Brussels Policy Briefing no. 34

Farmer-driven research to improve food and nutrition security

14 November 2013, JDE 52 (Jacques Delors Building, 99, rue Belliard, 1040 Brussels, 5th floor)
http://brusselsbriefings.net
Organised by CTA, the European Economic and Social Committee, the EC/DECVO, the ACP Secretariat and Concord in partnership with INSARD

1. Context

The World Development Report (World Bank 2008) underscores the importance of growth in agriculture as a critical catalyst for economic growth and poverty reduction. The report points out that GDP growth from agriculture is shown to raise incomes of the poor 2-4 times more than GDP growth from non-agricultural activities. Sustainable agriculture plays a key role in tackling food insecurity especially in rural areas. According to the UNDP (2012b) increases in agricultural productivity and better nutrition are important for food security and human development. They argue that increased food production will increase food security by raising food availability and lowering food prices, thereby improving access to food. Agricultural production needs to increase to address unequal access to food and resources, and to meet the needs of a growing world population. It may need to increase by an estimated 70 per cent globally and by 100 per cent in developing countries by 2050 in order to keep pace with population growth and shifting diets.
The livelihood of over 60% of Africans is derived from agriculture but productivity remains low on this continent whilst all other continents have experienced significant increases. Formal agricultural research in Africa has had limited success in improving the livelihood of resource-poor farmers. A possible cause of the low impact of research in Africa could be the way research has been designed and undertaken on the continent.[1]
Many reasons have been given for the slowness of agricultural development in sub-Saharan Africa. In the first place, smallholder farmers who constitute the bulk of the farming labour, lack access to relevant technologies, and researchers have not been giving enough support to these farmers' efforts to innovate to address the diverse ecological, market, institutional and policy challenges they face. Poor infrastructural facilities lead to high transaction costs and low competitiveness of products. Farm subsidies provided to farmers in industrialised countries also play a role in creating unfavourable external markets for African farmers. This, coupled with poverty-induced ineffective internal demand for products, has put the farmers at the wrong side of the poverty belt. In addition, service provision at all stages of the commodity chain also suffers debilitating institutional weaknesses. Finally, countries in sub-Saharan Africa have very few policies and regulatory mechanisms that support the participation of local communities and the private sector in decisions on matters related to formal agricultural research and development. These technological and institutional weaknesses hinder the chances of countries in sub-Saharan Africa to enter the path of rapid economic development required to bring the farming populace out of poverty.[2]
The challenge for agriculture is threefold: to increase agricultural production, especially of nutrient-rich foods; to do so in ways which reduce inequality: and to reverse and prevent resource degradation. Science and Technology (S&T) can play a vital role in meeting these challenges — for example, by developing innovations that smallholders with limited resources can afford and use. However, they can develop such innovations only if they work in close interaction with the smallholder farmers, who are themselves innovating with the resources available to them.

2. The case of agricultural research in Africa

Agricultural research for development (ARD) is important for long-term food and nutrition security but only if it responds to the needs of smallholders and vulnerable, food-insecure people. Despite

[1] Towards Enhancing Innovation Systems Performance in Smallholder African Agriculture. Proceedings of the first CoS-SIS International Conference, Elmina, Ghana 22–26 June 2009. Editors: Arnold van Huis and Anthony Youdeowei
[2] Why is the innovation systems approach important for African agriculture? *A A Adekunle Director NSF4, Partnerships and Strategic Alliances, Forum for Agricultural Research in Africa, FARA, 2009*

considerable public funding for international research over several decades in Africa, the formal ARD sector is often not producing research outcomes that bring the intended benefits to their target groups.
In the recent decades, support for agricultural development and agricultural research has been reducing, often neglecting small-scale farmers. Many bilateral donors have stopped funding agricultural research for development programmes or focus the research agenda on larger-scale and export-oriented agriculture. Only 6% of the ARD investments worldwide were spent in 80 mostly low-income countries (IAASTD 2008).
There is increasing debate on the need to revisit the organisation and approach of ARD in order to increase its effectiveness. There is generally wide agreement that, in this current process of reorienting and strategising ARD and reforming ARD institutions, the input and effective involvement of civil-society organisations (CSOs) beyond traditional researchers and private sector will be critically important in order to make ARD more relevant to food producers.[3]
For a very long time, agricultural research has largely been thought of as the domain of scientific experts, with farmers at the receiving end of the research outputs. Conventionally, in sub-Saharan Africa, ARD takes place in a linear version starting with the researcher who delivers the outputs or technologies that are supposed to be picked by the extension services who in turn expect farmers to adopt.[4]
For more than 20 years, agricultural research by national systems and international organisations has produced new varieties of cereals like sorghum and millet, and groundnuts, based on selections made in research stations. But very few varieties have been adopted by the smallholders, who continue to favour their traditional varieties. This constant failure has driven scientists to involve farmers more in the research process. However, this participation is still rather superficial because the research does not take the farmers' needs and conditions and own initiatives as starting points. [5]

