

THE SINO-AFRICA JOINT RESEARCH CENTER INITIATIVE IN JKUAT

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The idea of a Chinese-aided China-Africa Joint Research Centre in Kenya, where African and Chinese researchers would conduct joint research, was conceived during long arduous field treks that the author and his Chinese research counterpart Dr Wang Qing Feng undertook in the Chinese central provinces of Hunan and Hubei in 1999. The initiative has since come to fruition, thanks to long cordial ties between Kenya and China that can be traced back to the Ming Dynasty (1368-1644) when the famous navigator Zheng He reached the shores of Kenya.

Among the many benefits of the Sino-Kenya ties is the planned establishment of the JKUAT Botanical Garden and Joint Sino-Africa Research Centre in the University's Juja Main Campus. The idea of a JKUAT Botanical Garden and Joint Sino-Africa Research Centre has received overwhelming support from the JKUAT administration as it ties in well with the University strategic plan. The Directorate of Sino-Africa Biodiversity Research Conservation (SABREC) was established in JKUAT in September 2011, after a series of consultative meetings. The directorate was later renamed as Sino-African Joint Research Centre (SAJOREC), which primarily seeks to foster collaborative research and promote conservation of biodiversity through learning, training and research.

An MOU between JKUAT and Wuhan Botanical Garden, Chinese Academy of Sciences (WBG, CAS), was signed in 2010, this being followed by development of a joint project proposal developed for establishment of a botanical garden and research centre in JKUAT main campus, to be known as the JKUAT Botanical Garden and Sino-Africa Joint Research Centre respectively. The proposal was subsequently accepted for Chinese funding through the Ministry of Commerce of the Government of the People's Republic of China. Upon completion, the Sino-Africa Joint Research Centre and JKUAT Botanical Garden to be located on 40 acres of land at the Juja main campus are expected to be the hub of Sino-African cooperation in biodiversity-related research and conservation for the Africa region.

The JKUAT Botanical Garden will be based on seven thematic gardens, namely;

- (i) African indigenous plants garden comprising germplasm native to the Africa continent categorized into the different ecological zones.
- (ii) Medicinal plants garden comprising of plants used for herbal medicine.
- (iii) Rare and unique plants garden.
- (iv) Orchard of cultivated and wild edible fruit trees.
- (v) Bamboo garden.
- (vi) Aquatic plants garden with water lilies, lotus ponds and submerged plant observation areas.
- (vii) Asian and exotic plants garden comprising flora from other continents

The Botanical Garden will serve four main purposes:

- (i) Provide new plants of economic importance to society including medicinal, ornamentals, trees for reforestation and plants for industry, fruits and cash crops.
- (ii) Keep plants for study of growth, adaptability, economic and genetic characteristics.
- (iii) Disseminate cultural and scientific information about plants to the general public and
- (iv) Preserve endangered and rare plants and also investigate methods of conservation in natural habitats.

The garden will additionally provide recreation. It will also contribute to agricultural productivity through conservation and distribution of the many promising but underutilized and neglected food, medicinal and industrial crops, as well as wild relatives of crops which are used in plant breeding to impart resistance to drought, pests and diseases and to adapt crops to other adverse environmental conditions.

The Research Centre will comprise administration offices, conference and accommodation facilities, and a number of specialist research laboratories engaging in cutting-edge research, namely;

- (i) Cell and molecular biology laboratory.
- (ii) Plant biosystematics and conservation laboratory.
- (iii) Water resources management laboratory.
- (iv) Virus detection and diagnostic laboratory.
- (v) Nanotechnology and bioinformatics laboratory.
- (vi) Natural products development laboratory

The Centre will carry out joint research and facilitate training sessions both in Kenya and China, and foster student/staff exchanges with the purpose of raising the standards of biodiversity research among Kenyan scientists, technicians and other stakeholders. The centre will also support plant field expeditions in Kenya and the rest of East Africa with a view to documenting the flora of the region.

SAJOREC organizes annual forums of African and Chinese scientists dubbed the 'Sino-Kenyan Scientists' Workshops'. The first of these forums was held on 7th-8th August 2013 at the Utalii Hotel, Nairobi. The workshop brought together JKUAT scientists and their counterparts from 11 leading Universities and research institutes in China. The main objective of the forum was to bring together the scientists and lay the ground for joint future research activities in the proposed Sino-African Joint Research Centre. The joint research initiative also facilitates biodiversity documentation activities to identify plant taxa targeted for transfer to the JKUAT Botanical Garden.

SAJOREC has organized workshops and training sessions for African stakeholders to various Universities and research institutes in China, with an aim of enhancing skills transfer. One such development was a SAJOREC initiative sensitization seminar at the Wuhan Botanical Garden, Chinese Academy of Sciences in October, 2013. The workshop

brought together participants from Kenya and other African Countries, and Chinese officials and scientists.

Previous training sessions have benefited university lecturers and laboratory technicians drawn from leading Universities in Africa, including JKUAT, who have been trained in molecular laboratory techniques in Wuhan University and Wuhan Botanical Garden,

Also facilitated is the award of full scholarships for Kenyan students to the prestigious University of Chinese Academy of Sciences for post-graduate studies in various disciplines.