

Knowledge for Development

Observatory on Science and Technology for ACP Agriculture and Rural Development



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African Union summit & rural innovation

by Dr Monty Jones*, Executive Secretary, Forum for Agricultural Research in Africa (FARA)

The African Union's Science and Technology consolidated Plan of Action' responds to the inadequate attention that has been given to these topics. It seeks to address the low and declining public expenditure on research and development (R&D) in most African countries, and the weak links between industry and science and technology institutions.

The Plan of Action notes that in Africa the bond between science and society is still weak, and that there are serious 'disconnects' between what researchers are doing and the development aspirations of communities. Often the public does not have ownership of, or direct influence on scientific and technological developments, and researchers are also not well connected with policy makers. The results have been a weak scientific culture, and constituencies that neither demand nor promote scientific and technological development.

These observations are applicable and most serious with respect to agriculture, because it is the prime engine for the development of Africa's mostly agrarian economies. It is important that this is recognized by the Heads of State and Government at the AU's eighth annual summit in January 2007, which will be dedicated to science, technology and innovation.

Smallholder farmers and pastoralists in Africa need knowledge-based innovations because their options for increasing land, labour and capital inputs are virtually exhausted. Farmer derived technologies revealed in various publications illustrate that farmers despite the odds stacked against them, are succeeding in improving their production systems. They should therefore be important players in the processes that shape agricultural technological change and development. Yet, despite their remarkable capacity for change, and the research community's commitment to improving their livelihoods, these two communities are still far apart. R&D agents can



Dr Monty Jones, Executive Secretary, Forum for Agricultural Research in Africa (FARA)

tap into and build upon farmers' wealth of knowledge to their mutual advantage.

Agricultural research and extension services and information providers must rapidly evolve and move away from providing information downwards to farmers. They should also abandon simple criteria for measuring success, such as the numbers of information products disseminated or hits on websites, in favour of measuring impact such as evidence of uptake of technologies or market performance. This will require improving access to information, in the form and at the time it is required, and to the learning tools needed to convert the information into the contextualized knowledge for innovation to foster in their unique circumstances.

Advantage should be taken of the rapid advances and uptake in ICTs that enable a two-way exchange of information as witnessed by the spread of mobile phones in rural areas. Schemes such as the LifeLong Learning approach, in which Indian universities and the Commonwealth of Learning have made it possible for farmers to interact whenever necessary with their research and development peers, provide lessons on which Africa should capitalize.

FARA, through its Regional Agricultural Information and Learning Systems (RAILS), looks forward to working with CTA's 'Knowledge for Development', and the many other information providers, to develop combined information and learning systems for knowledge building to support rural innovation.

*Co-winner of the 2004 World Food Prize

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The ASTI System

About the website

CTA's website **Knowledge for Development** supports the policy dialogue on S&T for agricultural and rural development in African, Caribbean and Pacific (ACP) countries. It enables the ACP scientific community – primarily agricultural research and development scientists and technologists, policy makers, farmers and other stakeholders – to share and review the results of national and regional efforts and collaborate in harnessing S&T for the development of agriculture in their countries.

The website offers access to information:

- to promote dialogue and facilitate exchange among ACP stakeholders, and between the ACP and the EU, on S&T issues in order to enhance the processes of policy formulation and implementation;
- to raise awareness of relevant S&T developments and their implications for ACP agriculture, to enable policy makers set priorities, prepare and execute demand-led research agendas; and
- to support ACP countries in their efforts to develop indigenous knowledge systems, enhance research capacity and transform technological innovation systems for attaining sustainable and competitive agricultural production.

Visitors to the website can:

- find extensive information on S&T issues, programmes and institutions;
- network with others; and
- subscribe to the email newsletter.

For more information, or to comment on the website, please send an email to **S&T Strategies, CTA, Wageningen, the Netherlands: knowledge@cta.int**

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Building capacity to build capacity in ASTI systems

by Judith A. Francis, Senior Programme Coordinator, S&T Strategies, CTA

In 2004 CTA began a process of training African, Caribbean and Pacific (ACP) experts to understand and apply the innovation systems framework in the agricultural sector. On completion of the training, ACP partner organizations were provided with financial and technical support to analyze agricultural science, technology and innovation (ASTI) systems using a case study approach. The analysis was to focus on commodities that were important for either food and nutrition security or export diversification, or were considered to be under threat due to changes in preferential markets.