3. From traditional research to innovation systems

Spielman[6] defines an innovation system as a network of organisations, enterprises and individuals focused on bringing new products, new processes, and new forms of organisation into economic use, together with the institutions and policies that affect their behaviour and performance. There is a growing recognition that innovation is not a linear process from formal science through extension workers to farmer adopters but rather a social process involving a multitude of different actors, and that innovation processes can be enhanced by creating more possibilities for actors to interact. Formal ARD can inspire and be inspired by local innovation processes. Incorporating smallholders into ARD will help to better serve their needs and to discover and spread innovations that farmers have co-developed. However, donor support for farmer-driven ARD is very limited and scattered, with few opportunities for mutual learning. Some CSOs are collaborating in formal ARD in different parts of Africa, but they have not joined up their efforts to influence the wider research agenda. Many NGOs, policymakers and donor organisations concerned with rural development in Africa are not sufficiently aware of the contribution that ARD – if driven by smallholder farmers' interests – could play in agricultural and rural development.
The agricultural innovation systems approach encompasses but also is much wider than looking only at the value chain and employs an inclusive multi-stakeholder partnership approach to diagnose problems and design solutions in way that integrate the contributions of the diverse actors involved. It brings researchers into partnerships with extension agents, farmers, input dealers, policymakers, private sector actors and consumers to engage in a mutually catalysing innovation process. It seeks to enhance continuing collaboration in exploration and adaptation, thereby improving the chances of increasing development impacts and sustainability of innovation processes. Furthermore, this transdisciplinary approach also holds promise for addressing challenging and "wicked" issues such as land degradation, climate change and loss of biodiversity.

3.1. Supporting farmer-centred innovation

- **Joint research**

Starting with local innovation provides an entry point for joint research embedded in local realities and driven by farmers' interest. Discovering how and why farmers innovate makes outsiders appreciate

[3] INSARD Mapping Study Consultation Workshop on Coordination Mechanisms and Fund Flows in ARD. 19 November 2011
[4] Why is the innovation systems approach important for African agriculture? *A. A Adekunle Director NSF4, Partnerships and Strategic Alliances, Forum for Agricultural Research in Africa, FARA, 2009*
[5] Michel Pimbert. Democratising agricultural research: making excluded voices count in food and agricultural policy making http://www.excludedvoices.org/about
[6] Spielman D. 2006. Enhancing agricultural innovation: how to go beyond the strengthening of research systems. World Bank, Washington DC.

what local people are already trying to do to improve their situation. Also the farmers start to see themselves differently: although often poor in terms of financial resources and formal education, they realise they are rich in knowledge and ideas. A sound basis is laid for true partnership, in which the different contributions of the partners are equally valued.[7]

Joint research encompasses a variety of activities. It could be a trial conducted by farmers and extensionists (and maybe scientists) to find out which botanical substances are most effective in controlling diseases in animals or crops. It could be collaboration with a mechanic or engineer to make an implement easier to use or more efficient. It could involve working with private enterprises or consumer organisations in exploring processing and marketing procedures to see how benefits along the value chain can be more fairly divided. It could be working with communication experts to try out new ways of sharing information about agriculture. Thus, the focus could be on "hard" (technologies) or "soft" innovations (changes in institutions or methods) that farmers have chosen to investigate and for which they draw in other supporting expertise. In all cases, the research is led by farmers, with the support of other ARD actors.[8]

