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**August 2011 newsletter**

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## New ´S&T Policy Dialogue´ lead article

### Encouraging private investment in agricultural research: Myth or necessity for developing countries

*New lead article by Joshua Ariga, Economist with the International Fertilizer Development Center, Alabama, USA*

The focus for many developing countries is on increasing both public and private investments for improving the performance of the agricultural sector; an issue that is being pursued at national, regional and international levels. Identifying the right technologies, developing output and input markets, prioritizing agriculture in national development strategies, and private-public partnerships are important aspects for a successful research and development (R&D) and technology adoption framework. Agricultural R&D has the potential to reduce costs and/or raise output and therefore to shift the supply curve to the right. The InterAcademy Council and other public and private agencies have recognized the critical role of S&T in economic and social development and have recommended a doubling of public agricultural R&D funding by 2015.

Significant lags in the onset of benefits associated with some agricultural R&D endeavours (coupled with weak IP legislation) raise uncertainties for potential investors; there is a fairly long period from the inception of R&D to adoption of technology. Such lags call for sustained funding in order to achieve the high returns that are associated with agricultural R&D, but which take some time to develop. This scenario offers tough choices to private investors when coupled with an uncertain policy environment and limited demand in some developing countries.

The relatively low private investments in R&D in developing countries can be attributed to a number of constraints: predominance in subsistence crop production which do not augur well for investors who desire lucrative returns from value-addition; the low proportion of purchased inputs in total production do not provide the incentives that drive private enterprise; underdeveloped and small-sized input and output markets; poor infrastructure; stifling regulations that encourage rent-seeking; and an unfavourable policy environment for private sector agro-business growth. All of these constraints contribute to a low rate of introduction of new technologies. For the private sector to engage in R&D mechanisms are needed which allow them to recoup their costs and make profits. These include a number of enabling factors: favourable policy environment, enactment of IP rights regime, a pool of qualified researchers, national legislation that makes it possible to import and test new technology (without unnecessary bureaucracy and heavy tax burdens while also respecting environmental, safety and other concerns) and other attractive incentives.

Juxtaposing the current low levels of agricultural R&D and the high potential payoffs, a grossly underfunded pillar of agricultural development is revealed.

Read the whole article:

*knowledge.cta.int/en/content/view/full/14258*

### Private-sector agricultural research and innovation in Senegal - Recent policy, investment, and capacity trends

*knowledge.cta.int/en/content/view/full/14265*

By Gert-Jan Stads and Louis Sene; IFPRI, 2011.
Agricultural research and development (R&D) in Senegal has historically been spearheaded by the public sector. In 2008, the private sector accounted for just 14 percent of the country´s total (public and private) agricultural R&D investments. While the public sector dominates R&D related

to food crops, private-sector companies play a key role when it comes to export commodities, including cotton, groundnuts, and fisheries and horticultural products. Although data on public R&D capacity and investments are widely available, comprehensive information on R&D conducted by the private sector is not regularly documented. This paper attempts to fill this knowledge gap with new data and analysis on private R&D investment in Senegalese agriculture. In doing so, the paper also provides insights into policy and institutional issues constraining private investment, and options for addressing these constraints. (IFPRI, 2011)

## International Conference on Innovations in Extension and Advisory Services

### UPDATE -- Over 400 Abstracts Received and 600 Requests for Sponsorship

*knowledge.cta.int/en/content/view/full/13469*

Registration for self-sponsored delegates is still open until September 09.
Visit the conference website extensionconference2011.cta.int to register online to be part of this unique extension community.The International Steering Committee (ISC) met from 27-29 July in Nairobi, Kenya. Among their priorities was the preliminary screening of the over 400 abstracts and 700 requests for sponsorship that were received in response to the calls. The ISC in collaboration with the thematic sub-committees has selected approximately 75 abstracts for development into full papers and another 60 abstracts for development as extended abstracts, case studies or posters and the authors have been notified. The response to the journalists´ competition was also phenomenal; over 135 submissions were received before the deadline was closed. The organizers and partners are finalizing the selection of delegates who will receive sponsorship to participate in the Conference and have launched an additional call for sponsors to support as many delegates as possible.

