

Observatory on Science Technology and Innovation for ACP Agricultural and Bural Developmen

CTA and S&T

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About

March 2010

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New initiatives

Thinking forward: Better predicting and addressing future needs

http://knowledge.cta.int/en/content/view/full/11559

Over the last five years, different exercises - assessments (IAASTD, WDR), projections (IFPRI, FAO, Millennium Institute), foresights (Agrimonde, SCAR, Mediterra 2008, UK Foresight, etc.) - have been carried out. They differ on several aspects: partners, ordering body, objectives, levels at which they are carried out (national, European or international), methods used, conclusions, etc. All these exercises and their conclusions are useful. The main actors of these exercises know each other. However, there is a tendency of each of us to defend our methods, results, institution. In order to help strategy formulation by the actors of international agricultural research, our feeling is that increased dialog among ourselves is necessary to put light on convergences and differences, something like a "controversial dialog", involving committed persons having time enough to carry on interactions and exchanges. Read the reports and download the presentations.

Foresight 2010 conference: videos of presentations

http://knowledge.cta.int/en/content/view/full/11445

The Foresight Institute has posted 18 videos from its recent Foresight 2010 conference on the vimeo website. In each video, a well known expert expounds on a field of technology that offers significant likelihood of economically or socially important innovations in the future. Look at the video by Paul Saffo *Profile of the Future* in which he discusses that science and technology will become more polarized because of fundamental differences in world view and the unwillingness to explore possible options.In another video, Robin Hanson discusses the *economics of nanotechnology*. (Source: Zunia, 10 April 2010)

Designer nano luggage to carry drugs to diseased cells

http://knowledge.cta.int/en/content/view/full/11223

For the first time, scientists have succeeded in growing empty particles derived from a plant virus and have made them carry useful chemicals. The external surface of these nano containers can be decorated with molecules that guide them to where they are needed in the body, before the chemical load is discharged to exert its effect on diseased cells. The containers are particles of the Cowpea mosaic virus, which is ideally suited for designing biomaterial at the nanoscale. (Source: John Innes Centre, 10 March 2010)

Finding the food crops of the future

http://knowledge.cta.int/en/content/view/full/11222

Will maize still be the staple food in Kenya in 40 years? If not, what could people grow and eat? And, if you can still grow maize, how much water and fertilizer will it need? For the first time, a customized regional climate model linked to crop growing and water models, run on a supercomputer at Michigan State University (MSU), USA, will help provide crop breeders Kenya, Uganda and Tanzania with detailed answers on crop yields. Many research institutions have been working on models to predict the impacts of climate change on food production in Africa. In a few months, the MSU model will help scientists and breeders to zoom in at a regional level on the possible impacts of climate change on a wide variety of crops in these countries. (Source: IRIN, 24 February 2010)

Transforming agricultural research for development": Report for GCARD 2010

http://knowledge.cta.int/en/content/view/full/11602

By Uma Lele, Jules Pretty, Eugene Terry and Eduardo Trigo, with assistance from Maggie Klousia (March 2010)

This paper by the Global Authors' Team (GAT) was commissioned by the Global Forum on International Agricultural Research (GFAR) as an input into the Global Conference

on Agricultural Research for Development (GCARD). It builds on the consultations conducted over nearly a year as part of the GCARD process. Some 2000 stakeholders of agricultural research from different sectors participated in these consultations. It also draws on the team's analysis of the state of the world agricultural research undertaken by or for the benefit of developing countries and the rapidly changing international context in which the research is conducted. The Team reviewed nearly 300 recent and historical documents, drew on their own collective experience of nearly 35 years as well as benefiting from perspectives and comments on the earlier draft from the authors of Regional Papers, leaders of international, regional and national research systems, colleagues in IFAD, FAO, GFAR, the CGIAR, the World Bank, IDS and many others. The team also reflected on the discussions during the GCARD and the paper will be finalized by the end of April 2010.

