



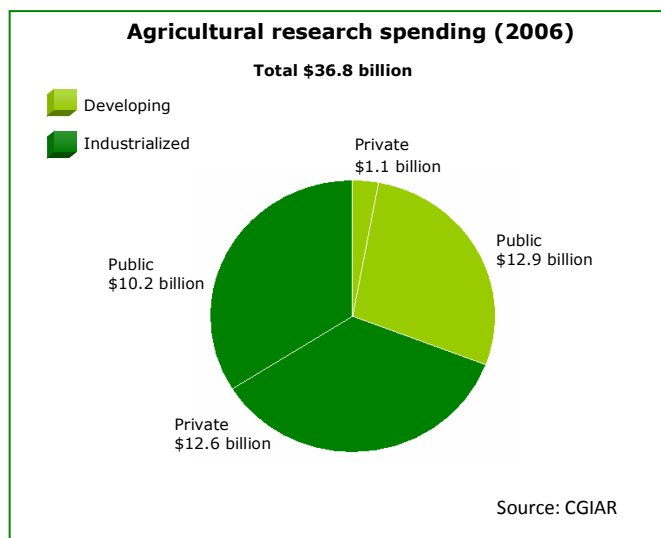
## GCARD 2010

### Background paper

## Better Benefiting the Poor through Public-Private Partnerships for Innovation and Action

The world's farmers, especially smallholders across Africa and South Asia, are facing growing threats to their ability to feed themselves and the world. Smallholders' lack of productive capacity will not be addressed by continuing the status quo. We need to build broader, deeper and more effective partnerships that improve the effectiveness of the global food chain and offer farmers the opportunity to produce more and earn more.

Governments have the power to create effective environmental and agricultural regulation, to prioritise public investment and to build the infrastructure that connects farmers to the broader economy. But they cannot act across borders, and their knowledge and range of technologies are often limited. More importantly still, governments face competing social priorities and demands which they must constantly rebalance. In practice, this has meant that public agricultural investment has often been relegated to low priority in economic planning, even though it is farm production that fuels the economies of many developing nations.



By contrast, the private sector – food retailers, manufacturers and processors, and most especially input suppliers – have the necessary focus, the knowledge and the technology to support farmers as their customers and partners, and thus to help them better benefiting from research. They also understand the long-term horizon of incentives that justify developing and delivering innovation. But the private sector alone cannot deliver the sort of structural incentives that can kick-start farmers to move out of subsistence

into surplus – and on to become successful entrepreneurs.

Each side - private sector and public sector - must do what it does best, but must also seek to transcend its limitations through cooperation.

Public and private actors need to act together. For smallholder farmers, in particular, structural issues stand in the way of further progress. Achieving the Millennium Development Goals (MDGs) is a challenge to the private and public sectors alike. Investment in research and innovation must be accompanied by similar investment in infrastructure, training, extension services and other aspects of the value chain to ensure farmers can access innovations, put them to use and reap the benefits.

### 1- Tailoring innovations to smallholder needs

- *How can we ensure that future innovations are relevant to smallholder farmers' needs?*
- *How can we ensure that they are adapted to local conditions and stresses?*
- *How can we ensure that farmers have the skills and knowledge to make choices that are right for them?*

**“Lack of incentives and contractual mechanism may discourage partnership, but still both the sectors can assume complementary roles. For instance, public sector can share responsibility of basic research, applied crop and resource management research, training of manpower and enforcement of regulatory policies. Some of the applied and adaptive researches could be in the private sector. In this task there may not be any formal partnership, but the roles are complementary to each other. Converting basic research into commercial technologies involves a number of processes, interfacing both the sectors at different stages. This interface can be operationalized in consultative, contractual, collaborative, or supervisory modes.” (GCARD Regional Review Asia Pacific)**