### Blog on extension and advisory services in Zimbabwe

*knowledge.cta.int/en/content/view/full/14266*

By Muhle Masuku Bulawayo, Radio VoP Zimbabwe.
A potentially explosive situation exists in the rural areas as extension and advisory service organisations struggle for recognition in Zimbabwe. A large number swamp the districts as diminishing returns set in. The Ministry of Agriculture, Mechanisation and Irrigation Development provides agricultural extension and advisory services through the Departments of Veterinary Services (DVS), Livestock Production and development (LPD), Agricultural, Technical and Extension Services (AGRITEX). A number of organisations augment public agricultural extension and advisory services such as; public research-cum-extension organisations; donor-supported rural development programmes; international and private research centres; farmers´ associations; Non Governmental Organisations (NGO) and bilateral donors; private agrochemical input suppliers; commodity processors and exporters. Mr Mandla Siwela, a small scale farmer in Bubi district said, "We are overwhelmed by the number of meetings we are expected to attend in one week. At times people are compelled to attend. That robs us of the time we are supposed to work in our plots. Lack of coordination between service providers at ward level is disrupting on-farm programs." According to farmers, extension and advisory service multiplicity is disabling information dissemination and causing confusion, hindering farm growth that itself acts as a stimulant for the emergence of more diverse opportunities in the rural economy such as rural services, non-farm enterprises and growth points. Farmers grieve over lack of information alleging that it contributes to poor margins that kill backward and forward linkages. Some farmers moan over inefficient markets due to inadequate information. (Radio Voice Of The People Zimbabwe, 19/08/2011)

### PNG´s agriculture extension system needs revitalising

*knowledge.cta.int/en/content/view/full/14156*

A number of factors have been identified as being responsible for the lack of or limited growth of PNG ´s agricultural growth (except for one or two sub-sector) and James Laraki of PNG´s National Agricultural Research Institute believes poor agricultural extension has been one of the significant factors. According to the author writing on Malum Nalu´s weblog, the dismal performance of extension began with the decentralisation of extension services from the National Department of Agriculture and Livestock (NDAL) to the provinces soon after independence. This created 19 extension systems without any plans and adequate resources. This followed with the creation of commodity boards and proliferation of NGOs, church-based extension services and other service providers, all with varied plans and client base. This resulted in extension services becoming very fragmented, with most of the providers working on ad-hoc basis. A new policy on agriculture extension system is required to focus on the development of an effective and efficient extension system. (Malum Nalu, 1/8/2011)
Earlier in 2011, Laraki and colleague wrote an article on PNG´s potential for aquaculture development. Find it here.

### CTA/CCST/CARDI/UWI/TTFC – Caribbean Young Professionals Science and Agriculture Film and Videos Competition: A Resounding Success

*knowledge.cta.int/en/content/view/full/14264*

In 2010 CTA in collaboration with CCST, CARDI, UWI and TTFC launched a Caribbean- wide Agriculture and Science Film and Video Competition as a mechanism to promote the importance of science, technology and innovation for improving agricultural performance and supporting economic development. The competition encouraged creative, technology savvy young professionals (persons 18-35 years) with passion for communicating ideas and an interest in leveraging the full potential of science and technology for agricultural and economic development to participate in the competition.

The Finals of the competition and the Awards ceremony were held in July 2011 at Crowne Plaza in Trinidad and Tobago. Twenty-two teams from eight Caribbean countries vied for the top prizes. The video productions will be used to increase public awareness and engagement in science, technology and innovation for overcoming the challenges facing Caribbean agricultural and rural development and encourage young professionals to consider training and careers in science and agriculture. Some of the winning film and video pieces can be viewed on our facebook page.

