"K4D lets scientists and policymakers express themselves"

December 2012 – January 2013 newsletter

Highlighting the latest additions to the site Knowledge for Development

Follow us also on Twitter and Facebook

Stay up-to-date with the **K4D RSS feeds**

Don't forget to register online

New feature articles
CTA and S&T

Developments / Publications
Events

Grants, calls & competitions
Jobs

New feature articles

How to educate in a changing world? Towards competence-based tertiary agricultural education

By Arjen Wals, Martin Mulder and Natalia Eernstmann, Education and Competence Studies, Wageningen University, the Netherlands.



According to Wals *et al.* 'continued globalization and digitalization are not only affecting how we think, what we know, who to believe and how we act, they also affect the role of education in society'. In this regard, they attempt to answer 'what do we educate for in such a world when things change so fast and knowledge becomes obsolete before you know it?' For example, Wageningen University started changing their identity by positioning themselves as *life science universities*, which aspire to contribute to a better world and improved quality of life.

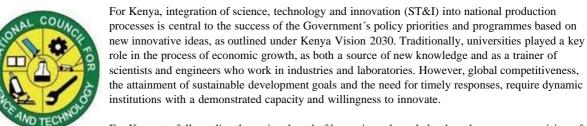
In this feature article, Wals and colleagues provide a brief review of some trends in Tertiary Agricultural Education (TAE) within Europe and examines the world-wide shift from *traditional transmissive* to *emerging transformative* development of more dynamic competencies in a real-world setting. They note that a number of new competencies are required including: interdisciplinary problem-solving, addressing multiple stakeholder interests, participatory approaches in innovation, interactive methods in conflict resolution, responsive actions regarding community needs, critical media literacy, and social responsibility in entrepreneurship, to name a few, along with those that still connect to specific content areas (e.g. animal science, plant science, environmental science and agro-technology).

This overarching innovation taking place in tertiary agricultural education in Europe is referred to as Competence-based Education and Training (CBET). A synthesis of the requirements for new graduates as defined by the public and the related competencies that are considered relevant is presented. A case study of the ten-step re-design of the MSc curriculum in horticulture at the Jimma University Agricultural College (JUCAVM) in Ethiopia is showcased.

Click to read the article.

Innovations in tertiary education: How can universities respond to Kenyan needs?

By Professor Shaukat Abdulrazak, CEO, National Council for Science and Technology, Kenya.



For Kenya to fully realize the national goal of becoming a knowledge-based economy, provision of a favourable policy environment which emphasizes the universities' pivotal role in the research and innovation process and necessary financial resources for R&D is a prerequisite. The universities also need to enhance collaboration with industry to be able to respond to the challenges and contribute to speeding up the innovation process. Ensuring the relevance of doctoral education, accessing financial support for research and having the right people is key.

The author is firmly convinced that tertiary education institutions must have a central role in the change process and that R&D funding needs to be increased. The Kenyan R&D sector including research institutes, universities, technical and vocational education and training and innovators will benefit and be able to focus on the national priority areas in a global context.

Click to read the article.

CTA and S&T

CTA / WUR / ACP Universities begin audits – 'Mainstreaming tertiary education in ACP ARD policy processes: Increasing food supply and reducing hunger'

CTA, Wageningen University and Research centre (WUR) and ACP partner universities will begin audits of ACP university teaching, research and outreach programmes as part of the joint project *Mainstreaming Tertiary Education in ACP ARD Policy Processes: Increasing Food Supply and Reducing Hunger* which was launched in 2012. The audits will take place in February 2013 in Kenya, Tanzania, Fiji and Trinidad and Tobago. These will be followed by audits in Burkina Faso, Niger and Senegal in March/April.

The project-team comprising experts from WUR and the ACP partner university will carry out the institutional analysis, using the Auditing Instrument for Sustainability in Higher Education (AISHE) which the team members have developed. This includes a review of the curriculum that supports ARD policy objectives as they relate to food security. This will also provide an overview of events and trial and error activities that have been occurring in the past. The following questions will be answered: What is being done within the university to address the increase of food supplies and the reduction of hunger? What portfolio of activities and provisions (including, policies, capacity development efforts, existing curricula with courses, modules, research programmes, community outreach, etc.) are already in place for trying to achieve the prioritized ARD goals?

