



Africa Center of Excellence (ACE) for Smart Agriculture and Biodiversity Conservation (Climate SABC)

Hosted by

Haramaya University

**Final Draft Mid-term Report
July, 2016-August, 2019**



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1. Background

The Africa Center of Excellence for Climate Smart Agriculture and Biodiversity Conservation (ACE Climate SABC) at Haramaya University is a milestone of the continued growth and program enhancement centered on the task of tackling loss of agricultural productivity as a result of climate change and loss of biodiversity across eastern and Southern Africa. Through this new program, our university hopes to advance and generate teaching and research outcomes in the fields of agriculture and biodiversity. The Center is aimed at producing skilled human capital for Africa to tackle challenges posed by climate change through quality post-graduate training and research in partnership with universities across Eastern and Southern Africa regions as well as with other higher learning institutions in the World. The Center was established with a competitive loan grant obtained from the World Bank. It became operational in October 2017. Since its establishment, the Center has been running a PhD program in Climate SABC and two MSc programs in Climate Smart Agriculture, and Biodiversity and Ecosystems Management.

2. Teaching-learning excellence

Teaching-learning at the Center is conducted through carefully designed curricula with both coursework and research work facilitated and guided by faculty from Haramaya University, as well as, from other universities in Eastern and Southern African region and other parts of the world. The teaching-learning process involves lectures and hands-on practical training for development of skills in cross-cutting areas of climate smart agriculture, biodiversity conservation and ecosystem management. The students are given ample opportunities to develop their skills in critical areas, such as data analysis and climate impact modeling using appropriate software as well as the use of important tools like GIS and Remote Sensing. Group assignments are used to develop the students' teamwork skills as well as for facilitation of horizontal learning and experience sharing. They are also involved in laboratory and field activities though we need to strengthen our laboratories further in terms of acquiring state-of-the-art equipment, reagents, and chemicals. All postgraduate students are provided with opportunities to visit different parts of Ethiopia to facilitate experiential learning in real-life setting. These sites of the visit include forested highland as well as lowland areas of the country and the UESCO-Registered Soil and Water Conservation Villages of Konso in Southern Ethiopia. This is believed to help the students appreciate indigenous knowledge and enhance their understanding with regard to opportunities and challenges

related to climate change adaptation and biodiversity management in mixed crop-livestock smallholder farming, pastoral, and agro-pastoral systems.

2.1 Development and validation of curricula

Though there is still room for continuous improvement, the curricula of the center were designed carefully in partnership with national and regional research and higher learning institutions as well as advanced knowledge center such as Purdue University, Wageningen University and others. Efforts were made to strike a proper balance between theoretical, conceptual, analytical, and practical issues relevant to the trans-disciplinary programs at ACE Climate SABC. In-house curricula validation workshop was held from 22 to 23 July 2016, followed by international curricula review and validation workshop held from 22 to 27 April 2017. Participants in the workshop were drawn from National universities and research institutes (Addis Ababa University, Oda Bultum University, Dire Dawa University, Mekele University, Hawassa University, Maddawalabu University, Jimma University, Ethiopian Institute of Agricultural Research, Oromia Agriculture Research Institute, Ethiopian Biodiversity Institute) CGIAR (CIMMYT), regional partners (Makerere University - Uganda, Lilongwe University - Malawi, Sokoine University - Tanzania, University of Eldoret - Kenya, Regional University Forum for Capacity Building in Agriculture (RuForm), University of South Africa (Unisa) - South Africa), and international Advanced Knowledge Centers (Purdue University - USA, Indian Agricultural Research Institute - India, Center for Agriculture and Bioscience International - Switzerland, Wageningen University - the Netherlands, University of Delph - Canada).

Subsequently, the final version of the curricula that embodied inputs from both in-house and international review and validation workshops was approved by the University's Senate for implementation.

2.2 Creation of conducive learning environment

In order to create a conducive environment for learning, the university committed two apartment buildings to accommodate regional students. The Center has fully furnished 33 houses in the buildings with beds, laundry machines, cooking stoves, refrigerators, sofa sets, reading tables and chairs. In addition, the students are provided with TV sets for common use and Internet connectivity (both Wi-Fi and broadband) in all houses. The accommodation service is provided to the regional students with

affordable monthly rent rate. National PhD students with families are also provided accommodation in these buildings.

The Center also boasts two floors of part of the big Afran Qallo Building allocated for office and class-, conference-, and reading-rooms. The Center has made available two smart class rooms, four syndicate reading rooms, and one conference/meeting room with tables, chairs, white boards, LCD projectors etc. by investing part of the project fund. In addition, the installation of video conferencing facilities is underway with matching funds obtained from the university. Four smart flat boards have been recently provided by the university and installed in two smart classrooms, conference rooms, and one of the syndicates. All PhD students have been also provided with shared offices for studies.



Afran Kallo Building
where ACE Climate SABC
offices and classrooms are
hosted

For smooth undertaking of the activities of the Center, office spaces have been made available to the Center leaders and project staff with full facilities such as desktop and laptop computers, managerial tables and chairs, printers (both colored and normal), scanner, photocopy machine, landline telephone, broadband and WiFi Internet connections.



One of the smart classrooms



Regional students' residence

In order to facilitate the learning-teaching and research activities of the Center, two vehicles (a coaster bus and a hard-top land cruiser) were procured. These vehicles currently provide transport services to visiting scholars, project team members, and students of the Center.

