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New Dossier

ICTs for transforming ACP agriculture

The next new dossier to be published on the *Knowledge for development* website is on ICTs. We are providing our readers with the two lead articles as a preview.

Unlocking the Promise of ICTs for Transforming Agriculture in Africa

<http://knowledge.cta.int/en/content/view/full/12177>

by Towela Nyirenda-Jere, Programmes Manager, NEPAD e-Africa Commission, CSIR, Pretoria, South Africa

In her article, the author explores the ways that ICTs can transform agriculture in Africa. She draws attention to the current status of ICTs in Africa and the promises they hold, such as the staggering growth of mobile phone use, the halting expansion of the fixed-line telephone network and the disappointing growth of internet access. She argues that ICTs could facilitate the creation of networks locally, regionally and globally, leading to collaborative and knowledge-sharing approaches to problem solving and research diversification. Yet, the most prevalent use of ICTs in agriculture is providing farmers with information and advisory services through SMS, voice, web portals and call centres. The author highlights the bi-directional sharing of information in the value chain between farmers and retailers, e-banking and the use of GIS to secure land titles. Challenges remain, however. They entail improving the mechanisms and infrastructure for sharing and exchanging agricultural knowledge generated through research at the national and regional levels, and boosting human capital to rapidly absorb and use these new technologies. Policy makers still need to appreciate fully the far-reaching benefits of ICTs and promote the right regulatory and market structures to realise their new opportunities, especially for Africa's benefit.

The challenge of changing trends in the development and use of information and internet web communication technologies for veterinary medicine education in Nigeria

<http://knowledge.cta.int/en/content/view/full/12171>

by Dr Olutayo Olajide Babalobi, Department of Veterinary Public Health and Preventive Medicine, Faculty of Veterinary Medicine, University of Ibadan, Nigeria

In his article, the author discusses trends in ICT use in veterinary science education in Nigeria. His discourse focuses on how the web itself is changing to allow new trends in communication, information and knowledge exchange to flourish in veterinary medicine. Education resources in this field of practice are actively being promoted in Nigeria, and include comprehensive articles on the application of ICTs in veterinary medicine, veterinary training and research. Their impacts and challenges are significant; as is their role in providing improved acquisition of skills and competences in veterinary medicine and animal production. Many veterinarians in Nigeria are now active participants in online social networking communities, such as Facebook, Ning and Twitter – and more and more are getting involved. The author concludes that perhaps the most important factor for the remarkable growth of ICT use recently has been collaborative funding initiatives from a number of international organisations, and he points to the massive joint support programmes set up by international funding agencies that have resulted in a phenomenal increase of ICT use in Nigeria's veterinary faculties.

CTA and partners

Relaunch: Call for expression of interest

<http://knowledge.cta.int/en/content/view/full/11798>

This call for expression of interest is to identify a shortlist of companies/organizations who will be invited to submit a full tender to provide services for the content management of 'Knowledge for Development.' This web portal seeks to put information on science, technology and innovation (ST&I) issues at the fingertips of ACP and EU scientists, policy makers and stakeholders and their international colleagues and provide them with a platform to dialogue on relevant issues in support of agricultural and rural development. The website is fully operational and bilingual offering content in both English and French. It includes RSS feeds and new social media (twitter, facebook). **Deadline: 30 September 2010**

2009-10 Africa-wide women and young professionals in science competitions

<http://knowledge.cta.int/en/content/view/full/12178>

The finals of CTA/FARA/AGRA/RUFORUM/ANAFE/NPCA 2009-2010 Africa-wide science competitions were held in Burkina Faso from 19-20 July 2010 as a side event during the 5th African Agricultural Science Week and FARA General Assembly. The 'Women in science' competition was won by **Dr Sarah Lubanga Mubiru of Uganda** for her work on the Development of the 'ENDIISA' decision support tool for improved feeding of dairy cattle in Uganda. Other winners were *Dr Theresia Luvuno Munga of Kenya*, *Ms Esperance Benedicte Zossou of Benin*, *Mrs Lalini Unmole of Mauritius* and *Ms Eunice Wamuyu Githae of Kenya*. The Young Professionals Competition was won by **Ms Sandrine Nguiakam of Cameroon** for her paper on « Cours des matières premières, recettes budgétaires et croissance économique: Cas de la Cote d'Ivoire ». Other winners were *Mr Kevin Zowe Mganga of Kenya*, *Ms Aneeza Soobedar of Mauritius*, *Dr Robert Kajobe of Uganda*, *Ms Wendkhoumi Sabine Marie Flore Doamba of Burkina Faso* and *Mr Michael Kwabena Osei of Ghana*.

