Liaison Office in Addis Ababa
with the African Union and the
Economic Commission for Africa

Science for sustainable
human living
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Building peace in the minds of men and women

Science for sustainable human living
African Environmental Film Series

“In the end we will conserve only what we love; we will love only what we understand and we will understand only what we are taught.”

The first volume of the African Environmental Film Series dealing with geo-hazards, ecosystems and habitat management issues in Ethiopia’s Bale Mountains National Park was produced and launched in 2015.

The script was written by female and male junior and senior geologists of Addis Ababa University, and the film was produced by Ethiopian photographer Aziz Ahmed, supported by UNESCO and UNEP.

This film series’ main objective is to raise awareness on environmental issues in Africa and how they adversely affect human well-being. Suggesting best practices and solutions can contribute to reversing the progress of ecosystem deterioration. Environmental problems will only be solved if they are identified, studied and discussed, in order to find and administer the most suitable interventions. It is at UNESCO’s heart to involve the youth.

Future film themes and locations have already been identified:

- The importance of the church forests at Lake Tana for biodiversity conservation
- The bird-life of Lake Tana

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UNESCO Green Academies
Better Buildings for Climate Change Resilience

Many places in the world, including Africa, suffer from a lack of adequate water and energy supply and an increasing overload of waste. We should apply our common knowledge and develop replicable demonstration sites. UNESCO aims to establish at least one ‘UNESCO Green Academy’ in each African country, starting in Ethiopia, Sierra Leone and Tanzania.

UNESCO Green Academies can be kindergartens, schools, colleges, universities and other educational institutions. They will fulfill five essential functions:

- Rain-water harvesting
- Waste-water recycling
- Application of renewable energy
- Science-Education clubs in support of peace and UNESCO’s values
- Planting of food crops or trees in school gardens

Any other buildings can also participate on the platform of ‘Better Buildings’, which is the origin of ‘UNESCO Green Academies’. UNESCO and the UNHCR have already identified one of Ethiopia’s 24 refugee camps, to assist in particular with water-issues.

The Beza Bizuhan Primary School inside the new Lake Tana Biosphere Reserve is the first ever ‘UNESCO Green Academy’, functioning as an inspiration and demonstration model.

UNESCO Biosphere Reserves and human settlements are ideal places for this activity. They already enjoy the attention and support of environmental science authorities and the involvement of local communities.

UNESCO has partnered with the African Union as a major partner. UNECA and other UN agencies have been informed and invited for their support, in order to benefit the people of the whole African continent.

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Flora and Vegetation of Africa

A diverse flora and rich ecosystems are crucial for human life support. Ethiopia, like many parts of the world, is challenged by loss of biodiversity and natural vegetation cover. These problems are real, and they are of concern to everybody. UNESCO Biosphere Reserves are ideal model regions to learn how to redress and reverse these trends.

UNESCO functions as a catalyst, providing essential ingredients on the platforms of science and education, assisting in good ecosystem management. However, in order to do so, partnerships are needed, with national, regional, local authorities, NGOs, UN agencies, and the public and private sectors that have an interest in continuously improving nature conservation in reconciliation with sustainable human living.

“A person who has planted a tree before he dies has not lived in vain.”

UNESCO supports biodiversity conservation, environmental education, eco-tourism development, and ‘rapprochement des cultures’ through the following projects:

- Botanical walkabout and a tree nursery for up to 160 indigenous species at the Tarageddem Church Forest on the northern slopes of Lake Tana Biosphere Reserve
- ‘Abrahamic Botanic Garden’, for the ex situ conservation of the Afro-Alpine flora and as a demonstration site for environmental best practices as stipulated in the Thora, Bible, and Qur’an.

Active partnerships with technical, intellectual and financial support and partnerships are invited.

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UNESCO developed **QUEST 4 Africa** as an annual event to turn from rhetoric to action in support of the UN Sustainable Development Goals in Africa. **QUEST 4 Africa** functions as a platform of exchange and discussion of knowledge and ideas that will facilitate the development of action plans and the formation of working groups to translate these plans into reality in support of the UN SDGs.

UNESCO and the African Union organized **QUEST 4 Africa I** in May 2015 in Addis Ababa. Government authorities, Embassies, UN agencies, experts and the youth were invited and developed very useful recommendations. Ten of these recommendations were taken up to organize **QUEST 4 Africa II**, this time with additional support from HoA-REC&N, in November 2015. Round tables were provided, more than 160 people participated, and working groups for specific activities are currently being formed. These working groups will become active in 2016, supported by UNESCO.