Furthermore, ACE Climate SABC declared January 4 as International Students' Day whereby all students of the Center, affiliated faculty, and officials of the university academic, research and support wings participate in social events organized every year to promote cross-cultural interactions.



International Students' Day being celebrated at Resource Center

2.3 Recruitment and enrollment of students

The process of students recruitment and enrollment at ACE Climate SABC starts with announcements on University's and partners' websites, social media, the Center's newsletters etc. three months prior to commencement of the academic year. Applicants should submit complete application forms along with authenticated educational credentials and other required documents in person or via express mail or email. Applications are, then evaluated and vetted based on predetermined criteria (previous academic relevance and performance, experience, publication, communication skills, relevance and quality of concept notes for PhD applicants) by a committee constituting senior staff members drawn from the College of Agriculture and Environmental Sciences (CAES), Postgraduate Programs Directorate (PPD), ACE Climate SABC, University Registrar, and senior faculty affiliated to the programs. Finally, best candidates are selected and approved by the Graduate Council of the Center.

The Center started its academic programs in December 2017 with the first cohort of 12 regional students coming from Kenya, Uganda, Tanzania, Rwanda, Malawi and Zimbabwe and 35 students from Ethiopia. During second round selection for 2018/19 academic year, 12 regional and 18 national students were admitted to the MSc and PhD programs on a competitive basis from a total of 245 applications from eastern and southern Africa region. During the second phase, one of the selected applicants was from Zambia, increasing the number of participating countries from the previous seven to eight.

Currently, a total of 77 students are pursuing their studies (32 PhD and 45 MSc) at ACE Climate SABC. The participation of female students is 57% due to the affirmative action the Center has been taking to increase admission of female students every year. Regional students account for 31.2% of the total enrollment (Table 1).

Table 1: Enrollment Statistics of ACE Climate SABC students

	First Cohort						Second Cohort					
	Male		Female		Total		Male	Female	Total			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Regional students	7	14.8	5	10.6	12	25.6	2	6.6	10	33.3	12	36.4
National Students	16	34.4	19	40.4	35	74.4	8	26.7	10	33.3	18	63.6
Sub Total	23	49.0	24	51.0	47	100	10	33.3	20	66.7	30	100
Grand Total							77					

Students in the first cohort (21 PhD and 25 MSc) successfully completed their coursework and defended their research proposals. Presently most of them are on the field work to conduct experiments and collect data for their theses/dissertation write up while a few of them particularly the Masters have started the write up of the theses. The second cohort students (11 PhD and 20 MSc) have already completed their coursework and have already started working on the development of proposals for their dissertation and theses research.

Selection of students for the third round enrollment (2019/20 A.Y.) has been done. A total of 20 out of 330 and 27 out of 91 applications have been selected for MSc and PhD programs respectively. Regional students whose applications have been selected account for 25% of the total successful applications.

2.4 Scholarships management

The Center had created a scholarship scheme in order to attract young and bright applicants from the other eastern and southern Africa countries to its postgraduate programs as well as to increase admission of qualified female students. Accordingly, scholarships have been made available on a competitive basis for eligible male and female students from eastern and southern Africa region (Kenya, Malawi, Tanzania, Rwanda, Burundi, Mozambique, Uganda, and Zambia) as well as for Ethiopian female students. Successful male Ethiopian candidates were granted financial support to cover research expenses. Due to fund limitation, the Center encourages the admission of candidates who can fully or partially cover costs of their studies.

Regional PhD and MSc students are entitled to receive a monthly stipend of 800.00 and 600.00 USD respectively during their stay in Ethiopia for coursework and dissertation/thesis write-up. Each scholarship holder can remit a maximum 40% of his/her stipend to support his/her family and dependents back home. However, the students would be paid only 40% of their stipends through bank transfer if they are return to their countries to conduct research. However, regional students doing both their coursework and research will be paid their full scholarships during the entire period of their studies (two years for MSc study and four years for PhD study) with the right to remit 40% of their stipends still holding. However, national female PhD and MSc students are paid the equivalent of 200.00 and 150.00 USD per month, respectively, as pocket money (in Ethiopian Birr).

In addition, maximum of 10,000.00 USD (2,000.00 USD for research admin costs) and 4,000.00 USD (1,000.00 USD for research admin costs) are granted for PhD and MSc research work, respectively. Each scholarship holders are also entitled to receive a payment of 200 USD as a book allowance and can use health services provided by the university's Health Center free of charge. However, the scholarship scheme for PhD candidates has now phased out since the Center has fulfilled its quota of admitting 30 PhD students based on the agreement stated in the project proposal. However, the MSc scholarship scheme will continue for the third and fourth round until a quota of admitting a total of 80 students will be fulfilled.

2.5 Staff exchange

In addition to the senior faculty members from different colleges of Haramaya University, several seasoned visiting scholars from national, regional and international universities and research institutions are involved in teaching the students and supervising their postgraduate research. This is important since the relevance and quality of postgraduate training is mainly influenced by qualification and competence of teaching staff.

Accordingly, close to 30 distinguished scholars have so far come over to the Center in the past two years to teach courses and share their experiences with the students from different national, regional and international institutions. Through such staff exchange, the Center has somehow managed to deliver the courses in a manner stipulated in the curricula to meet the desired quality standards. The Center expended quite a big sum of money to mobilize the scholars from different parts of the world.

