Environment and Climate Research Center
at the Ethiopian Development Research Institute

Workshop Report

A Consultative Workshop on "Toward Developing Long-Term Policy Research And Impact Evaluation Program In Support Of The CRGE Strategy"

23, February 2016

Environment for Development Initiative
Center in Ethiopia

In partnership with the
Global Green Growth Institute

Background

Environment and Climate Research Center (ECRC) is a new research center established in partnership with the Ethiopian Development Research Institute (EDRI), Environment for Development Initiative (EfD) and Global Green Growth Institute (GGGI). The research center will support green and climate-resilient development as a knowledge back stop.

The research centers core functions include undertaking policy oriented research on the economics of climate and environment in Ethiopia, conducting real time impact evaluation of the Climate Resilient Green Economy (CRGE)'s implementation process and serving as an interaction hub for research and policy in the country. The center will also play an important role in building domestic analytical capacity on climate related issues as well as developing a data and knowledge repository of Ethiopia's green growth experience.

A workshop with a theme "**Toward Developing Long-term Policy Research and Impact Evaluation Program in Support of the CRGE Strategy"** was held where ECRC presented its five year research plan to stakeholders on 23 February 2016 at Hilton Hotel, Addis Ababa.

The workshop was attended by high-level government officials, researchers, and experts from various ministries, universities, national and international research institutes, international organizations and partner institutes and embassy representatives.

Here is the full report of the workshop

Introduction of the event

Dr. Gebrehiwot Ageba, Director of Programs (EDRI) welcomed participants to the workshop along with Dr. Haileselassie Medhin, Director, (ECRC) giving an introductory briefing on the objectives of the workshop.

Opening Remarks

Dr. Tewolde Berhan Gebregziabher, (an internationally renowned environmentalist and former Environmental Protection Authority (EPA) director) made the opening remarks highlighting Ethiopia's endeavors in addressing the climate issue and the efforts that the country has mapped out to strengthen the sustainable green development. In his speech he recognized the relentless efforts that the country is currently undertaking in areas of climate change and emphasized the need to support these efforts with real time research for policy makers and implementing sectoral agencies. He also said that the country is prone to various climate variabilities and that it needs a concerted effort to overcome these challenges. He said the current El Nino phenomenon would have been much worse and devastating if there had been no climate action in place. He underpinned that long term evaluation is indispensable for the continuing usefulness for strategies like the Climate

Resilient Green Economy (CRGE).He wished participants to have a wonderful workshop as he ends his speech.

The keynote speech was made by **His Excellency Belete Tafere** (Advisor to the Prime Minister with a rank of Minister), entitled **'climate change and natural resource management: Challenges and opportunities in the context of Ethiopia'**. He discussed the overall country experience of climate change and the various interventions that were put in place to overcome the challenges. His Excellency emphasized the limitations the country has in areas of human capital, technology, and finance to undertake the various interventions in adaptation projects such as rehabilitation and management of degraded landscapes and natural resources. Nevertheless, he said, the government mobilized millions of people to rehabilitation works on hectares of degraded landscapes of Ethiopia and has shown encouraging results. He, however, mentioned that despite the encouraging results, there are some limitations that proved that we need to do more.

These are:

- Lack of natural resource accounting - the value of gain and viability for growth through the introduction of proper system of natural resource management is often missed and generalized to the other economic sectors and thus is often overlooked and oversimplified in the planning

- Lack of integration of actions - most development works on water and land still lack necessary degree of integration and needs synergy for sustainability
- The choice of techniques and the technologies in the design and implementation of natural resource management to make the optimal value and benefit

- Integrated watershed management and plantation is not yet adequately supported by the necessary public awareness and law enforcement to ensure the sustainability of these efforts

- The changing living standard of the people is seen to cause an increase in overall waste and pollution issues

He said, "…In spite of these hard facts and challenges, the government of Ethiopia has decided to continue following the green development model and enhance sustainable economy. In this regard the CRGE vision and strategy is established in action."

Finally, he reiterated the importance and crucial role of the academia and research community to strengthen the efforts by the government and people of Ethiopia.

Presentation 1: Introduction to ECRC

by Haileselassie Medhin, director ,ECRC

Dr. Haileselassie outlined his presentation and described the route Environment and Climate Research Center (ECRC) has taken so far. He presented the rationale for the establishment of the ECRC stating:

- The CRGE has the potential of making Ethiopia a leader in a green and rapid exit out of poverty. An essentially an unchartered territory.
- The implementation of the CRGE strategy needs to be supported by a scientific, policy-oriented and multidisciplinary research and knowledge management process.

