Proceedings of
National Conference on the Establishment of
The Ethiopian Academy of Sciences

Ad-hoc Committee for the Establishment of the Ethiopian Academy of Sciences

United Nations Conference Centre (UNCC)
February 13, 2009
Addis Ababa, Ethiopia
The Ad-hoc Committee and the Launching Board acknowledge the sponsorship of UNESCO’s Science Programme for Ethiopia, Djibouti and African Union for publishing this Proceeding.

The Ad-hoc committee is grateful for the assistance of Dr Heran Sereke Brhan, W/o Selome Bekele and Prof Yalemtsehay Mekonnen during the organization of the Conference.
Contents

Summary Report .......................................................................................................................... 1

Members of the Ad-hoc Committee .......................................................... 11

Section 1: Opening Session .............................................................. 13
Introductory Address
   Dr Luc Rukingama
   Director and UNESCO Representative for Ethiopia, Djibouti and African Union

Section 2: Roles and Lessons to be learned from Established Academies .................................. 19
Keynote Address
Promoting Merit Based Academy in Ethiopia .................................. 19
   Prof. Shem O. Wandiga
   Professor of Chemistry, Department of Chemistry, University of Nairobi, Kenya

Structure and Functions of the Royal Society .................................. 31
   Ms Natalie Day
   Royal Society Pfizer African Academies Program, UK

The Academy in Ethiopian Historical Perspective .................. 39
   Prof. Bahru Zewde
   Professor of History, Forum for Social Studies, Addis Ababa, Ethiopia

Some Thoughts on the Establishment of the Ethiopian Academy of Sciences .......................... 51
   Prof. Berhanu M. Abegaz
   Professor of Chemistry, University of Botswana, Botswana
Section 3: Proposal for the Establishment of an Ethiopian Academy of Sciences ............................................................... 63

The Concept Note for Ethiopian Academy of Sciences ...63
Prof. Masresha Fetene
Member of Ad-hoc Committee, Science Faculty, Addis Ababa University, Ethiopia

Section 4: General Discussion ............................................... 71
Roles and Experiences of Academies
Proposal for the Ethiopian Academy of Sciences............................... 75

Section 5: Deliberations and Election of National Organizing Committee ................................................................................. 81

Annex 1: Terms of Reference for The National Organizing committee of the Ethiopian Academy of Sciences...........85

Annex 2: Statutes Ethiopian Academy of Sciences ..........87

Annex 3: Conference Program .............................................. 99

Annex 4: Conference Participants List............................... 101
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS</td>
<td>African Academy of Sciences</td>
</tr>
<tr>
<td>AAU</td>
<td>Addis Ababa University</td>
</tr>
<tr>
<td>ASADI</td>
<td>African Science Academies Development Initiative</td>
</tr>
<tr>
<td>ASSAf</td>
<td>Academy of Sciences of South Africa</td>
</tr>
<tr>
<td>AU</td>
<td>African Union</td>
</tr>
<tr>
<td>CN</td>
<td>Concept Note</td>
</tr>
<tr>
<td>CSA</td>
<td>Civil Services Agency</td>
</tr>
<tr>
<td>CSA</td>
<td>Ethiopian Academy of Sciences</td>
</tr>
<tr>
<td>ERAIFT</td>
<td>Integrated Management of Tropical Forests and Lands</td>
</tr>
<tr>
<td>ESTC</td>
<td>Ethiopian Science and Technology Commission</td>
</tr>
<tr>
<td>GAAS</td>
<td>Ghana Academy of Arts and Sciences</td>
</tr>
<tr>
<td>GREET</td>
<td>Global Renewable Energy Education and Training</td>
</tr>
<tr>
<td>FSS</td>
<td>Forum for Social Studies</td>
</tr>
<tr>
<td>IAP</td>
<td>Inter-Academy Panel</td>
</tr>
<tr>
<td>ICSU</td>
<td>International Council for Science Union</td>
</tr>
<tr>
<td>ICTs</td>
<td>Information and Communication Technologies</td>
</tr>
<tr>
<td>KNAS</td>
<td>Kenyan National Academy of Sciences</td>
</tr>
<tr>
<td>LBEAS</td>
<td>Launching Board for the Ethiopian Academy of Sciences</td>
</tr>
<tr>
<td>NASAC</td>
<td>Network of African Science Academies</td>
</tr>
<tr>
<td>NEPAD</td>
<td>New Partnership for Africa's Development</td>
</tr>
<tr>
<td>NOC</td>
<td>National Organizing Committee</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MoST</td>
<td>Ministry of Science and Technology</td>
</tr>
<tr>
<td>OAU</td>
<td>Organization of African Union</td>
</tr>
<tr>
<td>PACN</td>
<td>Pan African Chemistry Network</td>
</tr>
<tr>
<td>RS</td>
<td>Royal Society</td>
</tr>
</tbody>
</table>
S&T  Sciences & Technology
ToR  Terms of Reference
TWAS  Academy of Sciences of the Developing World
UNESCO  United Nations Educational, Scientific and Cultural Organization
UNCC  United Nations Conference Centre
Summary Report

Opening Session
The program and speakers of the Conference were introduced by Dr Faud Temam, member of the Ad-hoc Committee for the Establishment of the Ethiopian Academy of Sciences (hereafter referred to as Ad-hoc Committee), which was followed by a Welcoming Address by Dr Seme Debela, Chairman of Ad-hoc Committee.

Dr Luc Rukingama, Director and UNESCO representative for Ethiopia, Djibouti and African Union gave an Opening Address. In his opening address, Dr Rukingama said that UNESCO had acted as a catalyst for the establishment of many, now leading scientific unions and bodies and is committed towards the establishment of Ethiopian Academy of Sciences (EAS).

Dr Rukingama stated that UNESCO places special emphasis on the mobilization of science, technology and innovation for sustainable development that accords top priority for poverty eradication.

The presenter outlined the specific areas UNESCO was focusing on in Ethiopia, such as supporting efforts in drafting the new national science and technology policy of the country.

Dr Rukingama mentioned a number of criteria learned and bona fide national academies need to adhere to.

The speaker concluded his address by expressing UNESCO’s wish for the Conference to result in a consensus of the participants on the establishment of EAS.

Following this, His Excellency, Ato Juneydi Saddo, Minister, Ministry of Science and Technology (MoST) gave an Opening Address.

First Session
The first session began by the Chairperson, Prof. Redda Tekle-Haimanot introducing and inviting Prof. Shem O. Wandiga to present the Keynote Address on ‘Promoting Merit Based Academy in Ethiopia’.
Prof. Wandiga started his presentation by highlighting the socio-economic status of Africa, which is mostly dependent on natural resources, tourism, mineral extraction and agriculture. These he noted have not managed to significantly improve the standard of living of African people.

The presenter stressed the need to adopt a knowledge based economy as the major means of achieving betterment of livelihoods and development of economies. He explained some of the ways in which this can be achieved, one of which is establishing strong science, technology and innovation policies.

Prof. Wandiga noted that the use of merit based science academies help in the synthesis of knowledge for consensus on development and policy actions. He also noted the importance of appropriately utilising and/or preserving Africa’s rich natural resources, heritage of cultural practices and the continent’s indigenous knowledge.

Prof. Wandiga then explained the main challenges African nations currently face emphasising on the challenge African nations have least contributed to - climate change and variability. He explained the hazards of climate change with a chart.

Although Africa is the least contributor to climate change, Prof. Wandiga stressed that it would be the continent that will suffer most from it. However, he noted that Africans had adapted to climate change throughout the ages by using their indigenous knowledge. Hence, it is important to update African traditional and indigenous knowledge with science and technology for devising future adaptation and coping strategies.

After briefly outlining the Millennium Development Goals (MDGs) set by the United Nations in 2002, he noted that most African governments will not be able to meet all of these Goals. He added the utilization of science, technology and innovation by African nations would greatly assist in achieving these Goals. Prof Wandiga mentioned African nations were lagging behind in the production and publication of scientific literature.
Prof. Wandiga said that merit based science academies individually or collectively are able to influence government policies to become science-based solutions. The presenter then outlined the counties in Africa with already established merit based science academies. However, he stated that most of the African academies were static and weak, resembling to old men’s clubs.

Following this the presenter explained the formation, structure and major activities of the Kenyan National Academy of Sciences (KNAS). He also explained the strategic plan of the Network of African Science Academies (NASAC).

Prof. Wandiga concluded his keynote address by expressing his and NASAC’s wish and support to establish a strong merit based EAS.

The Chairperson thanked Prof. Wandiga and reiterated that there were valuable lessons to be learnt from the Kenyan experience and from NASAC.

Prof. Redda then invited Ms Natalie Day to share the experiences of the Royal Society UK with participants.

Ms Day started her presentation by explaining the main objectives of the Royal Society (RS) and what activities the Society undertakes in aiming to achieve these objectives.

The presenter then briefly outlined the structure, governance and sources of income of RS. Ms Day specifically noted the objectives of the Science Policy Centre within RS. The RS is funded from both the government, which is unspecified and from private sources. She stressed, although RS is partly funded by government, the RS maintained its independence.

Following this, Ms Day explained the resources of the RS and how these contribute towards the Society’s work and activities.

Ms Day highlighted the challenges RS faces, some of which are issues of independence versus understanding policymakers; reactive versus
proactive work; following up recommendations; and the issue of competing voices/opinions.

The presenter concluded her presentation by explaining about the Royal Society Pfizer African Academies Programme which supports four African Academies including the establishment of EAS.

The Chairperson Prof. Redda, thanked Ms Day for her presentation and indicated that there were lessons to be learnt from the Royal Society. He then invited Prof. Bahru Zewde to present on ‘the Academy in Ethiopian Historical Perspective’.

Prof. Bahru started his presentation with an explanation on how the term Academy is currently perceived and used in Ethiopia. He stated that it is perceived and is being used to refer to all kinds of educational institutions, mostly referring to kindergartens. He then briefly noted the historical origin of the actual word, which originates from the Greek word “Akademia”.

The presenter then explained about the first ever Academy, which continued to flourish during Roman times, until it was closed by Emperor Justinian. This marked the transfer of the patronage of the sciences from the Greco-Roman world to the Islamic world.

Continuing the history of Academies, Prof. Bahru said academies came to be established as national institutions rather than bodies associated with a particular city, such has been the cases of the RS of London and the Italian Accademia Nazionale dei Lincei among others.

Prof. Bahru indicated the Italian Accademia Nazionale dei Lincei was to be a major sponsor of early Ethiopian studies. He also mentioned the support of the British Academy towards Ethiopian studies. The historian explained the first African Academy to be established was in Ghana, which came two years after Ghana’s independence from colonization.

Prof. Bahru said as the oldest Academy in sub-Saharan Africa, the Ghana Academy of Arts and Sciences (GAAS) is a pioneer organisation that
emerging academies, including EAS could learn a lot from. He also briefly explained the structure and functioning GAAS.

Following this, the presenter outlined the history of Ethiopia’s rich and long tradition of education and scholarly investigation which are set both within the Ethiopian Orthodox Christian and Islamic setups. Prof. Bahru noted the existence of a rich reservoir of indigenous knowledge in Ethiopia and gave the examples of Zara Ya’eqob and Woizero Ayelech Fikre of Ankober, among others.

Prof. Bahru expressed caution is required not to over romanticise indigenous knowledge, as there were some indigenous technologies that have remained stuck. He provided the most notable example of technological stagnation of the plough in Ethiopia.

The presenter explained that the early twentieth century saw a remarkable spirit of critical investigation and an expansion of knowledge that led to agitating social reform and advancement of the frontiers of knowledge. Prof. Bahru provided examples of some of the influential writings and treaties of the time.

Prof. Bahru explained attempts to establish academies in Ethiopia to date have not materialised, except for the Academy of Ethiopian Languages which has not managed to survive as an academy.

The presenter further explained the tendency of the State to appropriate initiatives, which was more or less what had happened to the idea of EAS which was initially envisaged as an independent body and ended up as a government agency (in the Ethiopian Science and Technology Commission/ESTC) during the socialist era. Prof. Bahru highlighted the set up, structure, function and legal background of the ESTC.

Following this Prof. Bahru outlined the history of professional and academic associations in Ethiopia. He stated these showed a significant increase in number in the 1990s. He said:
“It is the professional associations, with their relative independence and their commitment to professional excellence, that would naturally form the prelude to the Ethiopian Academy of Sciences that we are gathered here to discuss today.”

Prof. Bahru concluded his presentation by outlining the major challenge for EAS, which includes maintaining its independence while having a mutually beneficial partnership with Government. He thanked the Ad-hoc Committee for organizing the Conference and for the work it has done so far.

The Chairperson thanked Prof. Bahru Zewde for his very informative presentation and invited Prof. Berhanu Abegaz to present on “Thoughts on Establishing EAS” which follows on from the background provided by Prof. Bahru.

Prof. Berhanu started his presentation by voicing his opinion that the purpose of the Conference was not to justify the need for an EAS, rather to discuss how it should be established and structured. He said:

“Today we meet here, in my opinion, not to argue whether we need an Ethiopian Academy of Sciences, but rather how we should establish it.”

The presenter in explaining the need for an academy in Ethiopia initially outlined the current living standards in Africa. Prof. Berhanu said that the only way to solve the problems Africa faces is through a sustainable use of science-led and technology-based development. He mentioned a few of the several ways Africa has so far attempted to attain development, albeit without success.

Emphasising this, Prof. Berhanu said:

“Without science there could be no innovation, without innovation there could be no economic growth, and without economic growth there could be no better quality of life.”
The presenter argued that it was indeed timely to establish EAS and justified this by noting the availability of highly qualified and die-hard working scientists both in Ethiopia and the Diaspora, who deserve to be members of an Academy.

Prof. Berhanu, in explaining what kind of an Academy is envisaged, said it could embrace a Learned Society as well as Advisor to Society types of academies. He listed some of the proposed objectives of EAS and proposed activities towards achieving these.

Having noted these, the presenter expressed that these objectives and activities were generic, and therefore, represented global norms and trends. Prof. Berhanu expressed his belief that EAS has to base its objectives, activities and actions on the local realities and he explained some of these. In line with this, he mentioned some of the key issues EAS is expected to address.

The presenter explained about the types of academy memberships and how these differ from memberships of professional associations. He also provided an explanation about the role of founding members noting the purpose of this Conference was to eventually establish EAS through founding members and gave the example of the process in which the Academy of Sciences of South Africa (ASSAf) was established.

In outlining financial and governance issues of academies, Prof. Berhanu mentioned the most common features that have made academies successful. These are the quality, commitment, and resilience of the members and the support the academy receives from Government without political interference. Examples of academies in Africa and from around the world, which are successful and receive financial support from governments were mentioned by the presenter with recommendations for EAS.

The presenter concluded his presentation by emphasising the vital role academies play in societies and thanking the Ad-hoc Committee for organising the Conference.
The Chairperson thanked Prof. Berhanu Abegaz for his presentation and reiterated that it provided a sound background for discussion and the way forward. He then opened the floor for comments and questions on the presentations.

The comments and questions on the presentations made in this Session are in Section 4.

Second Session
The Chairperson for the second session, Prof. Berhanu Abegaz invited Prof. Masresha Fetene to present on “The Concept Note for EAS”.

Prof. Masresha started his presentation by stating that his presentation would be based on the Concept Note (Blue Booklet) as outlined by the Ad-hoc Committee and had been distributed to the Conference participants.

The presenter explained what kind of Academy is desired to be established and noted that the credibility of an Academy as an institution stems from the credibility of its members.

Prof. Masresha then continued to outline all the major categories of disciplines that will be bracketed into the Academy. In doing this he highlighted the significance of multidisciplinary ideas and views. He said:

“It is when ideas and views are evaluated and distilled by panels with disciplinary inputs that they have a lasting merit.”

The presenter indicated that the Ad-hoc Committee has suggested the Academy to be named Ethiopian Academy of Science (EAS) and gave the justifications for the naming.

Following this Prof. Masresha explained what the main role and mission of the Academy would be. The role of the Academy will mainly focus on assisting in building a knowledge based society.

The objective of the Academy would be that of a learned society and as an advisor to society (two of the three archetypes of academies). Prof. Masresha presented the specific envisaged objectives of EAS.
The presenter mentioned the activities the Academy would undertake, such as serving as platform for discussions and dialogue; publishing; awarding excellence, etc with the aim of achieving its envisaged objectives.

The following question Prof. Masresha addressed was who the founding members of the Academy should be. He expressed his belief that members should be gathered purely on the basis of their merits.

Prof. Masresha suggested that the issue of how founding members are selected could be discussed and deliberated on by the participants of the Conference. He also mentioned the importance of the role and involvement of scientists/scholars in the Diaspora and issues relating to their membership.

The next issue Prof. Masresha addressed was that of financial resources for the Academy and outlined some of the expected sources for this. He noted that the Government is expected to be the most important source of income.

Prof. Masresha reported that it has been learned from a meeting held with the Minister of MoST, H.E. Ato Juneydi Saddo that the Government of Ethiopia is extremely supportive of this initiative.

The final question the presenter addressed was what the Road Map towards realising the establishment of EAS would be. The Ad-hoc Committee that has organized the Conference have suggested the formation of a National Organizing Committee (NOC), which was also suggested to be named EAS Launching Board.

Concluding his presentation, Prof. Masresha outlined the tasks the NOC is expected to undertake to lay the foundation for the establishment of EAS. (Annex 1)

The Chairperson, Prof. Berhanu Abegaz thanked Prof. Masresha for his presentation and opened the floor for comments and questions. The discussions on Prof. Masresha’s presentation are detailed in Section 4.
Third Session

The Chairperson for the third and final session, Prof. Shibru Tedla, started the session by reading out the responsibilities and terms of reference of the NOC (Annex 1).

The Ad-hoc Committee presented its own recommendations on the election of the NOC.

The participants discussed and deliberated on these recommendations, and finally, the following members were elected to constitute the NOC:

1. Prof. Alemayehu Teferra Engineering Sciences
2. Prof. Bahru Zewde Social Sciences, Humanities and Arts
3. Prof. Berhanu Abegaz Natural Sciences
4. Dr. Berhane Asfaw Natural Sciences
5. Dr. Berhane Gebrekidan Agricultural Sciences
6. Prof. Masresha Fetene Natural Sciences
7. Prof. Redda Tekle Haimanot Health Sciences

Conference participants agreed that the NOC will take the responsibility of electing one additional member from social sciences and a representative from the MoST.

