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August 2012 newsletter

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Feature articles

Science and Technology for Livestock Value Chain Development: A Focus on Artificial Insemination

By P.H. Bayemi, *Institute of Agricultural Research for Development, Cameroon*



Artificial insemination (AI) was the first major biotechnology technique to be applied to improve reproduction and genetics of farm animals. It has had an enormous impact worldwide, particularly in dairy cattle. The acceptance of AI technology provided the impetus for developing other technologies, such as cryopreservation and sexing of sperm, oestrous cycle regulation, embryo harvesting, freezing, culture and transfer and cloning. New, highly effective methods of sire evaluation were also developed (Foote, 2002).

For over 60 years, AI has been practiced in developing countries, especially India, where growing milk demand has made it economical in commercial dairy herds (Chupin and Schuh, 1993; Chupin and Thibier, 1995). South Africa, Northern Africa and countries such as Kenya, Uganda and Sudan have also developed their AI systems. The practice of AI in African countries has often relied (at least in its beginning) on imported semen for crossbreeding with local breeds, and considerable gains in productivity have been obtained. The negative side effect of this system has been the need for improved management, and therefore additional costs in health and nutrition of the crossbreds. Indiscriminate and wide crossbreeding of native breeds have also put the local population in jeopardy. For example, a population of Brangus (*Bos taurus*) × Gudali (*B. indicus*) F₁ crossbreds was entirely decimated in Cameroon by tick-borne diseases. If animal production is to be further improved in less advanced countries, AI is one of the key technologies to be encouraged. Therefore, guidelines and breeding policies should be put in place to guide AI usage in developing countries and specifically ACP countries.

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CTA S&T Programme Updates

CTA/WUR Inception Workshop, September 2012: 'Mainstreaming Tertiary Education in ACP ARD Policy Processes: Increasing Food Supply and Reducing Hunger'

All the presentations are available on the website: knowledge.cta.int/en/content/view/full/16760

Tertiary education institutions are increasingly being called upon to move beyond training and the pursuit of knowledge and become more strategic assets with strong forward and backward linkages to the productive sectors, expand their reach and increase their impact at community and national level.

For pragmatic reasons, the Technical Centre for Agriculture and Rural Cooperation ACP-EU (CTA) and Wageningen University & Research centre (WUR) in collaboration with African, Caribbean and Pacific (ACP) partner networks and organisations, ANAFE, FARA, RUFORUM, TEAM-Africa, the University of South Pacific and the University of the West Indies, have chosen food security as the initial content domain to determine the extent of engagement of ACP tertiary education institutes in ARD policy processes.

The objective of the workshop is to generate consensus, understanding and commitment with respect to the project's ambitions and methods for mainstreaming tertiary education in ACP ARD policy processes with a focus on *Increasing food supply and reducing hunger*. This will be realized by a review and presentation of common trends and possible anomalies within the participating countries with respect to food and nutrition security and the universities' current vision, role and programmes. Experts from the ACP universities and partner organizations including ECOWAS and WUR will provide input during the workshop to familiarize participants with the latest research, trends and frameworks around food and nutrition security. The methodological framework will be reviewed and plans drawn for the next phase of the project which include a quick scan, audit, national university seminars and stakeholder consultations.

CTA/WUR Inception Workshop, September 2012: 'Integrated Seed Sector Development (ISSD) in Africa Phase II – Practices, Programmes and Policies for Seed Entrepreneurship'

knowledge.cta.int/en/content/view/full/16785

The Technical Centre for Agriculture and Rural Cooperation ACP-EU (CTA), proposes to build upon the strengths of phase I of The Integrated Seed Sector Development (ISSD) project which was carried out by a consortium led by the Centre for Development Innovation of Wageningen UR, the African Union Commission / African Seed and Biotechnology Programme, Plantum NL and, Self Help Africa (SHA) and support the engagement of African universities in Phase II of the project. The Objective of Phase II is to strengthen the development of a vibrant, commercial and pluralistic seed sector in Africa. Specifically, the objective will be to (i) conduct a survey and assess practices of seed entrepreneurs at multiple scales; (ii) assess relevant programmes and policies; (iii) explore and document ways in which practices, programmes and policies can be strengthened in promoting seed entrepreneurship; (iv) enhance the capacity of seed sector professionals promoting seed entrepreneurship; (v) enhance the capacity of universities acting as facilitator and catalyst in increasing food security and promoting seed entrepreneurship.

