syngenta foundation for sustainable agriculture

Scaling up through enterprise

The private sector and smallholder development
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International conference report

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Enhancing connections, boosting capabilities

Every day, millions of small farmers in developing countries and emerging markets interact with the private sector. Companies play decisive roles in agricultural transformation, creating value in supply chains 'from farm to fork'.

The private sector usually buys from business-orientated smallholders, who grow high-value crops for established supply chains. The Syngenta Foundation for Sustainable Agriculture (SFSA) works mainly with 'pre-commercial' smallholders, helping them, too, to link up with lucrative markets for their produce. These farmers typically lack technology, resources and information, and are hindered by market failures and many other barriers to success.

Smallholder production is already essential for food security. Improving their harvests will rapidly become even more important: the global population is projected to rise to over nine billion by 2050, and food production will need to increase by around 70% in the same period.

It is estimated that there are approximately 450 million smallholder farm units (up to two hectares) in non-OECD countries, and that about one-third of the world's population depends directly on small-scale farming. Smallholders produce a large share of the food consumed in developing countries and emerging markets, and their ability to farm productively can have a major impact on economic transformation. Enabling and encouraging the private sector to provide greater support to smallholders is therefore critical for development.

Scaling up

On July 5, 2017, the Syngenta Foundation convened a multi-stakeholder conference in Basel, Switzerland. Entitled ***Scaling up through enterprise: the private sector and smallholder development***, the conference brought together a range of experts from the public and private sectors, leading NGOs, farmers, seed producers, policy makers and over 120 delegates from around the world.

In a series of dynamic panel discussions, participants considered how to enhance connections between key players in the agricultural value chain. Panellists addressed the brokering of private-public partnerships, with a key focus on improving the delivery of seeds to farmers, and disseminating weather insurance to protect smallholders from risk.

The day's panel and plenary sessions built on and extended the narrative of the Foundation's earlier conference, The Future of Small Farms. Together, these two events provided a range of unique insights and perspectives on the issue of smallholder wellbeing and development.

This report captures the key outputs from ***Scaling up through enterprise***. Summarizing the key speeches and discussions that took place, it serves as a record of the views that were exchanged and the pathways that were explored. It is also intended to be a source of ideas and inspiration, and a snapshot of tangible measures that can help smallholders sustainably improve their crops and incomes.

Context

Delivering the goods?

In the opening session, Marco Ferroni, as SFSA Executive Director, and Chris Brett, Lead Agribusiness Specialist at the World Bank, discussed the background to the global challenge of smallholder/private sector engagement, and the various risks and opportunities within the agricultural value chain.

SFSA tests and incubates innovations designed to help smallholders farm more profitably. Once such products and services have "passed the relevance test", as Ferroni put it, SFSA focuses on making them available to as many farmers as possible. Market introduction and scale-up are often difficult, however. In many countries, governance structures and institutions are not conducive to market development. Furthermore, existing markets do not always work well for the products that might be relevant to farmers.

Systemic change in agriculture is inconceivable without the private sector, and Public-Private-Partnerships (PPPs), play a key role. PPPs were a focus of the Foundation's conference in January 2017. This second meeting, explained Ferroni, aimed to examine these partnerships in more depth, and to assess "the nitty-gritty of what makes [them] work or not".

As Ferroni noted, the 'public' aspect of PPPs is not just about government, and the 'private' side does not just refer to companies. Agricultural value chains can involve numerous further stakeholders, including foundations, NGOs, universities and donors. Together, they need to unite in a "shared-value proposition" which delivers mutual benefits and profitability.

Fixing the disconnect

Chris Brett opened by asking a question that had troubled him since a recent visit to the UK: "How is it that a cup of coffee at Starbucks costs £3.29, and yet a T-shirt from H&M, after all that manufacturing and processing and marketing, can cost only £2.99?" Both items are based on agricultural produce, sometimes from the same country, yet reach consumers through very different value chains. Strangely, the transient pleasure of a coffee brings greater profit to those involved than the more durable utility of clothing. Brett used this example to highlight the challenges facing those organizations working to improve smallholders' earnings across crops.