- A need for far-sighted and independent impact evaluation research process following up major CRGE-related interventions.
- ECRC was established in February 2015 as response to this critical demand, especially in relation to the economics of environment and climate change in Ethiopia in general, and the economics of CRGE implementation in particular.
- EDRI's response to fulfill its mandate of supporting key policies and strategies with research

He described the evolution of ECRC dating back to the establishment of EDRI and explained how the partnership between EDRI and the Environment for Development (EfD) started the Environmental Economics Policy Forum for Ethiopia (EEFFE) which later led to the establishment of the newly established ECRC in February 2015.

He explained about the core programs of the ECRC. These are:

1. **Policy Research & Impact Evaluation (PRIE)**
2. **Data Management & Knowledge Repository (DMKR)**
3. **Policy Interaction & Communication (PIC)**
4. **Capacity Building**

Dr. Haileselassie then listed the six thematic focus areas of research by ECRC and he briefly described each thematic area. The six thematic research focus areas are:

1. Sustainable energy transition
2. Sustainable forest management
3. Sustainable water management
4. Sustainable agriculture
5. Sustainable Urbanization
6. Green industrialization

With regards to implementations phase of the ECRC, he explained that the aim is to achieve a full-fledged core programs of the center by mid-2016. He recalled back the tasks undertaken since the establishment in areas of capacity mobilization and development of first five-year Policy Research and Impact Evaluation (PRIE) plan.

Afterwards, he described the detailed human capital of the ECRC as follows:

- Fulltime research staff: 6 PhD holders and 5 M.Sc. holders

- Part-time research staff (at least 30%): 7 PhD holders (based within EDRI and local universities)
- Other fulltime staff:
  - Data Management and Knowledge Repository expert
  - GIS analyst
  - Policy Interaction and Communication expert
  - Project management officer
- Technical support from GGGI (3 international consultants)
- A number of international collaborators based in partner universities

He emphasized the need for policy research and impact evaluation and described the elements that need due attention:

- Knowledge gaps related to policy processes & programs;
- Major CRGE-related Interventions poised to be implemented;
- Contribution to the development and measurement of CRGE/GTP indicators;
- Cross-cutting issues across the targeted thematic areas;
- Using existing projects, data and collaboration initiatives as building blocks;
- Stakeholder engagement in the program planning process.
- Collaboration & partnership

Dr. Haileselassie concluded his presentation by introducing the researchers and staff on each thematic focus areas and stressed the need for collaboration and partnership with sector ministries, national and international research centers, and academic institutions to ensure that ECRC objectives succeed.

Presentation 2: Research plans on energy, forestry, agriculture and water

By Alemu Mekonnen

Dr. Alemu started his presentation by outlining the thematic areas that he is going to cover and discuss and started with energy sector.

Energy

He described the overall energy consumption pattern in Ethiopia both in rural and urban settings. In rural setting almost all rural households use biomass fuel for cooking and heating and about 5% of rural households have access to electricity. On the contrary, about 50% of urban households also use biomass fuel sources for cooking and heating even though 85% of urban households have access to electricity.

He highlighted the status of the energy sector in the Growth and Transformation Plan (GTP) and the active engagement of the government to change the energy consumption pattern. He reiterated that power transformation was the key component under the GTP I which has been significant and indicated the plan for GTP II of 15000MW of power generation.

He then discussed the energy sector in the CRGE strategy and indicated that two of the four pillars are related to energy where the first states the expansion of generation of electricity from renewable sources and the second on transition to energy efficient technologies. He suggested that the Ethiopian government need a continuous flow of information on the impact of specific initiatives implemented under the CRGE and additional initiatives to speed-up the implementation of these initiatives in order to achieve the objectives set in the CRGE. He also described the energy sector on the United Nations Sustainable Development Goals (SDGs) and the priority that the world has given to the sector.

Dr. Alemu stated on the energy program and classified them as electric energy program and non-electric (improved biomass stoves, biogas-digesters and bio-fuel). He further classified electric energy programs as on- grid electricity programs and off-grid (which includes other sources such as solar and micro dam alternatives).

In terms of proposed research areas in energy sector, he listed the following as areas of interest in relation to CRGE, SDG and GTP:

- Electrification: Uptake and Impact
- Improved cook stoves: Diffusion, Demand and Impact
- Biofuel: production, emission and economy wide impacts
- Energy Transition
- Energy Efficiency

Dr. Alemu thoroughly discussed each proposed research areas in detail and provided in-depth analysis along with the possible research questions.