The project will operate in the following countries: Burundi, Ethiopia, Ghana, Mali, Malawi, Mozambique, Rwanda, Uganda and Zambia. Instead of a linear approach, ISSD fosters pluralism in matching food seed security to private sector development. It embraces variations among seed systems and thereby facilitates seed programmes and policies becoming coherent with the practices of farmers and a diversity of entrepreneurs in the seed sector. At the end of the ISSD Project phase I in 2010/2011, results were confirmed during national multi-stakeholder workshops.

The main conclusions were the following: (i) The co-existence of multiple seed systems; (ii) Seed systems require targeted policies and programmes to enable their development; (iii) The seed sector in Africa faces common challenges in fine tuning roles and responsibilities of the public, private, NGO and civil sector; (iv) The transformation from Government and NGO distribution or relief seed provision to sustainable market-based systems.

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Selected developments and publications | RSS

AgriVIVO: an ontology-based store of Uniform Resource Identifiers (URIs) and relations between entities in agricultural research

knowledge.cta.int/en/content/view/full/16645

In order to facilitate better collaboration between agricultural research actors and ensure more effective management of research projects and more rational funding, it is desirable to have access to comprehensive information on people's expertise, areas of activities of institutions, existing projects in specific areas and countries, related events and publications. An information system aimed at giving access to such information should: a) go beyond closed communities and directories (search several communities and directories, allow to share people profiles, affiliations, competencies, projects, publications across communities); b) go beyond serendipity, gathering information systematically, organizing data by discipline, affiliation, topic, geographic scope and providing context, in order to discover what is happening and who does what through meaningful relationships. Cornell University, the Global Forum on Agricultural Research and the Food and Agriculture Organization of the United Nations are working on an adaptation of the VIVO model (developed in 2003 at Cornell U) for agricultural research, called AgriVIVO. AgriVIVO integrates data from several large agricultural research management communities into a VIVO RDF store, customizing the ontology model to the organization of agricultural research, focusing on the relationships between people, institutions, projects, topics, events, and geographic locations. ([GFAR](#), 2012)

Network for Knowledge Transfer on Sustainable Agricultural Technologies and Improved Market Linkages in South and Southeast Asia (SATNET)

knowledge.cta.int/en/content/view/full/16647

The Network for Knowledge Transfer on Sustainable Agricultural Technologies and Improved Market Linkages in South and Southeast Asia (SATNET) recently launched a website to share knowledge on sustainable agricultural technologies and improve market linkages in the region. Part of a three-year project funded by the European Union and implemented by the Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA), aims to support innovation by strengthening intraregional learning on sustainable agriculture and trade to improve food security and reduce poverty of the poorest and most vulnerable people in South and Southeast Asia. More than 30 institutions involved in research, advocacy and capacity building for agriculture and food trade are participating in the project: www.satnetasia.org.

New release of Web-based resource resolves confusion over plant names

knowledge.cta.int/en/content/view/full/16650

In biology, an organism's scientific (taxonomic) name is the key to finding information about it. This data – on the genetic, ecological, and agricultural particulars of every known plant – is held in repositories scattered all over the globe, at places as diverse as university labs, museums, and private-sector corporations. Some of the information is hidden within spreadsheets stored on the computers of individual plant scientists. This often results in multiple listings (under different names) of the same species. To tackle the problem and provide a solution, the Taxonomic Name Resolution Service ([TNRS](#)) was developed by the National Science Foundation (NSF), the US Dept. of Agriculture and other institutions. The latest version of TNRS resolves plant taxonomic names – often lists containing thousands of names – by passing them through a process of exact matching, parsing to break names into their component parts and 'fuzzy matching' to search for near matches. Members of the botany community are invited to contact [iPlant](#) about contributing their taxonomic sources to the TNRS. ([Eurekalert](#), 1/6/2012)

Jamaica's agriculture to use GIS as decision-support tool

knowledge.cta.int/en/content/view/full/16726

Jamaica's Ministry of Agriculture and Fisheries launched In August 2012, a series of stakeholder consultations on how to better utilise geographic information systems (GIS) as a decision-support tool in expanding its food health and traceability infrastructure. Dwight Uylett, principal director, policy coordination and administration, explained the rationale for the initiative during the launch meeting. He said the series of workshops will seek to determine stakeholder needs and how best to strengthen the capacity of the Rural Physical Planning Division (RPPD) to respond and forge partnerships. GIS for food

security would help set export strategies, adapt to climate change and support agricultural land management. ([The Gleaner](#), 23/8/2012)