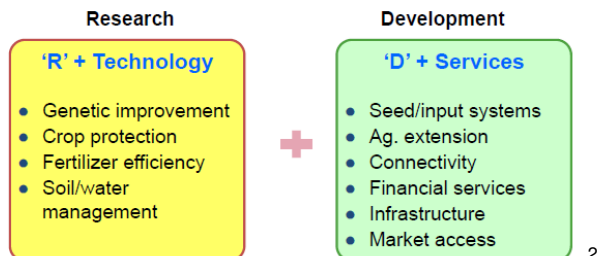
The R&D challenge in smallholder agriculture is to develop the right kind of knowledge and technologies for different farms, capabilities and local conditions. This is a complex process in which partnerships and participative approaches are essential between research and practitioners, focusing on result and technology transfer.<sup>1</sup>

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<sup>1</sup> Ferroni, M. 2009. Can Private Sector R&D Reach Small Farms? Syngenta Foundation - <http://www.syngentafoundation.org/db/1/846.pdf>

Different suppliers need to come together in different configurations in order to provide the goods and services needed by different farmers.

Suppliers: private, public, public-private, 'third sector'



By and large, technologies in agriculture are not "plug and play". Research into improved seeds, pesticides or fertilizer blends must be tested and adapted to suit local crop varieties, local practices and local conditions. Once in place, these must be continually monitored and improved to maintain their effectiveness. While in some regions the availability of a market creates the incentive for sufficient private investment to support the research and development needed in local productions, this is not the case everywhere. Where this does not happen, **partnerships between private and public sectors, based on mutual interest and trust, can create the missing link.**

**“Participatory approach (where users are involved in research implementation) is identified as an effective way to improve research efficiency. There is a need to identify mechanisms that help civil society groups especially farmer organisations to be more involved in research activities. There is also a need to reinforce cooperation between the private and the public sector and to stimulate greater inter-disciplinarity”**  
*(GCARD Regional Review Europe)*

Several partnerships have sought to address the challenge of developing locally adapted varieties, most notably for staple subsistence crops. For example, the African Agriculture Technology Foundation (AATF), a non-profit organization, is managing the Water Efficient Maize for Africa (WEMA) project<sup>3</sup> – a partnership between African public sector institutions and several private sector companies and foundations to develop drought-tolerant African maize using conventional breeding, marker-assisted breeding, and biotechnology. Also with regard to maize, a new alliance called IMAS (Improved Maize for African Soils)<sup>4</sup>, led by the International Maize and Wheat Improvement Center (CIMMYT), will seek to develop new maize varieties that use fertilizer more efficiently. The alliance has brought together foundations, national research institutions, international donors and the private sector. Similarly, researchers at the University of Bern teamed up with private sector researchers to work to maintain and improve yields of tef, the most important cereal crop in Ethiopia. The collaborative project includes sharing crop

<sup>2</sup> Ibid.

<sup>3</sup> <http://www.aatf-africa.org/wema>

<sup>4</sup> [http://beta.cimmyt.org/index.php?option=com\\_content&view=article&id=502&Itemid=314&lang=en](http://beta.cimmyt.org/index.php?option=com_content&view=article&id=502&Itemid=314&lang=en)

