Ministry of External Affairs
(E&SA Division)

India Africa Cooperation on Science, Technology and Innovation

Scientific and technological pursuit is known to be a remarkably effective catalyst for social development and economic growth as it empowers not only the individual but the society and the country at large. Economists acknowledge that in the emerging global knowledge economy, returns on science and technology are likely the single greatest cause of the long-term rise in economic advancement of countries; policies that lead to broad investments in science education and innovation can thus help reduce inequality while expanding economic opportunity through empowerment and job creation. Many developing countries have yet to benefit from the promises which science, technology and innovation holds. The science, technology and IT base it has formed since India's independence has grown multifold and has put India on the global map of leading nations in S&T.

Science and Technology Initiative under IAFS-I:

India has committed to share its experience in the field of Science, Technology and Innovation to Afirca through India Africa Forum Summit mechanisms in addition to bilateral exchanges. During the India-Africa Forum Summit in New Delhi in 2008, Prime Minister of India Dr. Manmohan Singh pledged substantial support for Africa, including the pronouncement of Africa-India Science & Technology Initiative as a central component of regional development and integration. Department of Science & Technology in partnership with the Ministry of External Affairs and the Federation of Indian Chamber of Commerce and Industries (FICCI) have broadly outlined the contours of our collaborative engagements in consultation with the African Union. These include organizing India Africa Ministerial S &T Conference, strengthening of three S& T institutions in Africa, technology transfer of appropriate technologies, training and provision of C V Raman Fellowships.

A. **India-Africa Science &Technology Ministers Conference and Tech Expo** was held on 1-2 March 2012 in New Delhi. Over 150 delegates from over 40 African countries attended the conference including 30 African Ministers dealing with Science and Technology, representatives from African Union Commission, and representatives from African Regional Economic Communities. Various round table sessions were held during the two days which focused on the following areas: Capacity building in Science and Technology, Science & Technology for development, Knowledge transfer & adoption and research areas of mutual interest.

The conference addressed the common societal needs such as affordable health care, water technology, climate change, agricultural science, food processing technologies, renewable energy, and Information & Communication technology, women in Science & Technology etc.

B.   **Strengthening of Institutions:** India agreed to strengthen the three selected regional institutions in Africa such as Institute Pasteur of Tunisia, Tunis; Institute of Mathematics and Physical Sciences of Benin and School of Science and Technology of Masuku in Gabon through developing Institutional / academic linkages, training of African researcher and exchange of technological kow-how.

C.   One of the flagship programmes under the S & T Initiative is **the C V Raman International Fellowship for African Researchers**. The objective of the Fellowship is to provide opportunity for African researchers to conduct research under the guidance of a host scientist in India in order to advance their own research capabilities while contributing to the progress of research in India. All fields of sciences like life, earth, agricultural, veterinary, medical sciences, biotechnology, natural chemistry, physical sciences, computer science, material science, engineering sciences including mathematics and statistics are covered under this programme.

During the first call in 2010, fellowships to 85 candidates from 28 African countries were awarded. In the second call in 2011, 79 candidates from 17 African countries were awarded. During the third call for 2012, 135 candidates from 30 African countries were awarded. So far, 309 fellowships have been awarded. The fourth call was launched in New Delhi on 21 May 2013. The Fellowship program offers slots for researchers to each African country in three different fellowship categories:

      (i)   Post-doctoral/Doctoral Fellowship (duration 6 months)

      (ii)   Visiting Fellowship (duration 3 months) and

      (iii)   Senior Fellowship (duration 1 month)

D.   **Technology transfer:** India's interactions with African researchers and the scientific community have brought to light the existing gap between science and industry in the African continent. The need for an effective commercialization initiative in Africa combined with India's proven track record in this domain can act as a primer to bring innovations through collaboration closer to the markets. DST in collaboration with FICCI and African countries is the process of identifying need based small and medium scale technologies in select fields which has successful commercialization in India, for its transfer to Africa**.**

E.   **Training Programmes:** Two batches of African researchers have already completed training in Biomedical Sciences in Delhi during April and September 2011. A training course on "Technological Innovation for Capacity Building in Data Analyst" was conducted at IIIT Allahabad during October - November 2012 which was attended by 25 participants from 13 African countries. Training course on 'Energy, Environment and Sustainable Development' was organized by TERI during April -May 2013. 21 participants from 10 African countries participated in the programme. Two other training programmes in Science, Technology & Innovation Policy and Indigenous Knowledge systems is under consideration.

