of relevant international experiences.
- ✓ Food sovereignty is ensured and shared responsibility among public-private partnerships is promoted along the food value chain.
- ✓ Food is recognized as a national strategic resource, promotes innovation and application of new, profitable and environmental friendly technologies for preparation, processing and familiarization of new foods and food products.

Implementation Approaches

- o Life cycle approach
- o Food as human right
- o Multi-sectoral integration, coordination and linkage
- o Nutrition specific and nutrition sensitive approaches
- o Farm to table approach

The government of Ethiopia is committed to end child malnourishment by 2030 through the Seqota declaration. Some of the key goals set in this declaration are:

- ➢ Zero stunting in children under 2
- ➢ 100% access to adequate food all year round
- ➢ Transformed smallholder productivity and income
- ➢ Water sanitation and hygiene
- ➢ Social protection for all

Major challenges facing implementation of the nutrition policy and the declaration

- Lack of coordination and linkage among the concerned sectors
- Limitations in data collection, analysis and use
- Resource
- Low level of nutrition literacy
- Lack of human resource and effective institutional arrangement

2.2.9. Presentation 8: Review of the Ethiopian Food System Related Policies: A move to Establishing an African Food System Policy

By: Mellese Damtie (PhD), Asst. Prof. and Lecturer at AAU School of Law

In the introductory phase of his presentation, Dr. Mellese stated that food systems are primarily concerned with food and nutrition security, livelihoods of food producers and consumers and environmental sustainability. He further stated that food systems also encompass infrastructure and activities that relate to the production, processing, manufacturing, distribution, marketing, sale, preparation, affordability and consumption of food.



Dr. Mellese while presenting

According to Dr. Mellese, the global food systems is expected to deal with complex triple challenges. These are:

1. To deliver safe and nutritious food to consumers, in sufficient quantities and at prices they can afford to the increasing global population (around 10b by 2050)
2. Produce more food while at the same time reducing GHG emission and avoiding ecosystem and biodiversity degradation
3. Ensure sustainable income and livelihoods for those in the food value chain

The foregoing issues are interconnected food systems issues that need to be treated as parts of the same body. However, historical analysis of food policy making show that they have been treated in isolation. So this seems to be one of the failures of policy making in the food and agriculture systems. That is because the complex nature of food systems calls for policies that align with the complexity through dealing with diverging interests and differing values. Moreover, policy making in complex systems should consider synergies and tradeoffs. Hence African countries should cooperate and pull together ideas so as to produce coherent continental food policy.

Analysis of key National Laws and Policies

A. The FDRE Constitution

The constitution does not treat the right to food in the main Chapter that deals with fundamental human and democratic rights. Rather it deals with food issues under its national policy principles and objectives. This shows that the constitution does not impose obligation on the state to provide citizens with the food and nutrition they need for living.

B. The Agriculture Development Led Industrialization (ADLI) Strategy-2003

This can be considered as the major agriculture related strategy in the country. The strategy underlines on devising mechanisms to ensure food security at household level and extricate the country from reliance on external food assistance. It further asserts that food security can be ensured not only through increasing food production but also enhancing incomes of off farm community.

C. Food and Nutrition Policy of 2018

By going a head of the constitution, this policy recognizes that attaining food and nutrition security is a constitutional and human right of Ethiopians. It also underlines that the Government of Ethiopia has the responsibility to ensure that its citizens are food and nutrition secure. Objectives of the policy directly related to food and nutrition include:

- Ensuring the availability and accessibility of adequate food to all Ethiopians at all times.
- Improving consumption and utilization of a diversified and nutritious diet that ensures a citizen's optimal heath throughout their life cycle.
- Improving food and nutrition literacy of all Ethiopians.

D. Food Security Strategy – 2002

This strategy focuses on environmental rehabilitation as a measure to reverse the level of degradation and also as a source of income generation for food insecure households through biological measures. It recognizes that environmental sustainability is critical to the pursuit of food security and economic development. The strategy sets a move away from traditional crop mixes to specialized oil seeds, fruits, vegetables and livestock as a direction. This, however, should be an initiative that should be handled with the at most care and caution so as not to result in displacement of local seeds and food crop production.

E. The Climate Resilient Green Economy Strategy – 2011

The CRGE recognizes agriculture development as one of its four pillars for GHG emission abatement. The strategy states that the agriculture sector is one of the big national GHG emitters contributing about 50% of the national emission. The strategy aims to abate emission from the agriculture sector through:

Adoption of agricultural and land use efficiency measures;
- Intensifying agriculture through usage of improved inputs and better residue management;
- Creating new agricultural land in degraded areas

F. Food and Medicine Administration Proclamation No. 1112/2019

The proclamation excludes medicine, cosmetics and tobacco from its definition of food. Purpose of the proclamation is stated as preventing public's health from hazards caused by unsafe food. It also focuses on the safety of food in relation to food processing, packaging, trade, etc.

G. Vision 2030 - Transforming Ethiopian Food Systems: A Synthesis Report - Game Changing Solutions to Transform Ethiopia's Food System, 2021

Vision 2030 is prepared in response to United Nations Food Systems Summit (UNFSS) call for member states to apply food systems approach as a means of achieving SDGs. The document dwells on the 5Ps (people, planet, prosperity, peace and partnerships) which are the crucial elements to achieve the SDGs. The document further identifies the following as key drivers of food change:

- ✓ Biophysical and environmental drivers;
- ✓ Technology, innovation, and infrastructure drivers;
- ✓ Economic and market drivers;
- ✓ Political and institutional drivers;
- ✓ Socio-cultural drivers; and
- ✓ Demographic drivers.