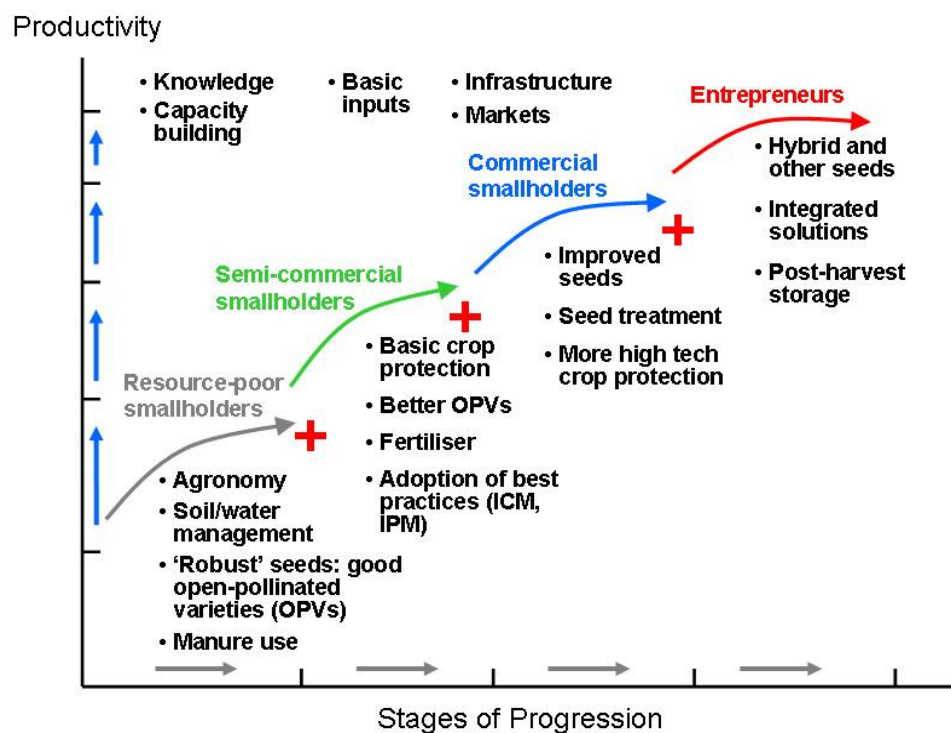
improvement and laboratory techniques. Without public-private collaboration, giving sufficient research focus for tef would have been more difficult to achieve<sup>5</sup>.

Another example of effective partnership to provide a research response to an animal health and livelihoods problem is that led by the UK Department for International Development (DFID), the Bill & Melinda Gates Foundation and the private charity GALVmed to develop a vaccine for cattle to save millions of domestic cows from East Coast Fever, which is caused by a killer parasite and plagues at least 11 African countries. The objective is to mass-produce the vaccine, distribute it and make it available to livestock keepers to protect cattle against the disease. In the long-term, the programme aims to make sure that sustainable commercial systems for vaccine production, distribution and delivery are maintained. To make it viable in the long-term, DFID is supporting GALVmed to explore ways of transferring the production and distribution of the vaccine into the private sector through local manufacturers and distributors.

However, **increasing investment and partnerships in agricultural research alone is not sufficient**. The past decades have seen significant developments not just in technologies and products, but also in knowledge improvement, such as best practices in crop management. The benefits of these developments and innovations have not been equivalently shared by all farmers, which points to the need to focus on obstacles to adoption and diffusion and on ways to address them: training, capacity development, advisory services, participative approaches and better involvement of the civil society and private sector. **For agricultural research to truly impact farmers and contribute to the achievement of the MDGs, it must be considered in the broader context of the value chains in which farmers exist**. Farmers not only need access to inputs, technology and knowledge; they also need access to other resources so that they are able to effectively break the subsistence cycle. Issues around credit, access to training, storage and transport facilities or markets are equally important and must be part of the strategy into which agricultural research fits.

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<sup>5</sup> <http://www.syngentafoundation.org/index.cfm?pageID=529>



Adapted from: Ferroni, M. 2009. Can Private Sector R&D Reach Small Farms? Syngenta Foundation - <http://www.syngentafoundation.org/db/1/846.pdf>

## 2- Improving access and uptake of innovation

- *How can financing and market mechanisms be combined to meet the need to generate technology which is directly relevant, accessible and affordable to poor farmers?*
- *What instruments can be leveraged by PPPs to best facilitate technology transfer/diffusion and uptake?*
- *What mechanisms and what incentives - such as subsidies to new technologies - can be promoted through PPP; in particular to address barriers to accessing inputs and knowledge?*

The most vital link in the chain from farm to fork is the one that turns research into effective development on the ground. This link can often be improved through public-private partnerships. Enabling resource-poor smallholders to gain access to knowledge and resources to become entrepreneurs is key to ensuring agriculture truly constitutes a pathway out of poverty.

**Public Private Partnerships are not only about improving access to knowledge and research. They are also about teaming up know-how, market knowledge and skills so that technologies and research can be relevant to the PPPs' audience. The system of**

intellectual property regulation is a system that assigns rights and responsibilities to those who use it, building a chain of accountability. It is a tool used by both public and private sectors to attract funding and spur research but it is also essential to build trust and allow collaborations to occur.