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## Developments | Follow the latest RSS feeds for this section

### Crops with deeper roots could boost $CO_2$ storage

*knowledge.cta.int/en/content/view/full/14142*

Breeding crops with deeper roots could significantly reduce atmospheric levels of carbon dioxide and make crops more drought resistant, according to a research study conducted at the University of Manchester. Reporting in the journal, Annals of Botany, professor Douglas Kell calculated that breeding crops whose roots extend 2 meters underground, rather than the 1-meter roots common to many crops, could double the amount of carbon captured from the atmosphere. In principle, any crop could be treated in this way, giving more productive yields while also being better for the environment. Kell reported that creating crops and plants with deeper and bushier roots would also lead to more water and nutrient retention and produce more sustainable plant yields as the world warms and droughts increase in water-stressed regions. (AlphaGalileo, 3/8/2011)

### Planning for community based adaptation to climate change (CBA)

*knowledge.cta.int/en/content/view/full/14146*

The e-learning tool "Community Based Adaptation to Climate Change" offers interactive learning sessions and practical resources for training on climate change adaptation in rural communities. Four thematic modules structured in 24 sessions, introduce basic concepts, participatory tools, analytical steps and working approaches using field examples from various regions of the world, as well as practical examples. (Caribbean ComDev Platform, 2/8/2011)

### Solar power for crop irrigation

*knowledge.cta.int/en/content/view/full/14149*

For fruits, cereals and leguminous plants such as oranges, wheat, beans and olives to grow in hot and dry climates, they must be irrigated regularly. And very often the water used comes from deep wells. In Egypt, many farmers currently use diesel generators to water their fields. A model project in Upper Egypt shows that other methods are possible. Here, a photovoltaic stand-alone system takes care of irrigating a wheat field. Concentrator photovoltaic system (CPV) modules – which, due to their higher degree of effectiveness and their particular construction, require far less space than traditional PV modules – supply the energy, while Fresnel lenses concentrate the rays of the sun onto pinhead-sized multi-junction solar cells. With the aid of a tracking motor, the CPV cells, which are attached to a pillar, follow the sun precisely to achieve an optimized yield of solar light. They supply the energy for a submersible pump that pumps the water up from a well that is 105 feet deep and for a small desalination unit that satisfies farmers´ potable water requirements. The CPV cells also supply the energy for PV-module trackers, the monitoring and control system and an air-conditioning unit that cools the utility room of the facility.(Frauenhofer-Gesellschaft via AlphaGalileo, 2/8/2011)

### Research on satellite imagery aims to advance sustainable agriculture

*knowledge.cta.int/en/content/view/full/14160*

The excessive use of irrigation water has resulted in serious environmental concerns in many dry-land countries, where rising demand has deteriorated groundwater resources, depleted aquifers, and accelerated saltwater intrusion. Scientists in Spain are working on new technologies to classify and monitor irrigated crops with a goal of promoting sustainable agricultural practices. The field studies the researchers designed were to evaluate the potential of multispectral reflectance and seven vegetation indices in the visible and near-infrared spectral range for discriminating and classifying bare soil and several horticultural irrigated crops. The research is the first step of a broader project with the overall goal of using satellite imagery with high spatial and multispectral resolutions for mapping irrigated crops. (American Society for Horticultural Science via Physorg, 1/4/2011)

### Analyzing agroforestry management

*knowledge.cta.int/en/content/view/full/14172*

Scientists at the University of Toronto and the University of Saskatchewan (both in Canada) have developed a conceptual framework to diagnosis

nutrient and non-nutrient interactions in agro-ecosystems. In this study, scientists analyzed data from field trials of cocoa and pigeon pea intercropping systems using vector analysis. They quantified nutrient and non-nutrient interactions, illustrating the application of this analysis for managing agro-forestry systems. Using their advanced model, scientists were able to increase the yields of both cocoa and pigeon pea rotated with maize. Additionally, phosphorus concentrations declined, reducing environmental impact. These improvements were attributed to better light conditions for the cocoa and alleviated soil moisture competition for the pigeon pea crop. The evaluation of both nutrient and non-nutrient resource interactions provides information needed to sustainably manage agroforestry systems. Improved diagnosis of appropriate nutrient usage will help increase yields and also reduce financial and environmental costs. To achieve this, a management support system that allows for site-specific evaluation of nutrient-production imbalances is needed. (Eurekalert, 28/6/2011)