Forestry

Dr. Alemu briefly described background on the forestry resource in Ethiopia highlighting the following:

- Ethiopia's forest cover estimated at about 12 million ha (~ 11% of total land area) (FAO, 2010); 15.5 % (MEFCC).
- Forestry estimated to contribute about 4-6% of GDP (FDRE 2011)
- About 37% of GHG emissions in Ethiopia estimated to come from forestry
- Average annual deforestation rate of 1.1% of total forest cover
- Drivers of deforestation: expansion of land for agriculture, fuel wood consumption, illegal logging and forest fires (FDRE, 2011) + failure of markets, policy and institutions

He mentioned the policies, strategies and programs in forestry in Ethiopia including the CRGE, GTP, RED++ and other related agriculture programs. He also mentioned the changes projected over GTP II Plan period which include:

- Area of land rehabilitated: 11.7 million ha to 22.5 million ha
- Forest cover: 15.5 to 20%

- Share of forest sector in GDP: 4 to 8%
- Dissemination of improved biomass fuel-saving cook stove technologies: about 15 million to about 26 million

Dr. Alemu indicated CRGE's aim for the forestry sector and described the strategies accordingly. These are:

- Reduce demand for fuelwood via efficient stoves
- Increase carbon sequestration through afforestation/ reforestation and forest management
- Promote area closure via rehabilitation of degraded pastureland and farmland

He mentioned that nine levers identified with an abatement potential of up to 131 Mt CO2e.The levers include afforestation/reforestation and area closure, fuel-efficient stoves, fuel-shift stoves, and forest management. He further listed objectives related to CRGE and GTP accordingly:

- Protecting and re-establishing forests for their economic and ecosystem services
- Sustainable management of forests, enhance forest carbon stock and improve income/livelihoods for local communities
- Enhance contribution of the forestry sector to the national economy and build a green economy
- Reducing pressure on forests by enhancing agricultural productivity

Dr. Alemu then presented the proposed research areas of ECRC for the forestry sector and described each topic in detail along with the possible research questions accordingly. The proposed research area s are:

- Forest rehabilitation: Evaluation of afforestation/reforestation programs
- Forest tenure reform, sustainable forest management and implications for household welfare and climate
- Evaluation of outcomes of trees and agro-forestry programs
- Valuation of peoples' preferences for restoration of degraded lands/forests
- Forests and people's livelihoods
- Towards Green Economy: Harnessing Wood Industry Efficiency and Sustainability in Ethiopia
- Macro level assessment of the forestry sector
- Agriculture and forest interaction: Synergies and tradeoffs

Agriculture

Dr. Alemu began his presentation on agriculture by giving brief background on Ethiopian agriculture and the challenges that farmers face in relation to climate change. He discussed the policies, programs and strategies that the country has taken and listed some of the major ones accordingly and explained in detail:

- Agricultural policy investment framework
- Growth and Transformation Plan
- Climate Resilient Green Economy Strategy
- Productive Safety Net Program
- Agricultural growth program
- Ethiopian strategic investment framework
    - Sustainable land management project
- Food security and disaster risk management
    - Food security program
    - Early warning and response

He further explained and summarized what the GTPII goals are for the agriculture sector as follows:

- Increase cereal productivity by 47.03% (from 29 to 43 quintals/ha)
- Increase percentage of beneficiaries that implement full package from 35% to 80%.
- Increase percentage of women agricultural extension service beneficiaries from 20 % to 30 %
- Voucher input credit system piloted in 81 Weredas will be fully scaled up and implemented across all regions
- Animal feed dry matter production: to increase from 68 to 184 million tons (annual growth rate of 22%).
- Natural resource and soil fertility management
    - Area enclosure to increase from 11.737 to 22.535 million ha
    - Area covered by soil and water conservation practices to increase from 7.059 to 27.23 million hectares

- Food security and disaster risk reduction
    - Household credit package to build asset to increase from 233,400 to 628,850 households
    - 45% of these will be female household beneficiaries.

In relation to the CRGE he underscored that the agriculture sector is given a priority and indicated that it states and advocates for:

- Intensify agriculture through usage of improved inputs and better residue management
- Introduce lower-emission agricultural techniques
- Increase animal value chain efficiency to improve productivity
- Support consumption of lower-emitting sources of protein
- Manage rangeland to increase its carbon content and improve productivity of the land

Dr. Alemu then listed the proposed research areas for the agriculture sector in the following order

- Crop production and productivity in a changing climate
- Livestock production and productivity in a changing climate
- Natural resource and soil fertility management in a changing climate
- Food security, disaster risk reduction and preparedness capacity

He concluded his discussion on the agriculture sector by providing in-depth plan on each topics and provided what the ECRC will seek in filling gaps under each broad proposed research topics.

Water

Dr. Alemu breifly introduced the scenario in water resources of the country and the challenge of development and management of the resource. He pointed out that the main challenges are extreme hydrological variability over time and seasonality; and international nature of its most significant surface water resources.