In relation to the foregoing key drivers, the document underscores that systems supporting food production need to be transformed so as the drivers to be addressed. The document also underlines the importance of cluster and contract farming to increase productivity and market access of smallholder farmers. However, the impact of this approach to diversity on farm and local food security is something to be further monitored.

Key findings:

- ➢ None existence of a comprehensive food policy framework in Ethiopia
- ➢ The constitution does not impose obligation on the state to ensure citizen's right to food
- ➢ The need to balance between the production of food crops and cash crops
- ➢ Policies and researches seem to favor export oriented commercial agriculture rather than smallholder farming
- ➢ Policies leave the burden of conserving farmers' seed varieties and related knowledge to farmers
- ➢ No dedicated institution in the country to govern the food system related issues
- ➢ Middle actors in the food market inflate food prices and constrain accessibility.

Policy Gaps identified

- The policies and strategies do not reflect the need to establish a common food system guideline or a standard based on the African context.
- They do not have mechanisms to integrate African countries regarding food system.
- The do not sufficiently provide enabling conditions for incubation of local innovations and traditional knowledge.
- They fail to give much emphasis for women farmers and are not youth relevant (lack of appropriate youth friendly technologies) and hence led to lack of a sense of ownership on the agriculture by the youth.
- They do not envisage the need for continental and sub continental food related market centers that promote inter-African trade in food.

- They do not consider key actors' roles (e.g. CSOs, professional organizations, smallholder farmers, women & youth) in the food system.
- They do not align with the spirit of pan-Africanism for the food governance
- They do not take into account the need to establish a common center of excellence for exchange and capacity building.

Recommendations:

- Consolidate issues by incorporating all elements for a good food system in a single document to have a comprehensive policy framework on food systems.
- Establish and/or strengthen an existing institution to spearhead the food system issues. ➔ Establishing a multi-stakeholder food council is instrumental.
- Make the participation of stakeholders all inclusive (youth, women, community, public-private, producers, consumers); sharing of experiences based on best practices
- Strengthen research, innovation, training, and education and foster knowledge co-creation
- Create favorable conditions to attain short-circuit value-chain
- Apply a comprehensive performance measurement and monitoring frameworks to encourage the adoption of agro-ecological and other innovative approaches.

2.2.10. Presentation 9: Key Features of the Proposed Framework for Mainstreaming Agro-ecology

By; Regasa Feyissa, Director, Ethio-Organic Seed Action (EOSA)



Ato Regasa while presenting

Ato Regassa started his presentation by giving a highlight of the Ethiopian agriculture. He stated that Ethiopia's agriculture is based on diversity, complexity of agro-ecological and production systems, socio-ecological needs of the people and genetic diversity that the agro-ecosystem generates. Hence, the agriculture is the basis for the entire socio-economic development of the country affecting all other socio-economic development sectors.

Food and Agro-ecosystems of Ethiopia

Food System

Ethiopia has still plenty food sources. Food systems of the country are based on:

- the complexity of agro-ecosystems
- the genetic diversity within the systems,
- the cultural practices and the socio-economic values to the people.

Food is more than mere commodity for most of the Ethiopian people. That is so because it is strongly linked to their social, ecological and cultural values. But this link of food with social, ecological and

cultural values is gradually being eroded. Reduction the status of food to the level of commodity detached from social and cultural values is leading to changes in diet composition and supply of cheap food less cultural and social values.

Agro-ecosystems

The agro-ecosystems of Ethiopia may be considered as the natural banks of the country. Yet, erosion of ecological resources through time has brought system crisis in which farming, production, seed and food supply and health systems are affected.

Some of the major challenges the Ethiopian agriculture system is facing are:

- Degradation of Farms, farm environments and landscapes
- Erosion of genetic diversity
- Vulnerability to seed and food insecurity
- Vulnerability to climate change
- Deterioration of agro-ecological resources
- Weak variety development and use
- Effects of resource sensitive technologies on long-term productive potential of farms
- Limited agro-ecological resource management, governance and use rights
- Ineffective policies and strategies

The foregoing challenges in the agricultural system are leading to the following consequences affecting socio-ecological wellbeing:

- Agro-ecological and food systems have become victims of modernity addicts and of the pressure of the reductionist approach to agriculture.
- Selectively reduced technologies to a few elements of homogenization.
- Shifts in balance of soil components, and damages to pollinators and other beneficial organisms.
- Phenomena such as farm soil pollution, soil acidity and decline in soil carbon level, species extinction and genetic erosion are to a larger extent attributed to the damaging agricultural practices.
- Some agricultural practices cause degradation and alteration of larger portion of agro-ecosystems and deplete food, feed and income sources within the systems.
- Rural food, economic, health and environmental crisis usually emanate as consequences of such agricultural practices

Policies and strategies in place tend to aggravate the problems in the agriculture system rather than being solutions. That is so because the policies and strategies are skewed to serve the interests of pro-industrial agriculture rather than being issued to address local contexts. The following are among the major limitations of existing policies and strategies:

- Inadequate perception of ecological resources as common goods;

- Reluctance regarding overseeing of lands and resources it contain as common goods;
- Unclear resource access regimes for collective use and by individuals;
- Local landscapes are eroding beyond the roles they play in stabilizing local environments and beyond the socio-economic and cultural values they offer;
- Insignificant sense of long-term environmental impacts in the practice of investment for development;
- Agricultural research and extension are of narrow option based, with little or no focus on native resources and practices and knowledge;
- The seed policy does not provide proper space for agro-ecology and diversity based production and utilization;
- Lack of emphasis and investment on the enhancement of the potential of native crops and to farmer developed varieties and to their roles as variety developers, adaptors and modifiers of crop varieties over a range of diverse agro-ecologies.