However, while in some instances PPPs enable the sharing of technologies or knowledge that is otherwise proprietary, often access to this knowledge is only a small part of the equation. Many other dimensions contribute to the successful development, diffusion and uptake of technologies and best practices. For example, issues of uptake of a crop or technology can be affected by socio-cultural norms and consumer preference. In the case of biofortified crops such as Golden Rice, it is possible that the yellow colouring of the rice would affect consumers who prefer white rice<sup>6</sup>. But more than consumer preference, often regulatory challenges or the absence of adequate regulatory frameworks are in fact one of the greatest obstacles to diffusion. Preparing the dossiers needed for regulatory approvals is a complex and in itself costly task, and approval processes can take a long time. But many countries may also simply not have in place the regulatory frameworks necessary for the technologies to be released. PPPs can help address the challenge of regulatory approvals by providing technical and financial support, as well as capacity building to regulatory authorities. This illustrates **the importance of considering research in context, and how important it is that R&D be considered as part of a 'package' of policies aimed at improving farmers' access to the tools and technologies they need.**

Only five years ago, 5 million people in Malawi relied on food aid. Then the Malawian government began subsidising farm inputs. They involved the private sector to distribute the inputs across the country while monitoring the subsidies themselves. Since then, the country has produced surpluses ranging from 400,000 to 1 million metric tons per year, and Malawi is now a significant net food exporter in the region, bringing it vital financial gains. The good rainfall pattern could be part of the picture, but the proactive actions and investments have been recognized as the main success factors. In Malawi, both the state and private sector recognised their own strengths and worked around their limitations.

**For a partnership to be effective, it must not only address the root cause of a problem but also impact on all the steps of the value chain.** In Turkey, a partnership managed to address the problem of zinc deficiency on a large scale. In 1993, a research project found that yields could be increased 6- to 8-fold and child nutrition dramatically increased through zinc fertilization. Through a partnership between Cukurova University, the state and the private company TOROS Agri Industry Group, zinc was added to fertilizers. The product was initially made available at the same cost, but the results were so positive that in spite of the repricing of the products to reflect the added value of the content, within a very few years Turkish farmers had significantly increased their use of the zinc-fortified fertilizer (1 per cent of zinc). Today, nearly 10 years after the identification of the zinc deficiency problem, the total quantity of zinc-containing compound fertilizers produced and applied in Turkey has reached a record level of 300,000 tonnes per annum. It is estimated that the economic benefits associated with the application of Zn-fertilizers on Zn deficient soils in Turkey is around US\$ 100 million per year. Also, zinc deficiency in children has been dramatically reduced.

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<sup>6</sup> The Golden Rice Project: [http://www.goldenrice.org/Content3-Why/why2\\_socio.html](http://www.goldenrice.org/Content3-Why/why2_socio.html)

**A strategy that has contributed to an increase in participation by private enterprise in research funding and execution is the creation of funds by means of contributions from farmers and manufacturers.** In Colombia, for example, a significant proportion of research activities have been funded by associations of farmers (Stads & Romano, 2008). In Brazil, the Funcafé fund is an important source of funding for coffee research. It is made up of contributions levied as a percentage of the sales price of a 60-kilo bag of coffee beans. Another Brazilian initiative is Fundecitrus, an association that includes funding and conducting citrus research as well as service provision in its mission statement. Voluntary contributions from orange growers and juice makers are among its main funding sources. (*GCARD Regional Review Latin America*)

Financial matters aside, it is important to note that farmers and manufacturers also influence the agricultural research agenda by participating in associations and funds of the type mentioned via collegial bodies. In Uruguay, the research consortium for cereals and grains (barley, wheat and others) enjoys the participation of all important actors involved in the production chains (production, industrial, S&T, suppliers). This initiative conducts research and other cooperative actions towards innovation.