He discussed breifly on the policies and strategies of the country on water resource in detail as follows:

- Water sector policy
- CRGE; climate resilience:
  - Irrigation: Accelerate irrigation plans; support the resilience of rain-fed agriculture and balance water demand
  - WaSH: Accelerate universal access to WaSH and enhance the climate resilience of supply
- GTP II
- Other related: Sustainable Land Management project, Agricultural Growth Program, NAPA

He then explained about GTPII and CRGE targeted goals on the water sector and listed the following as the main goals:

- Expanding and Strengthening Watershed Development Activities to Ensure Sustainable Agriculture
- Improve Water Resource Utilization and Management and Expand Small Scale Irrigation
- Ensure Food Security, Disaster Risk Reduction and Strengthen Preparedness Capacity
- Accelerate universal access to WASH-Universal Access plan; One-WASH National program
- Balance water demand through the water sector development plan and the River Basin Council and authorities
- Accelerate irrigation plans- Irrigation assessment studies and support the resilience of rain fed agriculture

He indicated the following to be the proposed research topics for the water resource theme

- Water supply, sanitation and pollution
- Management of water resources, watershed and water-related ecosystem services
- Agricultural water resource management
- Water-food-energy and environment nexus
- Policy, institutions and governance

He finally discussed in detail each research topic including the possible research questions under each topic.

Methods in General

Dr. Alemu breifly outlined the general methods and tools to be used to conduct these proposed research topics. These rigorous methods that are to be applied include:

- Propensity score matching method
- Endogenous switching regression method
- Instrumental variable regression method
- Difference-in-difference regression method
- Randomized control trial method
- Computable general equilibrium model
- Environmental valuation methods

He finally ended his presentation citing the data sources for the proposed research topics that ECRC has identified. Accordingly he stated that different types of data will be used depending on availability and nature of the study and these include: cross section and panel data, time series data, and data at different level (plot/parcel, household, firm, sector, national level, etc.)

Q&A

Dr. Gebrehiwot opened the floor for questions, comments and suggestions on what Dr. Alemu presented and the floor was open for participants

Q1. H.E Belte Tafere: How is the link and relation between ECRC/EDRI and other research institutions (such as the agriculture research institute (EAIR), MoFEC and academic research centers etc.) to avoid duplication of efforts?

- Detailed research areas should be left for sector specific research institutions because there are centers that conduct research in their specific specialized field. It is necessary for ECRC/EDRI to focus on very strategic and macro level research and policy advice. Why do you go into detail research topics while it can be done by sector specific research center or institution?
- The issue concerning reducing fuel wood demand is not clearly stated in the government strategy CRGE, why the need to discuss unless it is other interventions that are to be studied?

- There is concern on the water supply data on GTP where the presentation switched the figures on rural goal against the urban water supply goal. There is need to review the data and readjust the figures

Q2. Fitsum, AAU: Echoed the first question on the ECRC/EDRI to focus on more on macro-level research as several academic and research institutes conduct detailed research on specific thematic areas

Q3. Adugna, MoFEC: How are results of findings of the research are going to be disseminated to the relevant institutions so that they can be used?

- What is the private sector role? There should be a study on how and what the private sector role could be in activities such as (agriculture, energy, forestry manufacturing) mitigation efforts
- In order to identify how interventions impact society there need to be a social impact evaluation which not mentioned in the presentations?

Q4. Lakech, ATA: Is there any room for evaluating on-going pilot projects as a way of forming policy directions? And asked to consider the on-going pilot programs, specifically technologies, introduced by ATA to be included in the impact evaluation before scaling up for full implementation ?

Response

Dr. Alemu: In terms of linkage with other institutions, he said that communication/consultation has already started with various institutions and more efforts is planned for collaboration to avoid any kind of duplication of efforts

- The ECRC would not limit to macro level research only rather conducts and addresses all types of issues be it micro level and stressed that doing both is important while consulting with the specific institutions to avoid duplication of efforts
- On questions related to reducing fuel wood consumption, it is meant by introducing energy efficient technologies and alternative energy sources (improved cook stove) and focus on interventions and strategies. So the focus of this research is on interventions of energy efficient alternative technologies.
- On private sector role, we have not done much and take it as comment
- Impact evaluation – It is true we do have economic and welfare impact assessment and we do social aspects as well but not in detail and we should plan to incorporate social aspects and cross cutting issues such as gender
- Welcomed the comment raised on linkage between implementation and policy research suggested by ATA

Dr. Haile Selassie: echoed what dr. Alemu said on linking with institutions and reiterated that collaboration and sharing of knowledge is very important for such research activities to avoid duplication of efforts

- Impact evaluation: we do follow the baseline data to reflect on what works on the interventions
- On dissemination of results we will be proactive and devised communications plans

Dr. Gebrehiwot: Where EDRI feels there is knowledge gap it attempts to deal with it and we are trying to balance and reduce duplication of work by integrating EDRI with other institutions

Q&A 2

Q.5 Eshetu, MoEI: it is better to study the integration of on and off grid electricity connections issue with that of the private sector role

- Study topic suggestion on the electrification strategy overlaps and suggested to work with the ministry with this particular research as it is the interest of the ministry.