Overview of Policy Framework for Mainstreaming Agro-ecology in Ethiopia

Issue to be Addresses/Problem statement

The traditional Ethiopia's agriculture has been basically agro-ecological and is dynamic in which farmers' knowledge and practices have been shaping its management for generations. However, as the paces at which the socio-economic dynamics change and the potential of local agro-ecologies is declining, the traditional management practices of farming and rural societies is declining in its capacity to co-exist with the evolving agro-ecological processes. As it stands now, the Ethiopian agriculture system is being challenged by multiple problems including erosion of genetic diversity, degradation of farms, farm environments and landscapes, and disruption of local agro-ecosystems.

Hence, an agro-ecological approach should be adopted to curb the problems and shift to a sustainable agricultural practice. Such approach should be framed within a wider policy scope and with due regard to short and long-term development perspectives. The policy should be combined with ministerial or institutional responsibilities for designing and implementing strategies that ensure agro-ecological approaches within their lines of development actions.

In this regard, the draft policy framework for mainstreaming agro-ecology in to the Ethiopian agriculture system is prepared with the following vision, mission, goals and anticipations:

Vision: to see sustainable agricultural practices commensurate with the diverse agro-ecosystems of the country and aligned to the interests and needs of local food producers and consumers and their cultural values

Mission:

- Creation of an enabling environment for building a system of agriculture increases options, equity, security and sustainability across all agro-ecological and farming systems of Ethiopia.

- Work for existence of policies and strategies that promote the safety of the dynamic development process and sustainable management and utilization of agro-ecological and biodiversity wealth of the nation.

Objectives:

- To enhance Ethiopia's potential to make use of the enormous and varying sources of food and goods deriving from diverse agro-ecological, farming and production systems, and the biological resources it is endowed with;
- To encourage the culture and knowledge systems that nurture and will continue to nurture the resources;
- To provide important space for innovative technologies and investments and for local problems oriented learning and research.

Anticipations: the policy framework anticipates achieving the following policy outcomes

- A national framework for relevant sectoral policies to promote agro-ecological approaches and innovations with the aim to contribute to the development of sustainable agriculture and food systems, to enhance food and nutrition security, and to stabilize ecological systems and increase its services.
- Transition to ecologically sound agricultural and food systems that are built on systems of agriculture which increase diversity and livelihood options, and which provide sustainability in the face of the dynamic environmental and socio-economic changes.
- Increased resilience of food systems through promotion of diverse food sources and sustainable production and consumption patterns that enhance ecological resources and encourage autonomy and connectivity in food supply chains.
- Systems of agriculture that prevent damage to diversity on which itself stands and promote investments in diversification strategies and practices and technologies that address diverse farming and production systems and support the enhancement of local resources and agro-ecological services.
- Coherent and strong policy instruments that ensure the conservation and sustainable use of biodiversity for food and agriculture and support to the important past, present and future contributions of farmers and local communities in the development and management of the resources.
- Establishment of mechanisms for public assessments of the impacts of agro-ecological and other innovative approaches and specific innovations on key aspects of sustainable agriculture and food systems, on food security and nutrition, on the right to have access to food and food sources, on producers' revenues, on rural and urban resilience and on the environment and public health.
- Trans-and multi-disciplinary learning in agricultural and environmental development science, of participatory approaches in research and dissemination of knowledge and information, and studies for understanding and shaping the complex socio-ecological systems in agriculture and food systems.

- Support to transitions to resilient, diversified and integrated agriculture and food systems through agro-ecological and other innovative approaches
- An enabling environment for empowering vulnerable and marginalized groups for fair access to means to practice agriculture and to produce food sources of their needs, cultures and interests.
- Investment on and support to farmers variety development and seed systems as the potential use of formal seed is limited to most favorable conditions, and small scale farmers' variety use and development and seed systems play a major role.

2.2.11. Presentation 10: Interlinkages among Agriculture, Biodiversity and Food Security: Where are we heading to?

By: Feleke Woldeyes (PhD), Deputy Director General, EBI



Dr. Feleke while presenting

Dr. Feleke started his presentation by giving a highlight to the concept of agriculture. He stated that agriculture is a level or type of behavior that might be mentioned as one of the top most accomplishments of the human species. He further stated that its ability to provide food for the ever-growing human population can be regarded as one of the great success stories of human civilization. Agriculture is a practice evolved from use of natural capital, continuous selection domestication and breeding of crops and animals over a long period of time and development of agronomic skills. Although a number of theories have been proposed to explain the shift of human beings from hunter gatherers to agrarian community, the current understanding how agriculture arose remains unsatisfactory.