The 2004/2005 case study reports showed that an innovation culture was nascent or almost non-existent. Several gaps were identified in the system and although national policies existed, they were not necessarily linked to actions that would facilitate networking, information and knowledge sharing, interactive learning, research to foster socio-economic development, or entrepreneurship. Importantly, farmer innovators were not included in the knowledge system and universities were operating outside of the system. Although research was being undertaken by various organizations, the coordination was dysfunctional and the initiatives failed to address the needs of the subsector. Consequently, CTA launched a series of training workshops on 'Bridging the gap in the ASTI system' to address the issues of farmer innovation and demand-led research/priority setting. Additional training on analyzing ASTI systems also continued.

The success of the 2005 training programmes and follow-up case studies led to requests from ACP stakeholders to expand the outreach of the programme. This led to the development of a 'training of trainers' module on ASTI systems which integrated the earlier training modules on the ASTI analytical framework and bridged the gap in the ASTI system. In early 2006 experts from CABI Kenya, the Royal Tropical Institute (KIT), Vrije Universiteit, Wageningen International and CTA held consultations to develop an integrated, modular training programme.

The objective of the programme is to



ASTI workshop, Ghana 2006

develop the capacity of ACP professionals to apply the innovation systems framework to support ST&I policy development and implementation for improving the performance of ACP agriculture.

The programme's specific aims are to increase understanding of the concept and application of the innovation system framework and its relevance to the agricultural sector in ACP countries, and to develop skills to train others and facilitate ASTI system processes. In particular, the programme focuses on:

- analyzing the agricultural science, technology and innovation (ASTI) system;
- improving the interface between all actors in the ASTI system, i.e. farmers, scientists, policy makers and decision makers (using strategies to address two subsystems – farmer experimentation and demand-led research);
- influencing policy; and
- improving information flows and shared learning processes that will enhance the ASTI system as a whole.

The programme was piloted at four regional training workshops – two in Africa, and one each in the Caribbean and the Pacific – between July and October 2006. It was aimed at professionals with strong technical backgrounds, leadership skills, and exposure to systems thinking, experience in multi-stakeholder processes and who had demonstrated their openness to new ideas and willingness to learn. The participants found the training challenging and stimulating, and have begun sharing the knowledge gained with their peers.

The strength of an ASTI system depends, *inter alia*, on the interactions among the actors and the policy framework, and the ACP region must build the knowledge and skills needed to support the process. The learning has begun.

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Viewpoint

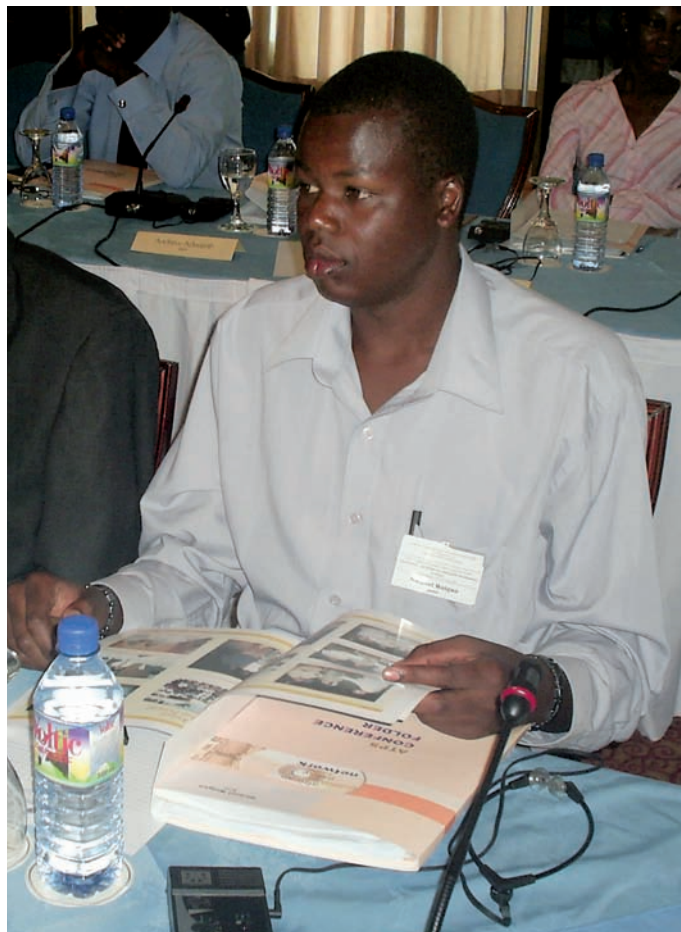
ACP youth say 'yes' to science and technology for agricultural development