- **New ways to fund local R&D**

One key way to assure that control remains with the farmers is to give them access to resources for funding research they regard as important. In eight countries in Africa and Asia, FAIR (Farmer Access to Innovation Resources) has piloted Local Innovation Support Funds (LISFs) for farmer-led joint research and innovation managed by local organisations. Men and women farmers and groups propose research projects. The local fund management committee selects those to be supported. The funds are used to buy materials for the farmer-led research, to pay supporting specialists (scientists or others) or to obtain relevant information. This mechanism turns conventional research funding on its head. It will be a sign that farmer-led joint research is truly mainstreamed when part of the government budget for ARD is allocated to such community-managed innovation funds.[9]

3.2. Participatory innovation processes

Some projects such as Convergence of Sciences (CoS 1)[10] have analysed participatory innovation processes to find more efficient and effective modes of agricultural research and technology development. The main conclusions were that it is not difficult to find technical or biological solutions to farmers' problems, however, a deficient interface of institutions and technology constrains adoption and/or adaptation of these technologies, thereby limiting the impact of research on especially smallholder farmers. What is needed are innovations that combine technical, institutional and organisational aspects that have been co-developed in a coherent manner to address constraints holistically. This will typically involve: (i) combining natural and social sciences, (ii) clear policy support, and (iii) engaging with all relevant institutions. To successfully develop such innovations, it is necessary to operate above conducting research at farm level and build networks amongst all relevant institutions and stakeholders.

There is a need to move from an exclusive focus on farmers, farms and technologies to broader innovation systems – markets, institutions, politics and policies really matter, too. This requires new skills, new partnerships and new institutional configurations – largely absent in most agricultural research and development systems. Agricultural education systems and most curricula do not address the challenges of today. Methodologies are needed that recast the way we do research and monitor and appraise he results – and the researchers themselves. There is a need to overhaul incentive and reward systems to put farmers first and promote "participatory innovation systems". A "politics of demand" needs to be put at the centre of a new set of accountability mechanisms for research and development. This requires building capacity and voice for farmer organisations so they can exert pressure and demand for appropriate research and other services. But it also means having more responsive service delivery organisations.

It needs to be highlighted that few efforts have been made to include women in ARD discussions and co-implementing research, even though they are involved in all aspects of food production—cultivation, selection and conservation of seeds—and have a deeper understanding of culinary and

[7] PROLINNOVA Policy Brief. Tapping the energy of farmers' creativity: supporting farmer-led joint research. Nov 2010. This B*rief is based on the booklet* Farmer-Led Joint Research: Experiences of PROLINNOVA Partners, *Silang, International Institute of Rural Reconstruction (IIRR 2010) edited by Chesha Wettasinha and Ann Waters-Bayer.*

[8] Ibid

[9] Ibid

[10] The purpose of CoS-SIS is to carry out inter-disciplinary policy and institutional experiments with a view to elaborate, apply and assess a development approach to sustainable rural poverty alleviation and food security, based on Innovation System (IS) thinking. http://www.cos-sis.org/

nutritional quality than men. There has also been insufficient attention to including youth, who are the future of farming.

4. The way forward

Land users, including smallholder farmers, men and women, are innovators in their own right playing an important role in enhancing food security and income generation. They possess invaluable knowledge about their own environment, and identify, develop and finetune innovations suited to their specific needs. It is increasingly realised that much can be gained if agricultural innovation programmes and actors link up with, empower and support local innovation processes using a farmer-led participatory innovation approach. Existing ways to fund agricultural innovation do not encourage collaboration between local innovators and ARD agencies.[11]

To have a positive impact on smallholders, formal research needs to involve farmers at all stages – in determining needs, identifying problems and opportunities, designing and testing new possibilities, sharing results, and assessing the way the research is done and the results shared. Extension services, or rural advisory services, are vital knowledge-sharing institutions, crucial to achieving the social, economic and environmental elements of sustainable development. Extension services can help improve livelihoods by providing vital information, technologies and knowledge to farmers but also by eliciting farmers' own knowledge and creativity and facilitating the link between different sources of knowledge and information. It can also provide access via mobile phones to market data such as weather projections and livestock prices, offers knowledge centres with information on new crop varieties, and index-based insurance through private sector engagement with local communities.