Table 2: List of visiting scholars

No.	Name	Academic Rank	Field of Specialization	Affiliation	Country of Residence	Course taught at ACE
1.	Carol Fadda	Senior Researcher	Biodiversity and Ecosystems Management	CGIAR, Bioversity International	Ethiopia	Institutional Policy and Innovation for Biodiversity Conservation
2.	Temesgen Tadesse	Professorial Lecturer	Environmental Economics	George Washington University	USA	Climate Economics
3.	Legesse Kassa	Professor	Statistician	UNISA	South Africa	Advanced Biostatistics
4.	Million Getnet	Assistant Professor	Developmental Studies and Agricultural Extension	International Livestock Research Institute	Ethiopia	Agricultural Extension
5.	Nega Tassie	Assistant Professor	Ecological Modeling of Climate Change and Biodiversity Conservation	Bahir Dar University	Ethiopia	Ecology Modeling
6.	Himanshu Pathak	Professor	Soil Science and Climate Change	ICAR-National Rice Research Institute, India	Indian	Principle and Practices of Climate Smart Agriculture
7.	Tamirat Bekele	Associate Professor	Vegetation Ecology	Addis Ababa University	Ethiopia	Biodiversity conservation and Management

8.	Feyera Senbeta	Associate Professor	Ecology and Natural Resource Management	Addis Ababa University	Ethiopia	Climate Smart Agroforestry system
9	Zebene Asfaw	Associate Professor		Hawassa University	Ethiopia	Climate Smart Agroforestry systems
10	Gemedo Dale	Associate Professor	Range Ecology	Addis Ababa University	Ethiopia	Policy, institutions, and innovation for biodiversity conservation
11	Tadesse Terefe	Associate Professor	Climate Physics	Addis Ababa University	Ethiopia	Models and Modelling for CSA
12	Feyera Liben	Senior Researcher	System Agronomist	EIAR-Melkassa Center	Ethiopia	Models and Modelling for CSA
13	Gudina Legesse	Assistant Professor	GIS and Remote Sensing	Addis Ababa University	Ethiopia	GIS and Remote Sensing for CSA
14	Kindie Tesfaye	Senior Research	Crop Modelling	CGIAR - Cimmyt	Ethiopia	Models and Modelling for CSA
15	Tesfaye Tesso	Associate Professor	Plant Genetic and Breeding	Kansas State University	USA	Improvement of Crops for Resilience
16	Gemechu Kenei	Senior Researcher	Plant Genetics and Breeding	EIAR	Ethiopia	Improvement of Crops for Resilience
17	Assefa Seyoum	Assistant Professor	Agricultural and Natural Resource Economics	BIOME Service PLC	Ethiopia	Institution, Policy and Innovation for Climate Smart Agriculture
18	Majaliwa Mwajalolo	Professor	Soil and Water Management	Makerere University	Uganda	Climate Smart Soil and Water Management
19	Tadesse Tujuba	Assistant Professor	Climatology/Hydrology	Arba Minch University	Ethiopia	Climate Dynamic and Modeling
20	Mekonnen Ayana	Assistant Professor	Soil and Water Management	Adama University	Ethiopia	Soil, Water, Plant and Atmospheric Relations
21	Debela Hunde	Professor	Biodiversity and Ecosystems Management	Jimma University	Ethiopia	Ecosystem Service and Sustainable Utilization
22	Gebissa Ejeta	Professor	Plant Breeding and Genetics	Purdue University	USA	Short course on global food security
23	Tesfaye Mengiste	Professor	Botany and Plant Pathology	Purdue University	USA	Short course on Biotechnology for CSA

24	Mathew Huber	Professor	Earth, Atmospheric and Planetary Science	Purdue University	USA	Short course on Climate Modeling
25	Jeffe Volenec	Professor	Agronomy	Purdue University	USA	Short course on Plant Physiology
26	Sylvie Brouder	Professor	Agronomy	Purdue University	USA	Short course on Agricultural Ecology
27	Bisrat Elias	Assistant Professor	Hydrology	Arba Minch University	Ethiopia	Models and Modeling
28	Zemedede Asfaw	Professor	Ethno-Botany	Addis Ababa University	Ethiopia	Agro-biodiversity, Climate Change and Food Security
29	Degefa Tolessa	Associate Professor	Geography and Development Studies	Addis Ababa University	Ethiopia	Agro-biodiversity, Climate Change and Food Security

2.6 Field-based experiential learning

In addition to courses being offered by experienced professionals, students have been gaining practical knowledge and skills through exposures to practical field training as well as provision of experimental learning opportunities through field trips across Ethiopia.

So far, the first and second batches of ACE Climate SABC's students have made a week long visits to different locations such as the Hararghe Highlands (*Zigita Dry Afromontane Forest Regeneration Site*), Lake Ziway, Batu Fisheries Research Center, Humbo Conservation Agriculture Project Site, Arba Minch Crocodile Ranch, Nech Sar National Park, Lante Agroforestry System, Konso Landscape (UNESCO registered soil and water conservation heritage site), Awash National Park, Gullele Botanic Garden and Ethiopian Biodiversity Institute to get hands-on experiences. The visit, according to some of the students, was a real opportunity to get concrete experiences on various practices related to climate smart agriculture and biodiversity conservation. Besides, the trip was an important opportunity for the students to interact with and learn from farmers and experts working at grass-root level in addition to learning through own observations and practical training in the fields by the accompanying supervisors from the university.