Pan African e-Network:

Pan African e-Network, the first initiative of India in Africa at the continental level was launched in 2008 and fully funded by the Govt. of India for an amount of around Rs. 530 crores. The network has 3 (three) components (i) tele-education (ii) tele-medicine and (iii) VVIP connectivity. The Network has been acceded to by 48 countries in Africa. The Network was scheduled to be handed over to the African Union in July 2014. Recently, in a communication, AU has requested the Govt. of India to consider hand holding of this project for a little longer. The proposal is under consideration.

India- Africa Technology Partnership Programme through CII:

Under IAFS-II held in Addis Ababa 2011, it was proposed to establish the **India-Africa Technology Partnership Programme**. The objective would be to create a mechanism to facilitate transfer of Indian technology to the African nations, build long term science and technology partnerships, create an enabling environment for Indian industries to gain access to African markets and build capacity in the recipient nations to absorb the new technologies through (a) partnership development activities/studies/research/web portal; (b) capacity building i.e. technology management training programme and intellectual property rights training programme; and (c) technology transfer and deployment.

Confederation of Indian Industry (CII) so far has organized a Technology Show in New Delhi on 18-20 March 2012. Two training programmes on Innovation and Technology Management in July 2012 in New Delhi and in January 2013 in Gandhinagar, Gujarat were organized. Over 50 candidates from 13 different countries from Africa had participated in the training programmes.

India-Africa Food Processing Business Incubation Centres:

Africa like India is a major producer of horticulture products and out of which very limited amount of products is being exported. There is a growing demand to encourage new African entrepreneurs through innovative ideas to participate in the business of food processing, value addition through technical training and providing hands on experience. To fulfil the basic needs of a food processing business, it is proposed to establish 5 India-Africa Food Processing Business Incubation Centres in Africa. Locations- Uganda, Cameroon, Ghana, Mali and Angola

India-Africa Information Technology Centre: It is proposed to establish a permanent Institute for IT training to raise general level of proficiency in IT. This will fulfill African demand for IT training of youth. Location- Ghana.

IT centres: On bilateral basis, ten IT centres are proposed to be established. Locations-Ethiopia, Namibia, Morocco, South Africa (Phoenix Settlement Trust), Sierra Leone, Benin, CAR, Cape Verde, DR Congo and Lesotho.

Training in IT: 80 candidates from various African countries participated in training programmes in IT sector in CDAC Noida and CDAC Pune. All the 8 training programmes were completed.

Details of course:
 (i) E -governance application (12 weeks)
(ii) Design, development & implementation of e-learning course (8 weeks)
(iii) Post Graduate Diploma in Advance Computing (DAC) (6 months)
(iv) Post Graduate Diploma in wireless and mobile Computing (WiMC) (6 months)
(v) Diploma in Business Computing (4 months)
(vi) Diploma in web Development and Programming (4 months)

LOC:

The Technology Development and Innovation Centre in Science & Technology Park in Mozambique under an Indian LOC of US $ 25 million was completed and handed over to Mozambique on 31 August 2013. Under LOC of US $ 25 million, a Technology Park in Cape Verde, Mahatma Gandhi IT and Biotechnology Park in Cote

d'Ivoire under LOC of US $ 20 million are under consideration. Information Technology Park in Swaziland under LOC of US $ 20 million is expected to be completed by June 2014.

Grants:

Under Grants- in -Aid, GOI has supplied Computers and peripherals, Science and Technology equipments for laboratories, Medical equipments for hospitals etc to various African countries.

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