"How can a T-shirt from H&M, after all that manufacturing and processing and marketing, cost only £2.99?"

Chris Brett

Picking up from Ferroni, Brett explained that the World Bank is very interested in understanding more about the principal actors and different roles and responsibilities within PPPs. It is also preoccupied with the current rapid transformation of the urban environment. Estimates suggest that by 2050 around 70% of the global population will be living in cities.[1] Improving the connections between smallholders and cities, and investing in ways to bring smallholder products to urban markets, will be critical in the decades ahead.

The disconnect between production and markets was a major theme in this opening session. In particular, Ferroni and Brett discussed how unsustainable trade agreements need to be revised if Africa is to feed itself and shape its own economic future. Agriculture contributes 16.2% of GDP in Africa, and provides employment to over 60% of the population.[2] The sector has a vital part to play in accelerating growth and development. However, as Brett observed, Africa currently spends $35 billion in foreign currency annually on imported food. This figure is set to rise to over $100 billion per year by 2030.[3] Furthermore, the importing countries could produce much of this food themselves, given the right conditions.

Ferroni was asked how one creates the right conditions for agricultural transformation through off-farm job growth and on-farm productivity improvements. In response, he spoke of the need for sustained government involvement and support, with a key focus on market-led agricultural research, infrastructure and progressive regulatory environments. Brett added that addressing land management issues is critical, and that the huge decline in agricultural extension programs must be reversed. Progress has been made in extension delivery around specific cash crops like cocoa and coffee. However, a lack of such support for food crops, particularly in West Africa, has had a serious detrimental impact.

In conclusion, both agreed that solving these challenges requires stronger public-private cooperation, as seen in India in recent years. "Only by scaling up through entrepreneurship and enterprise will we create the right environment for greater on-farm productivity and value creation within agricultural supply chains," declared Ferroni.

"We cannot conceive of system change in agriculture without the private sector and functioning markets."

Marco Ferroni

Africa currently spends $35 billion in foreign currency annually on imported food, a figure that is set to rise to over $100 billion per year by 2030.

Professor Tom Reardon, Michigan State University

Market links with farmers in an era of rapid transformation of agri-food value chains

For smallholder farmers looking to forge links with markets, the rapid transformation of food systems presents multiple challenges and opportunities. In particular, farmers have had to adjust to the accelerated growth of the urban food market, which has gone from being a relative niche area 20 years ago to representing 50-70% of today's demand in Asia and Africa. In Asia and Africa, the urban market is now 10 to 15 times more important to small-holders than exports, which absorb only about 5% of output. The flow of food from rural to urban areas, once a mere trickle, is now a river. On average, each rural farmer now feeds three city households.

The increase in volume has been accompanied by a shift in produce composition. Farmers now have multiple options beyond staple food grains. In the last 20 years, there has been rapid diversification away from basic food crops to a wide range of non-grain products. At the same time, a jump in demand for feed grain is opening up other market pathways. Nigeria, for example, has recently seen a 600% increase in its chicken feed grain market in only nine years, and the farmed fish market in Bangladesh has grown 25-fold. In this way, strong urban demand for quality and variety presents smallholders with many new opportunities.

"In Asia and Africa, the urban market is now 10 to 15 times more important to smallholders than exports."

Cold storage hots up the potato market

Change often occurs when multiple factors combine. A good example can be seen in the cold storage potato market of the Agra region in Uttar Pradesh, India. Once mainly a producer of wheat and rice, Agra's uptake of potato farming in the early 1990s coincided with the rise of the Delhi economy. As incomes increased and diets diversified, demand for crops such as potatoes accelerated. At the same time, investment in roads, electrification and irrigation, and the introduction of new, disease-resistant varieties of potato, meant that cold storage became a viable commercial option. Within a decade, cold storage potatoes came to account for two-thirds of the Delhi market. At 2.2 million tonnes, Agra is now home to 7% of India's cold storage capacity.[4] The Alliance for a Green Revolution in Africa is now looking to launch cold storage solutions in sub-Saharan Africa. Poor storage of farm produce currently accounts for 40% of post-harvest losses there.