### A photo guide to West African plants

*knowledge.cta.int/en/content/view/full/14179*

This interactive photographic guide helps users identify higher plants from West African ecosystems. It contains images of ferns and seed plants taken in the field. Browse through a taxonomic hierarchy and / or search according to selected characters observed on the plant of interest. The database currently contains 7686 photos and 1291 illustrated species. It contains photographs of plants from West Africa in a broad geographical sense, mainly from the savannah regions. It is possible to search for scientific or vernacular names via free text, browse through a taxonomic hierarchy starting with family names or select several morphological characters to access a result list of species with these characters.
(Brunken, U., Schmidt, M., Dressler, S., Janssen, T., Thiombiano, A. & Zizka, G. 2008. West African plants - A Photo Guide. www.westafricanplants.senckenberg.de. Forschungsinstitut Senckenberg, Frankfurt/Main, Germany.)

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## Selected publications | Follow the latest RSS feeds for this section

### ADOPT: How to estimate the timeframes for project impacts in innovation and agriculture

*knowledge.cta.int/en/content/view/full/14190*

By G. Kuehne; R. Llewellyn, D. Pannell; AgEcon Search; 2011.
This paper reports on the reasoning underpinning the development of the Adoption and Diffusion Outcome Prediction Tool (ADOPT), i.e., an increasing demand from research, development and extension (R, D & E) agencies for estimates of likely extent of adoption and the likely timeframes for project impacts. The tool has been designed to predict an innovation ´s likely peak extent of adoption and time for reaching that peak. The tool is structured around four aspects of adoption: 1) characteristics of the innovation, 2) characteristics of the population, 3) actual advantage of using the innovation, and 4) learning of the actual advantage of the innovation. Findings in the paper show that : (a) without considering the influences on adoption and diffusion, R, D & E investment can result in poor returns and unsatisfactory on-ground benefits; (b) there is demand from R, D & E funding agencies for ex-ante assessments of adoptability and proposed practice change resulting from R, D & E investments; (c) the use of a tool based on established adoption and diffusion principles offers a level of consistency when comparing forecasts of impacts across projects; (d) understanding the attributes of innovations allows the extension strategy to be modified so that levels of adoption and diffusion can be improved.

### A strategy for agricultural statistics in Ghana

*knowledge.cta.int/en/content/view/full/14192*

By E. J. Quiñones, J. Muñoz, G. Ngeleza; International Food Policy Research Institute (IFPRI); 2011.
This IFRPI report provides a brief synopsis of the reasons why the current agricultural statistics system in Ghana is inadequate, and gives justification for the development of a revamped agricultural statistics system, and a concrete strategy for moving forward. In particular, the aim is to operationalize a process to enhance Ghana´s agricultural statistics system to the point where it can regularly (annually) provide higher quality (precisely measured), disaggregated (district level) data for broader and deeper analysis of agricultural topics (greater crop, livestock, forestry, and aquaculture coverage) in order to facilitate improved, evidence based monitoring, planning, and research at the central and local administrative levels.

### Estimating yield of food crops grown by smallholder farmers

*knowledge.cta.int/en/content/view/full/14194*

By A. Fermont and T. Benson; International Food Policy Research Institute (IFPRI); 2011.
With specific reference to yield estimation for food crops under smallholder farming conditions in Uganda, this paper evaluates the various methods that are available to estimate crop

production and cropped area in such farming systems. A description and summary tables from a database of estimated crop yields in Uganda, collated from a large set of field studies over past decades, are also provided.

### New models of technology assessment for development

*knowledge.cta.int/en/content/view/full/14197*

By A. Ely, P. Van Zwanenberg, A. Stirling; STEPS Centre Working Paper 45; 2011.
This study explores the role that ´new models´ of technology assessment can play in improving the lives of poor and vulnerable populations in the developing world. The new models addressed here combine citizen and decision-maker participation with technical expertise. Technology assessment (TA) involves the collection, interpretation and evaluation of information and perspectives around contending technological options. In the absence of TA, technologies may fail to serve their desired function, or create unforeseen negative impacts. This report examines the utility of these new models of TA in a broad range of geographical contexts, and the extent they can be applied to improve the lives of poor and vulnerable populations in the developing world. Drawing on lessons from the past, and paying attention to recent experiences with a variety of approaches, the report highlights how the new models of technology assessment can contribute to development goals and suggests how particular components of the new methods and processes might work well in developing countries.

