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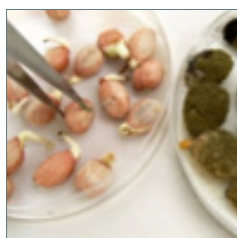


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New feature articles

Food Safety Challenges: The Case of Aflatoxin

Rose W. Njeru, Agro-Innovations International, Nairobi, Kenya



Rose W. Njeru, Agro-Innovations International, Nairobi, Kenya, provides a comprehensive overview of current research and risk management measures for minimizing aflatoxin contamination. Aflatoxins are naturally occurring toxins and pose major challenges to food safety, health and nutrition systems. Contamination can occur at any stage of the value chain; during production, harvesting, processing, storage and transportation. The goal is to minimize contamination in foods and feed by applying and enforcing standards and legislation. Exposure to high levels of aflatoxin has been known to lead to death from liver failure; the most devastating case occurred in Kenya in 2004. A promising long-term strategies is the development of resistant varieties and biological control measures but there are challenges. For example, two aflatoxin resistant maize lines have been identified and biological control measure are being used to reduce contamination in peanuts and maize in the USA and similar trials using local strains are on-going in Kenya and Nigeria. However few, if any, commercial cultivars are readily available and biological control measures are context specific.

At the same time, empowering farmers, traders and processors with adequate knowledge and skills on controlling aflatoxin contamination from the field to the fork, adopting cost-effective processing technology and quality control measures, and adherence to food safety and quality assurance systems, as well as enforcement of standards and legislation governing maximum aflatoxin residue in food and feed will effectively contribute to reducing aflatoxin levels. This has been clearly demonstrated by MFK, which has implemented an effective aflatoxin control process in the groundnuts value chain in Haiti and is one of the CTA Top 20 innovations. The control process involves: crop rotation, use of high quality seeds, timely planting, proper pest control, timely harvesting, undamaged pods, fast drying and threshing, bio-controlled storage and regular moisture tests and empowering small-holder farmers.

Image credit: ICRISAT. [ICRISAT carries out research on Aflatoxin contamination of groundnuts](#)

Processing as a driver of agricultural development: the case of Makerere University Food Technology and Business Incubation Centre, Uganda

John Muyonga, Makerere University, Uganda



John Muyonga, shares insights on how the Food Technology & Business Incubation Centre (FTBIC), Makerere University is building a new breed of graduate agro-entrepreneurs in Uganda. The purpose of FTBIC is to develop new value-addition food businesses based on research conducted at the University and to support students to gain practical and entrepreneurial skills as well as contribute to the further development of the agro-food processing industry.

Trainees (mostly new graduates) at FTBIC are offered access to processing facilities and provided with technical support in production, marketing and business management. Other food industry clients also benefit from the services which include product development, training in food processing, contract processing, food analysis and technical advice; especially on aspects of quality management, processing and packaging.

The FTBIC has facilitated the development of 20 new food processing enterprises and expanded the variety of agro-based food products on the market. It has also helped to strengthen the linkage between food science and technology research, training and business within the university.

Given the importance of agriculture to the economies of African and other developing countries, investment in agro-processing is critical to stimulating agricultural development. It can provide the much needed pull for catalysing and sustaining crop and livestock production systems.

Building Capacity for Value Addition: The case of the Faculty of Food and Agriculture, University of the West Indies, St. Augustine, Trinidad and Tobago

Neela Badrie, Faculty of Food and Agriculture, the University of the West Indies, St. Augustine, Trinidad and Tobago

Neela Badrie, professor at the University of the West Indies (UWI), St Augustine Campus, provides an exposé of the recent efforts aimed at remodelling the institution to serve as a state of the art agricultural and food research hub for the 15 country member states of the Caribbean region.