Follow this event on the K4D website.

Expert consultation on innovation systems: Towards more effective theories of change Dates: 4-6 February 2013

Venue: CTA Headquarters, the Netherlands

The Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) and Wageningen University and Research Centre's Conversion of Science – System of Innovation (Wageningen UR CoS-SIS) have co-organized the 'Expert consultation on innovation systems: Towards more effective theories of change' which was held at CTA Headquarters in Wageningen, the Netherlands, from 4-6 February 2013. The objective of the Expert Consultation was to make explicit theories of change and establish sound and consolidated differences of opinion and alternatives that can be the basis for further exploration and experimentation to support an innovation thrust which supports agricultural transformation and benefits smallholder farmers.

Several lead experts from Africa, the Caribbean, Europe and Australia presented lead papers and case studies to support their perspectives on the issues to be addressed. These papers were subjected to a peer to peer review process during the workshop and afterwards to identify the areas of convergence and divergence and the key issues for informing future policy, research and outreach agendas as they relate to applying the innovations systems approach in developing the agricultural sector. Get the programme and concept note and browse through the presentations.

CAAST-Net Plus &8211; Kick-off meeting, Brussels 11-12 February 2013 knowledge.cta.int/en/content/view/full/17440

CTA is part of the consortium for the 7th framework European Commission funded project <u>CAAST Net Plus</u> which aims to advance SSA-EU cooperation in research and innovation for addressing global challenges related to health, food security and the environment. The <u>project's Kick-off meeting</u> will take place on 11-12 February 2013 in Brussels, Belgium. The meeting will be hosted at the South African Embassy by DST.

Back To Top

Selected developments and publications | RSS

Fostering breakthrough research: a comparative study

knowledge.cta.int/en/content/view/full/17441

This comparative study of the research policy system of five countries, Sweden, Denmark, Finland, the Netherlands and Switzerland was commissioned by the Royal Swedish Academy of Sciences (KVA). Worried that the international importance of Swedish research is declining, the KVA sought to understand the reasons and explore avenues to counteract the decline. Some reasons that were identified include: 1) the rapid increase in undergraduate education without adequate funding and the increasing separation of education from research; 2) the ongoing shift towards more strategic research and the increase in short-term external funding which has weakened the sector's more challenging, investigator-driven basic research, which requires a longer-term view. The report recommended that the Swedish research universities take steps to improve conditions for research which a) give the universities more independence from government regulations and thus greater freedom; b) secure the universities' long-term block funding for core, basic research; c) develop more efficient administration systems for operational sectors; undergraduate education, independent long-term academic research prioritized by the university, externally financed, targeted research and externally funded commercialization; d) establish internationally attractive research chairs and increase researchers' national and international mobility and e) handle issues of intellectual property rights (IPR) more professionally.

(KVA report via University World News, 16/12/2012)

European Institute of Innovation and Technology (EIT)

knowledge.cta.int/en/content/view/full/17444

The European Institute of Innovation and Technology (EIT) brings together higher education institutions, research centres and businesses and aims to build Knowledge and Innovation Communities (KICs, a type of cross-border public-private-partnerships). To date, three KICs have been created, focusing on sustainable energy, climate change and information and communication society. The EIT should set up a KIC in 2014 on 'Food for the future' that will examine sustainable supply chains. Click to visit the EIT's website.

Guide to good practices for university open-access policies

knowledge.cta.int/en/content/view/full/17448

The Harvard Open Access (OA) Project has released version 1.0 (10/2012) of a guide to good practices for university open-access policies. The guide is based on policies adopted at Harvard, Stanford, MIT, and several other institutions around the world. It includes recommendations that should be useful to institutions using other approaches and those that are interested in considering implementing an OA policy. (Harvard University, 17/10/2012).