### Strengthening of plant genetic resources for food and agriculture: Conservation and utilization in the Pacific

*knowledge.cta.int/en/content/view/full/14203*

By the Asia-Pacific Association of Agricultural Research Institutions (APAARI); 2011.
This publication describes the historical perspective, extent of genetic diversity of major crops, the institutions involved, genebank holdings, crop improvement, utilization of genetic resources, training and capacity building and public awareness. It also highlights the regional efforts for plant genetic resources (PGR) conservation and use, the current issues and the way forward for agricultural research for development. The roots and tuber crops are of particular importance for the Pacific region, from the point of view of food and nutrition security, income generation and cultural diversity. In order to save the valuable genetic diversity from possible extinction, all countries in the region are engaged in plant genetic resources activities to varying degrees and a number of externally funded projects are being implemented on various aspects of collecting, characterization, evaluation, documentation, conservation and utilization.

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## Events | Follow the latest RSS feeds for this section

### AfDB´s first Regional Forum on Science, Technology and Innovation in Africa

*knowledge.cta.int/en/content/view/full/14212*

Dates: 7-11 November 2011
Venue: Nairobi, Kenya

The African Development Bank (AfDB) joins forces with the Association for the Development of Education in Africa (ADEA), the African Union Commission (AUC), UN Economic Commission for Africa (UNECA), and UNESCO to organize a Regional Forum on "Education and Training for Science, Technology and Innovation (STI)" in Africa to be held in Nairobi, Kenya from 7-11 November 2011.

### International Scientific Symposium on Food & Nutrition Security Information: From valid measurement to effective decision-making

*knowledge.cta.int/en/content/view/full/14213*

Dates: 17-19 January 2012
Venue: FAO headquarters, Rome, Italy
Call for abstracts deadline: 16 September 2011

Ten years after the 2002 International Scientific Symposium on the Measurement of Food Deprivation and Undernutrition, the FAO is organizing a new symposium to examine emerging trends in measuring Food and Nutrition Security Information and linking it more closely to decision-making.

### Young People, Farming & Food Conference

*knowledge.cta.int/en/content/view/full/14214*

Dates: 19-21 March 2012
Venue: Accra, Ghana
Deadline for general call for paper: 31 August 2011.

An international conference oon ´Young People, Farming & Food: The Future of the Agrifood Sector in Africa´, co-organized and hosted by the Future Agricultures Consortium and the Institute of Statistical Social and Economic Research (ISSER, Ghana), will be held on 19-21 March 2012 in Accra Ghana. The conference will examine, from both research and policy perspectives, the dominant and alternative framings and narratives, and recent empirical data, relating to how young people engage with the agrifood sector in Africa (as producers,

entrepreneurs, employees, consumers and citizens). It will also examine the dynamics of change in different components of the agri-food sector and the implications of these dynamics for young people; and the implications for young people of alternative policy approaches to the development of the agrifood sector.
The organizers invite papers that offer rigorous analysis from various critical perspectives around the topics and questions addressed at the conference. Also encouraged are comparative studies and proposals for thematic panels.

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## Grants and competitions | Follow the latest RSS feeds for this section

### 2012 Vavilov-Frankel Fellowship Call is now open

*knowledge.cta.int/en/content/view/full/14215*

Deadline for application: 6 November 2011.
The 2012 Vavilov-Frankel Fellowship Call is now open. Two fellowships, for up to US$ 20 000 each, are available for 2012 to carry out research to encourage the conservation and use of plant genetic resources. The fellowships are awarded to outstanding young researchers from developing countries to carry out relevant innovative research at an advanced research institute outside their home country for a period of three months to a year. (Biodiversity International, 3/8/2011)