SMEs provide the missing link

But how do farmers engage with and take advantage of rapidly changing markets? Many companies run Corporate Social Responsibility (CSR) programs in agriculture, but these efforts are seldom sufficient. Only 2% of smallholders in Asia and Africa actively participate in CSR programs.

An answer lies in the many small and medium-sized enterprises (SMEs) operating in supply chains. SMEs in the wholesale, transport and processing sectors form the main connection between farmers and the market. Building relationships with SMEs will deliver the greatest impact, in terms of market creation, stability and profitability, for smallholders in Asia and Africa.


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Myth-busting and interventions

When thinking about agricultural enterprise and success, Sir Francis of Assisi's 'Serenity Prayer' is worth remembering: *"God, grant me the serenity to accept the things I cannot change, courage to change the things I can, and wisdom to know the difference."*

Some aspects of agriculture are definitely beyond our influence. In the agricultural development process, for example, the percentage of total GDP that is agricultural, and the number of people working on farms, always diminish with economic development. This is not because farming's GDP gets smaller, but because other sectors become stronger. Another universal and unchanging fact is that primary agricultural GDP per person hardly changes around the world, working out at around $550-$650 per stomach. Agriculture is often a small and intractable sector; if too many people try to find employment there, they may never earn enough to escape poverty.

We also know that smallholders are not much engaged with agribusiness. In developing and emerging markets, they mainly sell to small and informal businesses. However, studies in Asia, and to a lesser extent in Africa, show that agricultural supply chains are undergoing a 'quiet revolution' through the modernization of traditional marketing channels. This revolution can be seen in the large-scale purchasing of produce at rural assembly markets, the use of mobile technology to commercial advantage, and investment in new and improved roads.

Targeted investments in roads and other infrastructure are particularly important, as 'time-to-market' is a significant determinant of productivity and income. Generally speaking, the nearer to a city a crop is produced, the higher the income received, which makes logistics and perishability key considerations for farmers. In Africa, productivity is much lower on farms that are over three hours away from towns of over 100,000 inhabitants than on those nearby.

Interventions for agricultural commercialization

There are a range of interventions currently being deployed to support agricultural commercialization. They can be defined as follows:

Empowering producers to link downstream to market opportunities

- Enabling producers to identify emerging market opportunities for themselves, as a first step to taking ownership and reducing dependency; this is achieved by experiential market training, incremental increases in joint activities, leading to increased trust between producers
- Using competitive grant-matching schemes for producer groups, typically to fill financing gaps and kick-start farmer group investments
- Using replicable and well-understood business models to reduce risks and encourage entrepreneurism

Working with agribusiness to link 'upstream' to producers

- Donor agencies working with new agribusiness investments to increase business model inclusivity and responsibility
- Working with agribusinesses that face expanding demand for their products and therefore seek additional raw materials
- Working with small-scale and informal traders – a hugely important although rarely used approach

Creating a supportive, enabling environment

- Positively influencing government policies, typically through research studies, policy replication, and benchmarking between countries to push for changes in regulations
- Investment in roads, water, electricity and telecoms
- Generation of knowledge, such as market intelligence, innovation and best practice through publicly funded R&D

"In Africa, productivity is much lower on farms that are over three hours away from towns of over 100,000 inhabitants than on those nearby."

Whether or not such interventions succeed or fail depends upon a range of factors. In countries that score particularly well on agricultural productivity and commercialization, supportive governments are nearly always part of the reason. Côte d'Ivoire is a good example. Practitioners also agree that every link in the supply chain needs to earn a sensible margin, and that 'function' is more important than 'form' – i.e. whether the agricultural entity is a co-operative, small trader or major agribusiness matters less than how it goes about its activities.