Development of 'ENDIISA' decision support tool for improved feeding of dairy cattle in Uganda

<http://knowledge.cta.int/en/content/view/full/12184>

By Dr Sarah Lubanga Mubiru, Livestock and Fisheries Programme, ASARECA, Entebbe, Uganda

Despite existing knowledge and, in some instances, the appropriate use of feed resources, milk production on dairy farms has remained low in the ranges of 2–5 L/cow/day. In her paper, Mubiru argues that this poor performance clearly points to a gap in farmers' knowledge regarding cattle feeding. Since farmers are unable to know the quantities of feeds needed to meet the nutritional requirements of their animals, they were only able to provide 59% and 36% of the required metabolisable energy and crude protein, respectively, to their animals. A mechanism was developed by which farmers could establish adequate feed quantities for their cattle, even when they are combining a variety of feeds. 'ENDIISA' is the web-based decision support tool that was one of the major outputs of the author's winning research submission.

Prices of Raw Materials, Budgetary Earnings and Economic Growth: A Case Study of Côte d'Ivoire

<http://knowledge.cta.int/en/content/view/full/12186>

By Ms Sandrine Nguiakam, ENSEA, Cameroon

In this study, Nguiakam and her co-author evaluated the impact of the fluctuation of international raw material prices on the variability of the Ivory Coast's GDP. She used the Vector Autoregression model on an international data set of primary products and export earnings. Inflation and GDP were selected variables analysed to conform to this instability. The results show that from 1960 to 2005, fluctuations of coffee prices accounted for about 15% of the variability of the total output, and they confirm the Ivory Coast's dependence on raw materials. They also illustrate the need to continue efforts at diversifying the economy – particularly the agricultural sector – and to establish a body to better interpret the world economic environment, in order to anticipate and absorb shocks.

Full papers will be published by CTA/FARA. Read the abstracts of all the top 27 finalists.

<http://knowledge.cta.int/en/content/view/full/12182>

Developments

Can science feed the world?

<http://knowledge.cta.int/en/content/view/full/12080>

In its editorial of 28 July 2010, Nature online asks what role science has to play in securing food for the future and argues that science by itself is not a panacea for world

hunger since poverty is the root cause. A second green revolution based on a wholesale realignment of agricultural research priorities is urgently needed. Nature online is calling for new high-yielding crop varieties that use less water, fertilisers or other inputs and crops that are more resistant to drought, heat submersion and pests. Lower-tech research on crop rotation, mixed farming, soil management and curbing post-harvest losses are considered 'equally crucial'. Research agendas should focus more on the needs of the poorest and most resource-limited countries, where population growth will be greatest in the coming decades. Nature notes that investments in agricultural research in China, India and Brazil have been growing exponentially and that these countries seem set to become the key suppliers of relevant science and technology to poorer countries. Increases in public and private spending on agricultural research and public-private partnerships that respond to the needs of poorer countries are more than justified. (Source: Nature News, 28 July 2010).

Model shows 'waves' of forest degradation

<http://knowledge.cta.int/en/content/view/full/12081>

An international team of researchers from Tanzania, UK and USA has developed a model suggesting that the degradation of tropical forests occurs in series of 'waves'. The team hopes the model will help sustain forests as vital carbon sinks and limit the loss of biodiversity. The researchers said an economic theory was used to provide a general model to predict patterns of tree loss. The team also developed their model to gauge what impact forest degradation has on 'public good' services, such as carbon storage and biodiversity. They did this by recording what species of trees existed in a given study area and what size the individual trees were. The model can be used to understand the impact of forest degradation in other sub-Saharan nations in Africa. (Source: BBC News, 3 August 2010)

Could boxes of water help reforest the world?