UWI has a long tradition in championing the processing of locally grown produce and also hosts the Food Technology Unit of the Faculty of Engineering based in Trinidad and Tobago. In 2012, UWI's Faculty of Science and Agriculture was divided into the Faculty of Science & Technology (FST) and the Faculty of Food & Agriculture (FFA). FFA's strategic programming puts emphasis on nutrition, food safety and quality, tropical crop protection and utilisation, agribusiness and entrepreneurship. Areas of current research include food analysis, food preference and sensory studies, food fermentations, processing of root crops (dehydration and extrusion), and food product development (food formulation from novel components). The Faculty also boasts state of the art science laboratories (microbiology and food biology) and is equipped with a range of small-scale equipment suitable for the systematic study of operations involved in the food industry.

In addition to participating in international research projects with the EU and Canada, the FFA plans to develop a 200-acre agricultural innovation park through a strategic cooperation agreement between UWI and China Agricultural University (CAU).

CTA and S&T policy



CAAST-Net Plus project synthesis report of the impact of joint Africa-EU ST&I cooperation on Global Challenges: Food and Nutrition Security, Climate Change and Health

CTA is a member of the consortium for the EU 7th Framework Programme project '*Advancing Sub-Saharan Africa-European Union Cooperation in Research and Innovation for Global Challenges*' or [CAAST-Net Plus](#). This project serves the Africa-Europe partnership in science, technology and innovation, as framed by the Joint Africa-EU Strategy to encourage more and better bi-regional ST&I cooperation for enhanced outcomes around topics of mutual interest, particularly in relation to the global societal challenges – climate change, food security and health. Last year, the online survey for analysing the impact of joint Africa-EU ST&I cooperation on food and nutrition security was shared with the K4D community. The summaries of the major findings and recommendations of the FNS impact analysis as well as those on climate change and health are [now available on the project website](#) and formed part of the [Entebbe deliberations](#), on 24-25 November 2014. The full reports when approved will also be shared with you.

Comment on Draft CTA/ASARECA Policy Brief on 'Seed Systems, Science and Policy'

The draft CTA/ASARECA policy brief on 'Seed Systems, Science and Policy' was developed in collaboration with several African scientists and regulators through CTA support for selected universities in sub-Saharan Africa to undertake a SWOT analysis of their contribution to integrated seed sector development starting in 2013. They have also documented their findings and these papers will be published. The findings were presented at a CTA sponsored side event during the ASARECA General Assembly in Burundi in December 2013 and the draft policy brief was elaborated in earlier this year and presented to private sector actors attending an ASARECA/EAGC workshop in Kenya in October 2014 which aimed at mobilizing private sector interest, involvement and support including financing for agricultural research and technology development in East and Central Africa. The draft policy brief is open for comments.

Developments and publications



The food waste hierarchy as a framework for the management of food surplus and food waste

To better tackle the problem of waste and derive major environmental, social and economic benefits, Effie Papargyropoulou suggests that the actual food waste, as opposed to surplus, should be categorised as either 'avoidable' or 'unavoidable'. This is according to a new framework for reducing wastage throughout the supply chain as published in the UK Journal of Cleaner Production. For developing their framework, Papargyropoulou, of the Technical University of Malaysia, Johar Bahry, Malaysia and colleagues

interviewed 23 food experts. They identified reductions of food surplus as the top priority to reduce food waste. To prevent surplus, farmers could produce only enough to meet nutritional and food security needs, retailers could sell only what is required, and consumers could buy only what they really need. Surplus that cannot be prevented should be redistributed to people in food poverty.

(EC Environment, 10/10/2014)

Travesty of poor refrigeration in developing countries

Around a quarter of total food wastage in developing countries could be eliminated if these countries adopted the same level of refrigeration equipment as that in developed economies according to the Institution of Mechanical Engineers (IME), London, UK. Establishing a continuous chain of temperature-controlled cold environments from the point of harvest to the marketplace and on into the home – a 'cold chain' – is required. The challenge for the engineering profession is to do this in a way which minimises food wastage, is sustainable and avoids harmful emissions and air pollutants. In summary, engineers need to help establish sustainable and resilient infrastructure, fit for purpose in the local context. Two elements are important; firstly, projects need to be affordable; secondly they must be safe, reliable, easy to build, operate and maintain.