Dossier Foresighting

http://knowledge.cta.int/en/content/view/full/9244

In this Knowledge for Development dossier, CIRAD's Marie de Lattre-Gasquet explains that the foresight process provides an opportunity for the world, and especially for ACP countries, to invent sustainable patterns of production and consumption and explore new lifestyles. In another article in this dossier, Neill Allan of Ability Europe Limited discusses the idea that foresight aims at better investment decisions and explains the why, how, what and when of Foresight. The lead articles are supported by background material in the form of web links to organizations, think-tanks, research groups, journals that deal with foresight.

Developments

Caribbean: Regional food safety agency launched in Suriname

http://knowledge.cta.int/en/content/view/full/11399

The long-awaited regional agency to oversee food safety standards in the 15-nation Caribbean Community (CARICOM) was launched in March 2010. The goal of the Caribbean Agricultural Health and Food Safety Agency (CAHFSA), which has been in the making since a 2004 decision by the Council for Trade and Economic Development (COTED), is the establishment of an effective and efficient Regional Sanitary and Phyto-Sanitary (SPS) regime. CAHFSA will also facilitate the harmonisation of the relevant laws and administrative practices required by the Revised Treaty of Chaguaramas, and provide assistance to member states in this regard. (Source: Caribbean Daily, March 2010)

Climate models to predict African disease outbreak

http://knowledge.cta.int/en/content/view/full/11471

African and European researchers are joining forces in a new project that will use climate modelling to predict outbreaks of diseases in Senegal, Ghana and Malawi. Researchers across 13 European and African research institutes are set to work together to integrate data from climate modelling and disease forecasting systems to predict the likelihood of an epidemic up to six months in advance. The research, funded by the EC, will give decision makers the necessary time to deploy intervention methods, helping to prevent large-scale spread of diseases such as Rift Valley Fever and malaria. (Source: afrol News, 16 April 2010)

Indigenous knowledge meets science

http://knowledge.cta.int/en/content/view/full/11211

For generations, the Nganyi people of western Kenya have served as rainmakers, helping local communities decide when best to prepare their land and sow their seeds. But even the Nganyi have been bewildered by climate change and the alternating cycles of droughts and floods it is inflicting. A British-Canadian project is helping the Nganyi people to develop new strategies to handle the impacts of climate change. Launched in 2009, the project combines indigenous knowledge with modern science to build up climate change intelligence and disseminate it more widely in a community whose existence depends almost exclusively on rainfed farming. (Source: the Independent, 19 February 2010)

African science must tackle local language barriers

http://knowledge.cta.int/en/content/view/full/11435

Indigenous African knowledge has much to offer to science – but only if science can be translated into local languages. Africans have a rich cultural heritage and a wealth of traditional knowledge on topics ranging from agriculture and forestry to medicines and medical practices – all of which could make valuable contributions to modern science. Much of this knowledge is embedded in the diverse local languages and cultures found in Africa. Yet despite centuries of scientific undertakings on the continent, there is still no vernacular word for 'science'. This marginalization of African languages and practices means much local knowledge is lost. Many innovations by farmers and rural

communities are excluded from modern science and technology (S&T) because there are no local terms or expressions to capture them. (Source: SciDev.net, 7 April 2010)

Scientists find a new way to help crops fight pests

http://knowledge.cta.int/en/content/view/full/11219

An international team of scientists has managed to transfer disease resistance from one plant family to another, offering broader protection from pests. The team found that transferring a single gene from a wild plant to disease-susceptible crop plants made them more robust against infections like bacterial wilt and other diseases. If the results can be duplicated more widely, they could help prevent massive crop losses and avoid the environmental, health and financial costs associated with using pesticides. (Source: Reuters Science, 14 March 2010)

East African scientists to form new disease surveillance centre

http://knowledge.cta.int/en/content/view/full/11340

Scientists from Burundi, Kenya, Rwanda, Tanzania and Uganda will establish a regional disease surveillance centre. This will link medical and veterinary institutions and improve their capacity to detect, identify and monitor infectious diseases in plants, animals and humans. The East African Centre for Infectious Disease Surveillance (EACIDS) will also increase laboratory capacities, harmonize and standardize best practices, and facilitate the sharing of data and communication. This initiative is supported by Food and Agriculture Organization (FAO). (Source: The Observer, 17 March 2010)

Biosafety Bibliographic Database (Bibliosafety)

http://knowledge.cta.int/en/content/view/full/11469

The ICGEB Biosafety Unit has launched a newly restructured Biosafety Bibliographic Database (Bibliosafety). Key improvements include a more powerful and simpler search function that uses a similar approach to Google, the listing of search outputs by the degree of relevancy rather than by publication year, a clearer layout of each record, and direct links, where available, to the date of issue, corresponding author email and journal website.