ACE Climate SABC
PhD and MSc
Students on field
visit in southern
Ethiopia

Generally, the field visit was instrumental in providing practical skills to the students and exposing them to a large and broader perspectives of climate smart agriculture and biodiversity conservation practices in the Central and southern parts of the country.

2.7 Program accreditation

The programs have been accredited nationally by the Ministry of Science and Higher Education of the Federal Democratic Republic of Ethiopia. Effort is underway to obtain regional and international accreditation for the programs. In particular, the Center Leader has recently communicated AQAS, Agentur Fuer Qualitaetssicherung durch Akkrediterung von Studiengaengen (Agent for Quality Assurance through Accrediting Study programs) in Germany, Mannheim. The agent has agreed to open a line of communication with the Center of Excellence to start the process of accreditation. The Center will make efforts to get its program accredited through this agent.

2.8 Course and program evaluation

At ACE Climate SABC, both MSc and PhD students conduct periodic assessment of course instructors and the programs as a whole. The students' feedback on the assessment of instructors is above 4.50 out of the total 5.00 for all except one. The overall assessment results of programs in terms of nature of courses and their deliveries and administrative and academic supports provided by the Center and the University have shown good performance and well indicated areas where improvements are required. The Center has planned to strengthen its M&E system in order to make continuous improvement in teaching-learning, research, management and governance.

3. Research excellence

The Master's and PhD research projects at the Center focus on generating climate smart agricultural technologies and management options, promoting and enhancing practices of climate smart agriculture, and exploring and enhancing biodiversity for sustainable conservation and utilization as well as ecosystem management. Research topics address regional priority areas (i.e. crop, livestock, soil and water, biodiversity, and policy, institutions and innovations for Climate SABC).

3.1 Identifying research thematic areas

One of the deliverables of the programs at ACE Climate SABC is generating appropriate climate smart technologies and practices as well as policy-relevant evidence as inputs to climate change adaptation, mitigation, and sustainable management of natural resources (biodiversity) in eastern and southern African region. The Center has been supporting PhD and MSc research projects with the aim of generating and disseminating technologies and management options to enhance agricultural productivity, socio-economic development, and biodiversity management under climate change and variability.

Identifying, prioritizing, and systematically categorizing existing knowledge gaps in addressing the challenge of meeting the growing demand for food, fiber, fuel, and medicine while protecting the natural resource base and biodiversity in the context of climate change is a critical step in designing and implementing need-based and impact-oriented research. To this end, the Center has developed five research thematic areas, namely:

- Climate Smart Crop Production and Management
- Climate Smart Livestock and Fish Production and Management
- Climate Smart Soil and Water Management
- Biodiversity and Ecosystem Management Under Changing Climate
- Policies, Institutions, and Innovations for Climate Smart Agriculture and Biodiversity Conservation

The research thematic areas guide postgraduate research and other collaborative research endeavors that the Center initiates and implements together with national, regional and international partners.

3.2 Development and approval of research proposals

The students at ACE Climate SABC identify research topic in consultation with their course instructors in line with the identified research thematic areas and based on their previous educational backgrounds and professional experiences. The Center supports the students in identifying advisors with appropriate qualification and expertise relevant to the selected research topics. The students develop the research topics into MSc and PhD research proposals under the guidance of their advisors.

The students present their proposals in the presence of at least one of their advisors and the reviewers to receive critical comments and suggestions during defense for further improvement. The review process at the Center is rigorous and has been given much importance as that of MSc theses and PhD dissertations defense. At least two and three carefully selected faculty with the required qualification and experience are used to critically review the proposals before defense for MSc and PhD, respectively. The proposals are approved by the Center Graduate Council after the incorporation of comments given during the review process. This serves as an important mechanism to ensure relevance and quality of research at the center.

3.3 Research grant managements

As it was indicated under section 2.4 (i.e. scholarship management), PhD students are entitled to a research grant a maximum of which cannot exceed 8000.00 USD whereas MSc students can utilize a maximum of 3000.00 USD for their theses research. Moreover, 2000.00 USD and 1000.00 USD were budget to cover some administrative costs related to supervision and examination of a PhD dissertation and an MSc thesis, respectively. For better management of the research fund, the ACE Climate SABC has an internal rule that the research grant for PhD research is released to the students in three equal installments (i.e. each installments amounts to $8000/3 = 2667$ USD). The first installment for the PhD research is released when the student submits an action plan approved by his/her local supervisor. The second and third installments are released upon the full settlements of the installments already utilized, the submission of the progress report with the utilized installment/s, and action plan for the requested installments. The same modality is used for the MSc research except the research fund for MSc research is released in two equal installments of 1500.00 USD each.

3.4 Training and knowledge sharing events

ACE Climate SABC has started delivering skill enhancement short courses in selected areas though this has now been curtailed by financial limitation due to delay in the second disbursement of fund by the World Bank.