by Teddy Morlai (Ghana), Maxine Brown (Jamaica) and Lynelle Popot (Solomon Islands)

The twenty-first century may come to be remembered as the 'techno-scientific age of youth enlightenment and empowerment', when science, technology and innovation (ST&I) and the concerns and aspirations of young people were fully integrated into the development agenda. Previously, most of the ACP region lacked self-confidence, and youth paid little attention to their role in advancing ST&I issues for stimulating growth and development. Through a series of regional consultations in Africa, the Caribbean and the Pacific, however, a new generation of young ACP professionals has accepted the challenge to build on the endeavours of past generations, and to increase their involvement in ST&I policy processes. The development vehicle is now expected to move forward at lightning speed with youth playing their part.

It has been noted that science search leads to knowledge, technology leads to advancement and man confirms. But how this confirmation is made depends on how S&T is applied, and whether the applications prove beneficial or harmful to society. These judgements can have long-term effects. Nevertheless, it is clear that the benefits of S&T far exceed the harmful effects if moral and ethical issues are adequately addressed. Electric power, solar panels, bridges and roads, medicines, ICTs, etc. – all have contributed to the comfort enjoyed in modern societies. But human needs and desires are diverse, and science and technology have yet to contribute to satisfying the basic needs of many people in the ACP group of states, where some major gaps continue to exist.

Agriculture forms the economic base of many ACP countries, where a significant percentage of the labour force is engaged in agriculture, mainly subsistence. Yet food security, hunger, malnutrition and unemployment remain major issues, and drastic improvements need to take place in the agricultural sector. ACP countries must be convinced that science and technology can provide the answers to their ailing agriculture. However, what foundations have been laid for such developments? Is there sufficient awareness of the potential benefits of science and technology? What needs to be done? Who should be included, and how?



Youth should be recognized as the future drivers of development. Therefore, ACP youth must be included in S&T policy decision-making for sustainability. Young people – the future leaders – are now ready to fill the vacuum as the old leaders give way. To show that they are no longer apathetic, ACP youth formally launched the African Youth Forum on Science and Technology (AYFST) in Accra, Ghana, in June 2006, and committed themselves to setting up similar platforms in the Caribbean and the Pacific. They also proposed strategies to revamp agricultural education in order to increase the interest of young people in agriculture. These strategies included raising awareness of the importance of agribusiness, forming linkages and partnerships with the private sector for funding and support, and establishing incentives and reward systems that emphasize solutions to local problems.

These platforms will be used to exchange ideas and experiences for building the capacity of ACP youth in agriculture, science, technology and innovation, and to empower them to participate in policy debates for sustainable development. Young people are ready and willing to change their attitudes towards agriculture and to 'get their hands dirty', and to struggle for good governance by participating in political processes. ACP youth therefore need action and are ready to act in response. Let science and technology flourish!

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S&T Policy Making

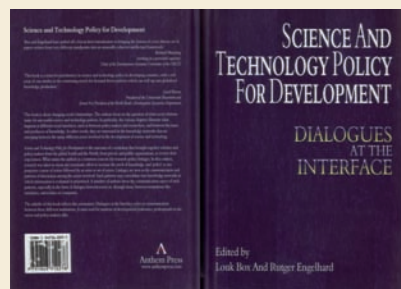
Dossier: S&T policy making

This dossier is intended to enable the ACP community of scientists, policy makers and other stakeholders in the agricultural and related sectors and disciplines to share their knowledge and experiences in order to enhance national regional policy dialogue to support informed policy formulation and implementation. It is hoped that the two lead discussion papers in this dossier, supported by material available through the links to related documents and websites, will stimulate feedback and debate.