Website about the safety of GM crops

http://knowledge.cta.int/en/content/view/full/11391

Two professors have created a new website called Academics Review (http://academicsreview.org) to set the record straight about the proven safety of genetically modified (GM) crops. Dr. David Tribe is a biotechnologist and microbiologist at the University of Melbourne, Australia, and Dr. Bruce Chassy works in food safety and human nutrition at the University of Illinois, USA. The website analyzes negative claims about GM crops on the basis of available evidence, the peer-reviewed scientific literature, and scientific logic. The website is designed as a platform for the critical scientific review of issues relating to food, food safety, agriculture, nutrition and GM crops. In the coming months, other issues and expert opinions will be added to the website. (Source: CBU, 31 March 2010)

A search for regulators and a road map to deliver GM crops to third-world farmers

http://knowledge.cta.int/en/content/view/full/11433

In May 2010, a school for the future regulators of Africa's genetically modified (GM) crops is opening in Burkina Faso. The school, called the African Biosafety Network of Expertise (ABNE), has been set up by the African Union and is funded by the Bill and Melinda Gates Foundation. This Africa-based, Africa-owned and Africa-led initiative will enhance the debate in the agricultural community on issues of food sovereignty and GM crops. "We acknowledge that sovereignty is in the hands of Africans," said Lawrence Kent, deputy director of the Agricultural Development Initiative at the Gates Foundation. "For research to move forward, African governments must move forward with biosafety capacity building." (Source: CheckBiotech, 6 April 2010)

Status of biotechnology in Africa: Challenges and opportunities

http://knowledge.cta.int/en/content/view/full/11491

Agricultural biotechnology alone will not solve the multitude of problems that farmers in Africa face. The challenges facing the continent on biotechnology and biosafety include: the lack of funds; the loss of trained technical expertise; the slow development of the biotechnology sector; inadequate Intellectual Property Rights infrastructure; government not taking a more active political role in promoting the technology; and the issue of public acceptance brought about by activism. The lag in the development of a governance capacity for biotechnology is seen in the current status of the development of National Biosafety Frameworks (NBFs) in Africa.

New efficient maize varieties

Launched in February 2010, the Improved Maize for African Soils Project (IMAS) develops maize varieties that are better at capturing the small amount of fertilizer that African farmers can afford, and that use the nitrogen they take up more efficiently to produce grain. Project participants use cutting-edge biotechnology tools such as molecular markers – DNA 'signposts' for traits of interest – and transgenic approaches to develop varieties that ultimately yield 30-50% more than current varieties, with the same amount of nitrogen fertilizer applied or when grown on poorer soils. (Source: CIMMYT, March 2010)

Mapping genebank collections

http://knowledge.cta.int/en/content/view/full/11405

The genetic diversity of traditional and modern rice varieties, and in the wild relatives of rice, is vital to agricultural development, as it provides the basis for rice improvement. Sometimes, a single rare gene found in only a few varieties can greatly contribute to rice production. A good example of this is the short-straw gene, or the SUB1 gene, which confers submergence tolerance. Ironically, the success of rice breeding has rapidly replaced traditional varieties with modern ones, particularly in Asia's irrigated rice fields. One important approach to avoid the loss of crop biodiversity, or 'genetic erosion', is the use of genebanks. The International Rice Research Institute (IRRI) and several other have assembled a broad collection of rice varieties (780,551 samples) and conserved them for breeding in several gene banks. The data have been refined to reduce the geographical search area for finding samples with important traits. (Source: Rice Today, April 2010)

Nature publishes biodiversity supplement for 2010 International Year of Biodiversity

http://knowledge.cta.int/en/content/view/full/11467

Nature is publishing a biodiversity supplement for 2010, the International Year of Biodiversity. As nations come together to address the alarming loss of species taking place worldwide, Nature hopes that these features, opinion pieces, News & Views articles and original research papers will provide a useful snapshot of the problems faced and solutions proposed.