Five internationally recognized professors from Purdue University in the USA including the Food Prize Laureate Prof. Gebisa Ejeta, offered short courses at the Center in August 2018. All Climate SABC students and some affiliated faculty attended the training. The topics covered in the training were Climate Smart Agriculture, Climate Modeling, Global Food Security, Ecology, Ecosystem and Biotechnology. The students and the affiliated faculty were highly impressed with the quality of the training given by the professors and expressed their hopes to maintain the relationship with the university for continued professional support. Moreover, the professors also listened to PhD students' research idea being presented to them and extended their professional comments. Female participants constitute 33% of the trainees while 34% of the trainees were regional students at the ACE Climate SABC.



The World Food Prize Laureate Prof Gebisa Ejeta while delivering a short course

The Center also organized a successful and highly appreciated training in collaboration with Ethiopian Biotechnology Institute on **measuring GHG emission from livestock and mitigation strategies in climate change scenario**. The training was conducted by three trainers from Haramaya University, Arsi University and Ethiopian Biotechnology Institute for a total of 28 trainees. These include PhD (4) and MSc (9) students of the center (including 4 regional MSc students); staffs of College of Agriculture and Environmental Sciences (4) and staffs College of Veterinary Medicine (3) of Haramaya University; staff of Ethiopian biotechnology Institute (3); staffs of Ethiopian Environment and Forestry Research Institute of Dire Dawa (3); a staff from EIAR, Asosa center (1) and a staff from Oda Bultum University (1). Among the

trainees from ACE Climate SABC, four of them are regional female students at the Center. The total number of female trainees was 9, making the participation rate of female 32%.



Trainees of GHG Emission with trainers and ACE Climate SABC management

The center has also supported short-term training of faculty, project staff and students provided elsewhere (15 trainees). Moreover, PhD students are supported to participate in the training and make presentations on knowledge sharing events such as conferences, both at national and international levels, see Table 2a and 2b.

Table 2a: List of short-term trainees

No	Name	Nationality	Role	Training topic	Organizer
1	Belete Shawel	Ethiopian	ICT Director	Rapid Prototyping for IoT	University of Rwanda - Rwanda
2	Daniel Tariku	Ethiopian	ICT expert	Rapid Prototyping for IoT	University of Rwanda - Rwanda
3	Kiros Welay	Ethiopian	Student	Latest discoveries in Methane Science	Sao Paulo School of Advanced Methane Science, Brazil
4	Primitiva Andrea	Tanzania	Student	Revolutionizing African traditional agricultural systems; and Latest discoveries in Methane Science	University of Sydney, Australia and Sao Paulo School of Advanced Methane Science, Brazil
5	Mohammed Aman	Ethiopian	Faculty	Research Analytics and Proposal Writing	Egerton University - Kenya
6	Dereje Kifle	Ethiopian	Faculty	Qualitative data analysis using thematic and	Sokoine University of Agriculture

				content analysis techniques	
7	Sintayehu Fetene	Ethiopian	Student	Integrated Decision Support System (IDSS)	Bahidar University
8	Wycliffe Tumwesigye	Ugandan	Student	Researcher connect professional development	British Council - Uganda
9	Tigist Kibru	Ethiopian	Student	Coding Data Open Science	Ethiopian Academy of Science - Ethiopia
10	Bethel Geremew	Ethiopian	Student	Coding Data Open Science	Ethiopian Academy of Science - Ethiopia
11	Eden Tesfaye	Ethiopian	Student	Nutrient cycling in agricultural production	Mazingira Center ILRI, Kenya
12	Tewodros Bezu	Ethiopian	Faculty		Israel
13	Anteneh Belaineh	Ethiopian	Faculty	Characterization of aloe vera species	Tshwane University of Technology – South Africa
14	Bobbe Bedadi	Ethiopian	Deputy Leader,	African Irrigation Development	Nelson Mandela African Institute of Science and Technology - Tanzania
15	Nigussie Dechassa	Ethiopian	Leader	Training of Trainers for post graduate research supervision	IUCEA, Tanzania
16	Homa Mulisa	Ethiopian	Comm. Officer	Effective communication	IUCEA, Kenya

Table 2b: List of participants on knowledge sharing events supported by ACE Climate SABC

No	Name	Nationality	Role	Conference theme	Organizer
1	Bethel Geremew	Ethiopian	Student	Participatory and Innovative Research for Technology Transfer and Sustainable Development	Debre Brehan University
2	Sinteyehu Fetene	Ethiopian	Student	Sustainable Water Development	Arba Minch & Hawassa Universities
3	Haftay Hailu	Ethiopian	Student		Hawassa University
4	Awol Seid	Ethiopian	Faculty		Ghent University
5	Abdissa Alemu	Ethiopian	Student	Sustainable Water Development	Arba Minchi University
6	Ephrem Mamo	Ethiopian	Student	Science-based Greenhouse Gas Emission Estimates in Support of National and International	EGU 2019-Vienna

7	Martha Kidemu	Ethiopian	Student	Building Disaster Resilient community in Ethiopia	Bahir Dar University
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3.5 Publications

Affiliated faculty to ACE Climate SABC have published more than fifty research articles in peer reviewed international journals over the past two years in areas related to climate smart agriculture and biodiversity conservation. Some of the faculty co-authored the articles with regional and international researchers.