(FoodProduction daily.com, 30/06/2014)

Enhancing crop shelf life with pollination

Although pollination has been shown to increase crop quality, impact on shelf life has not been quantitatively studied. Björn Klatt, University of Lund, Sweden and colleagues tested how shelf life, as represented by fruit decay, firmness and weight, changes as a function of pollination limitation in two European, commercially important strawberry varieties. Pollination limitation resulted in lower amounts of deformed fruits. The results suggest that crop pollination has the potential to reduce food loss and waste in pollinated crops and thus to contribute to global food security. Future pollination research should therefore focus not only on yield effects but also on crop quality. A more comprehensive understanding should lead to a more efficient crop production for meeting future food demands.

(Agriculture and food security, 2/10/2014)

Post-harvest food losses in a maize-based farming system of semi-arid savannah areas of Tanzania

Results of a 2012 survey show that quantitative post-harvest losses of economic importance occur in the field (15%); during processing (13-20%), and during storage (15-25%) in semi-arid savannah areas of Tanzania. Farmers' poor knowledge and skills on post-harvest management are considered to be largely responsible. According to the farmers, changes in weather (40%), field damage (33%), and storage pests, grain borers and grain weevils (16%) were identified as the three most important factors causing poor crop yields and aggravating food losses. Increasing farmers' technical know-how on adaptation of the farming systems to climate variability, and training on post-harvest management could reduce food

losses, and poverty and improve household food security. Africa RISING scientists in Tanzania published the results of their survey in the *Journal of Stored Products Research*.

(Africa RISING, 10/10/2014)

Cassava – exploring its leaves

Cassava leaves are available throughout the year and should be given as much attention as the roots. They are one of the most valuable parts of the cassava plant containing high amounts of protein, and are also a rich source of vitamins, B1, B2 and C, as well as carotenoids and minerals. In fact, the total amount of essential amino acids in cassava leaf protein is said to be similar to that of a hen's egg and greater than that of spinach leaf, soybean, oat or rice. Toxicity and antinutrients limit the consumption of cassava leaves as food. These toxic and antinutritional aspects must be addressed properly during processing and before consumption. Research at Hohenheim University is examining the optimal way to treat the cassava leaves in order to transform them into an economical and sustainable source of protein and micro-nutrients. Various cassava leaf processing methods have been developed.

(Rural21, 08/09/2014)

Natural gene selection can produce orange corn rich in provitamin A

Researchers have identified a set of genes that can be used to naturally boost the provitamin A content of corn kernels, a finding that could help combat vitamin A deficiency in developing countries and macular degeneration in the elderly. Professor of agronomy Torbert Rocheford and fellow researchers of Purdue University, USA, found gene variations that can be selected to change nutritionally poor white corn into bio-fortified orange corn with high levels of provitamin A carotenoids. Their study provides the genetic blueprint to quickly and cost-effectively convert white or yellow corn to orange corn that is rich in carotenoids, by using natural plant breeding methods, not transgenics.

(Purdue University, 06/10/2014)

Teff: nutrient composition and health benefits

Teff is widely cultivated and used in Ethiopia and accounts for about a quarter of the country's cereal production. However, its use for human consumption in other countries is limited due to a lack of knowledge about its nutrient composition and processing. In this study, Kaleab Baye, at the Center for Food Science and Nutrition, Addis Ababa University, Ethiopia describes the physical and chemical characteristics of Teff and its nutrient composition. He documents the use of Teff and Teff-based products for human nutrition in Ethiopia, along with the food processing challenges impeding Teff's worldwide consumption. Baye discusses how recent research advances could solve the challenges in the production of the little-known cereal and what the potential health benefits could be associated with wider consumption of Teff.