This concluded the Conference. The Election of NOC and deliberations of the Conference are presented in Section 5.

The Conference had Dr Zelalem Leyew and Dr Solomon Zewdie as rapporteurs, who compiled the discussion points and deliberations outlined in Section 4 and Section 5.
Members of the Ad-hoc Committee

From left to right in the photograph are:

1. Dr. Gezahegn Yirgu  Representing the Natural Sciences
2. Dr. Yacob Arsano  Representing Social Sciences
3. Prof. Masresha Fetene  Representing Ethiopian Association of Humboldt Fellows
4. Dr. Seme Debela  Private Consultant (Chairman)
5. Dr. Fuad Temam  Ethiopian Medical Association
6. Prof. Alemayehu Teferra  Representing Engineering and Technology
7. Dr. Solomon Bellete  Ethiopian Association of Agricultural Professionals
Section 1

Opening Session

Introductory Address

Dr. Luc Rukingama
Director and UNESCO Representative for Ethiopia, Djibouti and African Union

Your Excellency Minister of Science and Technology, Ato Juneydi Saddo, Dr. Seme Debela, Chairman of the Ad-hoc Committee for the Establishment of the Ethiopian Academy of Sciences, Distinguished Guests, Colleagues, Members of the press, Ladies and Gentlemen:

UNESCO promotes international cooperation in science in the interests of peace, human rights and development. The Natural Sciences Sector representing the ‘S’ in UNESCO between the ‘E’ for education and the ‘C’ for culture works in an interdisciplinary environment. In 60 years of existence, UNESCO has acted as a catalyst for the establishment of many, now leading scientific unions and bodies such as the World Conservation Union, and the European Organization for Nuclear Research. Initiatives with far-reaching implications for sustainable human security and wellbeing – such as the Man and the Biosphere programme, the World Heritage sites and the International Hydrological Programme – were launched in its first thirty years.

The Natural Sciences Sector contributes to UNESCO’s mission by using science to build peace, to eradicate poverty and to promote sustainable development.

UNESCO places special emphasis on the mobilization of science, technology and innovation for sustainable development that accords top priority to poverty eradication. Africa’s Science and Technology Consolidated Plan of Action (CPA) will serve as the main framework for UNESCO’s action in science on the continent. In particular, UNESCO will support the implementation of the CPA by assisting African Member
States to strengthen science and technology policies, and to reinforce planning and innovation capability through policy advice, advocacy and capacity-building. To that extent, UNESCO initiated a review at a continental level, first in Southern Africa (Botswana, September 2008) and continues with Eastern Africa (the meeting is scheduled for the beginning of April 2009).

An African Forum for Science and Technology Policy will be established to provide a platform for dialogue, harmonization of policies, information exchange and experience sharing.

UNESCO is linking Universities with Industry through regional pilot projects, science incubators and parks.

Another particular example of UNESCO’s action in Africa is the African Virtual Campus which aims to build capacity enabling the creation of online courses on science, technology and engineering for third level students. The Campus has started in Western Africa and will expand to the rest of Sub Saharan Africa.

Distinguished ladies and gentlemen

The Organization supports national strategies to improve water resource management and access to water, the promotion of sustainable management of natural resources and protection of the environment. UNESCO supports the NEPAD (New Partnership for Africa's Development) Environment Action Plan, and the African Ministerial Conference on the Environment especially on issues related to the management of transboundary resources including freshwater and biosphere reserves.

Through the International Hydrological Programme and its African Committees, activities to enhance water resource management, to improve water information systems and studies on groundwater, including the assessment of drinking water quality in urban and rural areas, are being carried out in Africa.
In the ecological sciences, UNESCO supports the Regional Postgraduate Training School on Integrated Management of Tropical Forests and Lands (ERAIFT) located in the Democratic Republic of Congo which trains 30 African professionals a year from more than 20 countries on integrated land and resource management.

Since 2004, the Man and the Biosphere programme has been implementing a project funded by the Global Environmental Facility (GEF) to Build Scientific and Technical Capacity for Effective Management and Sustainable Use of Biodiversity in Dryland Biosphere Reserves in West Africa. In addition, support for reducing rates of biodiversity loss is targeting the 21 African Great Ape Range States through the Great Apes Survival Project.

Finally, in the area of renewable energy, capacity-building and networking activities as well as pilot projects are being carried out under the African Chapter of the Global Renewable Energy Education and Training (GREET) Programme.

Gender equality is a fundamental human right, a commonly shared value and a necessary condition for the achievement of the internationally agreed development objectives, including all Millennium Development Goals. In UNESCO a two-pronged approach has been adopted: gender mainstreaming and women’s empowerment in Member States and within the organization. “Mainstreaming gender” implies that a systematic effort is made to look at, and attend to, the specific experiences and aspirations of both women and men throughout UNESCO’s programme cycle, from planning to evaluation.

All Natural Sciences Sector programmes will increasingly be designed monitored and evaluated from a gender equality perspective including all training, capacity-building, educational and research activities. Efforts will be made to ensure a more gender-balanced representation in networks of experts and researchers, as well as access by women to the outputs of research.
Ladies and gentlemen:

In Ethiopia and under the umbrella of the aforementioned Programmes we are focusing on the following:

- Supported the National efforts for drafting the new national science and technology policy (S&T);
- Supported the celebrations of the World Science Day;
- Supporting Science education with the donation of the exhibition “Environment in our hands” that is currently being exhibited at the Alliance Francaise;
- We are focusing on the establishment of Biosphere Reserves in order to promote sustainable development while preserving the environment; and
- We are supporting Science Education at a tertiary level by donating books and journals worth more than $250,000 to Addis Ababa University with a view to supply all Universities.

We are very satisfied with the focus of the Government to Science and Technology as one of the vehicles that will lead Ethiopia to a better future, and we promise to support their efforts in any way we can. That is also our main drive for supporting today’s event. Science Academies have a pivotal role in today’s societies.

An Academy of Sciences is an organizational body, usually operating with state financial support and approval, that coordinates scholarly research activities and standards for academic disciplines, most frequently in sciences but also humanities. Typically the country’s learned societies in individual disciplines will liaise with or are coordinated by the national academy. National academies play an important organizational role in academic exchanges and collaborations between countries.
The extent of official recognition of national academies varies according to each country. In some cases they are explicitly or de facto an arm of Government; in others, they are voluntary, non-profit bodies with which Government has agreed to negotiate, and which may receive Government financial support while retaining substantial independence.

There is a growing consensus among international federations of learned academies that bona fide national academies need to adhere to certain criteria, some of which are:

- The fellowship is elected, on the basis of excellence, by existing fellows;
- The number of fellows is restricted either to a total number or to a rate of accretion;
- The governance of the academy is democratic and “bottom up”. The fellowship is the ultimate source of the academy’s authority; and
- The academy is independent of Government, industry and professional associations. Most, if not all, all academies derive some financial support from some or all of these other organizations but this support needs to be given in a manner that does not compromise the academy’s independence.

We are very glad to observe the turnout of scientists to today’s event and we hope that today’s meeting will result in a consensus of the participants on the establishment of the Ethiopian Academy of Sciences.
It is high time that Ethiopian scientists from all disciplines be honoured for their work and achievements, first here at home, and not only in International fora.

We would like to wish you a fruitful meeting and we await for the results of your deliberations.

Thank you very much for your attention.

This was followed by an Opening Address by H.E. Ato Juneyi Saddo, Minister, Ministry of Science and Technology.
Section 2

Roles and Lessons to be learned from Established Academies

Keynote Address
Promoting Merit Based Academy in Ethiopia

Prof. Shem O. Wandiga  
Professor of Chemistry, Department of Chemistry, University of Nairobi, Kenya

Prof. Redda Tekle-Haimanot, Ladies and Gentlemen:

It gives me great pleasure to be given the opportunity to share with you my views about the audacious ambition to establish the Ethiopian Academy of Sciences. Let me at the outset give the kind regards and best wishes of Prof. Mohamed Hassan, President of the African Academy of Sciences and Prof. Joseph Otieno Malo, the Chairman of the Kenya National Academy of Sciences. They look forward to welcoming the Ethiopian Academy of Sciences into the fraternity of the Network of African Science Academies. My lecture will highlight socio-economic and cultural issues in Africa – their economic driving forces, the challenges needed to be overcome in order to improve the status of the African sciences and the actions which if undertaken will see the uplifting of the lives of our people.

The major socio-economic driving force in Africa is rooted in our natural resources, tourism, mineral extraction and agriculture. These sectors and our natural resources have served us well but they have not been sufficient to improve the lives of our people in a knowledge economy. Time has come when we need to have a shift in economic activities in order to adopt knowledge based industries. In order to do this, Africa needs the following changes:

- Establishment of a strong science, technology and innovation policy with forward and backward linkages;
Formulation of national innovation system(s);

Clustering of institutions and organizations to maximize cooperation between private sector, universities and research institutions and governments;

Establishment of legal and institutional framework with laws and regulations which are essential for business investments;

Provision of incentives, loans, investments and guarantees that will attract Foreign Direct Investments (FDI) and private sector participation; and

Restructuring of how governments do business so that there is:
- strong government leadership through policy formulation,
- obedience to practices, and
- operations become without strong government command.

These changes will require adoption of science, technology and innovation as the vehicle for future development. Science, technology and innovation offer mechanisms for the exploitation of our natural resources and maximization of our peoples’ talents and skills. Furthermore, use of merit based science academies help in the synthesis of knowledge for consensus on development and policy actions.

Africa is rich in natural resources and is the heritage of cultural practices and indigenous knowledge. Conservation and rational utilization of these resources require collaboration with keepers of cultural practices, traditional knowledge, regional and international partners and private sector investors. For example, collaboration between traditional healers and plant chemists from Kenya Medical Research Facility (KEMRI) in Kenya is underway in order to develop anti-malarial medication from tested plants. Another example of collaboration between traditional and mainstream knowledge is the development of solar energy cells over the Sahara Desert and other arid areas in Africa. It is estimated that each square kilometer of the African desert receives solar energy equivalent to 1.5 million barrels of oil. The solar energy received by the world’s deserts is more than 1,000 times the world’s entire annual energy consumption.
In addition, Africa is home to about 922 million people of whom 382 million (41.4%) are under 14 years old. This implies that we have a reservoir of future Noble Laureates if we nurture and develop the talent of our young. Unfortunately, the majority of these talents are currently being wasted. Investment in the education of the young generation will help improve the socio-economic status of Africa. Appropriate investments include development of cutting edge science and technology. We cannot compete internationally if we have no new knowledge based industries. Some of the cutting edge science and technology activities include nanotechnology (the development of materials using particles of less than $10^{-9} \mu m$), biotechnology (the manipulation of genetic materials to produce better and stronger plants and animals), wireless information and communication technologies (the transformation of mobile phones to societies). These areas of sciences are currently not being questioned and explored in Africa. Additionally neither is the exploration of space science and technology for the mapping of our natural resources and communication being explored. There are only a few African countries that have started investment in these areas of sciences. These include the following:

- Biotech: South Africa, Nigeria, Egypt, Uganda
- Nanotech: South Africa
- ICTs: Nigeria, Rwanda, Sudan
- Space S&T: Nigeria, Algeria

1. Challenges
Taken stock of the existing situation in Africa reveals that 35 of the world’s 50 least developed countries are African countries, 70% of the total African population lives on less than $2 a day, 26.5 million Africans are infected with HIV, and 2.5 million die each year of AIDS, 73% of Africans do not have electricity, nearly 1 million Africans are killed by malaria each year and 42% of Africans have no access to safe drinking water.

These are real challenges that we must overcome in the shortest time possible if we are to keep up with the industrialized countries. On top of
these facts and figures, we currently have an additional challenge of which we have contributed the least, which is climate variability and change.

There are very few weather related hazards that do not affect mountainous settlements. Well established communities, such as those in the developed nations, have built up their infrastructures and prospered within a general pattern of local climate to which they have adapted. However, meteorological and hydrological events with intensities outside that general pattern can cause catastrophic environmental, economic and social system failures.

A few examples include:

- Strong winds that impose exceptional loading (or pressure) on buildings and power transmission towers, causing structural failure;
- Heavy rainfall that leads to flooding, accompanied by erosion that undermines soil structures and inundations that could take lives, destroy crops, drown stocks, contaminate fresh water supplies and isolate communities;
- Prolonged high temperatures and dry periods, leading to drought with its associated erosion, loss of crops and soil cover, and loss of life; and
- Heavy snowfall and ice loading that can lead to broken power cables and other overhead cables, and isolation of communities.

Major atmospheric-ocean coupled patterns such as the El Niño phenomenon in the region of the tropical Pacific Ocean, and the North Atlantic Oscillation, influence the distribution of climatic hazards. The associated large scale variations in the oceans force changes in the atmosphere, which affects the wind flow in the upper atmosphere. The effects are carried far from the source region by the modified large scale circulation of the atmosphere, interacting with smaller scale influences such as the shapes and orientations of major mountain chains, resulting in changes in the normal weather patterns.
Recent experiences of climatic disasters have shown that Africa is the most vulnerable continent with respect to climate change and the least able to adapt to climate change. Despite these shortcomings, Africans have in the past adapted to climate changes throughout the ages. They have managed to do this with their indigenous knowledge. We need to update traditional and indigenous knowledge with the modern science and technology towards devising drought and floods escaping strategies.

In 2002 the world leaders agreed under the United Nations Conference on the Millennium Goals and Sustainable Development on specific actions to be undertaken on water, energy, health, agriculture and biodiversity. They further agreed on targets to be met by 2015 on eight goals, which are:

1. Eradicate poverty and hunger;
2. Achieve universal primary education;
3. Promote gender equality;
4. Reduce child mortality;
5. Improve maternal health;
6. Combat HIV/AIDS, malaria and other diseases;
7. Ensure environmental sustainability; and
8. Develop Global Partnership for Development.

We are currently halfway into the target year of 2015 and it is clear that all these goals will not be met by the African governments. “Even the best governed countries on the continent have not been able to make sufficient progress in reducing extreme poverty in its many forms.” Yet utilization of science, technology and innovation by our people would greatly assist in the achievement of the goals.

Utilization of science, technology and innovation is translated into scientific and technological publications. An assessment of international literature shows that contribution to journal and technical publications by African scientists is low compared to other countries. The figure below confirms the poor state of science, technology and innovation in the
continent. Looking at the contributions from each country shows that Ethiopia and Kenya are not doing so well in production of scientific publications. Certainly we also have ambitions to be like the Asian tigers. It is of importance to note that countries like South Korea that gained independence at about the same time as most African countries have surpassed us in this area. South Korea’s share of all ISL (International Scientific Literature) listed science and engineering publications is 1.6 times that of the entire African continent (S. Korea 2.4%, Ghana 0.02%).

**Figure 1:** Share of scientific publications contributions
Section 2: Roles and Lessons from Established Academies

Table 1: African contributions to world output of scientific publications (2003-2007 average)

<table>
<thead>
<tr>
<th>Africa</th>
<th>Share of World (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>0.46</td>
</tr>
<tr>
<td>Egypt</td>
<td>0.33</td>
</tr>
<tr>
<td>Tunisia</td>
<td>0.14</td>
</tr>
<tr>
<td>Morocco</td>
<td>0.11</td>
</tr>
<tr>
<td>Nigeria</td>
<td>0.11</td>
</tr>
<tr>
<td>Algeria</td>
<td>0.09</td>
</tr>
<tr>
<td>Kenya</td>
<td>0.07</td>
</tr>
<tr>
<td>Cameroon</td>
<td>0.04</td>
</tr>
<tr>
<td>Tanzania</td>
<td>0.04</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>0.03</td>
</tr>
<tr>
<td>Uganda</td>
<td>0.03</td>
</tr>
<tr>
<td>Ghana</td>
<td>0.02</td>
</tr>
<tr>
<td>Senegal</td>
<td>0.02</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>0.02</td>
</tr>
<tr>
<td>Rest of Africa</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Total Africa</strong></td>
<td><strong>1.70</strong></td>
</tr>
</tbody>
</table>

Source: TWAS, May 2008

1.2 African Merit-Based Academies

Merit-based science academies individually or collectively provide independent, evidence-based and credible advice to policymakers on critical sustainability issues using best available knowledge derived from a wide consensus. Often they are able to influence government policy on science-based solutions.

At the national or international levels academies issue statements and studies on critical global problems. There are over 100 merit-based science academies in the world. Out of the 53 African countries, only 16 countries have national science academies. The African Academy of Sciences (AAS) draws its membership from all African countries. It is therefore not considered as a national academy. The map below shows African countries with merit based academies. With the launch of the Ethiopian Academy of Sciences and the establishment of the National Academies in Botswana, Rwanda, and Tunisia the number will increase to twenty.
Figure 2: African countries with merit based academies

Academies in Africa are generally weak, and the majority of them need strengthening and transforming from their static private men’s / old men’s
clubs to becoming dynamic organizations. Academies in Africa must open up membership to younger scientists of academic merit and pay special attention to developing capacities of women. As most of the critical problems are common to all African countries, collective action by African academies is necessary.

1.3 The Kenya National Academy of Sciences
Mr. Chairman, I am among the 23 Founding Members of the Kenya National Academy of Sciences, the successor to the East African Academy of Arts and Letters. The Kenya National Academy of Sciences was established by the National Council of Science and Technology on 2\textsuperscript{nd} November, 1983. Its aim is to cooperate and collaborate with: the Kenyan Government, other scientific organizations and the general public in the mobilization of the scientific community in Kenya and the promotion of the scholarly application of all aspects of science and technology for National Development.

Generally, academies of science are either created by Parliament or registered by the Registrar of Societies as nongovernmental organizations. There are merits and demerits of each form of registration. The Parliamentary establishment enables an academy to receive financial and other logistical support from the Government. The registration by Registrar of Societies does not open the doors for substantial government support but such financial assistance may be negotiated with the Government, as the case may be with the Kenyan National Academy of Sciences.