Nigerian universities to develop hybrid sugarcane

knowledge.cta.int/en/content/view/full/17452

The Agricultural Research Council of Nigeria received two concurrent proposals on production of hybrid sugarcane varieties, one from the University of Ilorin and one from the Usmanu Danfodiyo University. To optimize its investment, the Council merged the two projects. The researchers have been scouting the country collecting samples of local varieties with high sugar and alcohol potential to characterize their genetic profiles and to create a genotype for the commercial production of ethanol. The researchers hope to be able to contribute to breaking the cycle of poverty and also provide advice to governments. (AllAfrica, 28/11/2012)

Policies to shape agricultural investments and markets in favour of small-scale farmers knowledge cta int/en/content/view/full/17455

This report by Oxfam and IIED identifies key policy levers at a national level that can tip commercial investments in favour of either small- or large-scale farming. It shows how policy levers influence market governance to constrain or to support the fair sharing of risk and reward between small-scale producers and the rest of the market. This report develops a framework to examine the role of policy at three levels: at the level of agricultural policy basics (Agriculture within wider development policies; Infrastructure and institutions; Cross-cutting gender laws and policies; Voice and participation); at the level of directly shaping investments (Investment policies; Control over land and natural resources; Conditions for investor access to land and natural resources; Contract farming and supply chain relationships); and at the level of market governance (Support for producer organisations; Diversity of market outlets; Market co-ordination; Competition policy; Quotas and market preferences; Public policies for private standards; Trade policy). The report also examines policy elements that can specifically contribute to gender-equitable results. Case studies, conducted in Guatemala, Nigeria, Tanzania and the Philippines, supported the research

(Oxfam and IIED, 6/12/2012)

Study details essential role of trust in agricultural biotech partnerships knowledge eta int/en/content/view/full/17458

In a special supplement in the UK-based journal Agriculture and Food Security, a research team from the Sandra Rotman Centre at the University Health Network and the University of Toronto, after a four year study into what built or undermined trust in scientific collaboration, concluded, that within agricultural biotechnology projects there were six key determinants: honesty, transparency, capability, accountability, solidarity and generosity. The body of work examined this issue in depth, using more than 80 interviews with stakeholders in eight African ag biotech projects spanning seven countries – Burkina Faso, Egypt, Kenya, Nigeria, South Africa, Tanzania and Uganda. (Physorg, 1/11/2012)

$\textbf{Farmers in East Africa not consulted on draft policy for Plant Variety Protection} \\ \underline{\textbf{knowledge.cta.int/en/content/view/full/17462}}$

East African farmers petitioned the African Regional Intellectual Property Organisation (ARIPO), following the latter's proposed draft of a regional harmonised policy and legal framework on plant variety protection. The draft policy will make it mandatory for small-scale farmers in East Africa to buy all their seeds from multinational firms and stop using seeds from past harvests. The farmers' group faults the process used to develop the draft policy and the negative impact its adoption would have on small-scale farmers, food security and on agricultural biodiversity. The draft policy will give powers to ARIPO regional offices to grant and administer breeders' rights on behalf of all the contracting states. It also paves the way for the African Union (AU) to start discussions on the cultivation, import and export of genetically modified crops in Africa at the next AU summit to be held in January 2013. Observers and civil society representatives have criticized these developments as they have had little access to the negotiation table and are asking ARIPO to undertake comprehensive consultations with all relevant stakeholders and desist from rushing governments into adopting the draft legislation.

(IP-Watch, 5/11/2012 and *The East African*, 16/12/2012),

Can genomics boost productivity of orphan crops?

knowledge.cta.int/en/content/view/full/17467

This opinion piece by Rajeev K. Varshney of ICRISAT and colleagues in *Nature Biotechnology* explains why the availability of advanced tools to support genomics-assisted breeding, should not be an issue anymore in developing orphan crops, mainly staples. However they note that the 'magnitude of the breeding effort for those orphan crops and the capacity of adopting modern technologies is extremely variable across developing countries and generally directly related to the health of the national economy'. They believe that 'centralized service facilities for high-throughput sequencing and genotyping, together with access to genomics and analytical breeding tools, should enhance implementation and adoption of molecular breeding in developing countries'. They recommend that 'continued training of breeders and geneticists in modern genomics and molecular breeding approaches and their retention in developing countries coupled with adequate institutional and governmental support will be critical for the sustainable and effective integration of genomics-assisted breeding in crop improvement programmes for ensuring food security in developing countries'. (*Nature Biotechnology* 30, 1172-1176 (2012).