S&T policy for development

Articles extracted from *Science and Technology Policy for Development: Dialogues at the Interface*, edited by Louk Box and Rutger Engelhard (2006) Anthem Press, London, UK.

- Foreword, by *Callestous Juma*
- Building a critical mass of researchers in the least developed countries: new challenges, by *Léa Velho*
- Epistemic communities and informed policy making for promoting innovation: the case of Singapore, by *Sunil Mani*
- Science for transformation: research agendas and priorities in South Africa, by *Johann Mouton*
- Science and technology policies through policy dialogue, by *Wiebe E. Bijker*
- International collaboration in science and technology: promises and pitfalls, by *Caroline S. Wagner*
- Priority setting in technical cooperation: expanding the demand for knowledge-based development, by *Jacques Gaillard, Royal Kastens and Ana Maria Cetto*
- The emerging contextual space for priority setting in development research, by *Paul Dufour*



Knowledge dependence and its discontents

by *Osita Ogbu, Executive Director, African Policy Studies Network (ATPS), Nairobi, Kenya*

In the early days of independence there was a congruency between the intellectual ideology of the time and the development policy focus of many African states, with strong demand for domestic policy research. In contrast, the era of structural adjustment and current globalization fostered knowledge dependence, through un-negotiated policy options that tied development aid to the acceptance of 'external' knowledge. Today, there are new opportunities due to new leadership in the continent and the various new economic development plans that could provide the basis for a stronger domestic research-policy interface. The development of the continent will require a political leadership that appreciates the intellectual capacity of Africans, a core of confident, liberated intellectual freedom fighters who are ready to use their knowledge to liberate the continent from poverty, and the emergence of new institutions such as the African Technology Policy Studies Network (ATPS) that would provide the platform.

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Regionalism and science and technology development in Africa

by *John Mugabe, S&T Adviser to the New Partnership for Africa's Development (NEPAD), South Africa*

Regional integration offers new and increasing prospects for Africa's scientific and technological development. If well organized and used, integration could provide the basis for developing and sharing infrastructure for research and development, and for mobilizing and using scarce expertise and financial resources. This article examines how science and technology considerations are being handled in the renewed efforts to promote regional economic and trade integration in Africa, and discusses new and emerging regional science and technology programmes.

[>>> Read more...](#)

The use of foresight in setting agricultural research priorities

by *Marie de Lattre-Gasquet, special adviser to the Centre de coopération internationale en recherche agronomique pour le développement (Cirad), France*

Foresight activities can be useful tools in public decision-making processes, and in particular for agricultural science and technology priority setting. Foresight complements more traditional ways of looking at the future, such as projections and models. Foresight uses a systems approach that is appropriate for agriculture and can be embedded in research organizations. This article describes three foresight exercises. The exploration of possible futures for a commodity (cocoa) has helped defining new research priorities, partnerships and networks. The Dutch exploration of the challenges facing agribusiness, rural areas and fisheries, and the contribution of S&T to meeting these challenges, created new networks and led to actions. IFPRI's '2020 Vision' for food, agriculture and the environment led to interesting data and reached many researchers, but did not manage to generate consensus about research priorities. Finally, the article discusses the prospects for the use of foresight in developing countries, especially in Africa.

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Science for transformation: research agendas and priorities in South Africa

by *Johann Mouton, Centre for Research on Science and Technology (CREST), South Africa*

How do research agendas reflect and represent the research interests of different constituencies? In South Africa, public sector research is currently being steered and shaped as a means to effect reconstruction and transformation in a society in transition. South African science is driven by a very broad and ambitious transformative agenda. One of the priorities is the reconstruction of the science system to address the needs and demands of the majority of citizens. This article assesses to what extent the government and its various S&T agencies are succeeding in this endeavour.