The registration as a non-governmental organization gives independence of thought and action of an academy, while Parliamentary establishment may often be construed by the public as being a tool of the Government and hence its mouthpiece. The cardinal point is to establish an academy that will be impartial and independent in views and thoughts without violating the principles of public responsibility and accountability. The KNAS is structured as shown in Figure 3.
Figure 3: KNAS organization structure

It has the President as the Patron, and has three Trustees. The General Conference is the policy body of the Academy and meets once a year. In the interim period between General Conferences the Governing Council implements policies approved by the General Conference. All moveable and immovable assets are looked after by the Board of Trustees. The Executive Committee undertakes the day to day business of KNAS. In addition it has standing and specialists committees that implement the approved activities.

The major activities of the Academy are publication of the Kenya National Academy Sciences Journal series – Physical Sciences, Biological Sciences and Social and Humanities Sciences; convening of conferences and workshops; holding of public lecture series; and carrying out of research. The Academy collaborates, at the regional level and international level with other academies through organizations like the International Council for Science (ICSU), the Network of African Science Academies (NASAC), Inter-Academy Panel (IAP) and Inter Academy Union, as well as collaboration with the private sector.
1.4 Network of African Science Academies

NASAC was founded in Nairobi in 2001 as an independent forum for African Science Academies to:

♦ provide (individually or jointly) independent evidence-based advice to African governments on scientific issues of critical importance to development; and

♦ prepare and issue common statements on major issues relevant to Africa.

NASAC has become a vehicle for international cooperation with other well established Science Academies in the developed world. Working visits by representatives of NASAC member academies have been made to:

♦ National Academy of Sciences, USA (2003)
♦ Royal Netherlands Academy of Sciences (2006)
♦ Royal Society, United Kingdom (2006)

NASAC has independently or jointly issued the following statements:

♦ Joint statement by academies of G8 countries and NASAC to G8 summit in Scotland in June 2005;
♦ NASAC statement to African Union (AU) summit in Addis Ababa, Ethiopia, in January 2007;
♦ NASAC statement to G8 summit in Germany in June 2007; and
♦ NASAC statement to TICAD and G8 summit in Japan in May and June 2008.

NASAC’s future planned activities include focusing on implementation of NASAC’s Strategic Action Agenda 2007-2009 and assisting in strengthening newly established merit-based science academies and in establishing new ones where they don’t exist. NASAC also plans to support African Science Academies Development Initiative (ASADI) project; support exchange programmes among NASAC members and other academies worldwide; strengthen links with major inter-governmental
organizations like African Union (AU), NEPAD, ADB, ECA, G8; strengthen links with Pan African Networks like Association of African Universities and Pan African Chemistry Network (PACN); and issue statements when appropriate

Due to its planned activities, NASAC’s strategy is worthy of support and has received 1.5 million EUR grant from Dutch Ministry of Foreign Affairs for implementation of its first strategic plan.

Before NASAC was born, science academies in Africa were in static and in sleeping mode. Following the establishment and activities of NASAC, they are slowly waking up. In the coming years, we hope to succeed in waking up the Ethiopian and the African lion especially in a country whose traditional symbol is the roaring lion.

Thank You.
Structure and Functions of the Royal Society

Ms Natalie Day
Royal Society Pfizer African Academies Program, UK

Royal Society Objectives

- Invest in future scientific leaders and in innovation.

  Cutting edge research demands outstanding talent. In aiming to achieve this objective, supporting outstanding talent through UK based fellowships and grants for high quality researchers are central to the Society’s work.

  Influence policymaking with the best scientific advice.

  To influence policymaking, the Society provides independent and objective advice on scientific aspects of public policy and policy for science. Recent issues the Society has been providing such advice on include synthetic biology, ground level ozone and separated plutonium. Details of policy advice the Society has worked on and is currently working on can be found at royalsociety.org/policy.

- Invigorate science and mathematics education.

  In aiming to achieve this, we work closely with key partners to revitalise UK science and mathematics education so that the interest of young people is restored, the needs of the economy are met and people's lives are enriched.

- Increase access to the best science internationally.

  The Society works toward connecting people and ideas from across the globe, to strengthen research and increase interactions between the best scientists and engineers wherever they are.

- Inspire an interest in the joy, wonder and excitement of scientific discovery.

  Aiming to inspire UK citizens and societies beyond, the Society organises a number of events throughout the year for members of the public and scientists including public lectures and a Summer Science
Exhibition. We also offer communication skills and media training courses for scientists. Details of all events organized by the Society can be found on the Society’s website at: royalsociety.org/events.

**Governance & Structure**
The Royal Society (RS) is structured and governed by a:

- Council,
- President and Vice Presidents,
- Advisory Boards,
- Finance and General Purposes Committee,
- Business Meetings,
- Anniversary Meetings, and
- Staff.

The Society generates its income from various sources. The proportion of income is detailed in following table.

<table>
<thead>
<tr>
<th>Source</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parliamentary Grant-in-Aid</td>
<td>60</td>
</tr>
<tr>
<td>Other grants for activities</td>
<td>10</td>
</tr>
<tr>
<td>Fellows' contributions</td>
<td>3</td>
</tr>
<tr>
<td>Donations and legacies</td>
<td>13</td>
</tr>
<tr>
<td>Investment income</td>
<td>5</td>
</tr>
<tr>
<td>Realised Foreign Exchange Gains</td>
<td>1</td>
</tr>
<tr>
<td>Publications and services</td>
<td>8</td>
</tr>
</tbody>
</table>

**The Science Policy Centre**
The RS’s Science Policy Centre’s director is Dr James Wilsdon. The Centre’s objectives are:
**Section 2: Roles and Lessons from Established Academies**

- To strengthen the Society’s reputation as one of the world’s most influential and authoritative sources of scientific advice to policymakers;
- To establish the Society as a global centre of excellence for ‘applied’ science policy;
- To map, analyze and make sense of developments in science policy around the world;
- To scale up the UK, EU and international reach and impact of our Influence work;
- To create a hub for debating new ideas, and connecting scientists to policymakers and the wider public.

**Resources**

Fellows, research fellows & other experts:

Our main resource is the fellows, research fellows and other experts that contribute to our work. Our fellows, research fellows and experts give time freely to the Society’s work because they believe in what we do.

Vice Presidents & Council:

Each Vice President leads on at least one area of policy and the Council must approve proposals for major projects and major reports.

Private and non-specific government funding:

The RS is lucky to have both private and government funding. Our private funding is largest amount. However our block grant from Government is unspecified and can be used according to the Society’s discretion and helps maintain our independence. We occasionally take on contracts on specific issues, from the Government, but maintain our independence in that we control the working group members, methodology, while keeping to ToR (Terms of Reference) from the Government.
Twenty one scientifically trained staff with expertise in policy and other staff:

These scientists link and liaise with policymakers in aiming to influence policy. The policy areas these scientists work on focus on education policy and international policy. There are also additional staff teams of the Society specifically working in different areas such as the media relations team, SiS team, administrative team, etc.

**The Royal Societies Activities**

Producing major reports and statements: These are produced by normally convening a working group, chaired by a Fellow, for the production process.

Preparing and presenting consultation responses: Our Government and parliament tend to issue a lot of consultations that are open to anyone to respond to. The RS uses e-mail groups of experts to respond to these and prepares consultation responses usually within a few weeks time.

Organizing and conducting science policy conferences and workshops: We bring scientists and other experts (often including policymakers) together in workshops to address particular policy issues – normally the summary of these meetings will be published so that they can have a wider impact. Recent examples of conferences and workshops are those we held on ‘Obesity’ and on ‘Climate Change’.

Arranging and convening briefings and private meetings with decision makers: We also have briefing meetings with Ministers and other senior decision makers from the public and private sectors (e.g. Higher Education Minister to discuss our concerns about the funding for science education). We interact with almost all the Government departments. Each year we bring all the CSAs (Civil Services Agency) together for a more general discussion about the use of science in government.

Recommending experts: For example to Government. We are often consulted about the membership of various advisory committees and
boards and about ensuring that the right people are on relevant committees and can thereby have a greater impact.

The other main activity we undertake is engaging the broader public / media with science.

**Current topics of interest**

Some examples of the current issues of interest and being worked on in the Society are:

- Nanotechnologies;
- Energy and climate change;
- Preventing the misuse of life science research;
- Pandemic influenza;
- ICT (Information & Communication Technologies) and health care;
- Food production;
- Science education for a knowledge-based economy;
- Importance of ‘valuing science’; and
- Changing geography of science.

**Challenges the Society Faces**

As any other Academy the RS faces different kinds of challenges. Some of these challenges that we grapple with are:

The issue of independence versus understanding policymakers: There is a need to protect our independence. However to do our job properly we also need to involve contact and consultation with policymakers. Balancing these two is one of the challenges we face.

Following up recommendations: As there are limited resources and very many projects we tend to finish a study on and make recommendations on, it is a challenge to follow up on all the recommendations we have made. We are however trying to increase the opportunities to remind people about the recommendations that we made to them.
The issue of reactive versus proactive work: It is often very easy to be reactive for example to Government consultations, but there is also a need to look ahead to the issues that no one is thinking about yet and be proactive.

Scientific advice in a social and economic context: Policymakers are different from scientist in their thinking because they don’t just have to consider and evaluate the scientific evidences, but they also have to take into account social and economic factors. We think that giving our scientific advice in the wider context will be more useful and therefore more likely to be considered and applied.

Competing voices: There are a lot of competing voices such as think tanks and NGOs that are also trying to give advice to policymakers and the RS must compete also compete with these voices.

**Fellows**

The Society's foundation is its Fellowship, which is made up of the most eminent scientists, engineers and technologists from the UK and the Commonwealth. Each year, the fellows elect 44 new fellows and eight new Foreign Members, chosen for their scientific achievements.

The Fellowship of the Royal Society is composed over 1300 of the most distinguished scientists from the United Kingdom, other Commonwealth countries and the Republic of Ireland.

In 2009, 44 new fellows were elected through a peer review process that culminated in a vote by existing fellows. The main criterion for election as a Fellow is scientific excellence.

Current fellows include Jocelyn Bell Burnell, Richard Dawkins, Stephen Hawking, Harry Kroto, Tim Berners Lee, Paul Nurse and John Sulston. There are currently twenty five Nobel prize winners among the fellows and many other holders of other equally prestigious awards. Previous fellows include Isaac Newton, Christopher Wren, Michael Faraday, Charles Darwin, Ernest Rutherford and Dorothy Hodgkin.
In addition, the Royal Society has 137 Foreign Members who are eminent for their scientific discoveries and attainments. Foreign members are also elected for life. Each year, up to eight Foreign Members are elected through a peer review process that also culminates in a vote by existing fellows. There are currently forty nine Nobel prize winners among the Foreign Members.

Sir Isaac Newton

The Royal Society / Pfizer African Academies Programme
National Academies are key to effective capacity building. Capacity building is vital for economic and social development that is needed in Africa. The RS/Pfizer African Academies Programme is working with Academies in Ghana, Tanzania and Zambia. The Programme is also assisting Ethiopia in the establishment of the EAS.

This particular initiative is being conducted in partnership with Network of African Science Academies, Pfizer and national academies themselves. The key features of the Programme include:

Bottom-up approach,
Connecting to other African academies through NASAC, and
Working with the scientific communities of the nations, to understand how best RS could help and it is tailored to each individual academies needs.

The four academies supported by the Programme are at very different stages, with different strengths and facing different challenges.
This programme will therefore be flexible to fit each academy’s needs with the Royal Society and NASAC working closely with each academy to maximise and tailor the impact of the programme to individual country context, whilst Pfizer’s network of expertise in-country will also act as a conduit for wider civic engagement.

This Programme has only a modest budget, and we are still at the stage of shaping the Programme - we are here this week to meet stakeholders in science and in policy, to understand the wider science, technology and innovation landscape in Ethiopia and to discuss your experiences and how our programme might add most benefit.

In terms of our thoughts on how the Programme will be run, essentially, each academy will be asked to draw on a menu of support packages provided by the Royal Society and NASAC.

This support is linked to the academies strategic objectives, that will help to elevate its profile, develop strategic objectives, enable the academies to be more responsive and proactive, and link with relevant national and international stakeholders.

These support packages will be developed with input from the national academies and from NASAC, and we are keen to facilitate the academies to learn from each other, and from other African organisations, such as are represented here today.

Thank You.
The Academy in Ethiopian Historical Perspective

Prof. Bahru Zewde

Professor of History, Forum for Social Studies, Addis Ababa, Ethiopia

Once a year, movie fans are left mesmerised as those who have made it to the pinnacle of attainment in movie production clasp fervently that iconic statuette of distinction, the Oscar. They watch incredulously as actors, whose eloquence and passion had otherwise kept them glued to their seats, fumble for words and fail to control their emotion. Most of them manage to mumble their gratitude to “the Academy” amidst expressions of indebtedness to friends and colleagues. Not so many people understand what those tearful actors and directors mean by “the Academy”. It is actually a reference to the Academy of Motion Picture Arts and Sciences, an honorary membership organisation that was founded in 1927 by thirty six professionals in the industry but now has a membership of more than six thousand. One of the Academy’s major tasks is the selection of the winners of the much coveted Oscar.

There are indeed few words that have lent themselves to various usages as the Academy. We in Ethiopia have for long associated the term with the elite military establishment in Harar, which produced the cream of the country’s military leadership over so many decades. Later on, the Ethiopian Language Academy, with its epic and ultimately futile struggle to be born, came to epitomise the designation, particularly in learned circles. Nowadays, the term has been trivialised to refer even to kindergartens.

As we are gathered here today to launch the Ethiopian Academy of Sciences, it would be most appropriate to survey the trajectory of the concept of the Academy, in order to place our own strivings within a global perspective. As in so many other things, the institution of the Academy goes back to ancient Greece. The term had its origin in “Akademia”, site of an institution of learning and research founded by the famous Greek philosopher, Plato, in the last quarter of the 4th century BC. Appropriately enough, that site had a sacred grove of olive trees
dedicated to the Greek goddess of wisdom, Athena. Among the other members of the Academy was the other famous Greek philosopher, Aristotle.

The Academy continued to flourish during Roman times, until it was closed by Emperor Justinian in 529 AD, forcing the members of the Academy to seek the protection of the Persian Emperor. That marked the transfer of the patronage of the sciences from the Greco-Roman world to the Islamic world.

The Renaissance, which was made possible partly by the advances registered by Islamic civilization, marked the renaissance of academies in the western world. Italy, the centre of the Renaissance, hosted a number of these academies, notably those located in Florence, Venice, Rome and Naples. In the sixteenth century, there was a veritable mushrooming of academies in Rome, some of them with rather fantastic names, such as academies of “the winegrowers”, “the enlightened”, “the intrepid ones”, “the humorists”, etc. Most of these “academies” were little more than circles of friends grouped around some prominent personalities.

More significant were the fine arts academies that started to emerge in the sixteenth century. Italy once again took the lead with the establishment of the Academy of Fine Arts in 1563. This was followed by the Academy of Painting and Sculpture in Paris in 1648 and the Royal Academy in London in 1768.

Increasingly, too, academies came to be established as national institutions rather than bodies associated with a particular city. Such has been the genesis and trajectory of the Royal Society of London mentioned above, Académie Française (the French Academy), the Royal Swedish Academy of Sciences and the Italian Accademia Nazionale dei Lincei. The last mentioned could literally be translated as the “National Academy of the Lynxes”, so-called with the objective of invoking the sharp vision of the animal that scientific investigation was expected to emulate. It was set up in 1603 and counted the great scientists, Galileo, Pasteur, and Einstein as well as the philosopher Croce among its illustrious members.
Moreover, aside from its role in the promotion of the sciences in Italy, it was to be a major sponsor of Ethiopian studies in the nineteenth and twentieth centuries, as Italy’s interest in the Horn of Africa continued to grow. It has produced such Italian luminaries of Ethiopian studies as Carlo Conti Rossini and Enrico Cerulli, even if their names were to be tainted through their association with the Fascist state, and published a famous journal, Rendiconti della Accademia dei Lincei (“Reports of the Academy of Lincei”), in which a number of articles on Ethiopia have appeared.

Mention should be made here also of the British Academy, which was established by Royal Charter in 1902 and has emerged as the United Kingdom’s national academy for the humanities and social sciences. It has currently about 900 fellows and gets its funding from the Government. Its mission includes the fostering of research in the humanities and social sciences and the promotion of international links between UK and overseas scholars.

Academies were not confined to the Western world, however. China, the seat of an ancient civilisation, had institutions that were equivalent to academies going as far back as the 8th century AD. They were known as shuyuan, which were rather secluded private establishments providing space for quiet scholarly investigation and contemplation. The Chinese emperors gave their blessing to these establishments by bestowing them with calligraphic signboards and books. These academies continued to flourish as independent institutions until the 13th century, when they were downgraded to preparatory schools for the imperial examinations that served to recruit civil servants. They were finally abolished at the end of the 19th century.

Coming to our own continent, the first Academy goes back some half a century. Ghana, which spearheaded the decolonisation process, also set the pace in this sphere with the formal establishment of the Ghana Academy of Learning, as it was known at the time, in November 1959, two years after Ghana had attained its independence. Two years later, it was renamed the Ghana Academy of Sciences. In its early years the Academy
enjoyed government patronage and support. It was actually Kwame Nkrumah, the first Prime Minister of Ghana, who initiated the very idea of its creation and served as its Chairman. In 1966, following the change of government, an appraisal of the Academy took place, which resulted, among other things, in the renaming of the Academy as the Ghana Academy of Arts and Sciences. The addition of the word “Arts” was meant to underscore the fact that the Academy’s mandate included the humanities and fine arts as well as the sciences per se.

The Academy’s relations with government cooled off in subsequent decades. It reached a low point in 1988 following a critical exposé of military regimes in Ghana by one of its fellows, the historian Professor Adu Boahen, at the Academy’s Annual J.B. Danquah lecture. This was a lecture dedicated to the memory of one of the founding fellows of the Academy, who had died in detention in 1965. In more recent years, however, relations have shown a distinct improvement, with the Ghanaian president, J.A Kufuor, for instance hosting the Academy’s Annual Dinner in 2003 and draft legislations being forwarded by Parliament to fellows of the Academy for their inputs.