Private sector partners have also been important in **helping farmers develop market skills and improve access to markets through cooperatives.** For example in Mali, the government, an international donor agency and the private sector have supported farmers' efforts to create certified cooperatives through which they can stock and market their surplus at the right time to maximize income. Other cooperative arrangements are helping farmers adopt best practices so that they use the tools at their disposal safely and efficiently.

Finally, the value of new technologies and tools is also largely dependent on farmers' ability to use them adequately and securely. In many cases, much could already be achieved by **helping farmers adopt best practices that improve natural resource management and productivity.** Training and extension services should be a key part of that effort, and can also benefit from a public-private approach.

For example, in West Africa, a history of deficiencies in maize production is being addressed by a series of workshops to educate farmers on sustainable crop and natural resource management. A partnership between the USAID-funded Agribusiness and Trade Promotion (ATP) project and CropLife Africa Middle East was set up last year to help farmers in the West African region to strengthen their agricultural input–output chains, in turn improving the livelihoods of the rural populations<sup>7</sup>. The programme involves sharing knowledge of sustainable farming practices, building business links to ensure farmers have access to agricultural inputs, and raising awareness of the need to ensure that only quality agricultural products are supplied to the market. In 2010, the project has started running five-day Integrated Pest Management (IPM) 'train-the-trainer' workshops, which are intended to create a greater awareness among farmers of the impact of poor soil fertility and pests, including storage pests. Participants at the workshops are then encouraged to go back and share their knowledge on IPM with other farmers to help boost their production.

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<sup>7</sup> <http://www.agribizafrica.org/index.html>

### 3- Impacting markets and livelihoods

To achieve change on the ground, **access to market and to resources is as important as investment in innovation**. Markets are needed to help the millions of small farmers that must be reached in the effort to bring technology to every acre farmed and ensuring farmers can sell their products. Some rural markets clearly work, reaching customers on a massive scale: think of soap, certain drinks, and mobile phones. For agricultural input products and services this is not the case, at least not to the same extent because of demand and supply side constraints that need to be addressed.

The World Food Programme's local food procurement program, 'Purchase for Progress' is a good example of efficient partnership with farmers to stimulate local demand, provide safety nets through secure contracts and prevent market destruction induced by food aid.

Access to markets for selling products and generating higher incomes is a key element and PPP are essential to facilitate such a process, particularly when private standards are applicable for the market chain.

For investment in research to impact on markets and ultimately on livelihoods, the functioning of the entire value chain must be broken down and understood. For example, in Nigeria, the Presidential Initiative on Cassava made sure that producers, processors and exporters were first organized before support, in the form of credit facilities and subsidies, was channeled to them.

Although research into agricultural development is extensive, and markets continually evolve, this information often doesn't reach the farmers who could benefit most from it. In remote areas of many developing countries, lack of access to telecommunications means that farmers either struggle to keep up-to-date with market and agronomic information, or they are forced to spend time and money in travelling to access this information, taking away from the already scarce time they have to work on the farm.

An IFAD project has been successful in Kenya, Tanzania and Uganda in giving farmers access to locally relevant market intelligence and facilitation of fair and secure trading in agriculture, horticulture and livestock markets. The services are delivered through a network of small businesses located in main and rural markets and production areas. The businesses use modern ICTs, especially mobile phones, solid-state laptops and the internet to gather information and arrange trading deals. Three license providers have been set up: AgriNet in Uganda, AgriTrade in Kenya and Rural Entrepreneurs Network in Tanzania and many more initiatives now exist that leverage ICTs for farmer use.

For example, Wireless Reach is a scheme that aims to bridge communications gaps, by bringing wireless technology to developing communities around the world. One of the projects has brought together an international telecommunications company in partnership with the Grameen Foundation to determine the feasibility of introducing wireless phones in Indonesia. The idea is simple and has already been successful in several other countries. A micro-loan is offered to a local person whose community has no telephone connection. This person then uses the loan to acquire a village phone kit and service plan, taking on the role of Village Phone Operator (VPO). The rest of the community can then purchase minutes from the VPO: they

benefit from access to affordable telecoms service, whilst the VPO is able to manage a sustainable ICT business<sup>8</sup>. Thanks to initiatives like this, more farmers are accessing information about weather, crops and pest control from their own remote villages, so that they can make better-informed farming decisions. Furthermore, being kept up-to-date with market information allows farmers to receive accurate pricing information and market their crops to buyers.