Video-lessons learned from the Dutch Biodiversity Fund

http://knowledge.cta.int/en/content/view/full/11463

Hivos-Oxfam Novib has produced two videos containing lessons learnt and experiences with biodiverse agricultural systems. The first DVD focuses on 'Biodiversity strategic value: conserving production processes' and the second on 'Biodiversity strategic value: farmer knowledge and livelihood strategies'. (Source: HIVOS, 15 April 2010)

Feasibility study on the AfricaConnect Initiative (FEAST)

http://knowledge.cta.int/en/content/view/full/11449

To be able to fulfil their missions, African research and higher education institutions need access to the global research and education network infrastructure. Unlike their peers on other continents, most do currently not have such access. Within the partnership on Science and Technology, the African and European Union Commissions have given highest priority to the AfricaConnect initiative as an early deliverable. The objective is to support African research and higher education institutions in their efforts to access this resource, which is a requirement for the development of knowledge societies. Most universities are in places where optical fibre cables are already deployed or will shortly become deployed. Policy and regulation is mostly permissive in principle, but the awareness of the importance of National Research and Education Networks (NRENs) and their needs is still low. The main finding is that the primary bottleneck is, with a few extraordinary exceptions, the readiness of the NREN communities. The conclusion of FEAST is that it is feasible to connect several ready African NRENs to each other and to peers at other continents via GÉANT and by reinforcing the emerging regional network, Ubuntunet.

African agriculture fund will link research to smallholder farmers

http://knowledge.cta.int/en/content/view/full/11207

The Africa Enterprise Challenge Fund (AECF) has launched a new funding window for 'Research into Business', aiming to catalyse the private sector's ability to bridge the gap between agricultural research and the smallholder farmer. This new funding programme will focus on putting into practice new crop varieties, pest and disease control methods and better irrigation techniques. It is estimated that over the next five years, the 'Research into Business' initiative will directly benefit 750,000 people, 60% of whom are living on less than US\$2 per day. It is predicted that the new technologies brought to agribusinesses by this initiative will drive their growth up by 5% every two years. (Source: R4D, 3 March 2010)

Nigeria: ADB doles out US\$15 million for science, technology and education

http://knowledge.cta.int/en/content/view/full/11214

The African University of Science and Technology (AUST) in Abuja, Nigeria, and the International Institute for Water and Environment Engineering (2iE), based in Ouagadougou, Burkina Faso, have received a US\$15 million grant from the Africa Development Bank (ADB) to promote and enhance links among African Science and Technology institutions. The project is a regional response to the need for high-level expertise in science and engineering in sub-Sahara Africa, and is expanding equitable access to higher education and research through the enhancement of a pool of excellence in science and technology in the Economic Community Of West African States (ECOWAS) sub-region. (Source: All Africa, 23 February 2010)

Mobile phones bring insurance to Kenyan farmers

http://knowledge.cta.int/en/content/view/full/11330

Kenyan farmers can now insure some of the costs of growing crops against bad weather by using mobile phone technology that links solar-powered weather stations to an insurance company. Farmers can cover the cost of seeds, fertilizers and pesticides at local agricultural supply shops by paying an extra 5% of their value. If their harvest fails due to bad weather, they are reimbursed and can plant again. The local climate is monitored by 30 solar-powered weather stations that transmit rainfall, sun radiation, temperature and wind data every 15 minutes over the mobile data network. In the case of drought or excessive rains, registered farmers automatically receive insurance payouts through M-Pesa, Safaricom's successful mobile money transfer service. (Source: Reuters, 12 March 2010)

Cuban scientist wins US-based environmental prize

http://knowledge.cta.int/en/content/view/full/11486

A scientist who says that the key to Cuba's agricultural future lies in its agrarian past has become the first Cuban to win the US-based Goldman Environmental Prize, the world's biggest award for grassroots environmentalism. Humberto Rios, 46, was announced as a prize winner on April 19 in San Francisco, along with five other activists from around the world. They will each receive US\$150,000, a huge sum in Cuba where the average annual salary is equivalent to US\$240. Rios won the prize for his work on promoting a return to more traditional farming techniques, focusing on seed diversity, crop rotation and the use of organic pest control and fertilizers to both increase crops and improve the communist-led island's environment. (Source: Reuters, 19 April 2010)