As the oldest Academy in sub-Saharan Africa, the Ghana Academy of Arts and Sciences is a pioneer organisation that emerging academies in the continent could probably learn a lot from. The Council, which meets at least twice a year and comprises of the principal officers of the Academy (the President, the two Vice-Presidents, the Honorary Secretary and Honorary Treasurer and other elected members), is the main governing body. The General Meeting of fellows serves as the ultimate source of authority and decision, including the election of fellows of the Academy. The more specialized tasks of the Academy are executed by different committees, dealing with prizes and awards, budget, education, publications and programmes.

Christian Ethiopia has a rich and long tradition of education and scholarly investigation. The three tiers of traditional education – zema, qene and tergwame – have been compared to the corresponding levels of
modern education – elementary, secondary and university. Correspondingly, centres of excellence in church education emerged in such celebrated places as Dabra Warq, Dima and Washera. The luminaries of this system of education, the liqawent, established a great reputation as interpreters of the scriptures. Oftentimes, they formed councils – yaliqawent guba’e – which were called upon to adjudicate on the fine points of theology and doctrine. Just as warriors were honoured through the bestowing of titles like ras, dajjazmach, qagnazmach, etc., so were those with high educational attainments, who also put their skills in the service of the state, celebrated with titles like blatta and blattengeta.

In the Islamic tradition, as well, there was a progression from the lower levels of learning the Arabic alphabet to the sophisticated and refined investigation of the Quran and other Islamic texts, with learned commentaries on Islamic law and theology. In this respect, Harar city in the east and Wallo in central Ethiopia were to emerge as famous centres of Islamic learning.

It would perhaps be far-fetched to portray these centres of learning – Christian or Islamic – as precursors of the Academy of Sciences that we are gathered here to launch today. Scientific investigation was not at the core of their concerns. But the sciences broadly understood were not entirely excluded, be it in the form of astronomy or astrology or herbal medicine and surgery.

As the seat of an ancient material and spiritual culture, Ethiopia has had and continues to have a rich reservoir of indigenous knowledge. The highest level was attained in this regard by the writings of the seventeenth century philosopher, Zara Ya’eqob, characterized as they were by a rationalistic approach to faith and a remarkable spirit of religious tolerance. He argued for what was little short of a revolution in Ethiopian Orthodox Christianity. There were also the traditional systems of governance marked by what in today’s parlance would be called participatory democracy, from the Oromo gada system to the sera so
prevalent even today among the Gurage and other peoples of southern Ethiopia.

Another remarkable reservoir of indigenous knowledge pertains to natural resource management. This included the prevalent practice of shifting cultivation and soil and water conservation techniques. With regard to the latter, the record of Woizer Ayelech Fikre of Ankober readily springs to mind. Woizer Ayelech is the winner of many national and international awards for her remarkable achievements in the field of soil and water conservation in one of the most intractable terrains in Ethiopia. To list the various spheres of accumulated indigenous knowledge would be tedious. But one could note in conclusion the attainments in iron smelting and other crafts, such as weaving and tanning.

While Ethiopia does have a rich tradition of indigenous knowledge, we should avoid the danger of romanticising it. For it is equally true that in so many spheres, indigenous technology had tended to remain stuck. The most glaring example of this technological stagnation is the plough, which has a history of thousands of years and yet has remained largely unchanged over the millennia, with serious negative implications for agricultural production. The late Professor Merid Wolde Aregay, in one of his seminal articles, has shown dramatically how long it took Ethiopian warriors to abandon the toe stirrup in favour of the wide stirrup.

Heruy Walda-Sellase
Section 2: Roles and Lessons from Established Academies

There is no better illustration of the difficulties – not to say ostracism – that craftsmen have faced in the execution of their functions than the famous edict of Emperor Menilek in 1908, in which he castigated his people for their attitude towards manual labour. He chided his countrymen for denigrating craftsmen and honest workers by giving them pejorative nicknames. In Europe, on the other hand, such craftsmen are respected and rewarded. The emperor ended his edict by saying that, thenceforth, insulting craftsmen was tantamount to insulting him and all offenders would be sentenced to one year imprisonment.

The early twentieth century, as has now become common knowledge, saw a remarkable spirit of critical investigation and a phenomenal expansion of knowledge. The "Pioneers of Change" wrote incisive essays and elaborate books not only to agitate for social reform but also to advance the frontiers of knowledge. While they may not have written much on the sciences per se, they were certainly prolific in the sphere of the social sciences and the humanities, notably political economy, history and language. It would suffice to cite here by way of illustration the treatises of Gabra-Heywat Baykadagn and Mikael Tasamma on political economy, the historical works of Heruy Walda-Sellase and Tayya Gabra-Mariam and the discourses on language of Gabru Dasta and Afawarq Gabra-Iyyasus.

Gabra-Heywat Baykadagn
One persistent area of concern was the need to reform the Ethiopic syllabary, which was universally deemed to be unnecessarily long and tedious. Various ideas of rationalization were proposed, including the elimination of redundant characters and the introduction of the zero to simplify the Ethiopic numerals above the number nine. The most dramatic demonstration of the redundancy of some of the Ethiopic characters was provided by Kidana Maryam Abarra, who showed that there were seven variations for one sound, ha. The French-educated Makurya Walda-Sellase went even further and advocated the establishment of what in effect was an Academy of Languages to address such concerns.

The idea of such an academy continued to preoccupy some of the intellectuals of the immediate post-Liberation period, as well. The late Dr. Dajjazmach Zewde Gabra-Sellase tells us that the franco-phone Abba Jerome Gabra-Muse, for instance, did strive in this direction. Abba Jerome, who was born in Eritrea, had accompanied the famous French Dakar-Djibouti Mission led by Marcel Griaule during the Ethiopian stretch of its long odyssey.
The Mission, in addition to its obsession with the zar (possession) cult of Gondar, returned to Paris with a massive collection of Ethiopian manuscripts and art objects; the former were deposited at the Bibliothèque Nationale (the French National Library) and the latter adorned the walls of the Musée de l’ Homme (Museum of Mankind) until they were transferred recently to the newly set up Musée du quai Branly on the southern banks of the River Seine. Abba Jerome ended his life as a librarian at the National Library of Ethiopia.

The first serious efforts to set up academies of learning belong to the late imperial period. These efforts had two dimensions: the attempt to set up an Ethiopian Academy of Sciences spearheaded by Dr. Aklilu Lemma—the kind of Academy with which we are concerned today– and the Amharic Language Academy (or “Yamaregna Merha Lesan”, as it was known in Amharic). The latter was actually set up in 1972, two years before the Revolution. In line with the recognition of the multinational character of the Ethiopian polity in the post 74 period, the body was renamed “the Ethiopian Languages Academy” in 1975. But all efforts to set it up as an autonomous chartered body failed to materialize. It was placed under the Ministry of Culture, Sports and Youth Affairs.

Efforts were made to reinforce the idea of an independent Academy of Ethiopian Languages after the change of regime in 1991. A symposium was held in 1995 at which a draft proclamation was even discussed. The draft actually did not envisage an independent body but rather one closely tied with government institutions. The governing Council was to be chaired by the Minister of Culture and Sports and it was to have as its members the Minister of Education, the President of Addis Ababa University, the Commissioner of Science and Technology, representatives of the Church and the Muslim Community, as well as prominent academicians. There was a heated debate at that Symposium on the character of the Academy, with a strong feeling among the audience that the Academy should be filled with “academicians rather than bureaucrats”.

-----------------------------------------

- 47 -
As we now know, the nearly three-decade long struggle to set up an Academy of Ethiopian Languages came to nothing. As a matter of fact, the Academy, which had managed to survive on a modest budget that had been allocated to it by the Government since 1972, was downgraded to a Language Research Centre affiliated to Addis Ababa University. And that remains its status today. Nevertheless, both the Academy and the Centre have managed to conduct and publish a number of important studies on various aspects of Ethiopian languages. These include surveys of different languages, compilation of dictionaries, coining scientific and technical terms, collecting Ge’ez qené and translation from Ge’ez into Amharic of works in philology, law and theology.

In a country like Ethiopia, there is a tendency for the State to appropriate all initiatives. This was particularly the case under the prevalent socialist ethos of the 1970s and 1980s. This is more or less what happened to the idea of the Ethiopian Academy of Sciences. What was initially envisaged as an independent body of academicians ended up as a government agency when the Ethiopian Science and Technology Commission was set up in December 1975 by Proclamation No.62/1975. The Commission was known under that name for much of its history until it was recently renamed “Agency”. Much more recently, it has been elevated to the status of a Ministry, an indication of the high importance that the Government has come to attach to the mandate of the institution.

The 1975 proclamation had stipulated that the Commission was to be an “autonomous public authority under the office of the chairman of the PMAC” (the Derg). But its governance structure, with the preponderance of representatives of the various Ministries in the governing Council, had ensured close Government supervision. This situation has persisted to this day. The 1994 proclamation that redefined the objectives and functions of the Ethiopian Science & Technology Commission did not introduce any significant departure in its governance structure.
This is not to deny the achievements that the Commission has made in the realization of the objectives for which it was initially set up, such as the encouragement of scientific research and the recognition of excellence in science and technology. More recently the Ethiopian Intellectual Property Office has done a commendable job in protecting the patent rights of Ethiopian inventors and producers.

The Commission has also played a commendable role in coordinating the activities of professional associations, including compiling a useful catalogue of these associations. The oldest of these associations was the Ethiopian Teachers’ Association, which was established in 1948; with 120,000 members in 1995, it was also the largest.

Other pioneer associations include the Ethiopian Library and Information Association, the Ethiopian Wildlife and Natural History Society and the Ethiopian Medical Association, which all go back to the 1960s. The 1980s also saw the establishment of some associations, such as the Chemical Society of Ethiopia and the Ethiopian Public Health Association. But, it was in the 1990s that witnessed a dramatic increase in the number of professional associations.

It is the professional associations, with their relative independence and their commitment to professional excellence, that would naturally form the prelude to the Ethiopian Academy of Sciences that we are gathered here to establish today.

For the Academy would constitute the cream of these professional associations. The associations would also hopefully play an important role in helping the young Academy surmount the difficulties that are inevitable in the initial years of establishment.
The great challenge of the Academy will be to maintain its independence while at the same time having a mutually beneficial partnership with Government. It would be difficult to imagine the Academy getting off the ground without government support, financial or otherwise. One is to hope that Government would be ready to lend this support, without, however, infringing on its independence and integrity.

Before I conclude, I would like to thank the Ad-Hoc organizing committee that is behind the Conference. They have done a highly commendable job not only in broaching the idea – long overdue – of an EAS but have also worked with energy and dedication in organising this Conference as well as preparing such an exhaustive dossier of relevant documents. Armed with such documents, we should be in a position to discuss the nature and role of the Academy in all its multiple dimensions.

Thank you for your attention.
Some Thoughts on the Establishment of the Ethiopian Academy of Sciences

Prof. Berhanu M. Abegaz
Professor of Chemistry, University of Botswana, Botswana

Introduction
Director of Ceremonies, Excellencies, invited guests, members of the diplomatic core, representatives of international organizations, fellow scientists, ladies and gentlemen:

It gives me a great pleasure to have the opportunity to address this august gathering in this auspices UN Convention Centre for Africa – only a stone throw away from the Africa Hall, the venue where in 1963 the founding fathers of 32 African states met and signed the charter of what was formerly known as the Organization of African Union (OAU). Today we meet here, in my opinion, not to argue whether we need an Ethiopian Academy of Sciences (EAS), but rather how we should establish it, how it should be structured, and how it can catalyze the socio-economic transformation of our country.

My assumption, that this is so, is based on my knowledge of the wide interchange of ideas that took place, during the last year, among many Ethiopians with Professor Masresha Fetene as the facilitator. Many, from inside the country as well as others from outside, voiced their support for the idea of an academy and a large number of them passionately shared their positive views and constructive suggestions.

As I start writing this text from where I live in Botswana having seen the program of the Conference, and noting that I would be speaking after quite a number of speakers - I felt that those who would speak before me would undoubtedly present the juicy and fascinating history of academies in the world. The ancient one in Baghdad, Plato’s Academy, and then the later academies of Western Europe. So, I decided to leave those topics to the other speakers.
I am also aware that the pervasive Internet and Google, democratizing as they are, would undoubtedly provide the same information to me as it would to others, and so the chances of coming up with the same story, pictures or even jokes are very high indeed.

We should be grateful to the Ad-hoc Committee, particularly Professor Masresha Fetene, for providing us his exhaustive and meticulous survey on the Academy of Sciences – History, Organizational Features, Activities and a Proposal for an Ethiopian Academy of sciences.

Is There a Need for an Ethiopian Academy of Sciences?
We live in a highly technological era. The gap between the rich and poor countries is becoming wider and wider. Dr. Mohammed Hassan, Executive Director of the Academy of the Developing World (TWAS) presented a presentation at a recent meeting in Nairobi that I attended in which he presented slides that show 166 million Africans living in slums; 42% of Africans having no access to safe drinking water, 73% of Africans not having access to electricity, Malaria kills 900,000 Africans each year, 25 million Africans carry HIV. Additionally Africa is very vulnerable to effects of climate change.

I have no figures from Ethiopia, but I believe that these figures are likely to be higher for Ethiopia, knowing where Ethiopia stands in poverty level among other African states.

The only way we can contribute to the lessening of these problems, and get out of the quagmire we are in, to narrow the gap between the haves and the have-nots is through a sustainable use of science-led and technology-based development. We have gone through many developmental models and approaches. Many years ago IDA/World Bank thought that if roads and bridges were built, if dams were constructed, if buildings were erected nations would develop. They (we too!!!) learned at much cost to us that these imposed infrastructures did not bring about development. Then came an era where it was thought that experts were needed to develop us, and they did come (and they were expensive!) we received loans and aid and paid for the experts. This too was not
successful. Now we have come to the knowledge economy- the era of fast communications. Today the only way to develop is through knowledge, scientific knowledge. And much of the science has to be indigenous and that indigenous knowledge must first look deep within the people. We need to interrogate how we do things. How we look into what we have, the knowledge that has sustained us and how we modernize it. The significance and importance of sciences is expressed:

Without science there can be no innovation;
Without innovation there can be no economic growth; and
Without economic growth there can be no better quality of life.

Building capacity in science and technology is a complex process which involves all disciplines – the basic and the applied sciences (engineering, medicine, and agriculture), the social sciences, arts and humanities. Therefore there is a need for having a sound strategy to harness science. Thus an Ethiopian Academy of Sciences can be a major player in the sustainable socio-economic development of Ethiopia.

Is it Timely to Establish an Academy?
There is no question in my mind that it is timely to establish an academy. I have had the opportunity to visit various countries and assess their higher education institutions. I do have teaching and research experience in Africa, several universities in Europe and North America. I can say that I have always been impressed with the stock and quality of Ethiopian professionals. I have great respect and admiration to the many die-hard scientists in various institutions in Ethiopia who are conducting innovative research and publishing articles in international journals, and who are immensely qualified to be members of an Academy.

These individuals work in highly facility-constrained environments and so, one can imagine how much more productive they would have been if they were working in the well endowed institutions of the rich countries. I am impressed also by the dedication and quality of Ethiopian students.
There are also thousands of highly qualified Ethiopians in the Diaspora who could be affiliated to the proposed EAS.

A number of countries that have comparable level of scientific achievements to Ethiopia have already established scientific academies and indeed have benefited from their contributions. Thus, in Africa (excluding North Africa) Cameroon, Ghana, Kenya, Malagasy, Mauritius, Nigeria, Senegal, South Africa, Sudan, Tanzania, Uganda and Zimbabwe have academies.

**What Kind of an Academy?**

Prof. Masresha’s survey clearly indicates that there are three types of Academies:

1. The Learned Society;
2. The Advisor to Society; and
3. The Manager of Research.

Since this will probably be a component of the afternoon presentation by Prof. Masresha, I shall only mention them to contextualize the succeeding sections of my talk. But, of the three models, I would like to see features of the Learned Society as well as the Advisor to Society embraced by the Ethiopian academy of Sciences. This can of course be debated in the discussion following this presentation and/or the post lunch meeting, which I have been asked to chair.

**What would be the Objective of EAS?**

The proposal in the Concept Note lists several objectives, some of the most important ones are:

- Recognize, support and promote excellence;
- Promote the application and roles of science, engineering and technology in human progress;
- Multidisciplinary interaction and collaboration;
- Provide information and secure public support;
- Consensus building to set priorities;
Contact among scholars and world leaders in and outside;
Offer advice to Government and other bodies; and
Promote and advance the generation of knowledge on the history, languages, literature, and traditional culture in Ethiopia.

The above objectives will be achieved through a whole range of activities which include:

- Conferences, workshops and symposia;
- Elect outstanding academicians to membership;
- Prioritize science agenda and table them at various fora – local and international; and
- Award grants, offer scholarships, prizes and medals and publish journals.

Most of these objectives and activities are generic for any academy, and therefore, represent global norms and trends. I believe, however, that the Ethiopian Academy has to base its objectives, activities and actions on the local realities. Some of these realities are:

Bright minds: many Ethiopian bright minds struggle on their own and are therefore attracted to go overseas – there is a need to stabilize these bright minds at home;
There are probably more highly qualified Ethiopians in every discipline out of the country than within;
The issue of science education: reaching the young, public appreciation of science, cultivating entrepreneurship, and developing the private sector need to be addressed;
Ethiopian scientists/academicians are not well connected to international cooperation;
Ethiopia is one of the weakest in terms of internet access; and
Top-down approaches are more common in developing policies in Ethiopia.
Noting these realities will require EAS to have a wider agenda. Some of the key points EAS will require to address are:

Linking scientific research to traditional knowledge.

What can an EAS do in a country which has a rich culture and history?

Addressing gender-equity issues is very critical.

Constructive dialogue and debate between academicians and politicians in discussions that are central to socio-economic development of the country, such as:

- Considering the case of the Millennium Development Goals (MDGs) in September 2000; and
- Employing a social science perspective, to emphasize the need for a deeper inquiry into developmental issues.

Linking Policy for science and science for policy.