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Demanding innovation

New dossier: Commodities

The ACP Group of States need to adjust their approach to agricultural production, marketing and distribution in order to be able to compete in national, regional and international markets. Traditional commodities such as banana, coffee and sugar are no longer assured guaranteed prices and ready access to international markets. How then should the ACP countries respond? Commodities are now being looked at in a different light. Can scientists assist these countries to make informed decisions about how to improve efficiency, cost effectiveness, quality and competitiveness? As ACP countries strive to improve their agricultural performance in order to increase food security and market competitiveness, the scientific community must provide leadership in identifying alternatives. This new dossier examines the scientific developments across the production to consumption chains for four major commodities in the ACP region: banana, cassava, cocoa and sugar. The resources in this dossier demonstrate that opportunities exist for innovation to transform the profiles of these commodities, and thus contribute to social and economic development in the ACP region.

New dossier: Differentiated S&T strategies

Farming systems in ACP countries are diverse. The scientific community must be able to provide adequate responses to meet the needs of small subsistence farmers whose primary concerns are sustainable livelihoods. Simultaneously, scientists must also address the concerns of medium to large-scale farm enterprises, which need to be competitive in terms of price and quality, responsive to changing consumer demands, and able to offer reliable supplies to all their markets. Therein lies the challenge, as there is no one-size-fits-all approach that will enable researchers to respond to the needs of both smallholder and medium- to large-scale farmers. Within the last few years, the ACP region has seen a resurgence in the emphasis being given to family farms, which are valuable not only for their contribution to maintaining social order, but also for ensuring environmental sustainability. This dossier offers guidance, as well as lessons learned, on how ACP countries can adopt differentiated strategies to promote and apply science for agricultural development.

Cassava industrialization in the ACP region – myth or feasible option?

by Y. Baguma and R. Kawuki, National Crop Resources Research Institute, Kampala, Uganda

Industrial linkages, research partnerships and innovations could serve to catalyze the transformation of cassava from a domestic food crop into a key industrial crop. Evidently, science, technology and innovation (ST&I) strategies will be critical in sustaining and promoting the utilization of cassava in the industrial sector. The benefits of this transformation justify institutional reforms and special programmes to increase awareness of the economic potential of cassava beyond subsistence farming. The nutritional value of cassava and its many potential uses – in vaccines, animal feed, biofuels and sugar production, as well as in food and non-food products – are cardinal in such transformation. Government support to facilitate the establishment of small and medium-sized cassava enterprises, as well as output-oriented research partnerships, will be pivotal in ensuring the transformation of this important crop.

[>>> Read more...](#)

Repositioning ACP sugar industries through science, technology and innovation

by Maureen R. Wilson, Sugar Industry Research Institute, Jamaica

These are challenging times for sugar producers in ACP countries. The decision of the European Union to change the sugar regime will result in a significant loss of export earnings that will affect many ACP economies. Some industries will be phased out, but others will require modernization of both field and factory operations if they are to remain viable and competitive. ACP countries need to explore new income streams such as electricity cogeneration, or ethanol production for fuel, while diversifying traditional products. Sugar industry stakeholders need to explore all the opportunities that science, technology and innovation can offer, by forming national, regional and international strategic public-private partnerships in order to avoid the complete shutdown of factory operations, and future reliance on imported sugar to support domestic consumption and industrial use.

[>>> Read more...](#)

Key to the adoption of more sustainable cassava production practices in Asia

by Reinhardt H. Howeler, Watana Watananonta and Tran Ngoc Ngoan, CIAT Thailand, Field Crops Research Institute, Thailand, and Thai Nguyen University, Vietnam

To enhance the adoption of soil conservation practices and improve the sustainability of cassava production, a farmer participatory research (FPR) approach was used to develop better soil conservation practices, as well as to test new varieties, fertilizers and cropping systems that tend to produce greater short-term benefits. Over the past eight years the resulting increases in cassava yields in Asia have increased the gross annual incomes of cassava farmers by an estimated US\$ 275 million.