Ghana, Liberia fisheries commissions to deploy geo-information systems (GIS)

knowledge.cta.int/en/content/view/full/16687

GIS solutions developed by the SuperGeo, a Taiwan-based enterprise, have been chosen by Ghana and Liberia's fisheries commissions. The technology will enable the personnel at the Fisheries Commissions to develop a GIS system for fishery resource analyses and management. The GIS will be used to visualize and analyze the geographical distributions of marine living resources in that area. Will the system be able to track fishing vessel and monitor catch quality and yield? The [Centre for Remote Sensing and Geographic Information Services](#) at the University of Ghana provided guidance on the choice of software. ([SuperGeo](#), 30/7/2012)

Launch of the Caribbean Disaster Risk Atlas

knowledge.cta.int/en/content/view/full/16730

A tool to enhance decision-making to reduce the serious economic and social impacts caused by natural hazards in the region has been launched by the University of the West Indies (UWI). The Caribbean Disaster Risk Atlas has been designed to meet the need for reliable data in the development of comprehensive risk management strategies in the Caribbean. ([Caribbean 360 has the story](#), 25/6/2012)

Ivorian agricultural scientists open up their research

knowledge.cta.int/en/content/view/full/16723

More than a dozen agricultural research institutes in Côte d'Ivoire have agreed to open up access to their research results and raise farmers' awareness of their work through a shared online platform. The aim is to increase the uptake of new and existing technologies and research findings, and eventually to boost agricultural production in the country and West African region, [SciDev reports](#) (14/8/2012).

The role of agricultural R&D within the agricultural innovation systems framework

knowledge.cta.int/en/content/view/full/16655

The Agricultural Science & Technology Indicators Initiative (ASTI) / International Food Policy Research Institute (IFPRI) / Forum for Agricultural Research in Africa (FARA) Conference Working Paper No. 6 traces the evolution of the innovation systems framework within the agricultural sector in Sub-Saharan Africa, and presents a conceptual framework for agricultural innovation systems. The difference between innovation ecology/ecosystems and intervention-based innovations systems is highlighted, given that these two concepts are used at different levels in promoting and sustaining agricultural innovations. The role of open innovation, innovation platforms, and innovation intermediaries in catalyzing, enhancing, and facilitating the innovation process are discussed, as is the role of R&D in the innovation process. The paper goes on to consider the interconnection of the innovation systems perspective and value-chain analysis in agricultural R&D processes, before summarizing the current status of agricultural R&D in Sub-Saharan Africa, lessons from past experience, and implications and key challenges confronting development practitioners in institutionalizing the agricultural innovation systems concept within the agricultural R&D in the region. ([IFPRI](#), 28/6/2011).

Science, technology and innovation policy review of the Dominican Republic

knowledge.cta.int/en/content/view/full/16658

Published in June 2012 by the United Nations Conference on Trade and Development (UNCTAD), this policy review was carried out in cooperation with the United Nations Economic Commission for Latin America and the Caribbean. The review considers three sectors: agriculture and agro-industry; health; and energy. To date, the reviews have been carried out for Angola, Colombia, the Dominican Republic, El Salvador, Ethiopia, Ghana, the Islamic Republic of Iran, Jamaica, Lesotho, Mauritania and Peru. The Dominican Republic is developing a strong institutional framework to enable businesses – and such related institutions as universities and research centres – to use science, technology and new ideas to improve existing products and create new ones, generating jobs and economic growth. Key legislative and regulatory measures have been put in place to encourage this process, and human and financial resources have been dedicated to it. As a result, a national innovation system is emerging in the country. The report suggests three areas for action (i) Greater promotion of innovation activities in enterprises; (ii) Efforts and resources should be concentrated in priority economic and social areas as energy sustainability, health care, agriculture and agro-industry; (iii) More should be invested in developing skills, especially among researchers at the postgraduate level, in the priority economic and social sectors. ([UNCTAD](#) via [IISD Reporting Service SIDS](#), 21/6/2012)

Manually-operated tools developed to preserve fresh breadfruit as gluten-free flour

knowledge.cta.int/en/content/view/full/16652

Breadfruit (*Artocarpus altilis*) is a high-yielding underutilized food-crop that grows in abundance in many tropical nations that struggle with malnutrition, including Haiti, the Philippines and India. It's high in carbohydrates, very high-yielding and requires few agricultural inputs. Because breadfruit has such a short shelf-life, most breadfruit goes uneaten, even in extremely malnourished communities. Compatible Technology International (CTI) has developed [a set of manually-operated tools that rural villagers can use to preserve fresh breadfruit as gluten-free flour](#). The tools include a shredder, dryer and grinder. Breadfruit flour can be used in cookies, cakes, and many other products as a substitute or in addition to wheat flour, which is much more costly. In the fall of 2012, the breadfruit equipment will be thoroughly tested at the [Breadfruit Institute of the National Tropical Botanical Garden](#) in Hawaii. CTI will use the data collected at the Breadfruit Institute and in Haiti (a project

using the tool) to help community enterprises form economically viable business models. (via agro.biodiver.se, 8/2012)