Agriculture in Ethiopia

Agriculture is a long standing practice in Ethiopia that started around 7000 years back. Historical literatures show that two inventions of agriculture took place independently. These are crop cultivation including enset and raising livestock.

Agro-biodiversity

Refers to all species and varieties useful to people, with a particular emphasis on crop, plant, and animal combinations. It includes all components of biological diversity relevant to food and agriculture. In general, agro-biodiversity can be describes as:

- the first link in the food chain
- a practice developed and safeguarded by indigenous people around the world
- part of nature that makes an essential contribution to feeding the world
- human interaction with nature to build security, resilience, adaptability, and reduce vulnerability to climate change and other weather events

Traditional Vs Industrial Agriculture

Features of traditional agriculture

- Optimum utilization of locally available resources
- Minimized risk of crop failure
- Better sustainability of the production methods
- Closely tied to local worldviews
- Evolves over time in a particular habitat and culture
- Relies on local inputs

Features of Industrial Agriculture (IA)

- Increased mechanization
- Wide-spread use of artificial fertilizers, pesticides and herbicides
- Large field and farm size
- Continuous cropping
- Increased farm specialization
- Developments in livestock and plant breeding
- Reliance on high yielding varieties

Traditional farming or agro-ecology is the only approach that can bring about complementarity between biodiversity and agricultural practice. Traditional farming or agro-ecology can contribute to enhancement of biodiversity by use of ecologically suitable varieties in mixed cropping and mixed farming system and also by making use of locally available conditions thereby contributing to conservation of genetic diversity.

On the other side agriculture benefits from biodiversity through wide ranging ecosystem services. These include:

- Plant and animal genetic diversity is the very building block for breeding technologies
- Genetic diversity is important in rescuing crop plants threatened by new pests and diseases or changing environments;
- Natural pollination and pest control
- Diverse and abundant organisms play a vital role in developing and maintaining healthy soils
- A diverse environment offers a shield for agricultural ecosystems against natural and man-made perturbations

As can have complementarity role, agricultural practice can also be a practice with negative effect to biodiversity if not managed properly. This emanates mainly from the continuously expanding human population and the consequent innovations in agricultural production systems to meet the rising demand for food. This also includes conversion of natural habitats to human managed systems with a general tendency to move them from heterogeneity to uniformity, from complexity to greater simplicity

and or intensive use of hazardous chemical inputs to increase productivity. Agricultural intensification so far has led to a significant reduction in the number of species and of production systems.

The Link between Biodiversity and Food Security

Biodiversity is the basic resource base for food security. Almost the entirety of food used by humans come from nature/biodiversity. Although there are about 400,000 potentially edible species of plants in the biosphere humans only use a small number of these as sources of food. The number of cultivated crop has been estimated at about 7,000 while domesticated animals are even less, around 40. In addition there are many locally used species that are scarcely or only partially domesticated while the rest are gathered from the wild. Wild harvested meat provides 30–80% of protein intake for many rural communities, particularly in the absence of domesticated alternative sources of protein. Generally, a range of local crops supplemented by wild-harvested species and animal products help provide diversity in the diet, and complements the nutrition provided by staples.

The Prospect of Meeting SDGs while Sustaining the Resource Base

Seven of the seventeen sustainable development goals refer, directly or indirectly, to biodiversity. Ethiopia is among the countries committed themselves to work toward achieving the SDGs. What are the efforts made so far to meet the SDGs?

A. Institutional arrangements
- ✓ The Establishment of EFCCC
- ✓ Ministry of Agriculture
- ✓ The restructuring and expansion of EBI
- ✓ Establishment of conservation oriented institutions

B. Provision of relevant policies, strategies and plans
- ✓ Environment policy of Ethiopia
- ✓ CRGE Strategy
- ✓ The 10 year prospective plan
- ✓ Ethiopian National Strategy and Plan of Action for Conservation and Sustainable Utilization of Animal Genetic Resources (2016)
- ✓ National policy and strategy on animal breeding (2017)
- ✓ National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020

C. Laws/regulations
- ✓ Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation (P.No. 482/2006)
- ✓ Rural Land Administration and Land Use Proclamation (P. No. 456/2005)
- ✓ Regulations under formulation (PES, Wetlands Proclamation,)

D. Stakeholder/Public Engagement

- ✓ A broad public base practicing/attached to small-scale agriculture /tradition of raising diverse crops, value attachment to local varieties, local seed systems, resource use norm linked to local world view/
- ✓ Conservation oriented local NGOs and CSOs
- ✓ International development partners

E. Conservation Oriented Undertakings by EBI and Partners

Ex-situ conservation efforts

- ✓ 82,000 accessions of 89 Crop & horticulture species
- ✓ 85,620 accessions of 576 different plant species including forest, forage and MP species
- ✓ 7245 coffee, root and tuber crops spices and fruits genetic resources in field banks

In-situ conservation efforts

- ✓ About 30 CSBs established (in collaboration with partners)
- ✓ Community crop conservation associations are organized
- ✓ Medicinal plants gene banks established
- ✓ Domestic animal breeds conserved

Issues of concern

- Gaps in policies relevant to conservation and production systems
- Lack of land use policy
- The tendency towards expanding mono-cultural crops