Membership to Academy of Sciences

*Academy vs professional association:*  
It is important to remember that an Academy of Science is an honorary society. It is in this regard that an academy differs from a professional association. A further distinctive feature of the academy is that it is multidisciplinary. I have some familiarity with academy membership because I work in the membership committee of the Academy of the Developing World (TWAS) and also have some experience in the Committee for Scientific Planning and Research (CSPR) of ICSU (International Council for Science). I have also, in preparation for this lecture, read a fair amount about the membership of various academies.

*Founding members:*  
In establishing an academy one needs to be cognizant of the fact that there will be the founding members to establish, launch and inaugurate the academy based upon an agreed set of statutes. The main purpose of our Conference today is to chart for the process that would lead to the establishment of an academy by founding members. I believe that the
afternoon session will follow the recommendations of the organizing committee in this regard.

It may be relevant and useful to note the set of events that took place in South Africa to form an academy which has become the National Academy. The name is the Academy of Sciences of South Africa (ASSAf). ASSAf was established by its founding members in the mid nineties. Subsequently in 2001, through the efforts of the Academy the South African Parliament passed the South African Academy act which made the ASSAf the official national academy, thus leading to some sort of subvention from the state reserves and giving it recognition by Government. This gave the academy the authority to represent the country in any international forum and among the global academies.

Other members:
There are also various types of membership designations. For the purpose of our discussion we can recognize them as three groups:

1. One group as ordinary, regular, or active members and fellows, and it is this group that will be focused upon.
2. The second group consists of those members referred to as: corresponding, associate, affiliate.
3. The third is foreign, honorary, patron, etc.

Many academies use any one of the first group to refer to what I want to call “fellows” of an academy. Some of the common procedures used to designate “fellows” of an academy are described below.

In most cases one cannot apply to be a member. Other members have to nominate that person – one would be a proposer and the other one seconds the nomination. The nomination form would highlight the outstanding achievements of the candidate, the CV would be attached and a list of the most important publications by the candidate. This is then reviewed by experts in the field and the results are submitted to say- the Membership Committee of the Academy.
Academy members will then vote and some defined majority would have to say yes for any candidate to be a member. There are some variations to this procedure. It is also noteworthy that the level of achievement that is expected of a member is so high that most people may age (and die!!) before they reach that level. In other academies (e.g. Sweden) members are nominated when they turn 65. In some academies the total membership is restricted and new nominations are made when the old ones retire.

On the other extreme, the Mexican Academy receives direct application for membership through its membership commission by any scientist who has published at least ten articles in peer-reviewed international journals. Expulsion from membership is also possible if a member fails to publish at least one paper in three years. Likewise in Uganda they have a type of membership called Ordinary member which is non-honorary, and embraces those who support, promote and subscribe to the aims and objectives of the academy.

I expect this topic to be the subject of a healthy and lively discussion as we face the reality that exists in our midst and at the while we are attempting to define the attributes of those that should be members of EAS, those that serve as role models for the young, those that should represent our scientists among others on global fora, and those that should be qualified enough to serve the interests of the Ethiopian people.

Getting elected to EAS must be both an honour and an obligation – an honour because of the high level of recognition that it entails, and an obligation because it should represent a commitment to serve individually as well as collectively, to make decisions based on sound knowledge of the field and taking into consideration the milieu that will be affected by the outcome. Members should, as individuals or as a body corporate, have the ability to apply scholarly scrutiny and collective insight at their disposal.
Financial and Governance Issues
Establishing an academy is like having a baby and, hence, it is necessary to give it the necessary nourishment, care and guidance so that it quickly matures to take care of itself and be able to make critical contributions in nation building and poverty alleviation. Reading about some of the successful academies reveals that the critical features that have brought about success of academies are:

1. The quality, commitment, and resilience of the members; and
2. Support from Government without political interference.

A write up about probably the first academy in Western Europe – the Academy of the Lynxes – in which Galelio Galeli was a member there are fascinating accounts of how Galelio benefited from the patronage of the Prince. In many countries there is a regular subvention approved by Parliament to academies - this is the case for the Royal Swedish Academy of Sciences. Malaysia launched its academy in 1994 with a $5 million endowment fund approved by the Malaysian Parliament.

TWAS is generously funded by the Italian Government. Many academies have income generating institutions like museums, parks, etc. The Moldovan Government enters into a partnership agreement with the national academy in four-year cycles.

It is a well known fact that those who provide money often end up controlling the recipients. In the case of academies, it is amply demonstrated that academies flourish and perform exceedingly well in those countries where there is support and understanding, without restricting the independence and autonomy of the academy.

Excellent examples of academies in the south are those in Brazil, Malaysia, South Africa, among others. A fine example of government support to an Academy in Africa is the million dollar support given by the Nigerian Government to the African Academy of Sciences.

My desire for the Ethiopian Academy of Sciences is a generous support in the form of an endowment fund or even a good piece of real estate that
would allow the Academy to have a regular income from the interest of the endowment fund or from property and facilities that are rented out to generate income for the academy. Such income would cover the operational and administrative costs of the academy while other funds can be raised through projects that the Academy executes through its membership.

As regards Governance, I have taken note the recommended governance structure in the papers circulated from the IAP which recommends a President, Vice President, Secretary and Treasurer as Executive Officers, with three regular elected members.

The Academy will also have a top administrative officer (Executive Director) to run the office, assisted by a secretariat. I do not wish to say much more on this structure, but am quite familiar with it as I have seen it closely in the CSPR committee of ICSU as well as in TWAS.

Regional and Global Academies
In this section I wish to make brief references to organizations such as the Academy of the Developing World (TWAS), International Council for Science (ICSU), the Inter-Academy Panel (IAP) and the African Academy of Science. My confidence to speak about some of these institutions stems from varying levels of interaction with them (quite intense with the first two and less so for the last two). Before I begin, though, I must mention the Royal Society, of whom I know relatively very little, but is represented here today by two of its officials. I understand that the Royal Society is working with various academies in Africa and particularly so, with the young ones.

*The International Council for Science (ICSU)*
Is the pinnacle organization of all the scientific unions as well as social sciences. The ICSU secretariat is hosted by the Government of France. It is led by an Executive Board and assisted by a Committee on Scientific Planning and Research (CSPR). The most relevant activity of our meeting
today would be so that ICSU undertakes actions to strengthen the wellbeing and effectiveness of science and scientists.

**The Academy of the Developing World (TWAS)**

Is considered as a leading voice in discussions on the advancement of science in the South (developing world) and a major player in efforts to promote South–South and South–North cooperation on issues related to science-based sustainable development. It also assists in the establishment of young academies in the developing world. Furthermore it has very effective programs such as the Small grants programs for young scientists. It also has activities that are intended to make young scientists aware of the best science in the world, and challenge these scientists to reach greater heights of achievement. TWAS has South-South fellowships tenable in Brazil, China and India.

**The Inter-Academy Panel (IAP)**

Is an organization that was established in 1993 and has 100 academies as members. These include 12 from Africa, 7 from North Africa and the Middle East, two from North America, 11 in Central-South America and the Caribbean, 10 from East Asia and the Pacific, 8 from South Asia and 46 from Europe and Central Asia. One of the objectives of IAP is to bring together leading natural and social scientists from around the world to advise governments and international organizations on issues of international concern. It currently has four major programs:

1. capacity-building for young academies;
2. health of mother and children in developing countries;
3. science and education; and
4. science and the media.

**Conclusions**

This Conference may very well be the cornerstone in the history and future development of our country. It seems to me that the advent of the new knowledge economy has ushered a new era that has made us
recognize the role of national academies. Academies provide excellent platforms to get the best minds to work on the needs of the country.

The multidisciplinary nature of the academy offers the opportunity not only to perform a deep enquiry within a subject but also a collective view that is holistic. In conclusion I wish to end my presentation with the following bullets:

I am of the opinion that of the three models that have been described an Academy that combines The Learned Society-Advisor to Society features may best serve our country.

We should institute policies and procedures that ensure the most qualified in their respective fields become members, because becoming a member is both an honour as well as a responsibility.

A good working relationship with Government is critical. But this is a very delicate matter and should be handled with the utmost care to ensure that the Academy works closely with Government but is also able to maintain its honesty, impartiality and professional integrity.

It is also important to realize that there are many international institutions that are ready to assist.

Finally, I wish to acknowledge my gratitude to the organizing committee for inviting me to present my thoughts about the establishment of an Ethiopian Academy of Sciences. I also acknowledge the assistance of the Horn of Africa Regional Environmental Centre and Network for a travel grant.

Thank You.
Section 3

Proposal for the Establishment of an Ethiopian Academy of Sciences

The Concept Note for Ethiopian Academy of Sciences

Prof. Masresha Fetene

Member of Ad-hoc Committee, Science Faculty, Addis Ababa University, Ethiopia

Ladies and Gentleman

We have heard a lot about what academies are and what they undertake. I would like to highlight some features of the proposed Ethiopian Academy of Sciences, as outlined by the Ad hoc Committee, for the purpose of initiating the discussion.

My presentation will be based on the Concept Note, circulated to you before nearly three months. The same proposal is in the Blue Booklet which we tried to distribute before the convening of this Conference.

I would like to address the salient features of the proposal by trying to answer some twelve questions.

The first question is what kind of an Academy we would like to establish. The Academy we would like to establish is an independent merit-based Academy committed to assisting the National Development Agenda.

Contributing to the development agenda is the foremost obligation of every citizen, learned or otherwise. We would like to build an Academy where members meet to deliberate freely and forward their views, evidence and knowledge-based, honestly and honourably.
The credibility of an Academy as an institution stems from the credibility of its members. This comes when members are gathered purely by their merits. As you well know, such people, before they involve themselves into an association, want to ensure that they are independent both in the day to day running of their affairs as well as in the governance of their institutions. It is gratifying to note that, in the discussions we had with scholars, institution heads and government officials, this was generally understood.

The second question is what broad disciplines will the Academy bracket. We believe the Academy should be constituted by members drawn from all the major categories of disciplines.

Broadly these are Natural Sciences, Engineering Sciences, Health Sciences, Agricultural Sciences, and Social Sciences, Humanities, Arts and Letters.

The knowledge-society we aspire to live in cannot be built only on the basis of Pure and Applied Sciences. The intricate socio-economic debates and problems of a developing country require the finest minds from the Social Sciences, Humanities, Arts and Letters as well as from the other disciplines. It is when ideas and views are evaluated and distilled by panels with disciplinary inputs that they have a lasting merit.

Additional benefits of bracketing all the major disciplines, at a time when Academy-stature scholars in every discipline are not counted in tens, makes the Academy stronger. It is for these and other reasons that we opt for an Academy of Sciences. Nevertheless, in due course, we believe that each of the disciplines will form academies in their own right.
The third question is what should the name of the Academy be?

Following the naming of several Academies worldwide we had proposed to call the Academy- Ethiopian Academy of Sciences (EAS). But then there came a suggestion to name it Ethiopian Academy of Arts and Sciences (EAAS) primarily to indicate the broad base.

Nevertheless, some people argued that this name may appear to exclude some other disciplines. There was also the argument that, since science is defined less by the content, as with the method of acquiring knowledge, the term the Ethiopian Academy of Sciences should address all disciplines. And thus we went back to EAS.

However, there is also the suggestion to call it Ethiopian National Academy of Sciences or National Academy of Science of Ethiopia. An academy becomes a national academy with an Act of Government. Thus these two names with National included in them may have to wait. We believe this audience should shed light on this.

The next two set of questions are on the role and mission of the proposed Academy.

We believe the role of the Academy should be:

- To assist in building a knowledge based society, fostering adaptation of new knowledge for economic growth, and improvement of the quality of life in Ethiopia including preservation of the environmental, historical, and cultural heritage of the country.

And the mission of the Academy should be:

- To empower curiosity, discovery and innovation by stimulating interest in sciences and technology, promote and support
research, improve science education, disseminate scientific knowledge, and recognize and publicize high levels of achievement in attaining these objectives.

The objectives of the Academy are presented corresponding to the two roles of the Academy, that is a as a learned society and as an advisor to society (two of the three archetypes of academies).

As a learned society we envisage EAS:

♦ To provide an independent forum through which scientists/scholars can exchange ideas, knowledge and experiences;

♦ To promote and foster the growth of the scientific community; Encouraging, stimulating, designing and coordinating interdisciplinary and trans-disciplinary scientific research and development;

♦ To advocate for proper, safe and ethical exploitation of science and technology in national development;

♦ To serve as an instrument of dialogue between government and the scientific community and provide advice to government on aspects of science, engineering and technology and the social and behavioural sciences that are important for national development;

♦ To serve as a consensus building platform for setting priorities and approaches on problems of science, education, development and research; and

♦ To promote a culture of science, national awareness, understanding and appreciation of the role of the sciences in human progress.
What kind of activities would the Academy undertake?

We believe the Academy could:

♦ Present a platform for discussion and dialogue to all scholars from Ethiopia and abroad through organizing conferences, workshops and symposia on themes and topics that fall within its objectives;
♦ Publish journals, other periodicals and books, both for the community of scholars/scientists and for the public at large;
♦ Carry out contests of research works and award prizes for scientific research works;
♦ Further cooperate with universities and other research institutions and contribute to training of the new generations of scientists;
♦ Counsel the Government, the Parliament and state institutions; and participate in drafting the legal acts relating to research and development activities;
♦ Represent and promote the interests of science in Ethiopia in national, regional and international organizations and decision making bodies;

The next question is who should be the Founding Members?

We believe, membership criteria should constitute the single most important factor that determines the future viability and credibility of an Academy.

Thus we will need to ensure that, so far as possible, scholars who have made outstanding contribution to their respective fields should be selected as Founding Members.
The same criteria will also hold for future members of the Academy, who will be nominated and elected by the Founding Members, once the latter are constituted.

In comparison the criteria and selection of future members should be easier, once that of Founding Members is established. Therefore the most important question is how to select the Founding Members. I suggest this should be deliberated at length by participants of this Conference.

An issue related to this is the role and involvement of the thousands of scientists and scholars in the Diaspora, a good number of whom are members of prestigious academies.

There will be a need to harness the knowledge and experience of the intellectuals in the Diaspora, establishing ties with academic institutions abroad to funnel material and financial resources for building a strong Academy. Perhaps a special membership category may be in order for these scientists/scholars in the Diaspora.

\textbf{The issue of financial resources is the next big question.}

It is expected that the Academy will acquire some resources from:

- Grants, donations, gifts, bequests, trust funds and prizes from national or international entities, public or private, or from individuals;
- Fees from Academy members or fees acquired for any services rendered.
- Budgetary support from Government (annual parliamentary grant-in-aid) or establishment of endowment fund.

Support from Government is expected to be the most important source of income for an Academy of Sciences.
Almost all Academies we have heard and read about get support from their respective governments in one form or another. No academy will stand on its own feet unless supported by government in one form or another.

We believe, any government interested in engaging the scientific community, particularly a government of a developing country, getting in full gear to advance science and technology, will want to support a budding Academy.

In this regard, it is heartening to mention that Members of the Ad-hoc Committee were happy to learn as much on this from His Excellency, the Minister of Science and Technology, Ato Juneydi Saddo in the last meeting held with him.

And finally what is the Road Map?

The Road Map to realize the formation of EAS, in our opinion, is to establish a National Organizing Committee (which someone here in the audience also called the EAS Launching Board).

The National Organizing Committee is expected to undertake the following tasks:

- Draft the Statutes of the Academy and an enabling legislation;
- Initiate the process to get an Act of Parliament so that the legislation gets adopted by the Parliament and/or Government to recognize the Academy and its Statutes as a public organization;
- Develop criteria and procedures for selecting the Founding Members;
- Develop a strategic plan and proposals for the operation of EAS for the short and medium term;
- Generate financial resources for the activities of the Academy; and
- Prepare and call the Launching Meeting of the Ethiopian Academy of Sciences.

We all look forward to that.

Thank you.
Section 4

General Discussion

Roles and Experiences of Academies

Chairperson: Prof. Berhanu Abegaz Molla
Rapporteurs: Dr Zelalem Leyew and Dr Solomon Zewdie

Comment (Dr Alex Tindimubona, Director for Science and Technology Section of ECA): congratulated the Ad-hoc Committee for convening the National Conference aiming at launching the Ethiopian Academy of Sciences (henceforth EAS). He expressed his good wishes for the establishment of the envisaged Academy. On behalf of ECA and on his own behalf, the Director invited all participants of the Conference to take part in a Continental Conference on the same issue to be held here in Addis in April, 2009.

Question (Ato Demis Chanyalew, Private Consultant): underlined the need to know the similarities and differences between ‘Association’, ‘Academy’ and ‘think-tank’ groups clearly. He then raised the following questions:

- How would the Academy continue with overall efficiency after its establishment?
- How can the Academy contribute towards answering the needs of the country?
- How would it be independent from the influence of the Government?

Response (Prof. Berhanu Abegaz, University of Botswana and Ethiopia): the envisaged academy should try to include and bring together the best minds with high reputation in quality of research and awareness in local realities. The tension between government agencies and the
envisaged academy seems to be obvious and hence needs serious concern and attention to alleviate the tension.

**Comment** (Dr. Yonas Geda, Psychiatrist, USA): as a former student of the Faculty of Medicine of AAU and currently a psychiatrist in Minnesota (USA), he stressed the importance of establishing the Ethiopian Academy of Sciences and expressed his readiness to share his experiences at home and abroad.

He also mentioned the urgent need of inspiring the young generation who determine the promotion of science and technology in the years to come. Inspiration through publications of high standard research outcomes in quality and quantity would contribute a great deal in this regard. The physician underlined the potential contribution of the Diaspora and hence informed participants of the Conference to invite Ethiopian colleagues abroad to put their hands together for the realization of the Academy.

**Comment & Question** (Dr. Tewabech Bishaw, Director of Hibret Makel Lelemat/NGO): started by emphasising the idea of considering the substantial contribution of the Diaspora for the realization of the establishment of the Academy and thereafter for the continued existence and the promotion of science and technology in Ethiopia. She then asked the following questions:

- How can we ensure that the envisaged academy will take care of public and problem-oriented issues as a focus area?
- How can we ensure the smooth working relationship between the academy and Government agencies?
- How can we realize the collaboration among the academy, the Government and the public at large?
Response (Prof. Berhanu Abegaz, University of Botswana and Ethiopia): elaborated on his response on the previous questions raised by Ato Demis Chanyalew, in that serious attention, planning and coordination would be required to work collaboratively with the Government.