Increasing food production in Africa by boosting the productivity of understudied crops knowledge.cta.int/en/content/view/full/17470

Zerihun Tadele (University of Bern, Switzerland) and Kebebew Assefa (Debre Zeit Agricultural Research Center, Ethiopia) have compiled a review of the major understudied ('orphan') crops of Africa (for example: teff, fonio, grass pea, okra, amaranth, among several other crops), listing their desirable and undesirable properties and the current knowledge (economic and scientific) on their production and improvement efforts (and the organisations working on the subject). The call for an agricultural revolution must point to further research on orphan crops of Africa if they are to benefit from modern improvement techniques to enable a truly secure agricultural sector on the continent. Partnerships, farmer participation and modern research capacity dedicated to these understudied crops may well get improved varieties out in the fields. (Agronomy 2012, 2(4), 240-283).

Multiple ways of supporting the conservation and use of traditional crop varieties knowledge.cta.int/en/content/view/full/17474

Devra Jarvis of Bioversity International and colleagues, reviews and discusses how studies on (i) on-farm diversity assessment; (ii) access to diversity and information; (iii) extent of use of available materials and information; and (iv) benefits obtained by the farmer or farming community from their use of local crop diversity, are necessary to identify the different ways of supporting farmers and farming communities in the maintenance of traditional varieties and crop genetic diversity within their production systems. Throughout this paper, two key themes are emphasized. First, any description or analysis within the four main areas (assessment, access, use and benefit) can, and most probably will, lead to a number of different actions. Second, the decision to implement a particular action, and therefore its success, will depend on farmers and the farming community having the knowledge and leadership capacity to evaluate the benefits that this action will have for them. This in turn emphasizes the importance of activities (whether by local, national and international organisations and agencies) of strengthening local institutions so as to enable farmers to take a greater role in the management of their resources. (Bioversity International, 10/12/2012)

Poorer quality wheat when carbon dioxide levels in the air rise knowledge.cta.int/en/content/view/full/17478

AlphaGalileo reported that researchers at the University of Gothenburg, Sweden found that rising levels of atmospheric carbon dioxide have a negative impact on the protein content of wheat grain and thus its nutritional quality. The results are unequivocal: 'Elevated carbon dioxide levels often increase the size of the grain yield, but also lead to a reduction in quality in the form of lower protein content', says Håkan Pleijel, Professor of Environmental Science at the university's Department of Biological and Environmental Sciences.

(AlphaGalileo, 10/12/2012)

Back To Top

Phytotracker: an information management system for easy recording of plants, seeds and plasmids knowledge.cta.int/en/content/view/full/17481

A large number of different plant lines are produced and maintained in a typical plant research laboratory, both as seed stocks and in active growth. These collections need careful and consistent management to track and maintain them properly, and this is a particularly pressing issue in laboratories undertaking research involving genetic manipulation due to regulatory requirements. Phytotracker is a laboratory management system/software designed specifically to organise and track plasmids, seeds and growing plants that can be used in mixed platform environments. It utilises the cross-platform Filemaker relational database, which allows it to be run as a stand-alone or as a server-based networked solution, to provide cataloguing and search functions for plasmids, seed batches, seed stocks and plants growing in pots or trays, and allows tracking of each plant from seed sowing, through harvest to the new seed batch and can print appropriate labels at each stage. The software was developed at Cardiff School of Biosciences, Cardiff University, UK by Jeroen Nieuwland and colleagues.

Learn more about the software at *Plant Method* (2012, 8:43; 13/10/2012).

Research4Life publishers extend open and low-cost access partnership through 2020 knowledge.cta.int/en/content/view/full/17485

Over 6,000 institutions in more than 100 developing countries will continue to benefit from free or low cost access to peer-

reviewed online content from the world's leading scientific, technical and medical publishers. Research4Life is the collective name for four public-private partnerships; Access to Research Initiative (HINARI, WHO), Access to Global Online Research in Agriculture (AGORA, FAO), Online Access to Research in the Environment (OARE, UNEP), and Online Access to Research for Development and Innovation (ARDI, WIPO) which seek to provide the developing world with access to critical scientific research. In November 2012 the Research4Life partners announced that they had agreed to extend their partnership through 2020.