[>>> Read more...](#)

Improving the productivity of ACP farming systems through science and technology: Lessons from Cuba

by M. González Perez, D. Ponvert, M.E. Ruiz and M.H. Prats, Cuba

The Cuban farming system is very diverse. However, despite the trade barriers and harsh economic conditions, the productivity of Cuban farms has increased through the combined efforts of scientists and farmers in developing and applying technological solutions. Two approaches have been adopted – one within Cuba's research centres and universities and, the other aimed at improving the interface between decision makers, farmers and scientists, and enhancing the policy environment to support technology transfer.

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S&T Issues in Perspective

New dossier: ICM strategies

Information and communication management (ICM) and knowledge management (KM) are often characterized as having three components: people, processes and technology. As a result of the rapid development of information and communications technologies (ICTs), however, ICM is sometimes seen as a largely technological issue. In reality, it is the people component of ICM and KM, supported by processes and technology that is most important. The articles and documents in this dossier discuss the concept of innovation systems as networks of interlinked actors, in which the effective communication of information and exchange of knowledge are critical to the performance of the system. Increasingly, in the agricultural science, technology and innovation system, successful organizations are those that recognize the importance of knowledge, and implement policies and strategies to promote its creation, sharing and application. This dossier highlights the issue of information and knowledge sharing, and offers readers a wide range of resources and tools.

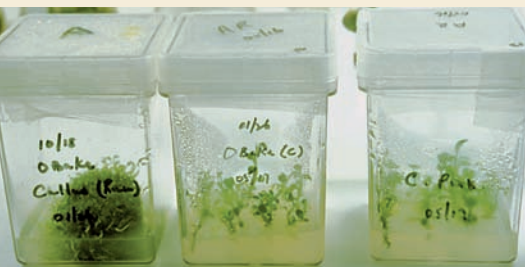
Annotated links

Agriculture and Climate Change: The Policy Context

Evan Branosky, WRI, October 2006

http://www.wri.org/climate/pubs_description.cfm?pid=4232

According to this first in a series of WRI policy notes, farmers can benefit from participating in government efforts to reduce greenhouse gases. This note focuses on the implications of climate change for the agricultural industry. Making a case that the agricultural industry can play a role in proposed climate change legislation, the author tracks agriculture's role in current proposed and pending US climate change legislation.



ICM strategies & knowledge-based development

by Rachel Rege, Kenya Agricultural Research Institute (KARI), Nairobi, Kenya

The accumulation of scientific knowledge and its technological applications are accelerating rapidly. Yet the global reality is that many innovations fail to reach those who need them most, and their benefits are not shared equitably, especially in sub-Saharan Africa. The processes of decentralization of public administration and privatization of public services – through the World Bank's structural adjustment programmes – also have implications for science and technology. A new approach to S&T is necessary to support a paradigm shift away from product-based economics to knowledge-based development. The recent World Trade agreements have led to changes in the roles of the three main actors – the public and private sectors and civil society. At the same time, the demand for technological innovations that will address development challenges is steadily increasing.

Accepting that developing nations now universally recognize the need for policies in the area of science, technology and innovation (ST&I), this paper which focuses on agricultural ST&I in Kenya argues that, for ST&I to become engines of economic development, there is need not only for policies that govern their application but also policies promoting ST&I. Importantly, developing countries desperately need to put in place Information Communication Management (ICM) strategies to ensure that ST&I products are appropriately processed, promoted and used by target stakeholders. It gives a general overview of the ST&I systems identifying products and gaps in the system as they relate to the need for ICM strategies. Further, it highlights the critical elements of ICM strategies and concludes with global recommendations on areas that need immediate attention.

Concepts and definitions that guide the direction of discussions on ST&I and ICM are given below.

Policy is broadly defined as a statement of intent, more specifically it is a set of actions by which a given situation in society is to be changed to correspond

better to the goals of a society. Therefore policy environment is made up of all laws, regulations, customs and practices that control the way in which components relate. Further, Hart observes that policy is a purposive course of action based on currently acceptable social values, which is followed in dealing with a problem or matter of concern. It predicts the state of affairs which would prevail when the purpose has been achieved. According to Pillay (1999), the basic features of policy are that it is developed to influence or shape behaviour and is the outcome of identified needs.

>>>Read more...