Comment (Prof. Demisse Habte, AAU/retired): thanked the Ad-hoc Committee for working hard to organize the Conference. He, as a former member of the Faculty of Medicine, mentioned the need to focus on health issues that have so far been underemphasized in the country. He also raised the need to think about financial resources ahead, so that EAS will sustain its existence and yield glamorous fruits.

Comment (Dr. Yemane Teklay, MoST): suggested that it would be good to think of a kind of model to keep the relationship between the envisaged academy and the Government agencies, especially those which are involved in issues related to science and technology like the Ministry of Science and Technology.

Question (Dr. Paulos Kene’a, AAU/retired) asked:
- How are the Royal Society and the British Government related?

Response (Ms. Natalie Day, Royal Society UK): said that there are appropriate strings that connect the Royal Society and the Parliament such as funding and identifying the priority areas to be researched. She mentioned her experience on the possible huge contributions of the Diaspora whose connection, however, is difficult to make.

Comment & Question (Prof. Beyene Petros, AAU): mentioned the past attempts to launch an academy in Ethiopia and expressed his optimistic opinion on the compatibility of missions and visions of the proposed EAS and Government agencies such as the Ministry of Science and Technology. He also expressed his concerns about the
bureaucratic procedures of reputable journals for publication and pointed out his high expectation from the EAS to alleviate problems of accessibility to such journals and enhance fertile conditions for high standard journals to be introduced locally. He then asked the following question:

- What criteria should be set to recruit the Founding Members of EAS?

**Response** (Prof. Bahru Zewde, Forum for Social Studies): said that the academy should be more than a think-tank in terms of depth, quality and quantity of its contributions. He stressed the need to clearly and openly discuss issues related to age of the founding members and endowments that can potentially be good resources for sustainable income. Like the other panellists, he also stressed the need for addressing the immediate needs of the public and stakeholders.

**Comment & Question** (Prof. Tsige Gebre-Mariam, AAU): mentioned the expanding graduate program of AAU (its PhD program in particular) as potential contributor for feeding the envisaged EAS with cutting edge research. He then asked the following question:

- How can we awaken the ‘sleeping cat’ (based on the symbolic presentation of Prof. Wandiga) and bring it into vibrant life?

**Response** (Prof. Shem Wandinga, University of Nairobi, Kenya): Academics in Africa have been like sleeping cats for so long. Fortunately, the sleeping cats are now waking up and ready to act and shoulder responsibilities. He sees that the commitments academics are showing in Africa today will make them not only active cats but strong lion cubs. One of the commitments goes to the private sector which of course benefits from the contribution of science academies. In return, from the private sector, academies will get funds for carrying out their overall activities.
One of the bridges that can best connect the Academy to the private sector is the relevance of its works to the needs of the sector and the public at large. The EAS should therefore be involved in different sectors of development and cutting edge areas of research. Equally important is the resource that science academies can obtain from the Government. Financial resource, for instance, can flow from the Government either through negotiations or through inspiring them by the quality and quantity of relevant and problem-oriented works or through both negotiation and inspiration.

If academies are committed to providing good services to the public, government and stakeholders, it is ostensibly clear that even individuals can contribute to avail money shortages for the smooth running of the Academy.

Proposal for the Ethiopian Academy of Sciences

Chairperson: Prof. Berhanu Abegaz Molla
Rapporteurs: Dr Zelalem Leyew and Dr Solomon Zewdie

Comment: The current crisis on the quality of education in higher learning institutions was mentioned. The newly establishing EAS should strive to improve the quality of education in higher learning institutions. It was also noted that the Academy should assist the graduate program at AAU. The EAS, according the commentator, can play a significant advocacy role. The other task the EAS would be able to assist in is efforts exerted to stop the brain-drain, one of the major problems in developing countries like Ethiopia. The EAS is expected to come up with the possible mechanisms of retaining such skilled manpower which undoubtedly plays a central role in advancing science and technology.
Comment (Prof. Andreas Eshete, AAU): in order to create comprehensive knowledge in its real sense, the inclusion of Humanities in the proposed EAS is mandatory. For the accomplishment of the EAS with reputation, it is not only the Diaspora that can contribute a lot but also Ethiopia’s expatriates who are engaged in Ethiopian studies from different perspectives.

Comment (Prof. Mesfin Abebe): suggested the vision, mission and objectives of the proposal to be revisited and incorporate points that are worth incorporating. He also suggested that since the missions and visions of the EAS is shared by the Government and hence, there will not be any fear of tension or antagonism between the Academy and the Government.

Comment (Dr. Amare Asgedom, Addis Ababa University): recommended adding the values of the academy independently beyond fragments of such essential points in the objectives section.

Comment (Dr. Bekure Woldesemait, AAU): commented on the nomenclature and suggested that the name of the Academy should be clearly coined in the sense that it encompasses social sciences, humanities and arts. The name of the academy, once clearly and carefully bestowed, would contribute a great deal to develop a feeling of belongingness and overall concern about the Academy.

Comment (Ato Asrat Bulbula, Midroc): commented on the significance and importance of the establishment of and the continued existence of the Academy and he mentioned the recently founded Ministry of Science and Technology had already proclaimed to establish such an academy as one of its mandates under its umbrella. He further suggested to take care of the originality of work, avoid repetitions and contradictions and above all to mainly focus on environment-related problems.
**Comment** (Ato Demis Chanyalew, Private consultant): suggested the name to be Ethiopian National Academy of Sciences, which in his view was better than other names including EAS.

**Comment & Question** (Dr. Hailu Ayele, AAU): thanked the Ad-hoc Committee for its great efforts to organize the National Conference which is believed to be extremely essential for the foundation of the Academy. He then forwarded his question on the various possible perceptions of a science academy.

- Would EAS be perceived as a club, consolidator, gap-filler or an institution with a new structure?
- What mechanisms could be applied and documents consulted to establish the Academy which would affect in one way or another the degree of independence that the Academy would enjoy after establishment?

**Response** (Prof. Masresha Fetene, member of Ad-hoc Committee, AAU): concerning the naming, he tried to make it clear that the generic component “Sciences” in the name “Ethiopian Academy of Sciences” includes natural sciences, social sciences and humanities and therefore suffices well to be an appropriate name. As a result, there will be no need to mention every discipline in the name of the Academy, which should be transparent, short and precise. However, he mentioned that the name “Ethiopian National Academy of Sciences” will be considered as a possible alternative. Regarding the missions and visions of the proposed Academy, he said that both will be revisited.

Prof. Masresha appreciated the suggestion that social sciences and humanities should be well represented in the structure of the proposed academy. In its duties and responsibilities, the Academy will take care of original issues of high standard, not replicate works conducted by other institutions. He finally tried to bring to the attention of the meeting the reservations of the Minister, H.E. Ato...
Juneydi Saddo, on the inclusion of social sciences and humanities in the academy.

**Comment** (Dr. Taye Bizuneh, Private Consultant): emphasised on the two crucial issues - independence, nomenclature and scope. Regarding its nomenclature and scope, he recommended that EAS should try to revisit its name and widen its horizon. To this effect, it should clearly show the inclusion of humanities and social sciences in its name and structure.

**Comment** (Dr. Tewabech Bishaw, Director of Director of Hibret Makel Lelemat/NGO): also commented that the name of the academy should include Arts and Sciences. She also mentioned that the academy should focus on merit-based agenda and should be left open to entertain such agenda.

**Comment** (Prof. Yohannes Kinfu, Midroc): additionally recommended Arts to be included in the name of the Academy and added that the objectives and missions should be wider and inclusive in scope.

**Comment** (Dr. Solomon Yirga, AAU and Prof. Mesfin Abebe, Private): both said the name EAS suggested by the Ad-hoc Committee is fine and indicated that sciences represents the social sciences and humanities as well.

**Comment** (Ato Aboneh Ashagre, AAU): proposed the name “Ethiopian Academy of Sciences and Culture” to be considered.

**Comment** (Prof. Andreas Eshete, AAU): suggested that letters/ arts should be represented in the naming and structure of the Academy. He also said that, in addition to the Diaspora which can of course play an important role, indigenous celebrities are also worth considering to be part of the proposed Academy.
**Section 4: General Discussion**

**Comment** (Dr. Yonas Geda, MAYO Clinic College of Medicine): suggested that the objectives of the Academy should explicitly state the main issues that make the Academy different from other institutions and associations and should state its independence.

**Comment** (Prof. Legesse Negash, AAU): said the general objectives should be stronger and more elaborate. He also mentioned that the activities should be framed in specific time.

**Comment** (Dr. Yeraswork Admasse, AAU): said that there are biases to natural sciences in the document. He added that there is a need to set standards as they are not clearly shown in the activities and objectives section of the document (Blue Book).

**Comment** (Dr. Fekade Azeze, AAU): suggested that, indigenous knowledge system needs attention, in the document (Blue Book) and future activities of the Academy.

**Comment & Question** (Prof. Jemal Abdelkadir, AAU/retired): asked when exactly the naming debate would get a final decision.

- He also asked who the founding members would be and how many these would be.

He then recommended the Ad-hoc Committee members to continue active as National Organizing Committee members and the numbers of the founding members to be 10.

**Response** (Prof. Masresha Fetene): The National Organizing Committee would be responsible for deciding on the “who” and “how many” of the founding members. But the naming of the Academy will be decided by the founding members when they approve the Statutes of the Academy.
Comment (Prof. Mesfin Abebe, Science advisor to the Deputy Prime Minister): supporting the suggestion made by Prof. Andreas, said that well-respected individuals by the public like W/ro Abebech Gobena could be included in the list of founding members.

Comment (Prof. Shibru Tedla, AAU/retired): pointed out that traditional academics deserve to be included as founding members.

Comment (Dr. Dejene Aredo, AAU): mentioned that the Academy should not leave aside cultural aspects and the scientific and indigenous knowledge should be perceived as complementing each other.
Section 5

Deliberations and Election of National Organizing Committee

Chairperson: Prof. Shibru Tedla
Rapporteures: Dr Zelalem Leyew and Dr Solomon Zewdie

Prof. Shibru Tedla, Chairperson of the session read out the responsibilities and terms of reference of the National Organizing Committee (NOC) to the participants. He mentioned the need to consider members from various disciplines and gave more emphasis to academic merits. The ToR for the NOC is presented in Annex 1.

Dr. Gezahegn Yirgu, member of Ad-hoc Committee reiterated that the emphasis should be given to high standard research and publication activities, willingness and multi-disciplinary interest as criteria for the election of members of the NOC. He said top minds and scholars should be nominated and elected.

The Ad-hoc Committee presented its own recommendations on the election of the NOC. It stated that following a rigorous evaluation of the merits of potential individuals, it had finally come up with a list of individuals for membership into NOC. The recommendations had two parts:

1. It suggested that two members of the Ad-hoc Committee would be given automatic membership in to the NOC; and
2. Presented another 5 potential NOC members.

The participants discussed at length on the total number of NOC members, the fair representation of the social sciences and the inclusion of a representative from the Ministry of Science and Technology (MoST). Following these discussions, the participants accepted in full, the recommendation presented by the Ad-hoc Committee and agreed to increase the number of NOC members from five to seven (one additional member from the social sciences and one representative the MoST).
As per the discussions, deliberations and recommendations, the following seven individuals were elected as members of the National Organizing Committee for the launching of the Ethiopian Academy of Sciences.

1. Prof. Alemayehu Teferra  Engineering Sciences
2. Prof. Bahru Zewde  Social Sciences, Humanities and Arts
3. Prof. Berhanu Abegaz  Natural Sciences
4. Dr. Berhane Asfaw  Natural Sciences
5. Dr. Berhane Gebrekidan  Agricultural Sciences
6. Prof. Masresha Fetene  Natural Sciences
7. Prof. Redda Tekle Haimanot  Health Sciences

It was agreed that the NOC will take the responsibility of electing two additional members (one from social sciences and a member from the MoST) as per the decision of the Conference.

This concluded the Conference.
Annex
Annex 1: Terms of Reference for The National Organizing committee of the Ethiopian Academy of Sciences

1. Background

The initial idea of establishing/founding the Ethiopian Academy of Sciences (EAS) came from a group of academicians and researchers. The idea was concretized through drafting a concept note (CN) that was circulated widely among concerned professionals both within and outside the country. This was followed by forming a seven-man Ad Hoc Committee to further develop the draft CN and work out a follow up process to actualize the concept. After several months of deliberations, the Ad-hoc Committee decided that a two-stage approach would be necessary in establishing the EAS:

- The first stage would be organization of a national conference, the participants of which include invited academicians, researchers and development workers as well as government officials from various public and private organizations. The objectives of the conference include:
  1. Discussion of the contents and approaches in the CN and including making improvements where necessary
  2. Election of members of the NOC

- The second stage in the process is expected to result in the founding of EAS by electing Founding Members through the second national conference which will be called for the purpose. The whole process of organizing the second conference will be undertaken by the NOC indicated above. The objective as well as roles and responsibilities of the NOC are indicated below.

2. Objective

The primary objective of the NOC is to enlist the support and active participation of Ethiopian intellectuals as well as public and private institutions in the country for the establishment and functioning of the EAS.
3. Composition of the NOC

The NOC would be a multi-disciplinary and multi-institutional entity. It is proposed that it should have seven (7) members and all must be elected on the basis of professional merit.

4. Duties and Responsibilities of NOC

The main activities to be undertaken by the NOC will include the following:

1. Establish a secretariat with minimal employed staff and necessary office equipment and furniture which could be transferred to the EAS upon establishment.

2. Establish its internal organization by electing its officers (Chairperson and Secretary) and formulating working procedures.

3. Identify key stakeholders and undertake intensive promotional work.

4. Define membership (classes and numbers) to EAS and develop criteria and procedures for electing Founding Members.

5. In consultation with relevant individuals/institutions and based on the criteria developed, prepare a list of potential candidates that qualify as Founding Members to be submitted for consideration by conference participants.

6. In consultation with relevant individuals and institutions with previous experience on the subject, prepare draft Statute (Memorandum of Association and Bylaws) of the Academy.

7. Prepare a draft strategic plan and proposals for the operation of EAS for the short and medium term for consideration of the executive body of EAS.

8. Fix the date, venue and prepare the agenda for the national conference.

9. Identify and invite participants to the national conference.

10. Identify and notify conference moderators and rapporteurs.

11. Conduct the conference and prepare conference proceedings.

12. Assist/advise the EAS secretariat in establishing the human and financial resources set up for the first few months.
Annex 2:

Statutes

Ethiopian Academy of Sciences

Whereas the sciences, in all aspects and forms, enrich our understanding of the world around us and of ourselves;

Whereas the contributions of the sciences are essential for the advancement of our nation, its growth and development;

Whereas the values of the sciences and of the scientific method enhance the quality of the decision making processes to chart the nation’s future;

Whereas the advancement of adoptive and innovative research is of central importance for a developing nation;

Whereas the applications of the sciences to the industries and arts of civilization is the mainspring of raising standards of living for the welfare of people everywhere;

Whereas a citizenry informed in the purviews of the sciences is the basis for appropriate public policy in a free society;

There is hereby established the Ethiopian Academy of Sciences.

ARTICLE 1 DEFINITION

1.1 The sciences in this Statutes refers to natural sciences, mathematics, medicine, life sciences, agricultural sciences, the engineering sciences, social sciences, humanities, fine arts and letters;

1.2 The Academy refers to the Ethiopian Academy of Sciences;

1.3 Board refers to the Executive Board of the Academy constituting Officers of the Academy and Ordinary Members;
1.4 **Fellows** refers to full members of the Academy who are citizens of Ethiopia;

1.5 **Associate Fellows** are fellows of the Academy who are not citizens of Ethiopia, but who have made significant contributions to the sciences in Ethiopia.

**ARTICLE 2 ESTABLISHMENT**

2.1 The Ethiopian Academy of Sciences is an autonomous, non-profit, non-governmental organization established by a group of scientists, hereinafter called “Founding Members”, to pursue the objectives set out below.

2.2 The Academy has legal personality under the laws of Ethiopia, it may receive and dispose of property, monies and other assets and it is capable of suing and being sued under its own name.

2.3 The Academy shall have its own insignia and seal.

**ARTICLE 3 OBJECTIVES**

3.1 The objectives of the Academy are:

3.1.1 To promote the advancement of basic and applied sciences and to enhance innovative technologies;

3.1.2 To promote, support and recognize excellence in scientific research performed by Ethiopian scientists;

3.1.3 To promote contacts among Ethiopian scientists, and between them and the world scientific community;

3.1.4 To strengthen the global position and role of scientific research performed by Ethiopian scientists;

3.1.5 To advise the Government of Ethiopia on issues pertaining to the quality and relevance of the sciences in particular on issues related to science education in Ethiopia;
3.1.6 To encourage that scientific research in Ethiopia is conducted in areas or on questions of special importance to the nation and its economy;

3.1.7 To organize public fora and other appropriate programs for the dissemination of major findings in the sciences;

3.2 In pursuing these objectives the Academy shall ensure the highest ethical standards and impartiality. Any recommendations or advice emanating from the Academy shall be merit-based and made public.

ARTICLE 4 ACTIVITIES

4.1 In pursuing the objectives set out in Article 3, the Academy may undertake, inter alia, the following activities:

4.1.1 Present a platform for discussion and dialogue to all scientists from Ethiopia and elsewhere on issues of common interest;

4.1.2 Elect into the Membership of the Academy scientists who, in their respective fields, have made outstanding contributions that meet the highest standards;

4.1.3 Represent and promote the interests of the Ethiopian scientific community in national, regional and international non-governmental organizations;

4.1.4 Conduct studies and publish reports and statements on themes and topics that relate to the sciences in Ethiopia;

4.1.5 Award competitive research grants to scientists who are based in Ethiopia and research organizations established in Ethiopia, either from its own financial resources or from financial resources made available to it;

4.1.6 Award medals, prizes and other honours to Ethiopian scientists who have made outstanding contributions to their respective fields or to the objectives of the Academy;
4.1.7 Publish its own journal(s), other periodicals and books in both Ethiopian and foreign languages, for the community of scientists and for the public at large;

4.1.8 Organize conferences, workshops and symposia on themes and topics that fall within its objectives and undertake such other projects and activities as it deems appropriate for achieving its objectives.