(Research4Life via FAO AIMS, 14/11/2012)

Performance and impacts of conservation agriculture on family farms in the South

knowledge.cta.int/en/content/view/full/17489

This meta-study conducted by scientists from CIRAD (France) and partner institutions in Brazil, presents the advantages and limitations of conservation agriculture (CA). It shows that while CA is a viable option to achieve sustainable and intensive crop production, its success mostly results from the permanent presence of organic mulch on the soil surface and the incorporation of cover crops in the rotations. Thus, applying CA principles requires a significant reorganisation of the production process at farm level, and when facing technical or socioeconomic constraints, most farmers usually opt for applying only partially the three main principles of conservation agriculture. The authors point to further investigations into the consequences of such partial implementation of conservation agriculture principles on its actual efficiency. (CIRAD, 09/2012)

Vertical farming sprouts in Singapore

knowledge.cta.int/en/content/view/full/17534

Vertical farming systems are meant to service urban centres where arable land is scarce. This particular method requires more energy and technical skills than the average 'horizontal' greenhouse. However, vertical farming or, at the least, some of its most basic principles could be adapted to small scale urban farms in developing countries, when space becomes scant. (NPR, 6/11/2012)

Water Harvesting in Sub-Saharan Africa

knowledge.cta.int/en/content/view/full/17536

This book by William Critchley (VU University Amsterdam, the Netherlands) and John Gowing (Newcastle University, UK), published November 2012, reviews the state of the art of water harvesting for crop production and other uses in Sub-Saharan Africa. It defines water harvesting as a set of approaches which occupy an intermediate position along the water-management spectrum extending from in situ moisture conservation to irrigated agriculture. It includes an assessment of water harvesting schemes that were initiated two or three decades ago when interest was stimulated by the droughts of the 1970s and 1980s. These events provide lessons to promote sustainable development of dryland agriculture in the face of changing environmental conditions. Case studies from eight countries across Sub-Saharan Africa provide the evidence base, with a focus on attempts to promote adoption of water harvesting, both horizontally (spread) and vertically (institutionalization).

Feedipedia: an online encyclopaedia of animal feeds

knowledge.cta.int/en/content/view/full/17539

Feedipedia replaces the FAO's AFRIS website and supplements the work done by the Association Française de Zootechnie (AFZ) and INRA on composition and nutritive value tables for raw materials intended for livestock. This online database is intended for anyone researching animal feeds. It provides: (i) quality information, with references (description, distribution, constraints on use, environmental impact, etc.) as well as; (ii) quantitative information (composition and nutritive value tables) on feeds. 201 sheets describing the different products obtained from a given plant or raw material and providing up-to-date information on more than 600 feeds and fodder types, are available. The information has been compiled by more than 25 researchers and engineers from the AFZ, CIRAD and INRA, based on bibliographical references from the scientific and technical literature. Visit Feedipedia's website: www.feedipedia.org. (via CIRAD, 21/11/2012)

Global database on the Implementation of Nutrition Action (GINA)

knowledge.cta.int/en/content/view/full/17542

The Global Database on the Implementation of Nutrition Action (GINA) is an interactive platform for sharing standardized information on nutrition policies and action, i.e. what are the commitments made and who is doing what, where, when, why and how (including lessons learnt). Users can apply this tool to: Map nutrition policies and action; Link policies and action to nutrition status indicators; Monitor implementation of key nutrition action; Identify overlaps and gaps; Share experience on implementation practices. The GINA policy section tracks commitments to ensuring good nutrition demonstrated in policy documents. The documents are sometimes specific for nutrition, e.g. national nutrition policies or vitamin A strategies, other times they have a broader scope, e.g. health or agriculture sector strategies, development plans. They include policies, strategies, action plans and legislations. Visit GINA's website at https://extranet.who.int/nutrition/gina/en.

The Scinnovent Centre launches its Strategic Plan for the next five years (2013-2017) knowledge.cta.int/en/content/view/full/17545

The emphasis of the <u>Scinnovent Centre</u> is on understanding the barriers to the adoption and use of science, technology and innovation (ST&I) knowledge for wealth and employment creation. Its work focuses on three possible barriers namely: (i) Policies and legal frameworks that shape the incentive structures for the application of ST&I: (ii) Institutions including the rules, norms, attitudes, habits and mindsets that shape how people view and respond to science, innovation and

entrepreneurship; and (iii) Capabilities (the technical, organisational and managerial skills required to turn ST&I into businesses and social enterprises).

In its first <u>inaugural newsletter</u>, the Centre details its strategic plan for 2013-2017, the objectives of which are: (i) to generate evidence to support policymaking and implementation: (ii) to strengthen skills and shape attitudes and mindsets, and (iii) to facilitate interactive and joint learning, networking and dialogue.