New journal launched: World Agriculture

http://knowledge.cta.int/en/content/view/full/11329

'World Agriculture: problems and potential' is a new independent journal which was launched at the beginning of April 2010. The journal will publish peer-reviewed articles giving clear, unbiased and factual accounts of development in, or affecting, world agriculture. Articles will intepret the influence of related subjects (including climate, forestry, fisheries, human population, economics, transmissible disease and ecology) on these developments. Highlights in this first issue include: 'Agricultural development: is it still relevant for sub-Saharan Africa?' and 'Contract farming systems in Uganda' and 'Fish farming in Africa'. World Agriculture will be a quarterly publication.

Technologies for Agriculture (TECA)

http://knowledge.cta.int/en/content/view/full/11546

TECA aims to respond to the need for a well-managed information system to share proven technologies and good practices for agriculture, focused on smallholder producers. More than 800 proven technologies and good practices, which fulfil the quality standards and principles of TECA, have been published and are available online. TECA aims to improve access to information and knowledge sharing about proven technologies in order to enhance their adoption in agriculture, livestock, fisheries and forestry. This will help to address food security, climate change, poverty alleviation and sustainable development.

Papers for conference on biotech-based sustainable agriculture online

http://knowledge.cta.int/en/content/view/full/11220

Papers presented by experts during the International Conference on Biotechnology-based Sustainable Agriculture, held in New Delhi, India on 19 December 2009, are now available online. Papers are categorized by sessions on the following topics: (1) dynamics of sustainable agriculture; (2) recent developments in agricultural biotechnology; (3) safety assessment for food and feed derived from GM technology; and (4) networks for safety management and knowledge sharing, with specific reference to Bt cotton and Bt brinjal.

Selected publications

Global Research Report Africa

http://knowledge.cta.int/en/content/view/full/11493

by J. Adams, C.King and D. Hook, *Evidence*/Thomson Reuters business, UK (April 2010)

Africa's contribution to the global body of scientific research is very small and does little to benefit its own populations, according to a Thomson Reuters report released on April 12. The African Diaspora provides powerful intellectual input to the research achievements of other countries but returns less benefit to the countries of birth. That is at least in part because of a chronic lack of investment in facilities for research and teaching, a deficit that must be remedied.

Pockets of gold

http://knowledge.cta.int/en/content/view/full/11493

By Savitri Mohapatra, Rice Today, April 2010

New findings presented by Africa Rice Center (AfricaRice) scientists and their partners during the Africa Rice Congress, held 22-26 March 2010 in Bamako, Mali, have renewed interest in African rice species. A few African farmers, such as the villagers in the Danyi plateau, have continued to grow African rice because of its adaptability and its ceremonial and cultural value. These farmers inspired AfricaRice scientists to investigate the species and tap into its rich reservoir of genes for resistance to several stresses, including weeds. Studies have shown that CG 14, one of the O. glaberrima varieties, is weed-competitive and has good resistance to iron toxicity, drought, nematodes, water logging, and major African rice diseases and pests.

Fisheries in the economies of the Pacific island countries and territories

http://knowledge.cta.int/en/content/view/full/11499

By the Asian Development Bank, 2009

The fishing industry benefits the people and economies of the Pacific in various ways, but the full value of these benefits is not reflected in the region's statistics. Records may be maintained, but they are not complete, accurate or comparable. The research summarized in this report reaffirms the importance of this sector to the economies and societies of the Pacific island countries.

Migration and science

http://knowledge.cta.int/en/content/view/full/11226

By TWAS, January 2010

Advances in science depend on the open migration of scientists. While such free movements benefit both science and scientists, science-poor countries continue to be hampered by the 'brain drain' phenomenon. Nevertheless, countries such as China and India have begun to reap the benefits of 'brain circulation', as highly skilled migrants return home and diaspora networks create valuable opportunities for the development of science and the economy.