Q.6 Yonas: Presentations and discussion are emphasizing on climate change and CRGE what about the overall environment?

Q. 7 Dr. Assefa, EEA: Conducting research on the stated five themes seem ambitious to address and it is difficult to capture impact evaluation with such little period of time hence compromises quality of results. Impact is basically measured over long period of time

- At times, duplication of efforts can be avoided but there is an ample need to ensure that there is no duplication of effort, for example the electrification

project proposed is also currently undertaken by World Bank and a similar study is done elsewhere

- Why do you choose impact evaluation, because impact evaluation has its own limitations? Why is impact evaluation emphasized? Aren't we ignoring other methods that capture behavioral aspects/approaches?

Response session 2

Dr. Haileselassie

In terms of linkage with other institutions, as said earlier, ECRC made communication with relevant academic and research institutions and focused on its objective and collaborate on research areas to avoid duplication of efforts.

In response to impact evaluation issue , Dr. Haile Selassie said that the ECRC is making an effort to gathering data and fill – knowledge gap and track interventions on what works and not.

Dr. Alemu on his part responded to questions on CRGE focus by stating that the proposed research areas are not only limited to CRGE objectives but covers issues of livelihood, equity issues etc. and we can look into others where appropriate.

With regards to why emphasis on Impact evaluation, Dr. Alemu acknowledged the concern but underscored the need to start on impact evaluation from the beginning of the projects and programs. Existing data collected on land management for various reasons could be data source and we need to start from somewhere to build on the evaluation and knowledge.

Presentation 3: The Quest for Sustainable Industrialization in Ethiopia: Research Plan Proposal

By Mulu Gebreeyesus

Dr. Mulu started his presentation by giving a brief background on industrialization especially on manufacturing sector in Ethiopia. He further explained about the conventional industrialization process and the challenges of intensive natural resources use resulting in the excessive environmental pressure and energy related carbon dioxide emissions.

He then discussed on the discourse whether industrialization is compatible with the green growth objective citing the notion of environmental considerations impose limitations on the industrialization process of developing countries. Consequently, he breifly stated that the emerging view indicates that industrialization and green growth are not necessarily incompatible. Instead, the late comer advantage and greening as source of competitiveness enables countries to be in a better position.

He then defined Green industry as the industrial production and development that does not come at the expense of the health of natural systems or lead to adverse human health outcomes (UNIDO, 2011). Dr. Mulu then listed the requirements for greening industrialization as: technology development, resource conservation measure, provision of local infrastructure, and institutional processes.

Dr. Mulu described the two policy and strategies of GTP and the CRGE in relation to industrialization stating that the two strategies are often regarded as the counterintuitive to

development experience. As the industrial sector expands GHG emissions are expected to grow .He further explained that the CRGE objectives on industrialization underscores the green industry path by using climate compatible modern energy efficient technology sources.

Dr. Mulu emphasized the need to conduct research in the industry sector and explained why ECRC/EDRI prioritized the sector as one of the key thematic research areas. According to Dr. Mulu, the specific aims of the industry research program are;

- investigating the challenges and opportunities for implementing CRGE strategy and foster green industrialization
- assessing the synergies and tradeoffs between industrial policy and green economy strategy
- evaluating the existing governance systems and frameworks to facilitate CRGE implementation in the industry sector and
- undertake impact evaluations for the key identified interventions

He indicated that the research team at ECRC/EDRI has developed indicative research proposal for the next five years. He further explained on the approach that ECRC to use in developing the research program. These are: Policy and research reviews and research plan.

The research proposal organized along with following four thematic areas:

- Mainstreaming Green Economy Strategies to Industry Sector in Ethiopia
- Inclusive, Efficient and Sustainable Agro-processing Industry Value Chains in Ethiopia;
- Impacts of Industrial Park on Efficiency and Environmental Performance in Ethiopia
- Greening Micro and Small Enterprises in Ethiopia

Dr. Mulu provided detailed research activities plans and interventions to be utilized in each thematic area he described and concluded his presentation by describing the methodologies to be applied for the research work – qualitative and quantitative research approaches.

