Science Center of the Ethiopian Academy of Sciences

Establishment Document
1 Introduction

The Ethiopian Academy of Sciences (EAS) is established with a vision of fostering the development of scientific culture and scholarship in Ethiopia and the improvement of the quality of life of its people. The Academy intends to promote the appreciation and understanding of science, among others, through the establishment of a science center. A science center is a venue that offers a friendly and dynamic environment where visitors of all ages and diverse educational background come to appreciate the wondrous world of sciences and discovery. It is also a venue that provides an experiment based learning ambiance to inculcate a spirit of inquiry, foster creative talent and create scientific interest in the community as a whole.

As an institution dedicated to promoting science and technology, EAS has taken the initiative to establish a science center in Ethiopia, which shall serve as a hub to promote a culture of science and enhance public understanding of science and technology in the country. Ideally, a Science Center is a vast undertaking where interactive exhibits spanning through various disciplines are displayed using current technological advances. However, because of the resource limitations to build and operate such a center, EAS has opted to begin modestly and expand as the Center garners more relevance and support. Hence, the current Science Center is located within the compound of the Academy’s Headquarter at the former residence of Blaten Geta Hiruy Woldeasselassie. The Center, which is proposed to be named Science Center of the Ethiopian Academy of Sciences (SCEAS), is set to be functional in early 2017.

2 Mission

The Mission of the Science Center is to create a vibrant and dynamic public space in Ethiopia where science is taught in an interactive mode—instilling a passion for science in citizens.
3 Objectives

The Academy is establishing the Science Center with the objectives to:

- create a space where learning science is an enjoyable and engaging experience;
- inform the public on the principles and applications of science and technology;
- promote and foster interest in scientific curiosity and inquiry;
- cultivate creativity and innovation; and
- promote a flourishing culture of scientific enterprise.

4 SCEAS Structure

In order to realize its vision, the Center will have its own structure under EAS with staff responsible for the day-to-day operational activities. Specific and detailed roles and responsibilities will be assigned to each level of the management/structure once the proposed structure is approved. The general functional area of each structure, including how roles, power and responsibilities are going to be coordinated between the different levels of management of the Science Center, is briefly outlined below.

4.1 Science Center Standing Committee

- Members of the Science Center Standing Committee shall be expert representatives from each of the five Working Groups of the Academy to be established by EAS Management Board.
- Committee members are expected to be committed to advancing the missions of the Science Center and to lobby and convince prospective partners and governmental stakeholders. The composition of members should, as much as possible, be representative of various disciplines of science.
- The Committee shall provide guidance on the operation of the Center and exercise oversight over the Center.
• The Committee shall decide the admission fee and propose changes to the fee whenever necessary.
• Together with the SCEAS Director and Expert Curators of respective units, the Committee shall decide on what exhibits will be displayed and for how long.
• From time to time, the Committee shall propose a temporary thematic program/exhibition that will be part of the Science Center.
• Members of the Committee shall be changed every three years, but can serve for additional three years if elected.

4.2 Director

The Science Center will be managed and led by the Director of the Science Center. The Director shall have a strong background in science and with managerial experience. The Director’s office will be the only permanently staffed office with a secretary to handle the everyday clerical work. The Director shall:

• manage and facilitate the day-to-day activities of the Science Center;
• report to the Executive Director of the Academy;
• prepare Annual and Monthly programs of the Science Center and follow-up their execution after opening;
• supervise Expert Curators of the Center with the collection and organization of exhibits as well as their everyday activities;
• represent the Center at various stakeholder meetings and events that will strengthen the visibility, relevancy and capacity of the Center; and
• create and/or strengthen network(s) nationally and internationally with other Science Centers

4.3 Expert Curators

The Science Center will have various exhibit rooms that will be dedicated to one or more disciplines. Separate disciplines require curators that are experts in their respective fields.
Hence each unit will have its own Expert Curator who, together with the Director, will be responsible for acquiring, cataloguing, preserving, displaying and maintaining collections that will be displayed at the Center.

5 SCEAS Units
The Science Center will have units dedicated to the various disciplines of science. A paramount focus will be given to devising methods to make the collections interactive, as this is one of the main features that distinguishes science centers from museums. Screens will be used to display images and videos that will contribute to the visitors’ overall experience in the various units of the Center. Documentaries, photographs, animation videos will be collected in coordination with each unit’s Curator. Furthermore, videos that will illustrate the progress and future endeavors of the Academy will be played rotationally. This will enable the Academy to further familiarize visitors with its programs and to garner support that is crucial when expanding the Center in later stages.

The Units of the Science Center shall be subject to changes and variations depending on the decision of the Standing Committee. The following is a list of some of the units of the Science Center.