Carbon market opportunities and indigenous knowledge

http://knowledge.cta.int/en/content/view/full/11229

By Patrick Karani, Frederick Ahwireng-Obeng, James Kung'u, Caleb Wafula, Bureau of Environmental Analysis International, February 2010

This report compiles a series of case studies that determine the potential of indigenous knowledge for the mitigation of, and adaptation to, climate change. The case studies assess the indigenous knowledge practiced and applied by local communities in the East, West and Southern Africa regions, and determine the benefits of integrating indigenous knowledge into mitigation and adaptation programmes and projects. Overall, they show how indigenous knowledge can add value to the development of sustainable climate change mitigation and adaptation strategies that support local communities' efforts to address problems of climate change and ensure sustainable conservation and natural resource management.

Guidelines on biofuels and invasive species

http://knowledge.cta.int/en/content/view/full/11230

By International Union for Conservation of Nature and Natural Resources (IUCN), 2009

These guidelines aim to highlight the risks of biological invasion by species introduced for biofuel production, and provide constructive recommendations on how to prevent the introduction, establishment and spread of invasive species resulting from biofuel developments. The guidelines are intended to inform the policies and practices of biofuel producers and decision makers, and ultimately provide guidance to importing

companies and countries.

A Green Step Forward in the Caribbean

http://knowledge.cta.int/en/content/view/full/11545

By The Caribbean workshop report, 2008

The Caribbean workshop report is the result of a two-day workshop which took place from 30 November to 3 December 2008, immediately after the University of the West Indies (UWI) 60th anniversary International Congress on Tropical Agriculture, entitled 'Overcoming Challenges to Developing Sustainable Agri-food Systems in the Caribbean'. UWI, in consultation with its key stakeholder, noted that over the years it had not established a strong link with other Caribbean Community (CARICOM) states to solve problems affecting the agricultural sector and related industries. One of the recommendations was that CARICOM should recognize UWI not only as an institution involved in building human capacity, but also as a research, innovation and outreach institution, and that UWI should configure itself into a think tank to address current issues and provide proactive policy direction for Caribbean states.

Jobs for ACP Scientists

IFPRI: Senior research assistant, Knowledge, Capacity and Innovation

http://knowledge.cta.int/en/content/view/full/11235

IFPRI seeks a senior research assistant for a one-year, fixed-term appointment in its Knowledge, Capacity and Innovation Division. This position is located at IFPRI's headquarters in Washington, D.C., USA, Specific duties include, but are not limited to: (1) assisting in preparing large datasets for analysis and public access; (2) developing documentation learning materials; (3) conducting data-based analysis, using STATA, SPSS and other similar software; (4) performing various activities including data collection, data maintenance, data analysis, literature review, report writing and editing; and (5) programming activities that facilitate, support and contribute to IFPRI's research and outreach efforts. THE Position is open until filled.

Consultant (scientist) to work on EU-FP7 project 'QWeCI'

http://knowledge.cta.int/en/content/view/full/11237

The European Centre for Medium-Range Weather Forecasts (ECMWF) is an international organization supported by 31 states. It produces analyses, medium-range forecasts of weather and ocean waves, and seasonal forecasts. ECMWF contributes to the QWeCI project (Quantifying Weather and Climate Impacts on health in developing countries) by providing medium- and extended-range forecasts for Africa from its EPS-monthly and seasonal forecasting systems. Specifically, ECMWF will deliver seamless, calibrated rainfall predictions for the whole African continent by post-processing the numerical output of its forecasting systems. Decadal simulations performed in the context of other EU-FP7 projects will also be analyzed to detect possible predictable signals over Africa. The task of the scientist will include detailed verification of ECMWF weather forecasts for Africa, the development of a calibration package, and the analysis of experimental decadal simulations.

Fellowships and grants

TWAS fellowships: Call for applications now open

http://knowledge.cta.int/en/content/view/full/11241

TWAS is now accepting applications for its postgraduate, postdoctoral, visiting scholars and advanced research fellowship programmes. The fellowships are offered to scientists from developing countries and are tenable at centres of excellence in various countries in the South, including Brazil, China, India, Malaysia, Mexico, Pakistan and Thailand. Eligible fields include: agricultural and biological sciences, medical and health sciences, chemistry, engineering, astronomy, space and earth sciences, mathematics and physics. Women scientists are especially encouraged to apply.

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