Presentation 4: Sustainable Urbanization Program

By Firew Bekele Woldeyes

Dr. Firew started his presentation outlining the sequence of his presentation. He gave a brief background to urbanization scene in Ethiopia and said currently, urban areas account for half the world's population, but generate around 80% of global GDP and 70% of global energy consumption and energy related GHG emissions. By 2030, 60% of the world population will be urban dwellers and most of the urban expansion is going to take place in the developing world (90%). He then explained about urbanization trends comapring Atlanta and Barcelona transit system and urban form.

He pointed out Ethiopia's urbanization scenario as follows:

- The percent of urban population in Ethiopia stands at 19%. This is low compared to the Sub-Saharan African average.
- The prediction is the urbanization level will reach 30% by 2028 (World Bank, 2015). The rate increase coupled with the expanding population will raise the stakes.
- Proactive management is needed to make the most of the anticipated transition and research have a big role to play.

In terms of policy review , Dr. Firew said the sustainable development goals aims for the development of inclusive, safer and resilient cities by targeting affordable housing, improving transport, inclusive settlement planning, job creation etc. he also cited the CRGE policy objectives to GHG emissions in transport and building. He emphasized other policy reviews in areas of housing and urban development including that of National Spatial Urban Development Plan (NSUDP) of MUDH.

Dr. Firew listed the research plans of the theme in sustainable urbanization as follows:

- Employment on farm and nonfarm enterprises
- Employment and migration
- Transport system
- Housing
- Industrial infrastructure
- Green structure
- Waste management and urban safety-net programs

Dr. Firew gave a detailed review and the current status under each research plan along with the possible research questions for each topic.

Finally, he concluded his presentation by providing the following summary points:

- In Ethiopia, urbanization is low which provides unique opportunity to shape its future proactively
- The youth in rural areas with different skillsets and endowments from the generation before will influence future development
- In exiting major towns, the issues transport and housing will continue to be vital
- Infrastructure plans such as industrial parks will also influence land use
- SUP will give emphasis to green infrastructure

Presentation 5: GER Project: Climate and Air Analytics and Policy support

By Andrew Kelly, EnviEcon

Andrew started his presentation by breifly introducing the concepts on GAINS and the overall GER project. He indicated that the project provides a platform for new opportunities for research, better policy and progress. He described the **GAINS** as follows: **G**reenhouse gases, **A**ir pollution, **In**teraction and **S**ynergy. He further explain that it is a model which is widely used in European countries. GAINS serves as a framework for consistent and coherent analysis of the casts, benefits and impacts of strategies to manage the reduction of Green House Gases (GHG) and pollution. He further explained about the components of the model and scenario mode reflecting that it works for sectoral, regional and international constraints in relation to GHG emissions and pollution.

He listed the 5 major stages to proposed GER project as follows:

- Review: Assess the current and expected status of all data and information relevant to the model development.
- Training: Develop indigenous capacity with all aspects of the GAINS model through an ongoing training and practice process.
- Calibration: Construct and iteratively refine national scenarios and then document and standardize the procedures for calibration.
- Application: Run the model and develop initial analytical reports – Utilize the model to support related national policy research.
- Linkages: Build awareness of the model, align it for policy support and leverage the work in support of investment

He underscored the need to act soon in utilizing the GER project and pointed out the following reasons:

- Rapid Transition to Advanced International Analytical System: GAINS Ethiopia would build from the foundations of an internationally established analytical system that would rapidly advance the national analytical capacities.
- National Information Assimilation: GAINS Ethiopia would assimilate developed knowledge over time to become an increasingly powerful and pivotal system in Ethiopian research and policy.
- Broadening experience and skillsets of Ethiopian Analysts: Working with the system would draw upon existing skills in the national team, but would also challenge the researchers and thereby broaden and develop new skills to further strengthen human capital resources in this area.
- Direct Support to the CRGE Strategy: Robust Integrated Emissions Analysis: Structured, consistent and coherent analysis of air and climate emissions is one of the fundamental features of GAINS. GAINS covers all sectors of the economy and identifies climate, air, health, environmental and cost outcomes. GAINS would thereby offer broad policy support to facilitate more popular 'win-win' policies.
- GAINS Ethiopia could directly support the regular dynamic assessment of progress, potential problems and pathways to success for core aspects of the CRGE Strategy.
- Excellent Interface for Analysis and Demonstration: GAINS has an exceptionally functional and flexible user interface. This affords researchers the opportunity to assess data and challenges from multiple perspectives, and also offers an impressive means of demonstrating outcomes to policymakers or other clients.
- Policy Identification and Strategic Support: GAINS would ultimately allow analysts to quickly identify the most challenging areas for national climate and air policy, the available technical potentials and the associated impacts. The model can also assess the coherence and performance of overall strategy, and support tailored research for policy interventions.
- Negotiation and Strategy Development: GAINS Ethiopia would be capable of supporting environmental negotiations into the future. Including testing or developing appropriate and credible responses.
- New Opportunities and Investment: GAINS could identify the environmental and health outcomes from specific actions that could then be used to support the case for inward investment programs around key infrastructure or policy initiatives (e.g. green bonds, donors, FDI).