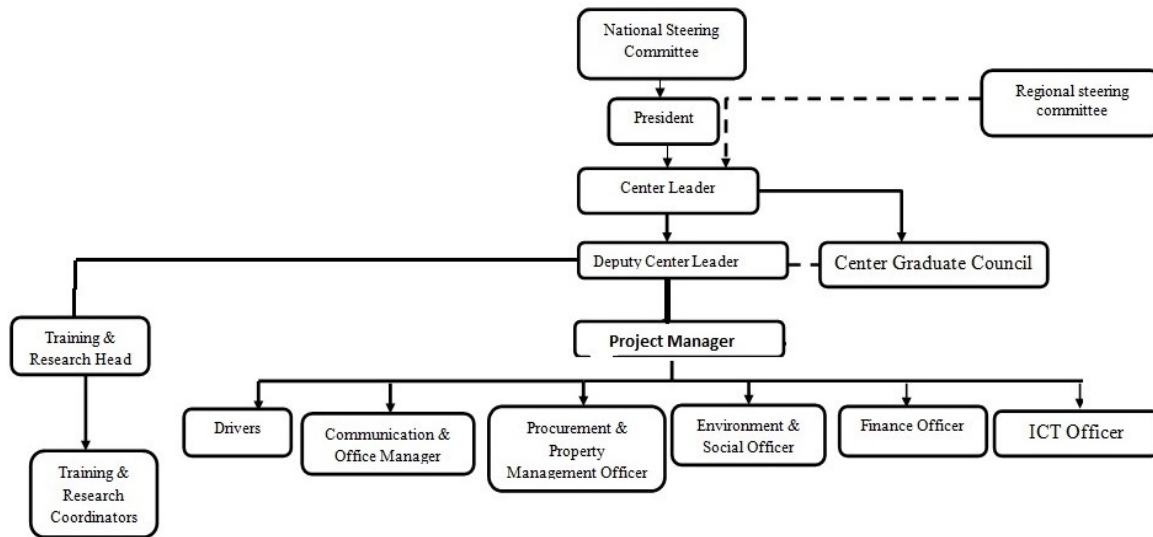
4. Management and governance

The governance and operation of the Center comply with provisions set in the University's Senate Legislation, other policy documents, and the World Banks operational procedures.

4.1 Development and approval of Center's management structure

As per the structure approved by the University Senate, ACE Climate SABC operates as semi-autonomous Center with functional linkage to College of Agriculture and Environmental Sciences and other relevant academic units of the University. The Center draws the majority of its teaching and research faculty as well as laboratory resources from the College of Agriculture and Environmental Sciences and other additional supports from other colleges and units of the University.

The Centre has its own leader, deputy leader, project manager, training and research head, finance officer, procurement and property management officer, communication officer, officer manager and driver.



Organogram of ACE Climate SABC

The Center Graduate Council was formally established on May 24, 2018 at the presence of the Center Leaders, all deans, and department Heads, as well as Graduate Council members of Haramaya University. The Council is constituted from all relevant schools and directorates and chaired by the Vice President for Academic Affairs while the Director for Postgraduate Programs serves as its secretary. The Council is responsible for periodic quality assessment and assurance as well as for approving admission, scholarship awards, course offering assignments, research proposals and grants, dissertation/theses for defense and submission, graduation.

The National Steering Committee (NSC) was established with members drawn from the ACEs hosting Universities (Addis Ababa University and Haramaya University), Ministry of Science and Higher Education, Ministry of Health, Ministry of Agriculture, Ministry of Water, Irrigation and Energy, Ministry of Innovation and Technology, and Ethiopian Railway Corporation. NSC provides guidance and support in monitoring the progresses of the ACEs' during implementation of the programs.

4.2 Experience sharing visits

During the establishment phase of the Center, the University president, Center leader and deputy leader had participated on First Africa-China-World Bank Education Partnership Forum for Higher education science and technology held during July 10-15, 2017. The aim of the forum was to strengthen tripartite relationship as well as to forge new partnerships between leading universities, science and technology research institutes, and private sectors of the two regions.

In addition, the Center Leader and Deputy leader paid a visit to Purdue University during October 20-30, 2017. The purpose of the visit was to further collaborative dialogues and engagements with the University so as to finalize development of PhD curriculum for ACE Climate SABC. The leaders used the opportunity to participate on an annual meeting jointly organized by the Soil Science Society of America and Agronomy Society of America at Tampa, Florida.

Dr. Lemma Wogi, Environmental and Social Safeguard Officer at ACE Climate SABC, attended University-Private Sector and Industry Partnership Forum for Innovation, Research and Development held during October 18-19, 2017 organized by IUCEA in Kigali, Rwanda.

4.3 Recruitment of project staff

ACE Climate SABC made official operation in October 2017 after the recruitment of project staff as stipulated in the approved structure. Currently there are six permanent project staff in addition to the leader and deputy leader who are not the full time staff of the Center.

4.4 Establishment of standing committees

In order to assure transparency and accountability in the utilization of the project fund, the Center has been supported by different standing committees that were established for the purpose. These include, the Finance Committee, the Audit Committee, and the Purchase Endorsement Committee.

4.5 Development of manuals and guidelines

The manuals and guidelines that were developed and being used at the Center include Procurement Manual, Financial Management Manual, and guidelines relating to tuition fees, students' stipend, research grants, DSA and per diem rates, and compensation rates for professional and other support services.