Concluding statements

- ➢ The good side still outweighs and the opportunity to achieve sustainable development without compromising the environmental resource-base (including BD) exists
- ➢ Efforts should continue to pursue an approach to agriculture that is biodiverse, providing a varied food supply, and ecologically sustainable
- ➢ However, this can only be achieved, by making knowledge-based decisions and taking appropriate measures

2.2.12. Presentation 11: Community Seed Banks (CSBs) as a Strategy for Transitioning to Agro-ecology and Sustainable Food Systems

By: Bayush Tsegaye (PhD), Community Agro-biodiversity Management Expert



Dr. Bayush while presenting

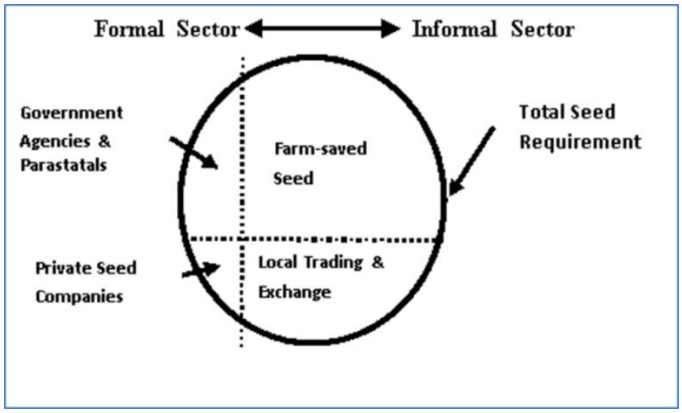
In the introductory part of her presentation, Dr. Bayush started by giving a short highlight of what a food system is. She stated that a food system covers all aspects of food starting from the farm (production) to the table (consumption) and food waste handling. She further explained a food system is a process that involves different stakeholders including

farmers/producers, processors, transporters, storage service providers, dealers, wholesalers/traders, retailers and consumers.

Share of Farmers' Seed System in the Ethiopian Agriculture

As the main food producers, farmers contribute the lion's share (80%) in the national seed supply system. The following figure illustrates the various actors and their respective share in the national seed supply system.

Fig.13. Contributors and their share in the Ethiopian seed supply system



The farmers' seed system not only takes the largest share in the seed supply system, but also is known as a strong and resilient sector. Some of the strengths of the farmers seed system include:

- It handles wide range of diversity of food crops;
- Seeds are saved from harvest and reused for generations;
- Diversity farming allows for dietary diversity and nutrition security;
- Having diversity allows for management flexibility;
- Having wide range of diversity helps to build farmers' capacity for resilience to different shocks (market, climate change, etc.); and
- Having diversity helps to spread risks across space and time.

Although farmers' seed system has all these strengths and merits, the attention given to the sector is very low. Some of the gaps relating to support for the system are:

- There is misunderstanding and local varieties are wrongly condemned as traditional and "backward";
- There is no formal seed supply system for the local varieties handled by farmers.
- There is no incentive mechanism to support small scale food producer farmers who also carry out on-farm conservation of local crops and varieties.

The reality on ground, however, shows that small scale family farmers are the real food producers who provide 70% of the global food supply using only 25-30% of land and 30% of water resources. On the

other hand, large scale commercial farmers who are profit oriented but get the support of policy makers and use 70% of the agriculture related resources, contribute only 30% of the food supply. Although the policy support provided to industrial agriculture is meant to support the assertion of increasing agricultural productivity to ensure food security in all parts of the world, millions of people around the world, most in Africa and Asia still suffer from food insecurity. Now the question remains who is responsible to fill the global food gap and how? Is the industrial agriculture viable or should be shifted to a more sustainable and healthy food production system?

The following are key points to be considered on how to fill the food gap and who should be involved:

- There is a need to have a shift in thinking towards agroecology; the conventional approach of high input and mechanization didn't work.
- There is a need to have a holistic view of the farming system and promote suitable agro-ecological practices.
- Agricultural practices should be in harmony with nature, be detached from external dependency and focus on building local community capacity for resilience to various shocks.
- Co-creation of knowledge is important and communities should be active participants of the agricultural innovation process. The time-tested traditional knowledge of farmers is highly valuable.

Community Seed Banks (CSBs), History and Emergence

A community seed bank is a community-based facility owned and managed by farmers. CSBs were initiated in Ethiopia in the late 80s by the renowned plant genetic scientist Dr. Melaku Worede. CSBs were initiated to address farmer communities' needs for seed after a shock (draught). The practice that was starts at a small scale to respond to farmers' needs gained global recognition and evolved over the last 40 years and the experience is being shared and applied in other countries. The CSB system now has many forms, type, scale and operational modalities as implemented by many countries across the globe. The following pics illustrate examples of the practice in different countries.

Fig. 14. Pictures of CSB practice in different countries







Community seed banking strategy to ensure food security: the Ethiopian experience

The primary purpose of a CSB is to provide seed supply service to its members to fill gaps of seed shortage they may face. By doing so, it strengthens the local seed supply system, increase on-farm diversity, build seed security status of its members, and also strengthen their capacity for resilience to seasonal climatic variabilities. Members get seed loan during planting season and pay back in-kind after harvest. Small interest rates are charged as agreed by the General Assembly and stated in their bylaw.

Taking the Ethiopian model as an example, the main services and functions a CSB provide to members include the following.