Back To Top

Events | RSS

Final Conference for the ERA-ARD II project

knowledge.cta.int/en/content/view/full/17546

Dates: 5 June 2013 Venue: Brussels, Belgium

This International Conference is being organised as a Final Conference for the ERA-ARD II project, in close cooperation with EIARD (The European Initiative for Agricultural Research for Development) and SCAR (The Standing Committee on Agricultural Research).

Further information with a preliminary programme for the conference and initial logistical information will be provided as soon as possible on the ERA-ARD website www.era-ard.org/final-conference/.

MSc degree course in GIS and Natural Resource Management

knowledge.cta.int/en/content/view/full/17554

Start: 2 September 2013

Venue: Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana

Deadline: 17 June 2013

This course is the application of geo-information and earth observation techniques in support of natural resources management. It provides participants with knowledge and skills needed for the collection, interpretation and management of spatial information, using remote sensing and geographic information systems, to support planning and decision-making processes in natural resources management. The curriculum concentrates on methods for assessing the state of the resource base and the changes that occur, and progresses to the assessment of impacts and, finally, societal response. Click for more information.

8th Conference of the Global Consortium of Higher Education and Research for Agriculture

knowledge.cta.int/en/content/view/full/17548

Dates: 26-28 June 2013 Venue: Moscow, Russia

Theme: 'Bringing solutions to Food security in the face of Climate Uncertainty'

The 8th Conference of GCHERA will be held in Moscow from 26 to 28 June 2013. It will be hosted by the Russian State Agrarian University (MTAA). For more information about the Conference host, click here. For additionnal information on the event, click here.

Back To Top

Grants, Competitions and Calls | RSS

Royal Society-DFID Africa Capacity Building Initiative

knowledge.cta.int/en/content/view/full/17549

Application deadline: 4 April 2013

This programme is for scientists in sub-Saharan Africa who want to develop collaborative research consortia with scientists attached to a research institution in the UK. The scheme provides funding towards research expenses, travel and subsistence costs, (PhD) training, and limited funds for equipment. Applications will be accepted in three research priority areas, including soil-related research. Click for more information.

ERAfrica Joint Call to create long-term research collaboration

knowledge.cta.int/en/content/view/full/17550

Deadline for proposals submission: 15 April 2013

The goal of the Joint Call is to create long-term research collaboration between EU Member States and/or Associated Countries and Africa. Research collaboration of a high standard between teams from EU Member States and/or Associated Countries and Africa will be supported through open competition. The thematic fields of the Call are: 'Renewable energy'; 'Interfacing challenges'; and 'New ideas'. More information at www.erafrica.eu.

Call for papers: Special Issue on 'Impacts of Agricultural Biotechnology: Long-Term Evidence' knowledge.cta.int/en/content/view/full/17551

Deadline for manuscript submission: 15 June 2013

The aim of this special issue of the *International Journal of Biotechnology* is to provide the latest evidence of the ecological and health impacts of GM crops. The special issue will focus on providing long-term trends based on assessments of studies on environment and health impacts of agricultural biotechnology. It will also welcome case studies of such impacts providing the best available evidence. Guest editor is Calestous Juma, Harvard Kennedy School, USA. Click for more information.

Back To Top

Jobs | RSS

Head, Biometrics and Statistics Unit

knowledge.cta.int/en/content/view/full/17552

The International Institute of Tropical Agriculture (IITA) invites applications for the position of Head, Biometrics and Statistics Unit. The position, announced in January 2013, will remain open until a suitable candidate is found. Click for more information.

Back To Top

To unsubscribe, send a blank email to leave-knowledge-en@lists.cta.int
If you have been forwarded this newsletter and would like to receive it, please visit the Knowledge-for Development website and register for the email newsletter; or send a blank email to join-knowledge-en@lists.cta.int Publisher: CTA

Coordinating editors: Judith Francis, CTA and Rutger Engelhard, Contactivity bv. Research: Cédric Jeanneret-Grosjean, Contactivity bv.



CTA is an institution of the ACP Group of States (Africa, Caribbean and Pacific) and the EU (European Union), in the framework of the Cotonou Agreement and is financed by the EU.