Research into mild preservation techniques for food products

knowledge.cta.int/en/content/view/full/16706

These days, food can be kept a lot longer than in the past. But techniques such as pasteurisation and sterilisation also affect the quality of the products. The nutritional quality suffers, the product has less aroma and the flavour and smell of the food sometimes deteriorate. New, milder preservation techniques go a long way to preventing this loss of quality. Wageningen UR Food and Biobased Research have joined forces with a group of Dutch companies in the food industry to explore the application of these techniques. (Wageningen UR, 2/7/2012)

Australia funds Pacific islands project to produce high quality veneer from coconut wood

knowledge.cta.int/en/content/view/full/16661

A new four-year research project aims to develop the technologies, processes and expertise to produce high quality veneer and veneer products from senile coconut trees in some Pacific island countries. Forestry departments of Fiji, Samoa and Solomon Islands and several industrial companies in the region are collaborating in the project, which is funded by the Australian Centre for International Agricultural Research (ACIAR). This research project is a follow-up of an earlier ACIAR-funded project on improving value and marketability of coconut wood, which aimed at the production of flooring from solid coconut wood for the high quality hardwood flooring market overseas.

(via agro.biodiver.se, 23/7/2012)

How to transform African farming: Return to 'orphan crops'

knowledge.cta.int/en/content/view/full/16745

If sub-Saharan Africa is to benefit from advances in agricultural productivity, investments in the so-called 'orphan crops' – sweet potato, cassava, and millet – will be crucial for strengthening the poorest farmers' livelihoods and improving nutrition, argues Daniel Bornstein for The Christian Science Monitor (6/8/2012). The author cites the work of the Association for strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and the International Institute for Environment and Development (IIED) in bringing these orphan crops to the research labs in several African countries, with the farmers' participation. Markets are vastly underdeveloped for crops such as sweet potato and cassava. Yet these crops' tremendous value to human nutrition makes it imperative to create local food markets for them. Sub-Saharan Africa has for too long depended on global food markets, leaving the continent vulnerable to high food prices.

Socio-economic issues in fresh fruit and vegetables supply chains of Dutch supermarkets

knowledge.cta.int/en/content/view/full/16669

Imports of fresh fruit and vegetables from developing countries to the Netherlands are increasing and the majority of these imports is handled by the Dutch supermarkets. Although exports of fresh fruits and vegetables (FFV) provide jobs for developing countries and constitute an important source of income for many producing countries, this study found the existence of precarious working conditions and unsustainable practices in (tropical) food supply chains. This relates to structural factors in the producing countries such as poverty, weak legislation and the weak implementation thereof. However, these factors, along with a suitable climate, also allow these countries to produce FFV competitively. Based on field research and literature review, the study discusses and analyses socio-economic conditions in a number of FFV supply chains of Dutch retailers.

(via Eldis, 2011)

Organic agriculture could help Africa fight poverty

knowledge.cta.int/en/content/view/full/16673

During the 2nd African Organic Conference held in Lusaka, Zambia 2-4 May 2012 on the theme 'Mainstreaming Organic Agriculture in the African Development Agenda' participants agreed that organic agriculture is becoming a key component of sustainable development. Research has shown that the adoption of organic agriculture practices increases yields, makes producers less vulnerable to international input price volatility, and promotes environmental sustainability, among other benefits. In this regard, a declaration adopted at the conference welcomed the institutionalisation of AfroNet (African Organic Network), the umbrella organisation uniting and representing African organic stakeholders. The declaration calls upon the African Union to mainstream organic agriculture into all areas of its work, including the Comprehensive African Agriculture Development Programme (CAADP). (Excerpt from ICTSD, 13/6/2012)

Climate-smart agriculture: Possible roles of agricultural universities in a strengthened Norwegian climate change engagement in Africa

knowledge.cta.int/en/content/view/full/16676

In addition to industrial emission control, Norwegian efforts to restrict climate change have focused on mitigation through forest protection (REDD+) and clean energy (Energy+). A third area of attention is climate-smart agriculture. Producing food in a more 'climate smart' way is seen as having three advantages: 1) Providing food for an increasing population, 2) maintaining food production under a changing climate, and 3) reducing greenhouse gas emission from agriculture while absorbing carbon in vegetation and soil. This report explores how Norway can support Africa's efforts to make agriculture more climate-smart through support to African universities. (via Eldis, 30/6/2012)