4.6 Fund and expenditure report

Since it became operational in October 2017 till end of June, 2019, ACE Climate SABC has made a total expenditures of 19.04 million Birr for various disbursement Linked Indicators (DLIs). Of the total expenditures, 6.12 million Birr was used to achieve learning excellence, 4.08 million Birr was utilized to improve learning experience, 0.29 million Birr was utilized to establish partnerships, and 2.71 million Birr

was committed to promote research activities and 5.48 million Birr was paid for governance and management of the Center. All these expenditures were met from the initial disbursement of 25.18 million Birr received from the World Bank upon meeting the effectiveness conditions and the development of an implementation plan for the project.

So far, ACE Climate SABC has prepared and submitted two Annual Work Plans and Budgets (AWPB) to both the WB and IUCEA and three semi-annual Interim Financial Reports (IFRs) to the World Bank since its establishment.

4.7 Financial and procurement audit

The financial and procurement records and reports of ACE Climate SABC covering the period from the establishment of the Center until December 2018 was audited by the auditors at the Audit Service Directorate of the University. The records and reports for the period running from July 7, 2017 to July 6, 2018 were audit by external auditors from a recognized Audit Firm called HST, Chartered Certified Accountants and Authorized Auditors. Both groups of auditors have issued unqualified reports with opinions that the financial records and reports provide true and fair view of the cash receipts and expenditure of the project and the funds were utilized for the purpose defined in the funding agreement and with accordance with the accounting policies of the country and financial provisions of the World Bank, the donor.

4.8 Participation on National Steering Committee (NSC) and Regional Technical and Advisory Committee (TAM) meetings.

The NSC oversees the Centers' accomplishments and provides strategic support and guidance to enable the Centers to overcome some of the bottlenecks in implementation of the planned activities. So far, the NSC has conducted one meeting in Addis Ababa on 28 December 2018. The participants in the meeting from Haramaya University were the delegated president of the University, dean of College of Agriculture and Environmental Sciences, leader and deputy leader of the ACE Climate SABC. The meeting served as a platform to update the steering committee members about the planned activities and progresses of the four ACE centers. The meeting was opened by H.E. Prof. Afework Kasu, state minister, Ministry of Science and Higher Education of the Federal Democratic Republic of Ethiopia. On the same meeting, Dr. Eba Mijena, the Director General of Research was introduced to be the chairperson of the NCE. One of the issues that was stressed on the NSC meeting was that the respective presidents of the

two Universities hosting the ACE programs should closely follow up the implementation of the planned ACE activities and provide appropriate required supports by taking ownership of the tasks.



ACE Climate SABC leaders while attending one of the NSC meetings in Addis

The Center leader and deputy Center leader had attended a series of Technical and Advisory meetings (TAM) organized by the regional facilitation unit, the Inter-university Council for Eastern Africa (IUCEA), and conducted in different countries including Kenya, Ethiopia, Ghana, China, Zambia and Rwanda. The meeting is regularly conducted twice a year every six months. The main purpose of the meetings is to create platform for the Centers to interact and share experiences from each other. Moreover, the Centers report their progresses and challenges faced during implementation of the programs and get feedback and directives from the donor as well as the regional facilitation unit on some of the main bottlenecks encountered in running and managing the Center's activities. Some of the meetings brought together the top management and financial officers of the Universities (Table 3) to bring the onboard so that they provide required administrative support in running the ACE programs. The forum is also used to share experiences among the ACEs of similar disciplines where, for instance, ACEs related with agriculture conduct side meetings and discuss on issues of common interest.

Table 3: Technical and Advisory Meetings (TAM) conducted from October 2016 -May 2019

Dates	City, Country	Participants from HU	Remark
24 -26 October 2016	Nairobi, Kenya	Prof. Nigussie Dechassa	First TAM and Inauguration of ACE II

27-28 April, 2017	Addis Ababa, Ethiopia	Prof. Chemedha Fininsa Prof. Nigussie Dechssa Dr. Bobe Bedadi Dr. Tesfaye Lemma Dr. Mitiku Eshetu Mr. Ayele Akuma Mr. Mohammed Aman	2nd TAM
09-18 July 2017	Beijing and Shanghai, China	Prof. Chemedha Fininsa Prof. Nigussie Dechassa Dr. Bobe Bedadi	3rd TAM and 1st Africa-China-World Bank Tripartite collaborative meeting: Both ACE I and ACE II attended
07-09 November 2017	Accra, Ghana	Prof. Nigussie Dechassa Dr. Bobe Bedadi Mr. Abera Molla	4th TAM and joint meeting of ACE I and ACE II
09-10 May 2018	Lusaka, Zambia	Prof. Nigussie Dechassa Dr. Bobe Bedadi Prof. Fekadu Beyene	5th TAM
12-14 November 2018	Kigali, Rwanda	Dr. Jemal Yousuf Prof. Nigussie Dechassa Dr. Bobe Bedadi	6th TAM
13-14 May 2019	Nairobi, Kenya	Prof. Nigussie Dechassa Dr. Bobe Bedadi	7th TAM

5. Partnership for excellence

Partnership is one of the key strategies that the Center pursues to achieve both academic and research excellence. To this effect, ACE Climate SABC has signed MOUs with other similar ACEs and a Network; and had already reached agreement to sign MOUs with Advanced Knowledge Centers. The Center of Excellence for Sustainable Agriculture and Agribusiness Management (CESAAM) hosted by Egerton University in Kenya, and Water Infrastructure and Sustainable Energy-Future (WISE-Future) hosted by Nelson Mandela African Institute of Science and Technology have already signed MOUs with ACE Climate SABC. The Center has also signed an MOU with African Conservation Tillage Network in Kenya. Furthermore, the Center is in process of finalizing the signing of the MOUs with Purdue and Oklahoma State Universities in USA, and University of Greenwich in UK.



