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Breakout sessions P2.2 Land, Water, Forests and Landscapes - Briefing Paper

CTA/Wageningen UR ACP/EU Think Tank on Science & Technology Side Event: Partnerships for Research, Capacity Building, Innovation and Foresighting: Managing Water for Agriculture and Food in ACP countries 28 October, 2012

Context – the problems being addressed

Safe-guarding natural resources (land, water, biodiversity) for ensuring the future of agriculture and food especially in the face of climate change, conflicting demands and increasing tensions, remain a priority for researchers, policymakers and civil society. While countries and authorities embrace the guiding principles of integrated water resources management (IWRM) as beneficial, they do not necessarily have the capacity for implementation to achieve the desired impact. Paradoxically, while calls for more investments in agricultural water management and security are getting louder, a sizeable part of the existing irrigation infrastructure is underutilized or functioning sub-optimally. Land and water management also remain disconnected. Moreover, many farmer-driven initiatives as well as the work of national, regional and international organizations remain 'under the radar' of governments, researchers, academia and donors, although they may provide important lessons on what works best where and under which conditions.

At the same time, there is increasing need to spur economic development especially in rural areas without further undermining of the natural resource base. New approaches to enable Green Economic Growth require integrating the domains of: (i) innovating product, business and market opportunities; (ii) while sustaining natural resources and; (iii) integrating the new opportunities with natural resources management and related sociological aspects that consider the realities of rural populations. Success in achieving green growth in the face of climate change and depleting resources therefore requires concerted global, regional, national and local policy responses and a radically new or improved agenda for research and innovation. This agenda needs to integrate perspectives of foresight, capacity building, partnership innovations, science for impact, institutional change, and innovative financing and investments.

Current activities presented and discussed in the session

The Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) in collaboration with Wageningen University and Research centre (Wageningen UR) and other partners from Africa, the Caribbean and the Pacific (ACP) Group of States, Europe and North America will host a technical GCARDII side event within the framework of the annual meeting of the ACP-EU think tank on science and technology for ACP agricultural and rural development (ARD). Several innovative research and capacity-building programmes from the ACP and other regions will be shared and discussed to provide lessons on the way forward. These include:

(i) The Wageningen UR European Union and African Union **EAU4Food** cooperative research project (www.eau4food.info) which aims to increase food production in irrigated farming systems in Africa. This is a partnership between European and African research institutes that responds to the need to co-develop innovations for better use of water and soil resources. This programme has set up comprehensive innovation processes that combine the implementation of locally-developed innovations in a sustainable manner. These are considered to be a natural starting point for enabling Green Economic Growth in Africa.

(ii) The Caribbean Institute for Meteorology and Hydrology (www.cimh.edu.bb/) Caribbean Water Initiative (CARIWIN) and Caribbean Agro-meteorological Initiative (CAMI). CARIWIN addresses the complex challenges of water management and promotes sustainable and equitable IWRM in Jamaica, Grenada and Guyana. Several training courses have been developed, e.g., on hydro-meteorological data processing and management, use of field instrumentation and water policy. The CAMI project focuses on increasing and sustaining agricultural productivity and enhancing water use efficiency at the farm level through improved dissemination and application of weather and climate information using an integrated and coordinated approach.

(iii) The System of Rice Intensification **(**SRI) which is an agro-ecological and knowledge-based methodology for increasing the productivity of irrigated rice by changing the management of plants, soil, water and nutrients (http://sri.ciifad.cornell.edu/). It is based on four principles, improving plant establishment; significantly reducing plant population, improving soil conditions and reducing irrigation water application. Land levelling is an important aspect of this water-saving practice to avoid drowning the young transplants with irrigation water. Results include; 20-40% reduction in production costs, increased yields of 20-50% and decreased water use of up to 30-50%. SRI principles can also be applied to other crops e.g. wheat, sugarcane, and teff. However, challenges exist and further research is critical across various ecological and cropping systems and for understanding the social and economic advantages and impacts.

(iv) A focus on women and youth as the untapped agents of sustainable water resource management contributors to the solutions in the green economy. New and innovative approaches that Malawi is currently implementing in water resource management and delivery while at the same time optimizing agricultural production using methods that are grounded in responding to climate change, will be highlighted.

(v) Caribbean Agricultural Research and Development Institute (CARDI) case study which chronicles the historical development of the techniques carried out in the Flagaman Community in Jamaica to effectively and efficiently manage on farm water systems. Flagaman district, lies in a rain shadow area and has rolling topography with a deep layer of red bauxitic soil. In the early days, all cultivation was done to coincide with the rainy seasons. Crop failures led farmers to experiment with grass mulching to reduce the rapid evaporation of water from the top soil. This was not sustainable, and they resorted to buying truck-borne water which - although more reliable - resulted in higher production costs. Rainwater harvesting system was then introduced but watering of fields was difficult. In 2009, the FAO Small-scale Irrigation and Rainwater Harvesting Project facilitated access to solar pumps and drip irrigation tubes which resulted in a more sustainable crop production system, higher yields, efficient use of water and energy, and a better standard of living for the community.

(vi) The Future Climate Leaders Project, coordinated by the Pacific Centre for Environment Sustainable Development of the University of the South Pacific (www.usp.ac.fj), Fiji aims to provide Pacific Island Communities with the right set of knowledge expertise and education in climate change as well as improve understanding to enable Pacific communities to better equip themselves with response driven adaptation measures in managing the impacts and risks associated with climate change. New courses on climate change are being developed. Another project addresses climate change impact on food security in the Pacific region.

Intended outcomes

Recommendations for national, regional and international bodies and GCARD II on policy, priorities for future research and capacity building and partnerships specifically to:

- Promote and support new product development through green growth initiatives and spur economic development in rural areas without depleting natural resources.
- Promote institutional reforms for readjusting water delivery mechanisms and achieving water security.
- Advance the science and research agenda in the areas of climate change, drought monitoring and water use efficiency in crop and livestock (including fisheries) production systems
- Develop and strengthen knowledge networks at local, national, regional and international level to build capacity and provide the evidence base for informing policy processes and foresighting.

A policy paper

- For enhancing research and innovation for enabling green economic growth that builds on lessons from the various initiatives/frameworks on integrated water and natural resource management, ecological sustainability and integrated sustainable development, and societal aspects linked to rural populations, women and youth.

Commitments to collective actions in 2012-2014 (national, regional or international)

i. With existing resources

CTA will work with Wageningen UR, and other ACP–EU national, regional and international research, education and knowledge networks within the framework of existing programmes to: (i) share information, knowledge, decision-support tools and approaches; (ii) support capacity building at local, national and regional level; (iii) trigger research that provide the evidence base for policy and institutional change for efficient use of water and natural resources and; (iv) facilitate innovation which lead to new product and business opportunities for agricultural transformation within the framework of Green Growth.

ii. Immediate gaps to be filled
The capacity and knowledge gap at local, national and regional level in the ACP Group of States for innovating within the context of integrated natural resource management and achieving Green Economic Growth.
iii. With specific large scale programme investment
For the African continent, there is opportunity to link with the NEPAD – AU CAADP within the framework of the national investment plans which have already been approved. For the Caribbean and the Pacific regions, opportunities will be sort in the framework of existing approved policies and plans.

In collaboration with