



EDITORIAL

Capitalisation loss
exposes gaps in NSE

Page 22»



NEWS INDEPTH

Malawi's tobacco
industry up in smoke

Page 24»



NEWS INDEPTH EXTRA

Italians seek to seduce
chocolate fans

Page 26»

COMMENT & ANALYSIS

TECHNOLOGY ■ JOHN MUGABE

Collaboration can boost science, technology growth in Africa

Challenge for continent is to invest in creating scientists who will be able to work with counterparts abroad

International co-operation in science and technology is increasing in intensity and complexity. Several studies have shown that collaborative science and technology activities have increased among developed countries and between some developed and developing countries.

This growth has been stimulated by a variety of factors, including globalisation and increasing recognition of the benefits of collaboration. Most recent international and regional economic, trade, security and environmental agreements or treaties contain provisions on co-operation in science and technology.

At the international level, many treaties emphasise co-operation in science and technology. They create obligations for their contracting parties to invest in joint science and technology programmes and engage in co-operation through exchanges of expertise and information as well as sharing research facilities.

On the whole, there is increasing recognition and articulation of the role of co-operation in fostering the application of science and technology for sustainable development. Scientific and technological development is a learning process that is largely achieved through co-operative or collaborative efforts of sharing experiences, information, infrastructure and other resources, such as human and financial. Today, no country can achieve scientific advances and technological progress without interacting with its peers and neighbours.

The ability of countries and firms to innovate, both in technical and managerial ways, is largely determined by strategic alliances forged both within their industrial landscapes and across sectors. Furthermore, for industrial firms to become successful in generating new innovations, they often have to form strategic partnerships with public research and development insti-



tutions, especially in fields like biotechnology. Co-operation in science and technology can take various forms, including joint projects, sharing of information, conferences, building and sharing joint laboratories, setting common standards for research and development, and exchanges of expertise.

For developing countries, particularly those in Africa, such co-operation can bring many advantages, including: providing access to new knowledge and training, offering access to research facilities, avoiding duplication of research, enriching the socio-political relations between countries, providing opportunities for multidisciplinary research activities and teams, creating a channel for international funding, and fortifying domestic research and development institutions.

The importance of co-operation in science and technology is also articulated in a wide range of declarations, statements and national policies. Many African countries have entered

into bilateral co-operation agreements.

Most, if not all, African countries recognise that international co-operation in science and technology matters. With the exception of a few countries, however, there is no evidence that they have set up specific programmes or made institutional arrangements to implement the provisions of the agreements.

Some of the reasons for this include the inadequate financial resources devoted to international and regional activities, the lack of explicit linkages between the science and technology policies and foreign policies of most African countries, the limited capacity to negotiate effectively and monitor the implementation of co-operation agreements, and generally weak national science and technology systems.

For African countries to be able to achieve high levels of scientific and technological development and thereby reap the benefits in terms of economic growth, poverty reduction, environmental sustainability, improved health,

etc., they must place greater emphasis on pursuing science and technology in regional and international contexts.

Isolated national approaches, de-linked from regional and international programmes, will deny these countries opportunities to benefit from the globalisation of science and related technological innovations.

African countries can benefit through increased regional co-operation because many scientific and technological advances are made in other regions of the world.

A large proportion of scientific articles and patents are generated outside Africa. Most African countries do not have the necessary research facilities in areas such as genomics, since these tend to be relatively

expensive. International and regional collaboration is necessary in order to enable African scientists to access such facilities.

However, in order for Africa to be able to utilise and benefit from discoveries made and facilities located elsewhere, it needs world-class researchers who can communicate and collaborate with the best scientists around the world. The challenge for the continent, therefore, is to invest in creating a cadre of scientists who will be able to work with developed country scientists on specific international projects.

John Mugabe is the secretary to the African Ministerial Council on Science and Technology (Amcost) of the New Partnership for Africa's Development (Nepad). This commentary is derived from a chapter in *Dialogues at the Interface: Science and Technology Policy for Development*, edited by Louk Box and Rutger Engelhard (Netherlands Ministry of Foreign Affairs/Directorate General for Development Co-operation, 2005).