- Provide access to seeds that are locally adapted.
- Offer seed loan to members and collect repayments in-kind after harvest.
- Provide access to seed diversity (offer choices).
- Create opportunity to share knowledge and experiences among farmers.
- Facilitate restoration of lost on-farm diversity.
- Contribute to local food security (focus on crops of local importance).
- Complement the national effort of conservation of crop genetic resources.
- Serve as a community center for members to come together for knowledge sharing and discuss on important common issues of concern.

Threats to farmers' seed varieties and seed security

The threats to farmers' seed varieties arise mainly from the false narratives against them. Some of such false narratives include:

- Farmer varieties are traditional and need to be abandoned.
- Farmer varieties are low yielding and need to be replaced.
- Growing farmer varieties makes farmers poor. Hence, they are not good for economic empowerment. Hence, farmer varieties should be abandoned.
- Farmer varieties are not good for food security and should be replaced. (This notion presents improved varieties and high input technology is the only way to ensure food security and feed the growing population).
- Farmer varieties are poor in quality, because farmers do not care about seed quality.

As a result of continued condemnation, farmers got confused, they lost self-confidence, and are forced to abandon many local crop varieties and many useful traditional knowledge and practices related to these farmer varieties that have lived with the community for generations.

Role of CSBs as agro-ecological practice in promoting sustainable food system (production)

The following are mentioned as the major roles of CSBs as agro-ecological practice in promoting sustainable food system:

- ✓ CSBs supply a range of locally adapted crop types and varieties.
- ✓ Easy and affordable access to seeds preferred by farmers
- ✓ Contribute towards building resilience capacity of farmers.
- ✓ Favor soil fertility enrichment in an organic way
- ✓ Control of governance by farmers
- ✓ Recognition of local knowledge and empowering farmers
- ✓ Give special attention to food crops of local importance
- ✓ Ensure farmers' seed security

Concluding Remarks

CSBs play a vital role in realization of farmers' food and seed security and nutrition security ensure farmers right to have access to easily affordable and preferred seed varieties in their locality. Farmer communities need to be empowered as food producers and be full decision-makers on what, when and how to produce food locally. They shall have the right to produce and consume what is culturally appropriate and healthy food and CSBs are the pillars to this end.

Recommendations

- ➢ Link CSB associations with the national gene bank and agriculture research center
- ➢ Create a platform for networking CSB associations
- ➢ Work on transfer of knowledge to the youth
- ➢ Strengthen the role of women in diversity management and the food system
- ➢ Promote collective marketing of CSBs

2.2.13. Presentation 12: Community Seed Banking in SNNP Region of Ethiopia
By: Fikirte Assefa, PhD Student at Hawassa University, College of Agriculture



Fekerte while presenting

Fikirte started her presentation by providing an overview of background of SNNP region. She stated that SNNP region is a region with a total population of about 19.1 mln and a home for about 56 ethnic groups with diverse culture. She also mentioned that the region is a center of origin for crops like coffee and enset.

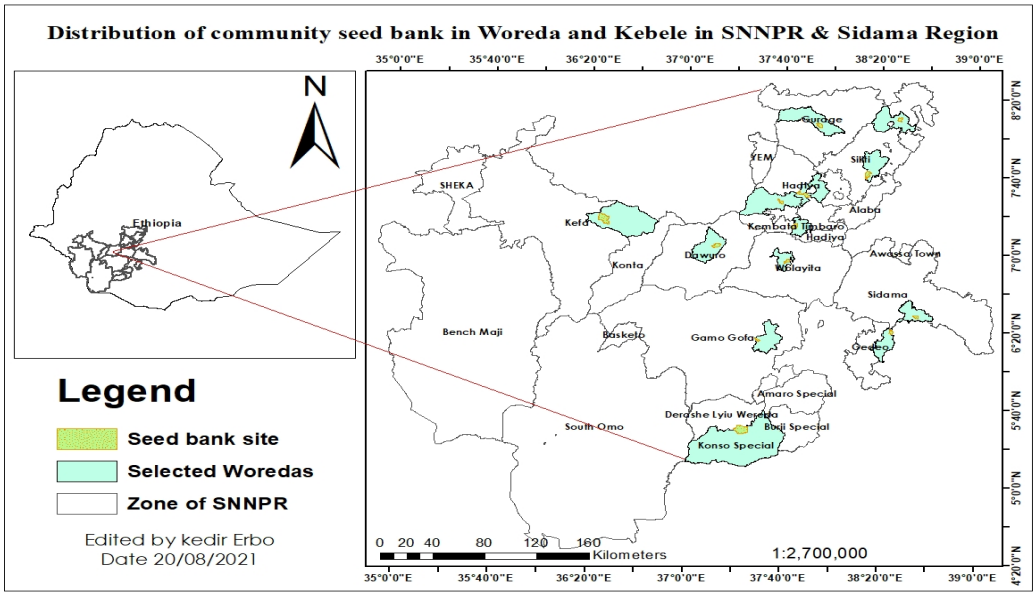
Fig. 15. Food and cultural diversity in SNNPR



History of CSBs in SNNPR

Establishment of CSBs in the region was initiated by agriculture bureau of the region in collaboration with Ethio-Organic Seed Action in 2010. The a total of 12 CSBs established in 13 zones from 2011-2021.