<http://knowledge.cta.int/en/content/view/full/12082>

From the land of dams and canals comes a new device billed as the saviour of agriculture and reforestation in drought-plagued areas. The 'Waterboxx', invented by Dutch businessman Pieter Hoff, collects rainwater and condensation, and funnels it to the plant. Experiments with the device are now underway in Kenya, Morocco, Spain and the United States. The farmer begins by filling the box halfway with two gallons of water. Theoretically, any condensation or rain is enough to keep the box filled and supply the plant with sufficient water via the wick. The device is stoppered with a siphon to prevent evaporation. The box has to be oriented in such a way that the oblong opening in the centre points east-west and shades the plant from the sun during the hottest part of the day. The box is removed after the plant's roots have reached the groundwater. The 'Waterboxx' can be used over and over again. (Source: Scientific American, 1 July 2010)

ILRI warns that rapid losses of Africa's native livestock threaten continent's food supply

<http://knowledge.cta.int/en/content/view/full/12083>

At the 5th African Agriculture Science Week, hosted by the Forum for Agricultural Research in Africa (FARA) experts from the International Livestock Research Institute (ILRI) told researchers that urgent action is needed to stop the rapid and alarming loss of genetic diversity of African livestock, which constitutes the livelihood of 70% of rural Africans and a treasure-trove of drought- and disease-resistant animals. On the basis of a new analysis, the scientists were urged to expand their efforts to identify and preserve the unique traits, particularly in West Africa, of the continent's rich array of cattle, sheep, goats and pigs developed over several millennia but now under siege. ILRI's push to preserve Africa's indigenous livestock is part of a broader effort to improve productivity on African farms through what is known as 'landscape genomics'. Landscape genomics involves, among other things, sequencing the genomes of different livestock varieties from many regions and looking for the genetic signatures associated with their suitability to a particular environment. (Source: ILRI News, 21 July 2010)

Online courses on knowledge management

<http://knowledge.cta.int/en/content/view/full/12084>

The FAO and the UN Institute for Training and Research (UNITAR) have signed a cooperation agreement to deliver jointly a series of online courses on knowledge management and web 2.0 technologies for developing countries. The UNITAR/FAO interactive tutor-facilitated online courses will be certified using internationally recognised quality standards schemes, and will be based on self-paced e-learning materials developed by FAO and partners as part of the Information Management Resource Kit. (Source: FAO Media Centre, 14 July 2010)

Selected publications

What is the Irrigation Potential for Africa? A Combined Biophysical and Socioeconomic Approach

<http://knowledge.cta.int/en/content/view/full/12087>

by IFPRI, June 2010

Many development organisations have recently proposed to significantly increase investments in irrigation in the region. However, the potential for irrigation investments in Africa is highly dependent upon geographic, hydrologic, agronomic, and economic factors that need to be taken into account when assessing the long-term viability and sustainability of planned projects. This paper analyses large, dam-based and small-scale irrigation investment needs in Africa based on agronomic, hydrologic and economic factors. This type of analysis can guide country- and local-level assessment of irrigation potential, which will be important to agricultural and economic development in Africa.

Rice Biofortification: Lessons for Global Science and Development

<http://knowledge.cta.int/en/content/view/full/12088>

by IDS, Sally Brooks, 2010

Biofortification – the enrichment of staple food crops with essential micronutrients – has been heralded as a uniquely sustainable solution to the problem of micronutrient deficiency or 'hidden hunger'. Considerable attention and resources are being directed towards the biofortification of rice – the world's most important food crop. These approaches, the book argues, exemplify a model of global, 'public goods' science that is emerging within complex, international research networks. It provides vital lessons for those researching and making decisions about science and research policy, showing that if this model becomes entrenched, it is likely to channel resources towards the search for 'silver bullet' solutions at the expense of more incremental approaches that respond to locality, diversity and the complex and uncertain interactions between people and their environments. The book presents a series of key changes to institutions and practices that might enable the emergence of more context-responsive alternatives.

Innovation, Sustainability, Development: A New Manifesto

<http://knowledge.cta.int/en/content/view/full/12089>

by STEPS Centre 2010

This new manifesto by the STEPS (Social, Technological and Environmental Pathways to Sustainability) Centre lays out new politics of innovation, which recognises the need for many alternative directions of scientific, technological and associated institutional change. A radical shift is needed in how innovation (new ways of doing things) are perceived, not only for science and technology, but for developing new ideas, institutions, practices and social relations that shape scientific and technological patterns, purposes, applications and outcomes. The manifesto provides many links to more detailed examples and an analysis of the associated manifesto. Lessons have been drawn from hundreds of participants in 20 roundtables in countries from China to Venezuela, India to Zimbabwe, Nigeria to Sri Lanka. The manifesto does not assert a single view but together with many parallel initiatives helps to achieve more diverse and equitably distributed forms and outcomes of innovation. Most importantly, it helps to catalyse and provoke more vibrant and explicit political debate about global patterns and directions of innovation.