4.2 In carrying out these activities the Academy shall endeavor to contribute to the social and economic development of Ethiopia. It shall also endeavor to increase awareness in society of the values represented by the sciences and the scientific method.

4.3 In carrying out these activities the Academy shall maintain effective cooperation and coordination with the Government of Ethiopia and other national or international organizations or institutions that have similar objectives.

**ARTICLE 5 MEMBERSHIPS**

5.1 The Membership of the Academy shall consist of the following categories:

5.1.2 Fellows

5.1.2 Associate Fellows;

5.1.3 Honorary Fellows.

5.2 Fellows shall be elected from amongst active scientists who are citizens of Ethiopia and who have made outstanding contributions in their respective fields. Fellows enjoy all the rights and have all the obligations of Membership.

5.3 Associate Fellows shall be elected from amongst scientists who are not citizens of Ethiopia, but who have made significant contributions to the sciences in Ethiopia. Associate Fellows shall meet the same criteria for Membership as Fellows and shall have the same rights and obligations.
except the right to vote in the General Meeting or to be elected Officer of the Academy.

5.4 Honorary Fellows shall be elected by the General Meeting from amongst persons who have made outstanding contributions to the broad objectives of the Academy. Honorary Fellows shall have the same rights and obligations as Fellows, except the right to vote in the General Meeting or to be elected Officer of the Academy.

5.5 The General Meeting may divide the Academy’s total Membership into Divisions based on disciplines.

5.6 Members of the Academy shall uphold the Statutes of the Academy and contribute to the achievement of the objectives of the Academy.

5.7 Membership ends if a Fellow withdraws from the Academy. Membership also ends when a Fellow commits a serious offence of scientific ethical concern or is declared to be of unsound mind.

5.8 A Fellow may be expelled from the Academy when he/she has acted in manifest contravention of these Statutes or has otherwise prejudiced the good name or interests of the Academy. Expulsion shall be a decision of the Board and shall be a last resort and be based on grounds that are communicated to the Fellow. Before taking a decision on expulsion, the Board shall give the concerned Fellow the opportunity to defend him/herself.

**ARTICLE 6 ELECTION OF FELLOWS**

6.1 Nominations for election into the Membership of the Academy shall be made in writing by two Fellows of the Academy. A nomination shall be personally addressed to the President of the Academy.

6.2 Nominations for election may be submitted at all times, but nominations received less than six month prior to the next General Meeting shall not be considered at that Meeting, but at a later General Meeting.
6.3 A nomination shall consist of the following documents: (a) a statement of at most 500 words giving the reasons why the candidate is deemed to meet the criteria for Membership, including his/her most significant contributions; b) the names of five referees with the widest possible geographical distribution who may be consulted by the Academy; c) a full CV of the candidate including a list of all his/her major publications/professional accomplishments.

6.4 Each Division of the academy shall have a Membership Advisory Committee which assists the President in the selection of the candidates to be proposed by him/her to the Board.

6.5 In the election of new Fellows, the Board shall consider not only the individual qualifications of the candidates, but also the overall balance between disciplines, age and gender in the Membership of the Academy.

6.6 The Board shall draw up a Final List of candidates to be elected into the Academy by the General Meeting.

6.7 Elected members, who have accepted all the rights and obligations of Membership, shall be introduced to the Assembly in the next General Meeting.

6.8 All information on persons considered for election obtained by the President, the members of the Membership Advisory Committee(s), the members of the Board or the staff of the Academy shall be treated as confidential.

**ARTICLE 7 GENERAL MEETING**

7.1 The General Meeting is the highest body of the Academy and it is composed of all Fellows of the Academy. It shall meet at least once every year in an Ordinary Session. All Fellows are expected to attend Ordinary Sessions.
7.2 The General Meeting may convene in an Extraordinary Session by decision of the President, the Board or at the written request of at least 1/5th of the total Membership.

7.3 The venue and dates of Ordinary and Extraordinary Sessions of the General Meeting shall be determined by the Board. Sessions of the General Meeting shall be convened by a written invitation, including a proposed agenda, to be distributed to all Fellows of the Academy at least two months prior to the Meeting.

7.4 The General Meeting shall make, in particular, the following decisions:
   7.4.1 Issue overall policy guidelines to the Board;
   7.4.2 Review and approve the Annual Activity and Financial Report of the Academy;
   7.4.3 Review and approve the planned activities of the Academy;
   7.4.4 Elect the new Fellows of the Academy;
   7.4.5 Elect the Officers of the Academy;
   7.4.6 Elect the Ordinary Members of the Board;
   7.4.7 Appoint the auditors of the Academy;
   7.4.8 Award medals, prizes and other honours on behalf of the Academy.

7.5 The General Meeting may make formal decisions only if at least one-half of the Membership of the Academy is present. If within one hour after the scheduled opening of a General Meeting less than one-half of the Membership is present, the session shall be adjourned. In that case the Board shall invite all Fellows to a second session that may make formal decisions if at least 1/3 of the Fellows are present, and there are no changes in the agenda with the provision that at least two weeks have lapsed after the adjournment.

7.6 Unless provided otherwise, decisions of the General Meeting shall be taken by a majority vote. Decisions shall be made by a show of hands unless the General Meeting decides to vote by secret ballot. In case of a tie the President shall have the casting vote.
7.6.1 Voting on the election of the Officers of the Academy and of the Ordinary Members of the Board shall always be done by secret ballot;

7.6.2 If there is more than one candidate for a specific position as Officer of the Academy or as Ordinary Member of the Board, the candidate who receives one-half of the votes, shall be elected. If no candidate receives one-half of the votes, the candidate with the fewest votes shall be withdrawn from the list of candidates. Voting shall then be repeated for the remaining candidates until a single candidate obtains a majority of the votes.

ARTICLE 8 BOARD

8.1 The Board shall consist of the Officers of the Academy and five Ordinary Members, all elected from among the Fellows of the Academy. The Executive Director will be a non-voting member of the Academy.

8.2 The members of the Board shall be elected by the General Meeting on the basis of a proposal from an ad hoc Nominating Committee appointed by the Board at least six months prior to the expiration of the terms in office of the incumbent Academy Officers and Ordinary Members of the Board.

8.3 The Officers of the Academy and the Ordinary Members of the Board shall be elected for a term of three years and shall be eligible for re-election for one additional term, either in the same position or in another.

8.4 For the purpose of continuity, during the last year of the second term of an incumbent President, the Nominating Committee may recommend a President-Elect who shall be, or become, a member of the Board.

8.5 The Board shall fill any vacancy caused by death, resignation or incapacity of any of its members for the remainder of his/her term. A
person filling a vacancy shall be eligible for election, thereafter, for two normal terms.

8.6 Subject to overall policy guidelines of the General Meeting, the Board shall be empowered to make decisions on all matters affecting the Academy. In particular, the Board shall make the following decisions:

8.6.1 Manage, coordinate and supervise all affairs of the Academy, including its financial resources and other assets;

8.6.2 Make bylaws or other instruments consistent with these Statutes for the purpose of regulating the Academy's business or any matter falling within the scope of the Academy's functions.

8.6.3 Convene the sessions of the General Meeting and distribute invitations, including an agenda, to Fellows of the Academy;

8.6.4 Prepare a draft Annual Activity and Financial Report of the Academy and submit the same to the General Meeting for approval;

8.6.5 Appoint standing and temporary committees as and when it deems such committees necessary;

8.6.6 Consider any reports and accounts to be submitted to the General Meeting for review and approval by that Meeting;

8.6.7 Prepare decisions of the General Meeting to award medals, prizes and other honours to scientists for outstanding achievements;

8.6.8 Adopt bylaws for the provisions of the Statutes of the Academy and inform Fellows of the Academy.

8.7 The Board may only take formal decisions if there is a quorum. The Board shall decide by a majority of votes. In case of a tie, the President shall have the casting vote. Decisions shall be made by a show of hands unless the Board decides to vote by secret ballot.
8.8 The Board shall meet at least four times a year. It shall keep all members informed on major developments and decisions on a regular basis.

**ARTICLE 9 OFFICERS**

9.1 The Academy shall have the following Officers: a President; two Vice-Presidents; and a Treasurer.

9.2 The President shall be the principal officer of the Academy and he/she shall represent the Academy at all levels. The President shall preside over all meetings of the Board and all sessions of the General Meeting. He/she shall present reports on the Academy's activities to the Board and to General Meetings.

9.3 One of the Vice-Presidents shall take the place of the President if the President is unable to attend meetings of the Board or sessions of the General Meeting or is unable to represent the Academy. The Vice-Presidents may discharge such other responsibilities as the President assigns to them.

9.4 The Treasurer shall be responsible for the financial records and administration of the Academy and for the management of all its financial resources and other assets. The Treasurer shall report to the Board on the finances and accounts of the Academy annually, and at such times as the Board may determine.

**ARTICLE 10 EXECUTIVE DIRECTOR**

10.1 The Board shall appoint an Executive Director of the Academy as the highest administrative officer of the Academy for a term set by the Board.

10.2 The Executive Director is accountable to the President of the Academy.

10.3 The Executive Director shall serve as Secretary of the Board.
10.4 The Executive Director shall be responsible for all official records, including the Register of Members of the Academy and for all official correspondence of the Academy.

10.5 Subject to guidelines and instructions of the Board, the Executive Director shall be responsible for the administration of the Academy and for the management of the office of the Academy, including the employment of staff.

10.6 The Executive Director shall support the Board in formulating and implementing the policies of the Academy and he/she shall maintain working relationships with all organizations that pursue objectives similar to those of the Academy.

ARTICLE 11 FINANCE

11.1 The Academy is authorized to accept and receive grants, donations, gifts, bequests, trust funds and prizes from national or international entities, public or private, or from individuals, as well as fees from its members or for any services it may render. Acceptance of such financial contributions shall be effected by the Executive Director under guidelines issued by the Board.

11.2 The Academy shall work towards the creation of an Endowment Fund in order to ensure financial sustainability.

11.3 The Officers of the Academy, the Ordinary members of the Board and other Academy officials elected from amongst the Members shall not receive any salaries or other honoraria or fees. However, they shall be reimbursed for any personal expenses made in performing their duties as members of the Board.

11.4 The Academy shall enter into financial obligations in relation to third parties only on the basis of an explicit decision of the Board. The Executive Director shall enter into financial obligations only for expenditures that are included in a budget approved by the Board.
11.5 The accounts of the Academy shall be audited in accordance with generally accepted accounting and auditing standards and pursuant to the laws of country.

**ARTICLE 12 PUBLICATIONS AND STATEMENTS**

12.1 Public statements on behalf of the Academy shall not be made until their release is approved by the Board. The President or the Vice Presidents shall supervise the preparation of all Academy statements. If the President or Vice Presidents consider a statement ready for release, he/she submits a proposal to the Board on the manner and mechanisms of dissemination.

12.2 The Board shall appoint Editor(s) and/or Editorial Committee(s), preferably from amongst its members, for the publication(s) of the Academy.

**ARTICLE 13 FINAL PROVISIONS**

13.1 Amendments to these Statutes may be made by the General Meeting on the basis of a proposal from the Board. Proposed amendments shall be put to a vote only if at least two-thirds of the Fellows of the Academy are present at the General Meeting. Approval of a proposed amendment shall require a two-thirds majority vote.

13.2 The Academy may be dissolved at an Extraordinary General Meeting, especially convened for that purpose.

13.2.1 The proposal to dissolve the Academy shall be put to a vote only if at least three-fourth of the Fellows of the Academy are present at the Extraordinary General Meeting. Approval of the proposal shall require a two-thirds majority vote.

13.2.2 In the event of the dissolution of the Academy all its assets shall be transferred to an organization with similar objectives as the Academy by the decision of the General Meeting.
Annex 3:

Conference Program
8:30 - 9:00  Registration
9:00 - 9:30  Opening Session
            Introducing the Program and Speakers
            Dr Fuad Temam (member of the Ad-hoc Committee)
            Welcoming Address
            Dr Seme Debela (Chairman of Ad-hoc Committee)
            Introductory Statement
            Dr Luc Rukingama (Director and UNESCO Representative
            for Ethiopia, Djibouti and African Union)
            Opening Address
            H.E Ato Juneydi Saddo (Minister, MoST)

Session 1 Presentations
Academy of Sciences: Roles and Lessons to be Learned from Established
Academies
Chairman: Prof. Redda Tekle Haimanot
9:30 - 10:00  Prof. Shem Wandiga
              Kenyan National Academy of Sciences and African
              Academy of Science: Genesis, Roles and Achievements
10:00 -10:15  Ms Natalie Day
              Introducing the Royal Society- Structure, Organization
              and Financial Resources
10:15-10:35  Prof. Bahru Zewde
              The Academy in Ethiopian Historical Perspective
10:35 -10:55  Coffee/tea break
10:55 - 11:25  Prof. Berhanu Abegaz Molla
              The Roles of an Ethiopian Academy of Sciences
11:25 - 12:45  General Discussion
12:45 - 14:00  Lunch Break
Session 2
Proposal for the Establishment of an Ethiopian Academy of Sciences
Chairman: Prof. Berhanu Abegaz Molla

14:00 - 14:20  Prof. Masresha Fetene
   Brief Presentation of the Concept Note
14:20 - 15:50  General Discussion on the Proposal
15:50 - 16:10  Coffee Break

Session 3
Election of National Organizing Committee (NOC)
Chairman: Prof. Shibru Tedla

16:10 - 17:40  Election of members of NOC

17:40 – 18:00  Dr Yacob Arsano, Member
   Ad-hoc Committee for the Establishment of EAS
   Vote of Thanks and Closing
## Annex 4:

### Conference Participants List

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abdusalman Sherif</td>
<td>AAU</td>
</tr>
<tr>
<td>2</td>
<td>Abebayehu Assefa</td>
<td>AAU</td>
</tr>
<tr>
<td>3</td>
<td>Abebe Dinku</td>
<td>AAU</td>
</tr>
<tr>
<td>4</td>
<td>Abeje Berhanu</td>
<td>AAU</td>
</tr>
<tr>
<td>5</td>
<td>Aberra Debelo</td>
<td>SG2000</td>
</tr>
<tr>
<td>6</td>
<td>Abiti Getanew</td>
<td>Ministry of Water Resources</td>
</tr>
<tr>
<td>7</td>
<td>Abiy Mulugeta</td>
<td>OSE</td>
</tr>
<tr>
<td>8</td>
<td>Aboneh Ashagrie</td>
<td>AAU</td>
</tr>
<tr>
<td>9</td>
<td>Abraham Aseffa</td>
<td>AHRI</td>
</tr>
<tr>
<td>10</td>
<td>Abraham Tadesse</td>
<td>PPSE</td>
</tr>
<tr>
<td>11</td>
<td>Adefris Debalke</td>
<td>AAU</td>
</tr>
<tr>
<td>12</td>
<td>Adefris Tekle-Wolde</td>
<td>EIAR</td>
</tr>
<tr>
<td>13</td>
<td>Afework Bekele</td>
<td>AAU</td>
</tr>
<tr>
<td>14</td>
<td>Alemayehu Teferra</td>
<td>AAU</td>
</tr>
<tr>
<td>15</td>
<td>Alemu Abebe</td>
<td>MoST</td>
</tr>
<tr>
<td>16</td>
<td>Alex Tindimubona</td>
<td>UNESCO</td>
</tr>
<tr>
<td>17</td>
<td>Amare Asgedom</td>
<td>AAU</td>
</tr>
<tr>
<td>18</td>
<td>Amare Gessesse</td>
<td>AAU</td>
</tr>
<tr>
<td>19</td>
<td>Amare Getahun</td>
<td>APM Consult</td>
</tr>
<tr>
<td>20</td>
<td>Araya Asfaw</td>
<td>AAU</td>
</tr>
<tr>
<td>21</td>
<td>Asrat Bulbula</td>
<td>MIDROC</td>
</tr>
<tr>
<td>22</td>
<td>Asrat Hailu</td>
<td>AAU</td>
</tr>
<tr>
<td>23</td>
<td>Asrat Worku</td>
<td>AAU</td>
</tr>
<tr>
<td>24</td>
<td>Assefa Hailemariam</td>
<td>AAU</td>
</tr>
<tr>
<td>25</td>
<td>Assefa Tolera</td>
<td>AAU</td>
</tr>
<tr>
<td>No</td>
<td>Name</td>
<td>Organization</td>
</tr>
<tr>
<td>----</td>
<td>-----------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>26</td>
<td>Atalay Alem</td>
<td>AAU</td>
</tr>
<tr>
<td>27</td>
<td>Aynalem Gebre-Mariam</td>
<td>Association of Neurological Science</td>
</tr>
<tr>
<td>28</td>
<td>Bahru Zewde</td>
<td>FFS</td>
</tr>
<tr>
<td>29</td>
<td>Bakele Abebe</td>
<td>AAU</td>
</tr>
<tr>
<td>30</td>
<td>Baye Yimam</td>
<td>AAU</td>
</tr>
<tr>
<td>31</td>
<td>Begizew Yaregal</td>
<td>Ethiopian Statistical Association</td>
</tr>
<tr>
<td>32</td>
<td>Berhanu Tekle</td>
<td>MAP Ethiopia</td>
</tr>
<tr>
<td>33</td>
<td>Bekele Gutema</td>
<td>AAU</td>
</tr>
<tr>
<td>34</td>
<td>Bekure Woldesemait</td>
<td>AAII, CSS</td>
</tr>
<tr>
<td>35</td>
<td>Belay Simegn</td>
<td>AAU</td>
</tr>
<tr>
<td>36</td>
<td>Belay Woldeyes</td>
<td>AAU</td>
</tr>
<tr>
<td>37</td>
<td>Berhane Asfaw</td>
<td>National Museum</td>
</tr>
<tr>
<td>38</td>
<td>Berhane Gebrekidan</td>
<td>ILRI</td>
</tr>
<tr>
<td>39</td>
<td>Berhanu M Abegaz</td>
<td>University of Botswana</td>
</tr>
<tr>
<td>40</td>
<td>Berhanu Sisay</td>
<td>Unity University</td>
</tr>
<tr>
<td>41</td>
<td>Beyene Petros</td>
<td>AAU</td>
</tr>
<tr>
<td>42</td>
<td>Binyam Ayle</td>
<td>EPHA</td>
</tr>
<tr>
<td>43</td>
<td>Biru Abebe</td>
<td>Ethio agri-CEFT</td>
</tr>
<tr>
<td>44</td>
<td>Dagnachew Legesse</td>
<td>AAU</td>
</tr>
<tr>
<td>45</td>
<td>Damene Haile-Mariam</td>
<td>AAU</td>
</tr>
<tr>
<td>46</td>
<td>Daniel Kitaw</td>
<td>AAU</td>
</tr>
<tr>
<td>47</td>
<td>Dawit Abate</td>
<td>AAU</td>
</tr>
<tr>
<td>48</td>
<td>Dawit Alemu</td>
<td>EIAR</td>
</tr>
<tr>
<td>49</td>
<td>Dawit Wolday</td>
<td>MED Brotec Lab</td>
</tr>
<tr>
<td>50</td>
<td>Dejene Aredo</td>
<td>AAU</td>
</tr>
<tr>
<td>51</td>
<td>Demese Chanyalew</td>
<td>Demor Ethio-Africa Plc</td>
</tr>
<tr>
<td>52</td>
<td>Demissie Habte</td>
<td>AAU</td>
</tr>
<tr>
<td>No</td>
<td>Name</td>
<td>Organization</td>
</tr>
<tr>
<td>----</td>
<td>-----------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>53</td>
<td>Dereje Gebre</td>
<td>AAU</td>
</tr>
<tr>
<td>54</td>
<td>Dereje Gulelat</td>
<td>AAU</td>
</tr>
<tr>
<td>55</td>
<td>Deribe Gurmu</td>
<td>ETAR/FRC</td>
</tr>
<tr>
<td>56</td>
<td>Desalegn Rahmato</td>
<td>FSS</td>
</tr>
<tr>
<td>57</td>
<td>Desta Hamito</td>
<td>EGPID</td>
</tr>
<tr>
<td>58</td>
<td>Dida Midekso</td>
<td>AAU</td>
</tr>
<tr>
<td>59</td>
<td>Digafe Tsegaye</td>
<td>Eth. D</td>
</tr>
<tr>
<td>60</td>
<td>Eneyew Adugna</td>
<td>AAU</td>
</tr>
<tr>
<td>61</td>
<td>Eshetu Wencheko</td>
<td>AAU</td>
</tr>
<tr>
<td>62</td>
<td>Eskinder Woubetu</td>
<td>Association of Ethiopian Architects</td>
</tr>
<tr>
<td>63</td>
<td>Etsegenet Gedlu</td>
<td>AAU</td>
</tr>
<tr>
<td>64</td>
<td>Eyasu Mekonnen</td>
<td>AAU</td>
</tr>
<tr>
<td>65</td>
<td>Eylacheu Zewdie</td>
<td>SMUC</td>
</tr>
<tr>
<td>66</td>
<td>Fekade Azeze</td>
<td>AAU</td>
</tr>
<tr>
<td>67</td>
<td>Fekadu Haile</td>
<td>EACE</td>
</tr>
<tr>
<td>68</td>
<td>Firew Kefyalew</td>
<td>Ethiopian Psychologists Association</td>
</tr>
<tr>
<td>69</td>
<td>Fiseha Yitbarek</td>
<td>ENA</td>
</tr>
<tr>
<td>70</td>
<td>Frehiwot Wolde-Hanna</td>
<td>AAU</td>
</tr>
<tr>
<td>71</td>
<td>Fuad Temam</td>
<td>AAU</td>
</tr>
<tr>
<td>72</td>
<td>Gebrehiwot Ageba</td>
<td>AAU</td>
</tr>
<tr>
<td>73</td>
<td>Gessesse Tadesse</td>
<td>AAU</td>
</tr>
<tr>
<td>74</td>
<td>Gezahegn Yirgu</td>
<td>AAU</td>
</tr>
<tr>
<td>75</td>
<td>Ghirma Moges</td>
<td>Et. Lab Association</td>
</tr>
<tr>
<td>76</td>
<td>Girma Lemma</td>
<td>AAU</td>
</tr>
<tr>
<td>77</td>
<td>Girma Woledetensae</td>
<td>EGMEA</td>
</tr>
<tr>
<td>78</td>
<td>Girma Zerayohannes</td>
<td>AAU</td>
</tr>
<tr>
<td>No</td>
<td>Name</td>
<td>Organization</td>
</tr>
<tr>
<td>----</td>
<td>-----------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>79</td>
<td>Gizaw Mengistu</td>
<td>AAU</td>
</tr>
<tr>
<td>80</td>
<td>Gosaye Mengistie</td>
<td>Ministry of Mines &amp; Energy</td>
</tr>
<tr>
<td>81</td>
<td>Habtamu Wondimu</td>
<td>AAU</td>
</tr>
<tr>
<td>82</td>
<td>Habtu Zegeye</td>
<td>Bahir Dar University</td>
</tr>
<tr>
<td>83</td>
<td>Haile-Michael Kidane-Mariam</td>
<td>Private</td>
</tr>
<tr>
<td>84</td>
<td>Hailu Ayele</td>
<td>AAU</td>
</tr>
<tr>
<td>85</td>
<td>Haymanot Assefa</td>
<td>EPA</td>
</tr>
<tr>
<td>86</td>
<td>Henok Tadele</td>
<td>ENA</td>
</tr>
<tr>
<td>87</td>
<td>Hirut Teklu</td>
<td>AAU</td>
</tr>
<tr>
<td>88</td>
<td>Hirut Wolde-Mariam</td>
<td>AAU</td>
</tr>
<tr>
<td>89</td>
<td>Hussein Ahmed</td>
<td>AAU</td>
</tr>
<tr>
<td>90</td>
<td>Ian Thornton</td>
<td>Royal Society UK</td>
</tr>
<tr>
<td>91</td>
<td>Jemal Abdulkadir</td>
<td>Health First Higher Clinic</td>
</tr>
<tr>
<td>92</td>
<td>Johannes Kinfu</td>
<td>MIDROC</td>
</tr>
<tr>
<td>93</td>
<td>Kaba Urgessa</td>
<td>Jimma University</td>
</tr>
<tr>
<td>94</td>
<td>Kassahun Berhanu</td>
<td>AAU</td>
</tr>
<tr>
<td>95</td>
<td>Kebede Oli</td>
<td>AAU</td>
</tr>
<tr>
<td>96</td>
<td>Leake Mariam Asfaw</td>
<td>AAU</td>
</tr>
<tr>
<td>97</td>
<td>Legesse Negash</td>
<td>AAU</td>
</tr>
<tr>
<td>98</td>
<td>Legesse Wetro</td>
<td>AAU</td>
</tr>
<tr>
<td>99</td>
<td>Lemma Dessalegn</td>
<td>EIAR</td>
</tr>
<tr>
<td>100</td>
<td>Masresha Fetene</td>
<td>AAU</td>
</tr>
<tr>
<td>101</td>
<td>Meheret Ayenew</td>
<td>AAU</td>
</tr>
<tr>
<td>102</td>
<td>Mekonnen Tadesse</td>
<td>AAU</td>
</tr>
<tr>
<td>103</td>
<td>Mekuria Lakew</td>
<td>AAU</td>
</tr>
<tr>
<td>104</td>
<td>Melaku Mamo</td>
<td>LCVH</td>
</tr>
<tr>
<td>105</td>
<td>Melaku Worde</td>
<td>Private</td>
</tr>
<tr>
<td>No</td>
<td>Name</td>
<td>Organization</td>
</tr>
<tr>
<td>----</td>
<td>--------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>106</td>
<td>Mengistu Nigussie</td>
<td>AESE</td>
</tr>
<tr>
<td>107</td>
<td>Merera Gudina</td>
<td>AAU</td>
</tr>
<tr>
<td>108</td>
<td>Mesfin Abebe</td>
<td>Office of the Privet</td>
</tr>
<tr>
<td>109</td>
<td>Millard Derbew</td>
<td>AAU</td>
</tr>
<tr>
<td>110</td>
<td>Moges Yigezu</td>
<td>AAU</td>
</tr>
<tr>
<td>111</td>
<td>Mohammed Dawd</td>
<td>EIAR</td>
</tr>
<tr>
<td>112</td>
<td>Muhammed Umer</td>
<td>AAU</td>
</tr>
<tr>
<td>113</td>
<td>Mulat Taye</td>
<td>U.M.F Surgical Society of Ethiopia</td>
</tr>
<tr>
<td>114</td>
<td>Mulatu Astatke</td>
<td>Private</td>
</tr>
<tr>
<td>115</td>
<td>Mulu Muleta</td>
<td>UNFPA / AAU</td>
</tr>
<tr>
<td>116</td>
<td>Mulugata Bekele</td>
<td>AAU</td>
</tr>
<tr>
<td>117</td>
<td>Mulugeta Alene</td>
<td>AAU</td>
</tr>
<tr>
<td>118</td>
<td>Mulugeta Naizgi</td>
<td>AAU</td>
</tr>
<tr>
<td>119</td>
<td>Muluneh Woldetsadik</td>
<td>AAU</td>
</tr>
<tr>
<td>120</td>
<td>Natalie Day</td>
<td>Royal Society UK</td>
</tr>
<tr>
<td>121</td>
<td>Nebiu Elias</td>
<td>Ethiopian Society of Mechanical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engineering</td>
</tr>
<tr>
<td>122</td>
<td>Nestant Mulat</td>
<td>FSS</td>
</tr>
<tr>
<td>123</td>
<td>Negussi Retta</td>
<td>AAU</td>
</tr>
<tr>
<td>124</td>
<td>Paschal Mihyo</td>
<td>OSSREA</td>
</tr>
<tr>
<td>125</td>
<td>Pawlos Kena</td>
<td>Landmark</td>
</tr>
<tr>
<td>126</td>
<td>Redda Teklehaimanot</td>
<td>Gerar Bet Rehabilitation</td>
</tr>
<tr>
<td>127</td>
<td>Rezene Fesseha</td>
<td>EIAR</td>
</tr>
<tr>
<td>128</td>
<td>Samuel Tadesse</td>
<td>AAU</td>
</tr>
<tr>
<td>129</td>
<td>Sebebe Demisew</td>
<td>AAU</td>
</tr>
<tr>
<td>130</td>
<td>Seid Mohammed</td>
<td>AAU</td>
</tr>
<tr>
<td>131</td>
<td>Seifu Kebede</td>
<td>AAU</td>
</tr>
<tr>
<td>No</td>
<td>Name</td>
<td>Organization</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>132</td>
<td>Seme Debela</td>
<td>Private</td>
</tr>
<tr>
<td>133</td>
<td>Seyoum Mengistu</td>
<td>AAU</td>
</tr>
<tr>
<td>134</td>
<td>Sheleme Beyene</td>
<td>Hawassa University</td>
</tr>
<tr>
<td>135</td>
<td>Shem O. Wandiga</td>
<td>University of Nairobi</td>
</tr>
<tr>
<td>136</td>
<td>Shibru Tedla</td>
<td>ECO-Climate</td>
</tr>
<tr>
<td>137</td>
<td>Shifferaw Taye</td>
<td>AAU</td>
</tr>
<tr>
<td>138</td>
<td>Sileshi Nimomisa</td>
<td>AAU</td>
</tr>
<tr>
<td>139</td>
<td>Solomon Bekure</td>
<td>ARD.INC</td>
</tr>
<tr>
<td>140</td>
<td>Solomon Bellete</td>
<td>EAAP</td>
</tr>
<tr>
<td>141</td>
<td>Solomon Lulu</td>
<td>AAU Yared School</td>
</tr>
<tr>
<td>142</td>
<td>Solomon Mebril</td>
<td>AAU</td>
</tr>
<tr>
<td>143</td>
<td>Solomon Mulugeta</td>
<td>AAU</td>
</tr>
<tr>
<td>144</td>
<td>Solomon Yirga</td>
<td>AAU</td>
</tr>
<tr>
<td>145</td>
<td>Solomon Zewdie</td>
<td>WGCF-NR</td>
</tr>
<tr>
<td>146</td>
<td>Sultan Mohammed</td>
<td>ESSS</td>
</tr>
<tr>
<td>147</td>
<td>Tadelle Teferra</td>
<td>Equatorial Bus Group</td>
</tr>
<tr>
<td>148</td>
<td>Tareke Berhe</td>
<td>SAA</td>
</tr>
<tr>
<td>149</td>
<td>Tarekegn GebreYesus</td>
<td>AAU</td>
</tr>
<tr>
<td>150</td>
<td>Taye Assefa</td>
<td>FSS</td>
</tr>
<tr>
<td>151</td>
<td>Taye Bezuneh</td>
<td>ASDAA</td>
</tr>
<tr>
<td>152</td>
<td>Taye Tessema</td>
<td>EIAR</td>
</tr>
<tr>
<td>153</td>
<td>Tefera Belachew</td>
<td>Jimma University</td>
</tr>
<tr>
<td>154</td>
<td>Tefera Abdula</td>
<td>Gonder University</td>
</tr>
<tr>
<td>155</td>
<td>Tegene Gebre-Egziabher</td>
<td>AAU</td>
</tr>
<tr>
<td>156</td>
<td>Tekalign Mamo</td>
<td>OPM</td>
</tr>
<tr>
<td>157</td>
<td>Tekalign Wolde-Mariam</td>
<td>AAU</td>
</tr>
<tr>
<td>158</td>
<td>Teketel Yohannes</td>
<td>AAU</td>
</tr>
<tr>
<td>159</td>
<td>Tekletsion Wolde-Mariam</td>
<td>Private</td>
</tr>
<tr>
<td>No</td>
<td>Name</td>
<td>Organization</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>160</td>
<td>Tekleyohanes Zike</td>
<td>AAU</td>
</tr>
<tr>
<td>161</td>
<td>Tenalem Ayenew</td>
<td>AAU</td>
</tr>
<tr>
<td>162</td>
<td>Tesema Taa</td>
<td>AAU</td>
</tr>
<tr>
<td>163</td>
<td>Tesfaye Dama</td>
<td>AAU</td>
</tr>
<tr>
<td>164</td>
<td>Tesfaye Kebede</td>
<td>AAU</td>
</tr>
<tr>
<td>165</td>
<td>Tesfaye Kumsa</td>
<td>Anno Agro Industry</td>
</tr>
<tr>
<td>166</td>
<td>Teshome Gebre-Michael</td>
<td>AAU</td>
</tr>
<tr>
<td>167</td>
<td>Tewabech Bishaw</td>
<td>Director of Hibret Makel Lelemat</td>
</tr>
<tr>
<td>168</td>
<td>Theodros Solomon</td>
<td>AAU</td>
</tr>
<tr>
<td>169</td>
<td>Thomas Cherenet</td>
<td>EVA</td>
</tr>
<tr>
<td>170</td>
<td>Tsige Gebre-Mariam</td>
<td>AAU</td>
</tr>
<tr>
<td>171</td>
<td>Wendessen Gulelat</td>
<td>PFG</td>
</tr>
<tr>
<td>172</td>
<td>Wendimagegn Mammo</td>
<td>AAU</td>
</tr>
<tr>
<td>173</td>
<td>Wolde-amelak Beweket</td>
<td>AAU</td>
</tr>
<tr>
<td>174</td>
<td>Wondimu Abeje</td>
<td>Ethiopian Urban Planners Association</td>
</tr>
<tr>
<td>175</td>
<td>Wondwossen Fantye</td>
<td>Dental Association</td>
</tr>
<tr>
<td>176</td>
<td>Yacob Arsano</td>
<td>AAU</td>
</tr>
<tr>
<td>177</td>
<td>Yemane Gebre Yohannes</td>
<td>AAU</td>
</tr>
<tr>
<td>178</td>
<td>Yemane Teklai</td>
<td>Ministry of Sciences &amp; Technology</td>
</tr>
<tr>
<td>179</td>
<td>Yeraswork Adimassie</td>
<td>AAU</td>
</tr>
<tr>
<td>180</td>
<td>Yeweyenhareg Feleke</td>
<td>AAU</td>
</tr>
<tr>
<td>181</td>
<td>Yewondwossen Tadesse</td>
<td>AAU</td>
</tr>
<tr>
<td>182</td>
<td>Yigeremu Abebe</td>
<td>CHAI</td>
</tr>
<tr>
<td>183</td>
<td>Yimtubezinash Wolde-Amlak</td>
<td>AAU</td>
</tr>
<tr>
<td>184</td>
<td>Yonas E.Geda</td>
<td>MAYO Clinic College of Medicine</td>
</tr>
<tr>
<td>185</td>
<td>Yoseph A.Mengesha</td>
<td>AAU</td>
</tr>
<tr>
<td>No</td>
<td>Name</td>
<td>Organization</td>
</tr>
<tr>
<td>----</td>
<td>---------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>186</td>
<td>Zebene Kiflie</td>
<td>AAU</td>
</tr>
<tr>
<td>187</td>
<td>Zekeriya Mohommed</td>
<td>Oxfam Canada</td>
</tr>
<tr>
<td>188</td>
<td>Zelalem Messele</td>
<td>Ethiopian Medical Laboratory Association</td>
</tr>
<tr>
<td>189</td>
<td>Zelealem Leyew</td>
<td>AAU</td>
</tr>
<tr>
<td>190</td>
<td>Zerihun Woldu</td>
<td>AAU</td>
</tr>
<tr>
<td>191</td>
<td>Zerihun Yetemgeta</td>
<td>AAU</td>
</tr>
<tr>
<td>192</td>
<td>Zewdie Shibre</td>
<td>AAU</td>
</tr>
</tbody>
</table>
Acknowledgments

The Ad-hoc Committee for the establishment of the Ethiopian Academy of Sciences (EAS) and the Launching Board for Ethiopian Academy of Sciences (LBEAS) would like to thank Addis Ababa University, Ethiopian Medical Association, Forum for Environment, Forum for Social Studies, Horn of Africa Regional Environment Centre and Network, M.H. Engineering Plc and UNESCO for their generous sponsorship and support for the National Conference.