Vulnerability and adaptation to climate change: Agricultural systems in Madagascar

knowledge.cta.int/en/content/view/full/16681

Decision-makers implementing Madagascar's national action plan on climate change adaptation have lacked precise information on the spatial dimensions of vulnerability to climate change -specifically where and which factors impact on people and resources. A project led by Madagascar's University of Antananarivo is looking at vulnerability and adaptation options in the island's agricultural sector. As well as improving information on climate change vulnerabilities, the project is facilitating dialogue between at-risk groups, decision-makers, and researchers. Gaining a better understanding of local perceptions of climate change is just one element of the team's effort to paint a composite map of climate vulnerability and risk to agrarian systems. To bring policymakers into the equation, and scale up the dialogue, reflection groups are being established at regional level linking decision-makers, support groups working on climate change and agriculture, and representatives from seven local reflection groups. The final technical document can be downloaded [here](#). (IDRC, 2012)

Impacts of climate change and variability on fish value chains in Uganda

knowledge.cta.int/en/content/view/full/16691

This study examines the vulnerability of fish production in Uganda, particularly as it relates to the predicted impacts from climate change, using the concept of the value chain. The value chain approach has been recommended as a useful tool to study specific challenges facing a sector resulting from various drivers of change, including climate. Critically, such analyses can reveal context-specific response strategies to enhance a sector. The specific purpose of the study was to identify current and potential impacts of climate change and corresponding adaptation strategies in fish value chains. The study builds upon information from earlier value chain analyses on fisheries and aquaculture production in Uganda to provide a more in-depth understanding of issues facing the fish industry. ([WorldFish Centre Research report 2012-18](#), 6/2012).

ECOWAS urges policy harmonization for fisheries development

knowledge.cta.int/en/content/view/full/16694

The ECOWAS Commissioner for Agriculture, Environment and Water Resources, Dr Marc Atouga, called on Member States to harmonise their policies and efforts in the fisheries sector to boost intra-regional trade in fish products. Addressing the opening of a five-day inaugural meeting of the Regional Fisheries Committee on the Coherence of Policies in the Fishery Industry in the ECOWAS Region, on 27 August 2012 in Cotonou, Benin, Dr Atouga noted that constraints in the sector included inadequate transport infrastructure and challenges posed by antiquated customs rules. ([AfricaBrains](#), 29/8/2012)

Studies to help growers become more efficient in the production of papaya

knowledge.cta.int/en/content/view/full/16697

Two scientific papers on the study of the sex chromosomes of papaya have been published as cover stories in the most recent issue of Proceedings of the National Academy of Science, the USA. Dr Qingyi Yu, a Texas AgriLife Research plant molecular biologist at Weslaco and a member of the scientific team doing the research, said their work is yielding new information about the evolution of plant sex chromosomes. Yu said she and her colleagues are studying the sex chromosomes of papaya to help growers become more efficient in the production of the fruit, estimated to grow on about one million acres worldwide. 'Our team sequenced the hermaphrodite-specific region of the Y chromosome, HSY, and its X counterpart', she said. 'By comparing HSY and its X counterpart, the team revealed two large inversions occurred in the Y chromosome, which likely caused cessation of recombination between HSY and its X counterpart and resulted in additional genome rearrangements. It is surprising that the papaya X chromosome has expanded due to accumulation of transposable elements', she continued. 'The results changed our previous views on sex chromosome evolution.' ([AgriLife TODAY](#), 10/8/2012)

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Launch of the first scientific cooperation programme Africa-Brazil-France to fight desertification in Africa

knowledge.cta.int/en/content/view/full/16786

This scientific programme is an original South-South-North cooperation initiative, jointly financed by Brazil, Africa and France. It aims to structure a scientific community comprised of African, Brazilian and French researchers to fight desertification in Africa, build scientific capacities on this continent and strengthen links between science and society, in order to contribute to a sustainable management of arid and semi-arid areas in Africa. ([IRD](#), 4/6/2012)

China to build agricultural research facility in Mali

knowledge.cta.int/en/content/view/full/16685

China plans to build a centre for agricultural research and technological demonstration near Bamako, Mali, to carry out experiments and technical training, and to contribute to the development of sustainable agriculture in the country, [SciDev reports](#) (7/8/2012).