ICM Strategies & knowledge sharing

by Roger Day, Director, CABI Africa Regional Centre, Nairobi, Kenya

Innovation systems are networks of interlinked actors, and the effective communication of information and exchange of knowledge among the different actors is critical to the functioning of such systems. Innovation is the application of knowledge (whether new or old), and an environment that encourages effective information and communication management (ICM) contributes directly to innovation, and to social and economic development. Increasingly, in a globalized world, successful organizations, sectors and nations are those that recognize the importance of knowledge, and implement policies and strategies to promote its creation, sharing and application. 'Knowledge is power, which is why people who had it in the past often tried to make a secret of it. In post-capitalism, power comes from transmitting information to make it productive, not from hiding it!'

>>>Read more...

S&T Issues in Perspective

New dossier: Biodiversity

Biological resources are the pillars upon which ACP countries can build their economic development. Nature's products support such diverse industries as agriculture, cosmetics, pharmaceuticals, pulp and paper, horticulture, construction and waste treatment. However, the loss of biodiversity threatens food supplies, opportunities for recreation and tourism, and sources of wood, medicines and energy in many ACP countries. The Convention on Biological Diversity identifies common problems, sets overall goals and policies, and organizes technical and financial cooperation. However, the responsibility for achieving these goals rests largely with the ACP countries themselves. This dossier provides background information on issues pertaining to the protection of biodiversity.

Annotated links

From FP6 to FP7

EU ISCP Newsletter, Special issue, March 2006

http://ec.europa.eu/research/iscp/newsletter/index_en.html#iscp

In 2007 the EU's Sixth Framework Programme for Research (FP6) will be replaced by FP7. The newsletter illustrates some of the successes of international scientific cooperation in FP6 and outlines what to expect in FP7. There is also news from around the world about ongoing international co-operation activities and S&T agreements. Publication of the newsletter coincides with the publishing of a new specific call to promote the participation of partners from third countries in FP6 projects for which contracts are already signed or under negotiation. All aspects of FP6 were thrown open to participation by scientists and researchers from third countries, reflecting the EU's determination to build a European Research Area that harnesses the best available talent and expertise.

New dossiers soon to be published

- Dryland Agriculture
- Biofuels

Plant genetic resources: knowledge for agricultural and rural development in ACP countries

by F.O. Anno-Nyako, CSIR-AFFS, Accra, Ghana

Sustainable management of plant genetic resources has become a prominent issue for debate in many international agricultural, environmental, intellectual property, and trade policy circles. The issue has gained overwhelming prominence, not only for its conservation significance, but also the unprecedented benefits that could accrue from the sustainable use of these resources. Specifically, plant genetic resources are any plant material that contains functional units of heredity of actual and potential value. Genetic resources at the local, national and international levels play a critical role in the lives of people and communities in ACP countries who depend on these resources for their economic, social and cultural well-being. Yet, the full potential of these resources is yet to be tapped. ACP and many other countries could benefit significantly in the global search for resources that could provide new sources of food, medicines, fibres, etc.

[>>> Read more...](#)

Biodiversity, science and governance

by Zacharia Magombo, National Herbarium and Botanic Gardens, Malawi

Biodiversity is the natural biological capital of the Earth and is the basis for the survival of humankind as it provides essential goods and services, including food, fuel, medicine, shelter and fodder. Biodiversity maintains ecosystems that support biological productivity, regulate climate, maintain soil fertility and cleanse water and air. It is important for recreation, tourism, science and education and provides opportunities for human societies to adapt to changing needs and circumstances, and to discover new products and technologies. Socio-economic development and poverty reduction strategies are dependent on biodiversity. Achievement of development initiatives such as the Millennium Development Goals is also related to sustainable management and use of biodiversity.

[>>> Read more...](#)

Biodiversity as a key factor for sustainable development

by Chris Maas Geesteranus, former programme coordinator, National Reference Centre for Agriculture, Nature and Food Quality, the Netherlands

The issue of how to resolve the problems of environmental degradation and dwindling biodiversity has been on the international agenda for some decades now. The formulation of environmental questions, however, is changing slowly. There has been a tendency to define those questions in sectoral environmental terms, like soil, air, water and nature (conservation). This approach has indeed been an important first step, because solving these questions has contributed to the direct conservation of nature being threatened.