Fig. 16. Distribution of CSBs in SNNPR



Objectives of establishing the CSBs in different zones of the region were:

- To conserve Farmers' seed varieties and their associated indigenous knowledge
- To ensure local seed security by strengthening the local seed supply system (e.g. through community seed banking)
- To restore the displaced crop genetic diversity and minimize further genetic erosion
- To improve local crop genetic resources to enhance their productivity
- To support local farmers in their efforts of on-farm/ *in situ* and off-farm/ *ex situ* conservation of crop genetic diversity

Achievements

- Established 19 local seed conservator associations with total of 1380 members
- Over 25 farmer varieties of 11 Field crop species conserved at different sites
- Distributed 65,842 kilograms of different crop seeds

Linkages between the CSBs and National Gene Bank

- Selected seeds from earlier collections of by EBI from the sites were obtained for replacement of lost seeds
- The seeds collected from EBI planted in multiplication and demonstration sites

Challenges encountered

- Lack of experience in action and budget planning, utilization and financial administration
- Gaps in practicing the necessary agronomic practices for Farmers' varieties
- Inadequate participation of women in conservation and training activities (CSB members)
- Delays in completion of construction activities

Lessons Learned

- CSB helped to provide locally adapted seeds to sustain agricultural production.
- The presence of CSBs offered the opportunity to raise awareness and strengthen the conservation of local crop diversity
- Some association constructed CSB by local materials (e.g in Gurage zone) and some associations can exchange seed with each other without the presence of CSBs.
- SNNPR continued to allocate budget for the establishment of CSB this indicates that higher official has given attention to this activities.
- Improved understanding of the use of CSB by policy makers for strengthening seed sector development
- Formal linkage between CSB and gene bank
- Creation of sustainable revolving seed scheme – increasing seed security and incentives for farmers

2.2.14. Presentation 13: AVACLIM: The Case of Agro-ecology Project by Institute for Sustainable Development (ISD)

By: Tekalign Ayisse, Project Coordinator, ISD

Tekalign started his presentation by providing a brief introduction to ISD. He explained that ISD is an Ethiopian non-governmental organization working for conservation of biodiversity and sustainable agriculture. He further explained that ISD works on ecological organic agriculture, seed and community knowledge, push-pull technology and nutrition sensitive agriculture as its thematic areas.



Mr. Tekalign while presenting

AVACLIM is a project by ISD geared toward uncovering evidences of the global benefits of agro-ecology. While the project is being implemented in six African countries, one of them is Ethiopia and the implementer is ISD. It is tasked with the purpose of generating evidence based agro-ecology advocacy and works with the conviction that agro-ecology is the best approach for enhancing adaptation of smallholder farmers to the effects of climate change and mitigating same.

Objectives of the project are:

- Strengthen the sharing of knowledge gained by practitioners of agro-ecology
- Advocate agro-ecology based on scientifically validated evidences.

Components of the Project

- Information sharing
- Scientific evaluation
- Advocacy and
- Communication

Accomplishments so far

- Identified fife national initiatives
- Organized national dialogue
- Organized consultative meeting with local partners

2.2.15. Presentation 14: A Healthy, Nutritious and Affordable Local Based Product for the Community: Experience of a Private Sector

By: Betlehem Lakew, CEO LeHem Nutrition Counseling plc

Betlehem started her presentation by providing a brief introduction to LeHem plc. She explained that LeHem is a private organization providing nutrition related services to the society including healthy diet plan for children, general weight management, weight management for people with chronic medical conditions and healthy weight management before, during and after pregnancy.



Betelhem while presenting

She then proceeded to explaining challenges faced by the organization as a pioneering and young organization. The challenges include:

- Access for prototype development
- Practical and management skill
- Legislation and
- Working capital

She further explained that the organization is working closely with organizations such as YALTA, Blue Moon Ethiopia, DoT Ethiopia and Reach for change to overcome the challenges of practical and management skill and working capital.

Recommendations

- Senior researchers and professionals should embark on mentoring the youth in their respective disciplines and professions
- Universities and research centers should offer practical learning programs to the youth
- Empower youth
- Policies and legislations should be revised to provide space for new small capacity producers

2.2.16. Feed Forward/Plenary

Following conclusion of the paper presentations, the next session was devoted to plenary discussion where participants engage in providing comments, inputs, reflections and sharing experiences in relation to the subject being discussed.

Accordingly, the comments, questions, inputs and reflections shared by the participants are summarized as follows:

- This should not be a onetime forum. We should all work together to continue organizing such forums until we bring change. In due course we need to have clarity on the interlinked concepts of agroecology and biodiversity. But the take home from this forum should be that agro-ecology is a field of agricultural practice that works in harmony with nature (biodiversity).
  Another point we should stress and take as an assignment should be the recommendation of mentoring the youth. This is a key to our future success that all of us should give due attention and work on.
  Regarding the concerns relating to GMO in Ethiopia, I assure you they will not succeed because they failed in other countries and started it here with a wrong assumption.
- I have gathered two contradicting ideas from this forum. The idea that there are sufficient policies to deal with our problems and the idea that there are policy gaps. So we need to come to consensus on these. If we assert that we have no policy gaps, we need to provide indicators of change as a result of the policies.
  My other observation is that we always talk of problem of coordination on such forums. So we should identify the root cause that is hampering coordination and address it and stop raising it any more.
  I see that most of the presentations are copied from literatures. While citing scientific theories is good, we should also try to integrate local experiences.
- National Nutrition is organized as a case team in the MoH. This shows that no sufficient attention is given to the case. This should have been a case for which sufficient resource allocation and institutional arrangement is given.
- Our policies are mostly short lived. That is so because they are not local context based. Agriculture in Ethiopia is a source for 46% of the total GDP and 80% of employment. So it is a

big sector that deserves sufficient attention of policy makers. We need to design mechanisms to make policy makers listen to the voices of researchers and experts in the field. Researchers and experts should be bold enough to challenge policies that do not benefit the community and the country. They may face resource limitation but they can use the available infrastructure in their respective institutions to guide policy making.