The role of transgenic crops in the future of global food and feed

knowledge.cta.int/en/content/view/full/16699

The paper ([AGRIS on-line Papers in Economics and Informatics](#)) is aimed at the problematic of biotech crops planting (GM, transgenic crops). It analyzes the trends in the main biotech crops planting groups in the sense of their use for food and feed in the future. The selected groups of biotech crops analyzed in this article are soybeans, maize (corn), cotton and rapeseed (canola). The used methods are chain and basic indexes and regression analysis of times series/ trend data – for predicting on next four years (2012-2015). The trends are able to determine the necessity of implementation the biotech crops planting into the agricultural systems everywhere (also in EU) and it is without the questions if the impact are mainly positive or negative. The dependence of world agricultural commodity market on the biotech crops is undeniable and the prediction acknowledges that the importance is increasing. Pieces of knowledge introduced in this paper resulted from solution of the institutional research intention 'Economics of resources of Czech agriculture and their efficient use in frame of multifunctional agri-food

systems'.

New project and call for evidence at EASAC: 'Planting the future: opportunities and challenges for sustainable crop development'

knowledge.cta.int/en/content/view/full/16700

EASAC – the European Academies Science Advisory Council – announced late July 2012 the new project to address genetics and the sustainable intensification of agriculture, covering science and technology in the context of EU food security and EU-global relationship. It is meant to explore the implications of alternative policy decisions on bioscience strategies in agriculture. One of the work streams is to collect evidence on the applications of molecular biosciences in agriculture in African countries.

([EASAC](#), 24/7/2012)

Plant genetic resources for food and agriculture: roles and research priorities in the European Union

knowledge.cta.int/en/content/view/full/16705

EASAC – the European Academies Science Advisory Council – published in December 2011 this report on the identification, conservation and use of plant genetic resources for food and agriculture across the EU. The present report uses the outputs from an expert analysis to discuss the opportunities and challenges that face the EU in capitalising on plant genetic resources and in addressing the shared problems. Its primary purpose is to provide an account of the roles and research priorities associated with these plant genetic resources in the EU and describe what is needed in coherent policy formulation. ([EASAC](#) via agro.biodiver.se, 21/8/2012)

Local vegetable production in Papua New Guinea

knowledge.cta.int/en/content/view/full/16710

Improvements in vegetable production, transport and marketing are important to the well being of small holder farmers in Papua New Guinea, and opportunities for strengthening the industry and enhancing performance can be achieved by use of value chain analysis. A project on 'Increasing Vegetable Production in Central Province, Papua New Guinea to Supply Port Moresby Markets' funded by the Australian Centre for International Agricultural Research (ACIAR) and led by the Tasmanian Institute of Agricultural Research is identifying and addressing vegetable supply chain priorities in Central Province of PNG. It aims to provide small farmer communities with production options and marketing skills so they can take advantage of the opportunity to improve their socioeconomic position in a sustainable manner in an economy that is expanding due to mineral and gas development projects. An integral part of the project was a value chain workshop for the stakeholders held at Pacific Advent University, Port Moresby. The value chain workshop was designed to assist stakeholders to develop skills to improve the performance of the value chain through enhancing relationships among the chain participants (or actors) – farmers, transporters, wholesalers and consumers. The ultimate aim is the development of viable, functional value chains that provide satisfactory returns to all participants in them. ([AgriCultures Network](#), 2012)

International Water Management Institute (IWMI) study report on smallholder water management in Africa and South Asia

knowledge.cta.int/en/content/view/full/16713

The International Water Management Institute (IWMI) has published a study demonstrating that smallholder water management techniques can increase crop yields by up to 300% in sub-Saharan Africa and South Asia. Among the findings, the study reports that small-scale private irrigation projects in Ghana employ 45 times the number of employees of major public irrigation projects. The study, titled 'Water for Wealth and Food Security: Supporting Farmer-Driven Investments in Agricultural Water Management (AWM)', is based on the results of the AgWater Solutions Research Initiative. It examines the context of the AgWater Solutions project, the future of smallholder AWM, opportunities for investing in smallholder AWM and ways forward. The report highlights the potential of AWM to provide poor farmers with the ability to generate income during the dry season, and notes that AWM technologies are cheap and affordable, with a strong potential for up-scaling and reducing poverty. (News and excerpt from [IISD Reporting Services – Africa Regional Coverage](#), 24/8/2012). [IRIN](#) has the analysis.