Institutions of higher education need to incorporate methods of experiential and participatory learning in order to create linkages between students and farmer-researchers. This would prepare the students as future ARD professionals who are open to engage with farmers in joint research – and also to become famer-researchers themselves. Staff of these institutions will need support to transform curricula and to find creative ways to involve innovative farmers and groups in learning cycles.[12]

5. Objectives of the Briefing

This Briefing is co-organised with INSARD – Including Smallholders in Agriculture Research for Development – which is an EC-funded partnership project involving six African and European-based CSOs[13]. INSARD is working towards making it easier for CSOs – both non-governmental organisations (NGOs) and farmer organisations (FOs) – to be actively involved in influencing agricultural research systems in Africa.

This briefing will address issues related to the way in which ARD can respond better to the needs of smallholders by giving smallholders a bigger say in all research stages. In particular, the briefing will: (i) highlight the key opportunities and challenges in making ARD more responsive to smallholders' needs and own initiatives; (ii) provide space for sharing experiences with ARD driven by smallholder farmers; and (iii) facilitate networking among development partners.

Target group

Policymakers and representatives of EU Member States, civil society groups, research networks and development practitioners, and international organisations.

Available material

Input and comments before, during and after the meetings will be included in the Briefings blog: http://brusselsbriefings.net. A Reader and Highlights in printed and electronic format will be produced shortly after the meeting.

[11] PROLINNOVA. ETC Foundation. Farmer Access to Innovation Resources (FAIR) Local Innovation Support Funds: from pilots to farmer-managed institutions. Leusden, February 2013

[12] PROLINNOVA Policy Brief. Tapping the energy of farmers' creativity: supporting farmer-led joint research. Nov 2010.

[13] ESAFF, ETC Foundation, GRET, PELUM Association, Practical Action and REPAOC

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8h15-8h45 Registration
8h45-9h10 Introduction and Opening of the Briefing: *Isolina Boto, Manager, CTA Brussels Office*
Introductory remarks: *M. Xavier Verboven, EESC, ACP Follow up Committee President; DG DEVCO, EC; Secretary General, ACP Secretariat; Michael Hailu, Director of CTA; Marianne Meijboom, INSARD Coordinator*

9h10-11h00 **Panel 1: Approaches and instruments for ARD to be more responsive to smallholders' needs**
This panel will provide an overview of the key concepts, challenges and opportunities for agricultural research and development (ARD) to respond to smallholders' needs and own initiatives. It will discuss what is needed to support participatory processes and enhance the capacities of farmers to innovate and develop appropriate systems of resource management to achieve food security, sustain their livelihoods and safeguard the environment using indigenous knowledge and creativity.

Chair: *H.E. Brave Ndisale, Ambassador of Malawi*
Panellists:
- Promoting participatory innovation systems for smallholder development
  Prof. Neils Röling, Emeritus Professor, Innovation & Communication, University of Wageningen
- Knowledge transfer is a two-way street
  Dyborn Chibonga, Chief Executive Officer, NASFAM, Malawi
- Farmer-to-farmer services to strengthen institutional development processes
  Cees van Rij, Agriterra on behalf of AgriCord
- Local innovation support funds: experiences and lessons
  Ann Waters-Bayer, Prolinnova, ETC Foundation, Netherlands
- Successful participatory research by farmers through innovative Farmer Field Schools in Rwanda
  Jean-Pierre Busogoro, Belgian Development Agency (BTC), Rwanda

11h00-11h15 Coffee Break

11h15-13h15 Panel 2: Lessons and successes in farmer-led agricultural research
This panel will present concrete examples of farmer-driven ARD successes from the field, highlighting the lessons learned and good practices of partnership between smallholders and other actors in ARD.

Chair: H.E.Frédéric Assomption Korsaga, Ambassador of Burkina Faso (tbc)
Panellists:
- Lessons from joint learning about innovation systems in African agriculture
  Anne Floquet, Joint Learning about Innovation Systems in African Agriculture (JOLISAA), Benin
- Promoting local innovation and participatory ARD: the role of women
  Chris Macoloo, World Neighbors Regional Associate President for Africa, Kenya
- Quncho: the first popular tef variety in Ethiopia
  Kebebew Assefa, Debre Zeit Agricultural Research Center, Ethiopia
- Participatory technology development in support of artisanal palm oil production in Ghana
  Charity Osei-Amponsah, Researcher, CoS-SIS Programme, Ghana
- Women and young farmers as innovators in community-driven agro-ecological ARD
  Bern Guri, Executive Director, CIKOD, Ghana

Concluding remarks

13h15 **Lunch** (*Atrium 6 in 6th floor*)