Smallholder farmers also tend to be risk-averse, which impedes their capacity to invest in their farms. Helping mitigate the problem of risk is another key driver to help farmers grow their production. Weather/crop insurance can help achieve this by providing farmers with a safety net. Many programs already exist that provide micro-insurance. For example in Kenya, an innovative program uses a low-cost, mobile phone payment and data system, and automated, solar powered weather stations, to offer thousands of farmers in parts of Western and Central Kenya affordable, “pay as you plant” insurance to protect their investments in seeds and fertilizers, as well as other farm inputs. The program, called “Kilimo Salama,” is a partnership between the Syngenta Foundation for Sustainable Agriculture, UAP Insurance, and telecoms operator Safaricom. The project offers farmers who plant on as little as one acre insurance policies to shield them from significant financial losses when they face the risk of drought or excess rain wreaking havoc on their harvests<sup>9</sup>.

## CONCLUSION

The role of the private sector in agricultural research and innovation systems has been strongly highlighted in the most recent initiatives to support agricultural development in developing countries, such as the L’Aquila joint statement on Global Food Security: *“We support public-private partnerships with adequate emphasis on the development of infrastructure aimed at increasing resources for agriculture and improving investment effectiveness.”*

While the private sector is generally seen as a key driver and actor for economic growth, **trust and transparency** still need to be strengthened for all stakeholders to be able to work together to fight poverty. The private sector is working to define its role in the context of meeting the MDGs, in particular by explaining **how business interests can be aligned to benefit the poor**. The MDGs cannot be reached as a solely public endeavour. In addition to the role played by governments and local authorities, **local entrepreneurship needs to be stimulated** to create the jobs, assets and income that will allow farmers to improve their livelihoods.

**Progress in sustainability as well as in economic development needs to be monitored.**

Achieving the MDGs does not simply require agriculture to provide a means for farmers to achieve decent livelihoods; this must also be done on a sustainable basis. Measuring the progress made in maintaining or even decreasing the footprint of agriculture would constitute an important element of a sustainable agricultural policy and can feed into the research cycle by

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<sup>8</sup> [http://www.qualcomm.com/citizenship/wireless\\_reach/projects/entrepreneurship.html#indonesia](http://www.qualcomm.com/citizenship/wireless_reach/projects/entrepreneurship.html#indonesia)

<sup>9</sup> [http://kilimosalama.files.wordpress.com/2010/02/syngenta\\_kilimo-salama\\_release\\_final3.pdf](http://kilimosalama.files.wordpress.com/2010/02/syngenta_kilimo-salama_release_final3.pdf)

helping set priorities for further research. The Field to Market report<sup>10</sup> produced by the Keystone Alliance provides a good example of how such measurements can be made collectively with the support of many stakeholders. The report highlighted some significant improvements in the footprint of agriculture in the USA over the past twenty years in four key crops, in the areas of land use, soil loss, irrigation water use, energy use and climate impact. Carrying out similar assessments in different regions over time would provide an important basis for measuring the progress of sustainability, in addition to the socio-economic impacts of agricultural development.

A lot of pending questions must still be addressed, such as:

- What are the greatest inhibitors for PPPs to take place and succeed?
- What preconditions are necessary for PPPs to succeed?
- What are the priority areas of research where PPP would be most needed?
- How can agronomic research best be shared and results and technologies be made more accessible to the poor?
- What means best facilitate the sharing of local knowledge, applied research, and scientific discovery?
- How can multi-sector interests establish shared goals and measurement mechanisms for PPPs?
- How important is the management of information in the PPP for stimulating innovation or transferring it?

It is what we will try to do during the GCARD session “Better Benefiting the Poor through Public-Private Partnerships for Innovation and Action”

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<sup>10</sup> <http://www.keystone.org/spp/environment/sustainability/field-to-market>