Feeding a Thirsty World – Challenges and Opportunities for a Water and Food Secure Future

knowledge.cta.int/en/content/view/full/16715

This report provided input into the discussions at the 2012 World Water Week in Stockholm, under the theme of Water and Food Security. It features brief overviews of new knowledge and approaches on emerging and persistent challenges to achieve water and food security in the 21st century. Each chapter focuses on critical issues that have received less attention in the literature to date, such as: food waste, land acquisitions, gender aspects of agriculture, and early warning systems for agricultural emergencies. The analysis showed that there will not be enough water available on current croplands to produce food for the expected population in 2050 if we follow current trends and changes towards diets common in Western nations. The researchers found that industrialized nations currently get on average 20 percent of calories from animal protein (meat plus other products like milk and eggs). To produce the grain necessary to maintain that level and take it worldwide by 2050, farmers would need more usable water than the planet is capable of providing. What level would work, according to the researchers? There will be 'just enough water', they conclude, 'if the proportion of animal-based foods is limited to 5 percent of total calories'. In other words, we non-vegans need to prepare ourselves and our children for radically different diets in the coming decades – eating about a quarter of the meat, eggs, cheese, etc we now do. Rather than relying heavily on animals for protein, we'll have to learn to consume much more of what we now feed animals: legumes and grains.

[Read the report.](#)

[Read the commentary.](#)

Women Empowerment for Improved Research in Agricultural Development, Innovation and Knowledge Transfer in the West Asia/North Africa Region

knowledge.cta.int/en/content/view/full/16720

This study on women empowerment in agricultural research and development was commissioned by the Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA). It aims at proposing policies to ministries of agriculture, agricultural research institutions and extension agencies to advance the role of women working in agriculture in the region. It combines a desk-study with literature, internet research and field studies in Jordan, Egypt and Tunisia. Given limited resources, only field-research was conducted in three of the five WANA sub-regions. The results illustrate the significant barriers rural women and female farmers face in the WANA region. The reasons are manifold, ranging from the limiting impact of the prevailing patriarchal gender paradigm on rural women, to gender-blind agricultural policies, insufficient human resources, lack of skills and know-how in agricultural institutions and organizations. Shortages of funds, weak commitment, gender equity on all levels and persistent gender stereotyping are common. The study concludes with the following key messages: 1) Persistent discrimination of women hold development back; and 2) Gender stereotyping in agricultural policy making, innovation and knowledge transfer still persists. ([Published in 2012 by AARINENA](#))

German researchers hand biofuels a poor review

knowledge.cta.int/en/content/view/full/16734

Germany's National Academy of Sciences Leopoldina has come down firmly against the use of crops for energy. In [a report issued by a panel of more than 20 experts](#) who have been working together since 2010, the academy concludes that biofuels should play only a small part in the move toward sustainable sources of energy. Biofuels use more land area, generate more greenhouse gas emissions, and have a greater impact on the environment than other alternative energy sources such as photovoltaic solar energy, solar thermal energy, or wind power. Biofuel crops may also find themselves competing with food crops for valuable land. (via [AAAS ScienceInsider](#), 26/7/2012)

International network for edible aroids

knowledge.cta.int/en/content/view/full/16737

The [International Network for Edible Aroids](#) (INEA) is a global consortium of scientists and growers, formed to work on *Colocasia* and *Xanthosoma* under a project entitled: 'Adapting Clonally Propagated Crops to Climatic and Commercial Change'. A 5-year EU-assisted project, INEA will use edible aroids as a model to improve clonally propagated crops of the tropics, which are difficult to adapt to new conditions as they rarely flower and set seed. In order to overcome the constraints such as climate change, pests and diseases, market needs, etc., INEA will help countries bring together plants with varied genetic backgrounds, assist with breeding strategies, and demonstrate the use of modern biotechnologies to facilitate the work. In the process, it will develop a network of scientists and farmers exchanging information and germplasm under the auspices of international treaties.

Scientific Research Organisation of Samoa (SROS)

knowledge.cta.int/en/content/view/full/16741

The [Scientific Research Organisation of Samoa](#) (formerly known as The Research and Development Institute of Samoa – RDIS) is a newly formed government initiative, established to provide scientific and technical research, and develop technologies which provide benefit to Samoa's industry and economy. It is an independent corporate body constituted and operating under the provisions of the SROS Act 2008. The primary objective of SROS is to assist farmers and businesses through scientific and technical research with the primary aim of adding value to local resources to promote the national economy. There is a need to add value to food production in Samoa to fully utilize local resources (agricultural produce), generate income, employment and reduce imports. There is also a need to exploit energy sources that are renewable to compact high energy cost. All research activities of the Organisation are geared to achieving these goals. SROS research on [postharvest disease management](#), among other themes, has received international commend.