### PhD scholarship in Agrobiodiversity in Pisa, Italy

*knowledge.cta.int/en/content/view/full/14216*

Deadline for application: 10 October 2011
The Sant´Anna School of Advanced Studies of Pisa (SSSA), an ENDURE partner, will initiate the 8th year of the International Doctoral Programme in Agrobiodiversity. Six scholarships are available to motivated students from any country. Applications from developing countries are particularly welcome. The application must include description of a research project that the candidate would like to carry out during the three-year period of the Doctorate. English will be the one and only language for all activities envisaged in the Doctorate. Further information on the Programme and the online application form can be found here

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## Jobs | Follow the latest RSS feeds for this section

### Call for "6 Senior Scientist Positions" (Burkina Faso)

*knowledge.cta.int/en/content/view/full/14252*

The West African Science Service Center on Climate Change and Adapted Land Use (WASCAL) is currently seeking to appoint six team leaders to help implement the WASCAL agenda, formulated during regional consultations over the past year, covering the following fields: 1) Meteorology and climate modelling; 2) Hydrology and modeling of the water cycle; 3) Landscape ecology and land use change modeller; 4) Biodiversity and ecosystem services; 5) Climate change economics; 6) Social impact of climate change. Work location is at WASCAL´s Competence Center in Ouagadougou, Burkina Faso. Applications are open until the positions are filled.

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## Organisations | Find more organisations on our website

### The Global Plant Council

*knowledge.cta.int/en/content/view/full/14219*

The Global Plant Council is a coalition of plant science societies of the world that brings plant scientists together to work synergistically toward solving the pressing problems facing humankind and that speaks with a strong voice from a plant science perspective to inform the global debate on those problems. The mission of the Council is to define and engage in coordinated strategies that impact the most critical issues and to increase awareness of the central importance of plant science in addressing these issues. The shared vision and effort will enable more effective use of knowledge and resources, accelerating progress in solving the challenges of world hunger, energy, climate change, health and well-being, sustainability and environmental protection. The Council proposed that membership in GPC is for not-for-profit professional plant science societies/organizations, the key component being that the organization represents plant scientists.

### South Africa Institute for Poverty, Land and Agrarian Studies (PLAAS)

*knowledge.cta.int/en/content/view/full/14224*

The Institute for Poverty, Land and Agrarian Studies (PLAAS) is a research and teaching centre founded in 1995 as a specialist unit in the School of Government, in the Economic and Management Sciences Faculty, at the University of the Western Cape (UWC), Cape Town. Since then, PLAAS has produced high-quality research on land and agrarian reform, poverty, and

natural resource management in South Africa and the southern African region. Besides research and postgraduate teaching, PLAAS undertakes training, provides advisory, facilitation and evaluation services and is active in the field of national policy development. Through these activities, and by seeking to apply the tools of critical scholarship to questions of policy and practice, PLAAS seeks to develop new knowledge and fresh approaches to the transformation of society in southern Africa.

### POL-SABINA : Policy and support actions for Southern African natural product partnership

*knowledge.cta.int/en/content/view/full/14225*


The Policy and Support Actions for Southern African Natural Product Partnership (POL-SABINA) is funded through the European Union Africa-Caribbean-Pacific (EU-ACP) programme. The project will develop a ´Virtual Research Environment´ for SABINA; provide training courses and workshops on a number of topics such as project management and fund management. It will address intellectual property management in the SADC region.
SABINA (Southern African Biochemistry and Informatics for Natural Products) is funded by the Carnegie Corporation as a regional initiative in science and education. The programme aims to grow human capacity in natural products research through training of PhD and MSc students in the partner institutions.

### Swaminathan Research Foundation

*knowledge.cta.int/en/content/view/full/14232*


M S Swaminathan Research Foundation (MSSRF) is a non-profit research organization, established in 1988 and located in India. The Foundation is carrying out research and development in six major thematic areas : Coastal Systems Research (restoration of mangrove forests, alternative livelihood for fishing community), Biotechnology (developing salt and drought tolerant transgenic rice varieties, testing availability of oil content in plants), Biodiversity (medicinal plants register, ex-situ community based gene bank, in-situ on-farm conservation), Ecotechnology (bio-villages), Food Security (urban and rural food insecurity atlases) and Information, Education and Communication.

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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.