5.1 Ethiopian Geography, Geology and Paleoanthropology
This unit will be used to display the evolution of the earth and its inhabitants, with a special emphasis given to showcasing collections from Ethiopia. Exhibits that will be displayed include (but will not be limited to):

- Earth process and landforms;
- 3D map of Ethiopian landforms: highlands, rifts, etc.;
- Representative rock samples from the three major types of rocks (igneous, sedimentary and metamorphic rocks) from all over the world;
- Representative minerals/rock samples of significance from Ethiopia;
• Special rock samples of scientific and/or aesthetic significance from the world and Ethiopia; and
• A representation of the six million years of human evolution in Ethiopia and exemplary artifacts.

5.2 Aquarium
This will be a contained room where various species of fish of Ethiopia will be kept and displayed live in an enclosed and transparent area. This unit will provide a relaxing and entertaining learning experience that can be enjoyed by both adults and children.

5.3 Biodiversity
This unit will provide visitors with the concept of the structure of plants and animals, their interactions with the environment, and their roles as the foundation of life for humankind. In addition to live display of plants and taxidermal animals, audio and video presentations will also be available to make visitors’ experiences interactive and enjoyable.

5.4 Information and Communication Technology
This unit will be used to demonstrate the evolution of information and communication technology, with a special emphasis in Ethiopia. Some of the exhibits that will be displayed in this unit include:

• The development of the telephone
• Radio and radio transmission history
• The development of computers
• Film and media history
• The evolution of transportation (from locomotives to supersonic jets)

5.5 Industry and Engineering
The artifacts and interactive models in this room will illustrate a wide variety of concepts relating to engines (for e.g. steam engines, diesel engines, hydraulic pumps, etc.), weaving
and spinning machines, and manufacturing processes. In addition, interactive innovations from students and aspiring scientists in Ethiopia will be displayed rotationally. Exhibits will include:

- Models of locomotives and machine tools
- Textile manufacturing
- Electricity from dam, wind and sun
- Timeline of the big bang
- Evolution of measurement, showing how measurements of length developed over time
- Mechanics and fluids
- Optics and Waves
- Acoustics
- Electricity and magnetism (electricity from dam, wind and sun)
- Energy/Motion

5.6 Planetarium

By making use of the advances in technology, the planetarium unit of the Center will give visitors an up-close and personal illustration of planets, stars and other celestial objects in the universe. The Academy is in the process of acquiring a portable planetarium from the Authority for Research and Conservation of Cultural Heritage, Ministry of Culture and Tourism, on loan. Parallel efforts will be made to permanently acquire a technologically up-to-date planetarium.

5.7 Ethiopian Agriculture

Displays in this room will provide visitors with the understanding of agricultural systems in Ethiopia. Visitors will learn about the production of various agricultural crops; livestock and agricultural tools used in Ethiopia. The unit will be used to teach visitors about the most recent developments in agricultural technologies in Ethiopia using interactive displays.
5.8 Population Dynamics

This unit of the Science Center will educate visitors on the features of Ethiopia’s population. Supported by pictorial, audio, and video illustrations, the unit will interactively teach visitors about Ethiopia’s population dynamics and the economic, environmental and institutional implications. Exhibits of this unit will include:

- Graphic displays of total, urban and rural population size of Ethiopia including age composition;
- Graphic displays of elements of population dynamics Fertility rate; mortality rate; Natural increase;
- Interactive displays of patterns of population, density and distribution in Ethiopia;
- Interactive displays on the relationship between population and natural resources.

5.9 Mini-Zoo

Because of resource constraints, this unit of the Center is going to be limited to displaying very few carefully selected animals that can easily be managed. However, an effort will be made to enable visitors, particularly children, to get a closer look of the animals and to pet, stroke and feed them when possible.

6 Friends of SCEAS

Friends of SCEAS will be an association of individuals and/or corporations who share the Center’s vision of instilling and nurturing a culture of science in Ethiopia. Membership class may be structured into Platinum, Gold, and Silver. A reasonable annual membership fee for individuals and corporations of each membership class will be proposed by the SCEAS Standing Committee. The details regarding application for membership, the responsibilities and benefits specific to each membership class will be proposed by the SCEAS Standing Committee, Director and Executive Director of EAS for approval by EAS
Executive Board. Benefits for Friends of SCEAS, depending on the membership class they belong to, may include:

- Free/ discounted access to exhibitions in the SCEAS
- Free access to workshops and/or trainings offered by EAS
- Opportunities to network with Ethiopia’s prominent scientists
- Access to seminars that EAS is invited to by third parties
- Tickets for special events, award ceremonies, etc.

7 Functionality of SCEAS Working Document

This working document will come into effect when approved by the Academy’s Management Board.