(IFPRI and EDRI, 09/2014)

Technical considerations for maize flour and corn meal fortification in public health

The technical aspects of flour biofortification are explored in this issue of the Annals of the New York Academy of Sciences. Research questions such as stability, ingredient dosage, market reach, bioavailability, processing and legislative frameworks are addressed. Through this publication, the WHO, in collaboration with the Sackler Institute for Nutrition Science and the Flour Fortification Initiative (FFI), is updating several evidence-informed guidelines for the fortification of staple foods as a public health intervention, including the fortification of maize flour and corn meal with iron and other micronutrients. (*Annals of the New York Academy of Sciences*, 14/04/2014)

Increasing the consumption of nutritionally rich leafy vegetables in Samoa, Solomon Islands and northern Australia

Although certain leafy vegetables were popular in countries such as Solomon Islands and Tonga, there was a lack of widespread knowledge of their considerable health benefits. This publication reports on a project for increasing the consumption of nutritionally rich leafy vegetables in Samoa, Solomon Islands and northern Australia Surveys. The project, led by Graham Lyons, University of Adelaide, South Australia and Mary Taylor, Pacific Germplasm and Agricultural Development Consultant, UK, and their colleagues, was successful in: (i) documenting knowledge and opinions of local people on the growing and consumption of leafy vegetables; (ii) producing and distributing information factsheets; (iii) promoting local leafy vegetables via the media in the participating countries; (iv) building local capacity and (v) providing information on optimal propagation methods for the popular vegetable, aibika, from a field trial conducted in Samoa. (ACIAR, 09/2014)

Weather variability and food consumption

Higher temperatures have an adverse effect on food consumption. In contrast, food consumption is not substantially affected by rainfall variations. This working paper, authored by Sara Lazzaroni and Arjun S. Bedi, and published by the International Institute of Social Studies of Erasmus University (ISS, The Netherlands), relies on two-period panel data combined with data on rainfall, number of rainy days and maximum and minimum temperatures which were used to examine the impact of weather variations on food consumption in rural Uganda. While evidence from qualitative interviews and trends in agricultural production suggest that households are adopting mitigation measures, the conclusion from the evidence assembled is that higher temperatures are associated with a decline in crop yields and food consumption. (ISS, 04/2014)

Plant insights could help develop crops for changing climates

A new computer model that shows how plants grow under varying conditions could help scientists develop varieties that have high yield under particular environmental conditions in the future. Scientists built the model to investigate how variations in light, day length, temperature and carbon dioxide in the

atmosphere influence the biological pathways that control growth and flowering in plants. They found differences in the way some plant varieties distribute nutrients under varying conditions, leading some to develop leaves and fruit that are smaller but more abundant than others. Professor Andrew Millar of the University of Edinburgh's School of Biological Sciences, led the study which has been published in *Proceedings of the National Academy of Sciences*.

(BBSRC, 08/09/2014)

Saving seeds the right way can save the world's plants

More careful tailoring of seed collections to specific species and situations is critical to preserving plant diversity. Using a novel approach called simulation-based planning to make several new sampling recommendations, this study shows that a uniform approach to seed sampling is ineffective. Publishing in *Biological Conservation*, researchers from the National Institute for Mathematical and Biological Synthesis and the University of Tennessee, USA, recommend to collectors to choose their plant populations from a wide area rather than a restricted one. Collecting from about 25 maternal plants per population versus 50 plants appears to capture the vast majority of genetic variation. The approach developed could be used to further refine seed collection guidelines, which could lead to much more efficient and effective collections.

(NIMBioS, 30/07/2014)

Coral reef winners and losers

Researchers from universities in California, Hawaii and New Hampshire have analysed contemporary and fossil coral reef ecosystem data sets from two Caribbean locations and from five Indo-Pacific locations. Working together in the working group *Tropical Coral Reefs of the Future: Modelling Ecological Outcomes from the Analyses of Current and Historical Trends*, they built a trait-based dynamic model to explore ecological performance of coral reef ecosystems in a warmer future. They found a subset of coral species that is fast-growing, phenotypically smaller and wider, and more stress-resistant and that readily produces offspring. Much is still unknown about how this subset functions, but their research reveals a range of nuanced outcomes for tropical reef corals other than near-complete loss of live coral cover in the face of warmer oceans.