He concluded his presentation by stating that GAINS could also support EDRI/ECRC to engage in other opportunities (e.g. research proposals) or specific programs (e.g. PMEH program out to 2020).

Q & A

Dr. Gebrehiwot opened the floor for participants for questions, suggestions, and comments

Q.8 Anteneh: what are the plans in benchmarking? And certification is lacking in the proposals. What are your thought on that?

- For Dr. Kelly, Does the GAINS model can be used for life cycle assessment?

Q.9 Dr. Assefa, (EEA): You mentioned about Chinese companies interest in Ethiopia and yet they are the major polluters, is it compatible to our green industrial strategy?

-For Dr. Kelly, what is the data requirement for the GAINS MODEL?

Q .10 Adugna: what are the research plan for the Industrial parks in terms of expected negative impacts? And what are the adverse effects of urbanization that will emanate from the industrial parks?

Q.11 Melaku, GGGI: In relation to housing the focus is on urban housing what about the rural housing? If this is not taken seriously slums could emerge in rural areas? So studying rural housing is important

Q. 12 Shimelis, CRGE facility GGGI: reiterated the need for the center to focus on the macro level and asked the role the center plays in supporting Ethiopia in global arena in areas of climate issues

- The focus is on economic and social research is there a room to link with the bio-physical research? And who are you partners in that regard?

- There should be a clear communications strategy to address to the strategic partners

Q. 13 Ruhinudka, EfD Tanzania: Does the output respond to policy strategies to influence the policy agenda? In other words does the center has a role to influence policy agenda?

- There is need to prioritize the key research areas otherwise the team will be overstretched and output will be scattered and narrow

Q.14 Dr. GebreHiwot: What is the relevance of the GAINS model to Ethiopia and are there any strong justifications that it works?

Response 3

Dr. Mulu

- We are interested in the value chain aspects but we can also address other issues as well. We acknowledge that the certification issue is improtant and we take the comment
- Why attracting China? We hope that the new industrial parks have their own mechanism to reduce emissions or facilities to monitor environmental performance
- The issue regarding the relation between Industrial park and urbanization need to be studied and noted the comment.

Dr. Kelly

- GAINS model includes the lifecycle analysis with technology involvement
- There is a need for good deal of data required for the GAINS model in terms of data intensity.
- GAINS is an international standard and more productive model with more advanced interface

Dr. Haileselassie

- Collaboration facilitates ambition and filling the knowledge gap is the center's priorities
- Considering models such as GAINS may open doors for partnership

End of morning Session

Panel Discussion

The afternoon Panel discussion session began with an introduction of the panelist by Dr. Alemu Mekonen. The panelist were:

- **Dr. Gunnar Köhlin (EfD)**
- **Dr. Wubalem Tadesse (EEFRI)**
- **Melaku Ghebreyesus (GGGI),**
- **Dr. Klaus Deininger (World Bank)**

Each panelist was given 5 minutes to reflect on the ECRC proposed research plans and their remark to the overall Climate related research.

Dr. Wubalem was the first speaker who reiterated the CRGE objectives in line with forestry. He focused on the need to prioritize the forestry sector in combating climate change. He mentioned that the two major drivers for clearing of forest is the growing need for agriculture expansion and the demand for fuelwood consumption for household use. He stressed for a concerted effort in devising mechanism to follow and design and implementation of land use programs and the need to utilize technology to serve as a substitute for the use of fuelwood for our energy demands. He suggested the center to conduct research in evaluation of Land use planning and land use policy, quality seed and plantation programs and urged the need of linkages with other institutions.

Dr. Gunnar on his parts hailed Ethiopia's ambitious development strategy CRGE and stressed that being ambitious is equally challenging .He indicated that the Lima declaration signifies the commitment by strategic partners to Ethiopia's development path. He said the research proposals by ECRC didn't come easy and there are major gaps still need to be filled. He underscored that Ethiopia has installed respective institutions to implement the ambitious CRGE strategy and it successful implementation is of high importance. He concluded his remark that ECRC's initiative is quite exemplary that EfD would want to replicates the same initiative to other countries where the center has offices.

Melaku expressed his appreciation to the initiative's progress and current status at the start of his talk and discussed the CRGE in-built objectives. One, it contains perceptual issue where it reflects on climate resilience and growth. The second, perspective and principles where the business as usual is not working anymore and highlights the institutional transformation and Third, the genuine concern of reducing redundancy and duplication of efforts to surface out different issues to support policy makers.