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Readers are encouraged to visit the CTA Knowledge for Development website, to participate in the process of knowledge development and sharing, to provide inputs for the policy dialogue and to subscribe to the Knowledge email newsletter.

CTA and S&T

Winners of the Caribbean essay competition

CCST and CTA are happy to announce the winners of their essay competition. The topic was Tapping the Potential of Science, Technology and Innovation in Agri-food Chains – Creating Employment & Wealth for Youths in the Caribbean:

- Silda A. James, 1st place
- Mc.Garret Magloire, 2nd place
- Chelsa Fernander, 3rd place

Winning essay by Ms. Silda A. James (BSc), Antigua, W.I.

"It's all in the mind," psychologists say, if we can control the mind then an obstacle will be turned into an opportunity.

It translates that the solution to youth obstacles is to change their mind sets! This is not an easy task, it takes a determined effort by the youth to first recognize the need for a change and then make that change. In this essay the obstacles facing youth in attaining wealth and employment will be identified, proposals will be made at to alleviate these obstacles and an organization involved in helping youth obtain wealth and employment will be highlighted.

The obstacles identified on the part of youth are as follows:

- Failure of professional youth to keep up with evolving technologies
- Distorted mindset of youth toward agriculture instilled by their parents/ society;
- Lack of discipline and time management skills along with failure to prioritize
- Lack of self motivation leading to timidity of youth in business ventures and acceptance of mediocrity;
- Failure of youth to take responsibility for their choice of sexual activity leading to contraction of STD therefore degrading the caliber of the work force
- Youth are not able to make the transition from schooling to the work place
- Failure of youth to see how important agri-food chains are, in that there will always be a need for food and therefore a market for produce.

[>>>Read more...](#)

Women in science for food and nutrition security in Africa

Women's effective engagement in science, technology and innovation is essential to ensure that their roles, skills, circumstances, interests, concerns and aspirations are taken fully into account in the development process. Finding ways to encourage more women to become engaged in science for resolving problems in Africa is a development issue that urgently needs to be addressed.

There are two important aspects to engagement, quantitative and qualitative. The critical question with regard to quantitative engagement is, 'Is there a critical mass of women scientists engaged in science, technology and innovation specifically aimed at increasing food and nutrition security?' This critical mass would be the minimum number of women scientists who would be able to support the development agenda. In most African countries there is no such critical mass, and there is inadequate networking to support knowledge sharing among female scientists working in agriculture, food and nutrition, and engineering. Consequently, there are too few women scientists, and they are not able to influence change, let alone promote the mainstreaming of gender issues.

Although increasing the number of women scientists is a prerequisite, this will not be sufficient to ensure their effective involvement in agricultural research and development (R&D) unless some important qualitative aspects of engagement are also addressed. In this regard, a number of questions need to be asked, including 'Is the right research being done? What are the consequences for productivity, output and hence food and nutrition security, incomes and livelihoods? Are all stakeholders engaged in the decision-making process?' Women scientists would be able to contribute their own perspectives and experiences, such that women's biological and physical make-up, social and cultural norms, and roles and functions in livelihood activities

are considered when setting agendas for agricultural R&D, and in promoting science and technology development.

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ACP experts review tertiary education in agriculture

Emerging economies such as Brazil and China have demonstrated that tertiary education is the main building block for producing the skills, competencies and innovations necessary for economic transformation. Currently, the tertiary education systems in the ACP region are not geared to producing human resources of the calibre required for transforming the agricultural sector. In response to the needs of a knowledge-based economy, ACP countries must invest in tertiary education, both to address the shortcomings in existing programmes, and to help achieve the Millennium Development Goals, especially those aimed at eradicating poverty and hunger, promoting gender equality, and empowering women. Enabling S&T policy and investment environments are urgently needed, as well as curriculum reforms to contextualize agriculture in an increasingly globalized knowledge society where distance learning, life-long learning, networking and knowledge sharing are shaping the future of tertiary education.

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S&T Expert Consultative Meeting to prepare ACP Policy Brief on Tertiary Education in Agriculture, Wageningen, The Netherlands, 16-19 May 2006