(UCSB, 01/10/2014)

Status and Trends of Caribbean Coral Reefs: 1970-2012

The report *Status and Trends of Caribbean Coral Reefs: 1970-2012* is the most detailed and comprehensive study of its kind published to date and represents the work of 90 experts over the course of three years. It contains an analysis of more than 35,000 surveys conducted at 90 Caribbean locations since 1970, including studies of corals, seaweeds, grazing sea urchins and fish. The results show that the Caribbean corals have declined by more than 50% since the 1970s. But according to the authors, restoring parrotfish populations and improving other management strategies, such as protection from overfishing and excessive coastal pollution, could help the reefs recover and make them more resilient

to future climate change impacts. This latest report was produced by the Global Coral Reef Monitoring Network (GCRMN), the International Union for Conservation of Nature (IUCN) and the United Nations Environment Programme (UNEP). [View report](#).

(Caribbean Climate Blog, 07/2014)

Fish aggregation devices: An analysis of use, profitability and shared governance in the Caribbean

A fishing trip analysis shows that catch and profitability are higher when public fish aggregation devices (FADs) are managed privately or by small groups and access to the aggregated fisheries resources is somewhat restricted. In partnership with Counterpart International, the Caribbean Regional Fisheries Mechanism, the Dominica and St. Vincent and the Grenadines Fisheries Divisions and the Florida Sea Grant collected information from fishermen on their use of FADs that were deployed privately, by small groups or by the government. This allowed for a determination of governance arrangements that were most profitable and provided input to stakeholder meetings with FAD fishers to identify best practices for sustainably using and co-managing FADs. An engagement strategy that introduced an activity planner as a best practice to increase information sharing helped strengthen the rapport between government and fisheries stakeholders. (CRFM, 07/10/2014)

Real-time monitoring system for offshore aquacultures

Scientists of the EU-funded project Enviguard are developing a real-time monitoring system for offshore aquacultures, to warn fish and shellfish farmers about impending diseases in time. Applied on a moored buoy, the small device undertakes the same functions as a fully equipped laboratory to detect the presence of toxic microalgae, viruses and chemical contaminants. Three different sensors can allow a simultaneous monitoring of the different threats. With this technology fish farmers can prevent epidemics in their aquacultures.

(Partnership for African Fisheries, 07/10/2014)

Global database: Cattle genome cracked in detail

The detailed knowledge of the variation in the cattle genome has been increased by several orders of magnitude by the creation of a global database containing data from the breeds Angus, Holstein, Jersey and Fleckvieh and the genomes of more than 1,200 animals. The first generation of the new data resource, which will be open access, consists of sequenced genomes for a number of bulls and are based on new sequencing techniques. The research was published in *Nature Genetics* and led by Hans D Daetwyler of the Department of Environment and Primary Industries, Australia. Scientists from other countries are encouraged to join the project, to ensure a continual inflow of data. Key ancestor bulls have daughters all around the world, so it is a considerable strength of the project that such data are connected into one database.

(ScienceDaily, 03/10/2014)

World mapping of animal feeding systems in the dairy sector

This report provides a wealth of knowledge on animal feeding systems and is a valuable resource for the dairy sector and connected chain partners. It can be used both to compare and improve feeding systems that are already in use and for the development of new feeding systems. In addition, the report provides information that can be used: (i) to estimate the environmental impact of the livestock sector; (ii) to develop diets and feeding strategies to reduce the carbon footprint and to optimise milk composition; (iii) to enhance animal productivity, health and welfare; (iv) to increase the quality and safety of animal products; and (v) to improve economic sustainability of milk production. The report was compiled by three organisations (IDF, FAO and IFCN) each of which undertook a separate but complementary approach to map dairy feeding systems around the world.

(FAO, 10/2014)

Chemical composition and nutritive value of Tanzanian grain sorghum varieties as feed

Tanzanian grain sorghum has high nutritive value and could partially replace maize in poultry feeding. Their full utilisation in poultry diets, however, requires a strategic improvement to reduce anticipated effects of the high level of condensed tannins (anti-nutritional factors) present in the grain. The research to assess type, suitability, nutrient composition and anti-nutritional components of commercially available Tanzanian grain sorghum was carried out by scientists from the Department of Animal Production and Marketing Infrastructures at the Ministry of Livestock and Fisheries Development and from the Department of Animal Science and Production, Sokoine University of Agriculture, in Tanzania.