Generating evidences to convince policy makers on the alternative ways is a crucial issue we should work on.

- In addition to influencing policy, our researchers and scientists should also focus on generating appropriate technologies for our smallholder farmers. It is only when we work closely with farmers and support them with appropriate technologies that we can bring real change.
- Design mechanisms to promote multi-sectoral approach modality for implementation of available policies and influencing policy makers to issue appropriate policies.
- We need to also focus on using the outcomes of this meeting to build on what we should bring for the next one. We should be aware of the fact that we are challenging bodies that have global power. We should come up with evidences that can silence our counterparts. That is how we build trust to influence policy.

  We should also be ready to accommodate some developments of the time including technology and global marketing. Sometimes it is also good to start at grassroots level rather than decision makers to efficiently influence policy.
- Population pressure is the biggest challenge in the food and agriculture sector. So we need policies that can address this problem as well. Land is a limited resource and we should design mechanisms on how to use it wisely without compromising the environment.

  The other issue is to bring farmers, who are the big stakeholders to this kinds of forums, on board and listen to their voices.

Responses to Some of the Concerns Raised

- Ato Regasa

  I totally agree to the idea that we should work to come up context appropriate technologies to solve smallholder farmer problems. We also need to agree on some of the conceptual issues relating to agro-ecology so that we do not confuse our farmers with conflicting ideas. Government and all stakeholders should also share the responsibility of conserving the genetic resources with farmers.
- Solomon

  The forum has been rich with very good ideas. We have really shared and learned a lot. Some of the concerns and questions raised by participants are right. But they need time to get appropriate answers. The common problem we all share is the fact that we have problems in our food and agriculture systems. Some of these problems are attributable to policy gaps while others can be addressed by owning the problems and working in collaboration and partnership. Regarding influencing policy making through evidence based advocacy, we have lots of concrete evidences. The question is on how to make them presentable to policy makers. We should also support policy makers by producing policy briefs and MELCA is working on this with partners.

We should not go with the misconception that agro-ecology is against technology and marketing. What we are talking about is technology appropriate to the local context and our smallholder farmers and food market that is fair and beneficial to the producers. We need to own the agenda of agro-ecology and build positive partnership and critical mass to speed up realization of the change we are anticipating. I would like to take this opportunity to assure you that MELCA will continue promoting agro-ecology with an enhanced effort.

2.2.17. Summary of Key Recommendations

- Establish a common understanding among partners and stakeholders on what constitute a sustainable food and agriculture system
- Foster collaboration and partnership
- Enhance engagement of groups like farmers and women
- Mentor the youth and enhance their engagement on policy issues like this
- Strengthen scientific evidence based policy advocacy
- Prepare a comprehensive policy framework that facilitate engagement of all stakeholders
- Strengthening research, innovation, training, and education and foster knowledge co-creation

Section III. Final Words, Vote of thanks and Closing Remark

3.1. Final words and Vote of Thanks

1. Tilahun Seifu (BfW)

   Tilahun started his final words by thanking MELCA for organizing such beneficial forum. He stated that so many challenges and threats to sustainable agriculture and food systems in Ethiopia have been identified and this will be considered a big outcome for BfW as partner in funding the forum. Since BfW values social assets and environmental health, the forum well aligns with its strategy. Participation of participants from diverse sectors is much appreciable as the issue demands multi-stakeholder approach. This shows that the organizers have invested time and effort in stakeholder mapping.

   We need to ensure sustainability of such forum by engaging farmers and more women as they are key stakeholders. Finally I would like to say thank you to all participants and your active participation.

2. Solomon

   Solomon extended thanks to all who presented papers on the forum on short notice on behalf of MELCA and himself. He also voted special thanks to Dr. Feleke, Ato Regasa and Dr. Tsedeke for dedicating their precious time to make this forum so fruitful. He also thanked donors including BfW and Sida for being active partners in the process.

3.2. Closing Remark

Closing remark was provided by Dr. Feleke, Vice Director of EBI. In his closing remark, Dr. Feleke underlined that representatives from key government stakeholders such as Ministry of Agriculture

(MoA) and Ethiopian Public Health Institution should have participated on this forum and fed in the position of their respective offices with regard to food and agriculture in the country. He also stressed that existence of policy gap as one of the contributors to the multifaceted problems in the food and agriculture system and it is time to address the gap. In addition to none existence of appropriate policies, he also mentioned limited practicality of some existing policies. So the effort to address policy gap should see both ways.

He finally stressed that we should promote active engagement of farmers, value local knowledge and continue to scale promoting agro-ecology.

Finally he concluded his closing remark by thanking MELCA-Ethiopia and BfW for organizing such fruitful dialogue forum.