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Events | RSS

AARSE 2012 International Conference

knowledge.cta.int/en/content/view/full/16749

Dates: 29 October- 2 November 2012

Venue: El Jadida, Morocco

The Conference Theme: Earth Observation & Geo-information Sciences for Environment and Development in Africa: Global Vision and Local Action Synergy

The 9th African Association of Remote Sensing of the Environment (AARSE) International Conference, AARSE 2012, on Earth Observation & Geoinformation Sciences for Environment and Development in Africa: Global Vision and Local Action Synergy will be held in El Jadida, Morocco, at the Faculty of Science, Chouaib Douakkali University from 29 October to 2 November 2012. The conference will be a major event in the African and international community of Earth observation and geo-spatial information science in 2012; organized by AARSE and the Faculty of Sciences, Chouaib Douakkali University in partnership with the International Islamic Organization for Education, Science and Culture (ISESCO) and the Moroccan Association of Remote Sensing of the Environment (MARSE). Paper selection is based on abstract and full paper peer review following the guidelines provided in the 'Call for Paper' document downloadable from the conference website:

www.aarse2012.org.

European Gender Summit 2012 'Aligning Agendas for Excellence'

knowledge.cta.int/en/content/view/full/16744

Dates: 29-30 November 2012

Venue: European Parliament, Brussels

Distinguished scientists will discuss opportunities for advancing excellence through greater awareness of the role of gender as a dimension of research content, and as an important driver to promote innovation and mobility of talent and knowledge. The 2012 edition of the European Gender Summit will demonstrate innovative initiatives in the area of gender equality introduced by leading science institutions, such as the League for European Research Universities (LERU), German Research Foundation (DFG), European Research Council (ERC), National Science Foundation (NSF) and European Commission (EC). The Summit is designed to confront common challenges at national, EU and international levels. [More information](#).

International Conference System Dynamics and Innovation in Food Networks

knowledge.cta.int/en/content/view/full/16746

Dates: 18-22 February 2013

Venue: Innsbruck-Igls, Austria

Deadline for paper submission: 15 October 2012. This [conference](#)'s objective is to provide an interdisciplinary and creative discussion environment that generates new ideas for innovative and multidisciplinary research. Its focus is on the analysis of the food system dynamics and interdependencies; the identification of drivers for sustainable system dynamics in the decision sphere of the system actors (e.g. chain management, consumers, agencies, policy, etc.); and on the identification and promotion of potential system innovations.

Climate-Smart Agriculture Science Conference – UC Davis, 2013

knowledge.cta.int/en/content/view/full/16748

Dates: 20-22 March 2013

Venue: UC Davis Campus, USA

The University of California, Davis has been asked by the World Bank to host a global conference focused on the topic 'climate-smart agriculture'. The conference will take place 20-22 March 2013 on the UC Davis campus. This will be the second science-based conference on the topic; the first was held at Wageningen UR in October 2011. Participants will have the opportunity to contribute science-based knowledge to help shape the global policy discussions about how agriculture can play a positive role in the environmental challenges the world is facing. More information will be forthcoming. Stay up-to-date by visiting the [conference website](#).

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Grants, Competitions and Calls | [RSS](#)

Call for proposals 6th Plant KBBE 'Plant Alliance for Novel Technologies – towards implementing the Knowledge-Based Bio-Economy in Europe'

knowledge.cta.int/en/content/view/full/16756

Deadline: 15 October 2012

Plant-KBBE is funded in partnership between ANR (Agence Nationale de la Recherche), the Ministry of Economy and Competitiveness (MINECO) in Spain, the Federal Ministry of Education and Research (BMBF) in Germany and the FCT (Fundação para a Ciência e a Tecnologia) in Portugal. This new 2012 call for proposals has been developed to promote competitive, novel plant production systems and agriculture in sustainable conditions. The objectives are to develop i) transnational cooperation in application-oriented plant genome research, ii) novel approaches for the improvement of crop plants and algae, and iii) their use in agricultural and industrial innovations. Focal points of Plant-KBBE are the application of research results in industrial practice, the strengthening of the competitiveness of the involved businesses, and the reinforcement of the cooperation between public research and industry.

The 2012 call deals with 'Food and Feed: crop yields and nutrition security in the context of climate change'. Research topics are: 1) Yield stability; 2) Plant health; and 3) Adaptation to pressures from the environment, phenotypic plasticity. More information [here \(ANR\)](#) and [here \(IRD\)](#).

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Jobs | [RSS](#)

Plant geneticist, marker assisted breeding specialist

knowledge.cta.int/en/content/view/full/16757

Deadline: 15 October 2012

Cirad (France) is seeking, for a post-doctoral position, a [researcher](#) with a background in marker assisted breeding, to be involved in sorghum and rice marker assisted breeding programmes. The selected plant geneticist will be in charge of genetic data analysis and plant selections in two recurrent selection programmes.

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