(*Livestock Research for Rural Development*, 10/2014)

Quality management of laboratories: accreditation and certification

A quality management system for analytical or testing laboratories including microbiological and radiological laboratories that carry out tests to establish the essential characteristics, the safety and the wholesomeness of food and the essential is presented. The handbook discusses a framework of processes and procedures to ensure that a laboratory will always be capable of producing quality test results. The handbook is based on EU legislation for laboratories and meant for organisations in developing country wishing to export to the EU. It was produced by EDES, a COLEACP programme.

(EDES, 02/10/2014)

Biosensors and food safety

This special issue of Foods is dedicated to research that addresses development and application of biosensors and novel sensors coupled with sample preprocessing, for detection, identification, and high throughput screening of food-borne microbial pathogens or toxins that are relevant to safety of food. Biosensors may include but are not limited to optical, electrical, electrochemical and others that utilise

both labeling reagents/probes or with label-free interrogation approaches. This publication is edited by Arun Bhunia, Department of Food Sciences, Purdue University, USA.
(*Foods*, 19/10/2014)

Consensus documents on safety assessments of transgenic cassava

The Organisation for Economic Co-operation and Development (OECD) has recently released a consensus document on the biology of cassava to facilitate regulatory assessment of transgenic varieties. This is intended to encourage information sharing, promote harmonised practices, and prevent duplication of effort among countries. From time to time the OECD develops consensus documents which are used to identify elements of scientific information in the environmental safety and risk assessment of transgenic organisms common to OECD member countries and some non-members.
(OECD, 09/2014)

Mapping banana plants to facilitate plant health assessment

A new mapping approach allows for better identification of banana plants that have been affected by Banana Bunchy Top Virus (genus: Babuvirus) that reduces plant growth and prevents banana production. Developed by Kasper Johansen of the Biophysical Remote Sensing Group, School of Geography, University of Queensland, Australia and colleagues, the approach is based on very high spatial resolution airborne orthophotos. Object-based image analysis is used to: (i) detect banana plants using edge and line detection approaches; (ii) produce accurate and realistic outlines around classified banana plants; and (iii) evaluate the mapping results.
(*Remote Sensing*, 02/09/2014)

SoilGrids1km – Global soil information based on automated mapping

SoilGrids1km is a global 3D soil information system at 1 km resolution containing spatial predictions for a selection of soil properties (at six standard depths): soil organic carbon, soil pH, sand, silt and clay fractions, bulk density, cation-exchange capacity, coarse fragments, soil organic carbon stock, depth to bedrock, World Reference Base soil groups, and USDA Soil Taxonomy suborders. These predictions elaborated by Tomislav Hengl and colleagues of ISRIC - World Soil Information, Wageningen, The Netherlands, are based on global spatial prediction models which were fitted, per soil variable, using a compilation of major international soil profile databases, and a selection of 75 global environmental covariates representing soil forming factors. The current version of SoilGrids1km still has some limitations such as; (i) a weak relationship between soil properties and explanatory variables due to scale mismatches, (ii) a difficulty to obtain covariates that capture soil forming factors, (iii) a low sampling density and spatial clustering of soil profile locations. However, as the SoilGrids system is highly automated and flexible, increasingly accurate predictions can be generated as new input data become available.
(*PLOS ONE*, 29/08/2014)

Agricultural education and training in sub-Saharan Africa

This book clarifies the challenges, issues, and priorities of agricultural education and training (AET) in sub-Saharan Africa, and provides suggestions for practical solutions that can help guide organisations interested in furthering AET for agricultural development. Edited by Frans Swanepoel of Stellenbosch University, South Africa and colleagues, *"Towards Impact & Resilience: Transformative Change In and Through Agricultural Education and Training in Africa"* discusses (i) the African context within which a transformed AET system needs to be located; (ii) analyses African and international experiences that are relevant to identified AET needs and challenges; (iii) dissects AET models that may hold important lessons; and (iv) addresses the main critical issues that will impact upon AET in sub-Saharan Africa. The concluding chapter synthesises the ideas, experiences, and evidence from the preceding chapters in order to highlight critical issues for success as well as possible solutions. The publication is uniquely positioned to add to a call to action on AET, to pull together state-of-the-art knowledge from within and outside sub-Saharan Africa, and to advance 'out of the box' thinking about the principles, values and character of AET for development.