Technology and Innovation Report 2010: Enhancing Food Security in Africa through Science, Technology and Innovation

<http://knowledge.cta.int/en/content/view/full/12090>

by United Nations Conference on Trade and Development, 19 May 2010

This report focuses on the challenges of improving agricultural performance in Africa and the role of technology and innovation in raising the agricultural production and incomes of all farmers, including smallholder farms. Much of the analysis is to some degree applicable to farmers in developing countries outside Africa. The report argues that the main challenge lying ahead is one of strengthening the innovation capabilities of African agricultural systems in order to be able to successfully address poverty, improve food security and achieve broader economic growth and development.

Towards the EU-LAC Knowledge Area

<http://knowledge.cta.int/en/content/view/full/12091>

By the European Commission, 2010

Climate change, demographic transitions, expectations for better health and greener and more inclusive economies are among the drivers for more scientific and technological cooperation and innovation. The Guadalajara Summit in 2004 therefore placed the development of an EU-Latin America-Caribbean Knowledge Area on the political agenda of bi-regional relations. In 2010, this concept is gaining fresh momentum through the endorsement of a new Joint Initiative for Research and Innovation. This publication traces the development of cooperation and illustrates the link between policy and action through a sample of concrete research collaborations, mostly from the 6th and 7th Research Framework Programmes. They represent a sizeable innovation potential for sustainable development and social inclusion, the focus of the 2010 EU-LAC Summit in Madrid.

EDULINK in Action: Empowering the People of Africa, the Caribbean and the Pacific through Higher Education

<http://knowledge.cta.int/en/content/view/full/12092>

by ACP-EU Cooperation Programme in Higher Education, 2009

EDULINK represents a harmonised approach for the implementation of EC-funded programmes in ACP countries to improve the effectiveness, management, visibility and impact of ACP-EU co-operation in the field of higher education. This report presents the ongoing EDULINK programme, its current projects, actors, expected results and areas of intervention. These include the search for environment and eco-friendly solutions, quality and the paradigm shift from instruction to learning, access to health, rural development, information technologies and equitable development processes, all critical components of the EC's commitment to achieving the Millennium Development Goals

Vacancies

Call for nominations: 6th WLB Award for excellence in genetic resource conservation

<http://knowledge.cta.int/en/content/view/full/12093>

The William L. Brown Award recognises the outstanding contributions of an individual towards the study of useful plants and their conservation. The WLB Award recognises an individual who excels in the collection, preservation, understanding and sharing of plant genetic resources in order to help meet the global demand for food. Nominations should call attention to the nominee's achievements and the significance of his or her work as it relates to the study and conservation of plants that are used by people for nourishment, medicines or other important functions of life. **Closing date: 31 August 2010**

Fellowships and grants

Food Security Center offers up to 29 research scholarships in 2011

<http://knowledge.cta.int/en/content/view/full/12094>

In 2011, the Food Security Center (FSC) will award 29 scholarships for PhD students and postdoctoral researchers for a period of 4 to 36 months. The Center wishes to attract outstanding PhD students and postdoctoral fellows pursuing a career in academia or development collaboration.

FSC offers three categories of scholarships:

1. Sandwich scholarships for PhD students (6 months)
2. Research scholarships for visiting postdoctoral researchers (4 months)
3. Excellence scholarships for the FSC-supported PhD programme 'Global Food Security' (36 months) at the University of Hohenheim.

Closing date: September 30 2010

Erasmus Mundus-UNESCO-IHE Scholarships

<http://knowledge.cta.int/en/content/view/full/12095>

The UNESCO-IHE Institute for Water Education offers a postgraduate diploma course in hydraulic engineering to practicing professionals from developing countries. One existing programme – integrated flood risk management – focuses on reducing the human and socio-economic losses caused by flooding, while at the same time taking into account the social, economic and ecological

benefits from floods and the use of flood plains or coastal zones. The programme follows a holistic approach and is explicitly designed to cover a wide range of topics – from drivers and natural processes to models, decisions and socio-economic consequences and institutional environment, and is therefore an important advance in water education for Europe.

The programme is offered by a collaboration of four leading European institutes, namely UNESCO-IHE (lead), the Dresden University of Technology (Germany), the Technical University of Catalonia (Barcelona, Spain) and the University of Ljubljana (Slovenia). A number of attractive fellowships will be available, which will cover tuition fees and living expenses.