**QUEST 4 Africa III** is currently planned to take place in November 2016.

“**What should young people do with their lives today? Many things, obviously. But the most daring thing is to create stable communities...**”

With the above in mind, **QUEST 4 Africa** functions as a platform to catalyze and revert from too many words, slow planning, and too much reporting, to what is really needed in order to improve the situation on the ground: action.

Pledges to develop and initiate projects have been developed, for example on the initiation of discussions on cross-border Biosphere Reserves, biodiversity conservation, sustainable tourism development, waste management and environmental education.

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UNESCO Biosphere Reserves are the best platforms to achieve the UN Sustainable Development Goals (UNSDGs). They function as models for sustainable human living and the reconciliation of development and nature conservation.

One of UNESCO’s most important comparative advantages is the World Network of Biosphere Reserves. Ethiopia has successfully established four Biosphere Reserves, namely Kafa, Yayu, Sheka Forest, and Lake Tana which was enlisted in 2015. It is now time to assist the existing Biosphere Reserves to function as expected, and to identify new sites.

UNESCO is coordinating a Biosphere Excursion, bringing together young people of several nationalities to learn about ecosystem-management issues in Ethiopia and the United Arab Emirates. The young and diverse group of professionals is jointly working on biosphere reserve management in different ecosystems ranging from Afro-Alpine to desert, coastal and marine systems.

The generous support of the Global Citizen Foundation and additional support of Emirates, HoA-REC&N, Hope College of Business, Science & Technology and the Embassy of the United Arab Emirates for this project is highly appreciated.

UNESCO Addis Ababa Office provided technical, intellectual and generous financial support in favor of the 4th Afri-MAB General Assembly in Accra, Ghana, 24th to 27th November 2015, and to the 4th World Congress of Biosphere Reserves, 14-17th of March, 2016, in Lima, Peru, in favor of African Member States’ participation, and in support of establishing new cross-border Biosphere Reserves in the Horn of Africa.

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**Water Resources Management**

UNESCO has assisted Ethiopia in the last few years to achieve its ambitious target to increase drinking water coverage as reflected in the Universal Access Plan (UAP) and the Growth and Transformation Plan (GTP).

UNESCO has made a significant contribution to this in a partnership project between UNESCO and UNICEF, by providing state-of-the-art science-based information that increased the ground-water drilling success rates, particularly in the arid areas of Afar, Somali and Oromia. This has the potential to be scaled-up for other regions in Ethiopia.

UNESCO is also planning to support scientific research into the ground-water, surface-water, wetland-ecosystem, and climate interaction in Gambella, in partnership with the Ethiopian Geological Survey and the IAEA.

**Enhancing capacity - to ensure high quality water supply for Ethiopia**

UNESCO’s activities will assist Ethiopia’s WASH program. The Regional Center for Eco-Hydrology as a future platform for capacity building and water resources management will also be continuously supported.

To ensure capacity building, short-term training of young professionals will be done. Knowledge transfer through maps and CD-ROMs containing all available information on groundwater resources of investigated regions will help to increase drilling success rates.

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Floating Mangroves
prospects for the production of biofuel

UNESCO supports the conservation and restoration of natural mangrove ecosystems via numerous activities, in view of the immense importance of these ecosystems.

Between 2010 and 2015, an innovative technology on mangrove biomass production afloat of the ocean’s surface has been successfully developed in an experimental plot. Air-filled containers are being used for buoyancy. Beneath the substrate containers is a semi-permeable membrane, which allows seawater to enter and prevents the loss of substrate. This means that no equipment and no energy for pumping is required.

“Prepare now for the solutions of tomorrow.”

The experimental plot showed remarkable growth of mangroves irrigated only with seawater; moreover, it did not require valuable land for biomass production. This is sufficient encouragement to carry out a feasibility study and build a prototype to obtain exact scientific data on:

- Primary productivity of biomass
- Biomass utilization for biofuel production
- Uptake of land-based marine pollutants
- Engineering and design for large-scale application
- Socio-economic and environmental impacts
- Sequestration capacity of atmospheric carbon
- Production of livestock fodder and other economically useful products

UNESCO has developed a partnership with the African Union, HoA-REC&N and the Institute for Sustainable Halophyte Utilization at the University of Karachi. The partners are now discussing the possibility of establishing further experiments and a prototype in several African countries.

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**Used acronyms:**

- Horn of Africa Regional Environmental Center and Network (HoA-REC&N)
- International Atomic Energy Agency (IAEA)
- Non-Governmental Organization (NGO)
- United Nations Economic Commission for Africa (UNECA)
- United Nations Environment Program (UNEP)
- United Nations High Commissioner for Refugees (UNHCR)

**Disclaimer**

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