He also indicated that there is need to pay due attention to two major success factors. These are:

- It should be demand driven research to ensure that it engage policy makers and implementing institutions
- Collaboration and partnership – there is a need for clear communications strategy bet it federal and regional level

He concluded his remark wishing well to the center.

Adugna started his views highlighting the need for collaboration and partnership and described Ministry of Finance and Economic Cooperation (MoFEC) responsibility in areas of resource mobilization in CRGE related initiatives. He further explained the major functions of the ministry is monitoring and evaluation, appraisal of programs, and impact interventions. He said that monitoring and evaluation manuals have been developed by the CRGE facility, with clearly defined result matrix developed however it lacks baseline data and information where he said there is an opportunity the center can collaborate. There is also impact evaluation of the financed programs by the facility where the center can also collaborate. He indicated that currently the facility is working with the World Bank on a multisector investment plan. He hinted that the GAINS model may be an area of collaboration for such kind of work.

In relation to database development, he said the CRGE facility is mapping partnership for climate information repository. As he concludes his remark, he said that there is ample opportunity to work together and stressed the need for partnership and collaboration. He pointed out areas of collaboration such as:

- Conducting result-based impact evaluation, which is need by the facility
- Developing data base on vulnerability and climate data
- Developing baseline data for the performance indicators indicated in the monitoring and evaluation manual developed by the facility

Dr. Klaus on his part said that informed decision making is improtant for the CRGE to make an impact and emphasized the need to identify the existing programs, baseline survey and data at different levels. He also stressed the need to clearly defined key outputs of the research. He acknowledged that the proposed research plan by ECRC is sound and emphasized the need to consider using such as satellite images and other related data sources for analysis and cautioned that the discussed programs overlap when it comes on the ground and there is need to document on what can be operational.

He also stressed the need to prioritize on programs and policies by asking questions such as, what are alternative policies? How are policies addressed and who is addressing them? What is the long term policy impacts and others? As a concluding remark, Dr. Klaus said that fostering synergies to collect and make data available is important.

Q&A

Dr. Alemu opened the floor for participants to ask questions and forward suggestions.

Q. 15 Dr. Kelly, EnvEcon: To what extent is the CRGE strategy multi thematic?

Q.16: Tigist, Danish embassy: What are the areas to be included regarding the policy framework? And what about performance evaluation of technologies introduced to the country, which work and not? What about the financing part on CRGE? What is the private sector role in green growth? Is there any playing field for private sector investment that the research can focus on? In terms of the energy diversification and mix, did the research plan for energy looked at alternative energy sources such as waste energy? In area of agriculture, is there research plan to study specialization against diversification?

Q.17: What will be ECRCs special role as there are many research institutions around? What is the direction of the center? ECRC needs mapping in sharing responsibilities.

Q.18 Anteneh: What innovative measures can you share in order to ensure ambitious strategies such as CRGE are successful/doable?

Q.19: Toman, World Bank: underscored the importance to endorse the pragmatic approach proposed by each research theme. However there are lots of micro-level knowledge gaps to fill in terms of coordination role needed and impact evaluation research. He highlighted that the impact evaluation should not only address to what happened but as to why it happened. World Bank is looking forward to collaborate in such research plans. He applauded the ambitious research plans of the ECRC

Q.20: The lesson learnt from GTPI is useful for impact evaluation of GTPII, so there is need to draw lessons from GTPI. The agriculture theme should consider research on how to boost labor productivity? What are the key challenges to transiting from agriculture to industry, a research area that can be of interest? How to strengthen inter sectoral coordination to transform our agriculture is also another area that can be useful.

Q.21: Technology dimension is given very little focus in all the research plans? Studying the impact of technologies shall come before the methods of adoption. When we talk about transformation, transition and efficiency the technology component is crucial so there is need to address technology in the proposed research plan

Response 4

Dr. Gunnar

- No detailed policy reviews done elsewhere but this is a platform to start. Impact evaluation on interventions is a global challenge. The institutional impact evaluation is important for CRGE strategies to keep track of emissions etc.

Dr. Alemu

- Acknowledged the issue raised on technology research inclusion and noted that it is not adequately covered. We can do research on the adoption (socio-economic study) of the technology but cannot dwell on the technology because we do not have technology experts to examine the technology itself.

Dr. Alemu invited Dr. Haile Selassie to reflect on the issues raised and forward the concluding remarks.

Dr. Haileselassie

- Thanked participants for the valuable comments and suggestions and made his concluding remark urging stakeholders' partnership and collaboration in these efforts.
- He officially closed the workshop

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