MOU signing with African Conservation Tillage Networks



Delegates of Oklahoma State University visit to establish partnership with ACE Climate SABC

ACE Climate SABC developed a communication strategy targeting with various actors and stakeholders within the university campus, at a national, regional and international levels. The visibility of the Center has remarkably increased on account of the efforts made to promote core activities of the Center at national, regional, and international levels through a variety of public relations and communication channels. The following are some of the communication channels used for the promotion activities.

- Agrofood Ethiopia expo during May 03-05, 2018 at the Millennium Hall in Addis Ababa, an international event that came to Ethiopia and saw a number of visitors and exhibitors from different actors in the agricultural and food supply chain sector
- Exhibitions organized as side event of the Research and Extension Review conducted once every year at Haramaya University
- Exhibitions organized as side event of regional forum
- Periodic press releases and interviews with national mass media
- Publications such as annual magazine, newsletter, brochures
- Social media, own and partners' websites
- Production and distribution of promotion materials such as t-shirts, pens, pamphlets etc.



ACE Climate SABC being promoted at Agrofood Ethiopia Expo, in Addis

7. Sustainable financing

The center has made some attempts to lure additional resources to intensify its effort of leaping to excellence. As a result, some of our students were fully sponsored by the Inter-University Council for East Africa with its program of supporting young female scientists.

The Centre has mobilized additional resources to support research related to Climate SABC. A team of researchers affiliated to ACE Climate SABC won a grant from NORAD -NOK 989,200 (of this NOK 479, 388 has already been transferred) for a three- year project entitled “Participatory Action Research for Enhancing Food security and Climate Resilience in Dryland Areas of Eastern Ethiopia and Somaliland. Another team has received collaborative Research grants (140,000 Euro) with InnovAfrica.

After the end of the project period, the university is expected to sustain the Center through seeking grants or allocating government budget. The university is expected to establish a grant seeking committee that could write grant winning proposals in collaboration with national, regional and international partners. The funds raised through different mechanisms during the project period will be used to sustain the activities of the Center. To this effect, the University should encourage and support senior faculty members to team up and develop grant proposals to attract more funds.

8. Major challenges

One of the key challenges that the ACE Climate SABC has been facing is inability to implement some of its planned activities such as conducting short-term courses (though the course materials were already developed), acquiring state-of-the-art laboratory equipment, chemicals and reagents (though need

assessment was conducted and complete bid document was developed). In addition, the cash balances in the bank accounts are dwindling leading to critical solvency risk. This is mainly caused by lengthy and ineffective verification process. The Center had met and repeatedly reported some of the DLRs such as publication in peer reviewed journals, enrollment of PhD and MSc students in line with targets set for female and regional compositions, staff exchange for which huge expenditure was made, external revenue/grant generation, short courses, and national accreditation of the programs. However, the reported DLRs have been either partially (e.g. students' enrollment and staff exchange) or fully (publication and national accreditation of the programs) were unrecognized during the verification process.

Table 4: DLRs met vs. verified

No.	Relevant DLI	DLR met and reported	DLR verified	Difference
1	MSc enrollment	45	23	22
2	PhD enrollment	32	None	32
3	Approved PhD research proposal	21	10	11
4	Short courses	47	30	17
5	Exchange	29	4	25
6	Publication	44	None	44
7	Accreditation	1 (national)	None	
9	External revenue/grants	USD 293,639.64	None	

Other challenges include:

- Over-expectation and high demand of students in relation to provision of stipends, research funds, and facilities.
- High restriction on hard currency transactions, hectic, expensive, and time-consuming activities of shuttling between the University and National Bank of Ethiopia in Addis Ababa (500 km) to effect the process to remit 40% of monthly stipends and installments of approved research budgets for the regional students.
- Extremely bureaucratic hurdles to get travel funds in hard currency (USD) when such a need arises.
- The requirement to deposit externally generated revenues/grants in the ACE's bank account whilst the donors require to maintain separate bank accounts
- Difficulty in getting highly experienced international professors at the right time, as most of them have very tight schedules.

- Absence of willing private companies to engage in concrete partnership that requires resource commitment.
- Limitation of the University finance system and the capacity of its staff as well as the resignation of the former finance officer of the project affected the smooth running of some of the project activities, particularly on the efficiency of remittance of monthly stipends and research fund.
- Bureaucratic procurement process that delays the acquisition of goods, works and services in time, particularly for overseas purchases.
- High rate of project staff turnover (project manager, finance officer and commutation officer resigned).
- Inadequate support from national and regional steering committees.

9. Measures taken by the Center

- The center management discussed with the National Bank of Ethiopia (NBE) and got permission to remit 40% of students' monthly stipends to their respective countries.
- The Center has been widening its network to attract professors and keeping its academic calendar flexible to accommodate their busy schedule
- The Center has been collaborating with the Haramaya University Finance Administration and Procurement and Property Management directorates