(Cambridge Scholars Publishing, 2014)

Big data for international scientific programmes: recommendations and actions

Big Data present particularly significant challenges and notable opportunities for transdisciplinary, international research programmes as well as for scientific data services and infrastructure providers. The delegates of an international workshop made a series of recommendations for the sponsors of international research programmes so that beneficiaries can take better advantage of the Big Data age. These are: (i) respond to the importance of Big Data; (ii) exploit the benefits of Big Data for society; (iii) improve understanding of Big Data through international collaboration; (iv) promote universal access to Big Data through global research infrastructures; (v) explore and address the challenges of Big Data stewardship, Encourage capacity building and skills development in Big Data science and (vi) foster development of policies to maximise exploitation of Big Data. CODATA, an interdisciplinary body of the International Council for Science (ICSU) organized the workshop.

(CODATA, 16/06/2014)

Protection of traditional knowledge and origin products in developing countries

Patrick Martens, Maastricht School of Management, The Netherlands discusses the links between the protection of Traditional Knowledge (TK), including origin products, and local economic development in developing countries. He focusses on two particularly relevant cases: argane oil from Morocco and rooibos from South Africa and concludes that international, regional and national protective legal systems and political freedoms should be strengthened while at the same time an appropriate level of development support in the establishment of 'economic facilities', 'transparency guarantees' and 'social opportunities' should be provided.

(MSM, 09/2014)

The Sustainable intensification of European agriculture

This report comprises the first systematic analysis of sustainable intensification (SI) of the European agricultural sector and argues it must be the paradigm within which future agricultural policy is made in the EU. Three key points are made. First, the agricultural input which needs to be intensified across all of Europe is knowledge per hectare. This means knowledge in managing delicate ecosystems, knowledge to ensure that pollinator populations thrive, knowledge to make water management minimise flooding, as well as knowledge to achieve more food output per hectare. Second, the EU needs to devise a measurement tool for environmental farming performance. It would be strongly preferable to build on an EU-wide set of indicators already developed, for example the Joint Research Centre's IRENA indicators. And third, in addition to better enforcement of existing environmental regulations, and using policy measures under the CAP, changes in farming practices must also come from farmers and private actors themselves. This report was the initiative of the Public Utility Foundation for Rural Investment Support for Europe (RISE) and launched at the Center for European Policy Studies (CEPS). (PAEPARD, 24/06/2014)

Events



First Global Soil Biodiversity Conference - Assessing soil biodiversity and its role for ecosystem services

Dates: 2-5 December 2014

Venue: Palais des Congrès, Dijon, France

African Higher Education Summit : 'Revitalising Higher Education for Africa's Future'

Dates: 10-12 March 2015

Venue: Dakar, Senegal

World Food System Conference 2015

Dates: 21-26 June 2015

Venue: Monte Verità, Ascona, Switzerland

Deadline for abstract submission is 22 February, 2015.

Calls



Call for applications: Future Earth young scientists' networking conference 2015

Deadline: 22 December 2014

Call for applications: IFS Individual Research Grants

Deadline: 31 December 2014

Call for articles: Remote Sensing Special Issue 'Remote Sensing of Land Degradation in Drylands'

Deadline: 31 December 2014

Call for applications: IPCR coral reef research in French Polynesia

Deadline: 12 January 2015

Call for projects: Swiss Network for International Studies (SNIS) 2015

Deadline: 22 January 2015

Nestlé Creating Shared Value Prize 2016: Grants for Nutrition, Water & Rural Development

Deadline: 28 February 2015

Jobs**Researcher (Irrigation Engineer)**

Deadline: 14/12/2014

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Coordinating editors: Judith Francis, CTA and Rutger Engelhard, Contactivity bv.

Research: Cédric Jeanneret-Grosjean, Contactivity bv



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