Researchers seek climate change-proof food crops: opening of the 2010 call for proposals

<http://knowledge.cta.int/en/content/view/full/12096>

As climate change already is affecting agricultural output in large parts of Africa, there is now a need to develop new food crops that can adapt to the new conditions. A recent initiative, launched by the International Treaty on Genetic Resources for Food and Agriculture (ITPGRFA) is promoting research that can develop food crops able to resist these tougher climatic conditions. ITPGRFA, an FAO agency dedicated to food and agricultural plant genetics, released US\$10 million in a call for project proposals. This is the second time ITPGRFA is funding scientific projects to develop climate change resistant food crops. This new call for proposals under the Benefit-sharing Fund of the International Treaty is now open for its biennial cycle (2010-2011). Any governmental or non-governmental organisation, including gene banks and research institutions, farmers and farmers' organisations and regional and international organisations, based in countries that are contracting parties eligible for funding, may apply for grants until 8 September 2010.

Calling MSc graduates interested in a PhD scholarship in plant breeding

<http://knowledge.cta.int/en/content/view/full/12097>

The African Centre for Crop Improvement at the University of KwaZulu-Natal in KwaZulu-Natal, Pietermaritzburg, South Africa offers this prestigious scholarship to young African scientists who are keen to make a career out of plant breeding. The aim of the ACCI is to train African plant breeders, in Africa, on African crops. This involves two years of academic studies at the University of KwaZulu - Natal and three years of field research in the students' home countries, at their home institution. The crop our students breed are food security crops: cereals, roots, and tubers and legumes. Successful candidates should be eligible to begin their studies in January 2011. Please send applications to Mrs L Mbhele at: acciadmin@ukzn.ac.za.

Events

1st African Youth summit on Climate Change

<http://knowledge.cta.int/en/content/view/full/12098>

Date: 20-22 August 2010

Place: Nairobi, Kenya

The 1st African Youth summit on Climate Change is being organised by the African Youth Initiative on Climate Change (AYICC) to serve as an appropriate venue where African youth can come together and discuss issues relating to various topics on climate change, including the role of youth in adaptation and mitigation projects, public awareness and participation, biodiversity and active participation in UNFCCC negotiations. The Summit is open to young people from all over Africa interested and involved in initiatives aimed at tackling climate change and ensuring sustainability. It will consist of informative sessions and skills-building workshops on climate change issues ranging from scientific knowledge to effective political advocacy.

Climate change adaptation in agriculture management

<http://knowledge.cta.int/en/content/view/full/12099>

Date : 28 February - 11 March 2011

Place: Eastern Africa

The Wageningen UR Centre for Development Innovation is organising a course on policy making and programming for sustainable development in Eastern Africa. The aim of this course is for participants to gain a full understanding of climate change adaptation concepts. The course will teach the participants to effectively and meaningfully contribute to the debate on

climate change adaptation, either in the policy process or in providing knowledge to the policy process. It will also strengthen their positions in these processes on the basis of newly acquired concepts, skills and methodologies.

The application deadlines are: with Netherlands Government Fellowships Funding (NFP) – 1 September 2010, with other funding – 28 January 2011

Organizations

Open School of Tropical Animal Science and Production (OSTASP)

<http://knowledge.cta.int/en/content/view/full/12100>

OSTASP improves the knowledge, technology and the sustainable development of animal science and production with respect to neo-tropical species in their indigenous regions.

In particular, OSTASP carries out education programmes to raise awareness on the threat of extinction of neo-tropical wildlife or terrestrial non-aquatic wildlife in the Caribbean. There are various sub-programmes such as (1) the virtual centre of neo-tropical animal wildlife and the electronic journal of neo-tropical animal wildlife .

African Biodiversity Conservation and Innovations Centre (ABCIC)

<http://knowledge.cta.int/en/content/view/full/12101>

ABCIC was established in 2010 as a non-profit regional organisation enhancing the conservation and sustainable utilisation of biodiversity for posterity, environmental preservation and sustenance of livelihoods for African rural communities. ABCIC primarily focuses on agrobiodiversity and adopts an integrated approach that carefully balances conservation imperatives with sustainable use through facilitating and promoting production, product development and enhancing the marketing of biodiversity products through a value chain approach. ABCIC bridges the gap between international agricultural and biodiversity research organisations and community-level NGOs by blending good scientific principles and concepts with practical application of technologies at the community level using efficient and flexible style of work.

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