Finally, 'voice' and 'choice' remain the vital ingredients for project success; 'voice' in relation to productivity, and 'choice' in relation to public and private bodies coming together to decide how projects should work. For the kind of smart investments that deliver lasting benefits to small-holders, the decision-making process needs to include producers, traders and local government. Interventions imposed without consultation usually fail.

Getting seed to the farmer: the case for private delivery of public goods

Panel: Richard Jones, AGRA, Felister Makini, KALRO, Susan Mureithi, Suera, Anushka Ratnayake, myAgro

Moderator: Ian Barker, SFSA

Since the early days of the Green Revolution, modern varieties of seeds have been responsible for at least 20% of yield growth in developing countries, rising to almost 50% between the 1980s and 2000.[6] However, there are still damaging disconnects between the seed industry and the smallholder. Improving farmers' access to high-quality seeds is essential, but remains a major challenge.

Despite the missing links in the value chain, demand for seed among smallholders is strong. And where access is enabled, take-up is high. In Kenya, for example, 68% of smallholders use hybrid corn, which they can obtain from 35 different seed companies. But for a broad range of crops, like sorghum, cassava, potato, pulses and beans, seed access is still a major problem. It continues to be one of the main contributing factors to deficiencies in yield and nutrition, particularly in sub-Saharan Africa.

Ian Barker of SFSA opened the debate by explaining that, while there are many new varieties of food security crops being developed in the public sector, the expertise and capacity to deliver these seeds lies in the private sector. Solutions to the problem of access therefore depend upon the public and the private sectors working together. However, these partnerships are slow to form on their own. Smallholders' seed requirements therefore remain largely unmet. Indeed, today only 2.5% of the seed used by smallholders in sub-Saharan Africa comes from seed companies.[7]

In the panel session, representatives from four organizations – which, in combination, represent the kind of partnership required to tackle this issue – considered the enduring conundrum of how to enable private delivery of public seed products.

Financing must improve all round

One of the main factors preventing access to seed is a lack of inclusive finance and funding. As Anushka Ratnayake of myAgro explained, cash-poor smallholders often lack funds when they need them most. Divorced from microfinance institutions, they are unable to save and acquire the inputs they need, with no money at planting time to invest in seed, fertilizer, or crop protection.

myAgro tackles this problem by promoting 'layaway' payments by smallholders. This model enables farmers to top up accounts for seed and fertilizer, as they would for a mobile phone, at 650 local shops in Mali and Senegal. myAgro then buys the pre-ordered products in bulk, checks the promised quality, and delivers them to farmers before planting time. "We also," explained Ratnayake, "provide technical training so farmers can use these inputs well."

But as Ratnayake has found, resolving smallholder cash-flow problems is only half the battle. In 2015, despite having a network of 6,000 groundnut farmers, myAgro stepped out of the groundnut market due to lack of quality seed. "We had a $100,000 check," said Ratnayake, "farmers who were willing to pay, and yet we couldn't find anyone to fulfil our order."

According to Susan Mureithi, Managing Director of Suera, a leading Kenyan potato seed producer and rose grower, the market's inability to meet such demand can also be finance-related. "Financing is often a problem for producers," said Mureithi. "It's expensive to produce seed, and the banks are not forthcoming in support of agriculture."

This is a view echoed by Felister Makini, Head of Crops at KALRO, Kenya's national agricultural research organization. She said that producers want to breed in response to market demand, but need to be paid for developing new varieties. Only financial support for breeder seed and foundation seed development will improve access and availability.

Richard Jones, AGRA, added that catalytic investment is essential to help SMEs mitigate the inherent risks of doing business in Africa. In Ethiopia, for example, AGRA is currently supporting a project to develop chickpea inoculum, without which chickpea yields will remain far below their potential. Without risk-mitigating upfront investment, such projects would never get off the ground. But as Anushka Ratnayake remarked, investments need to be sustained and customer-driven if they are to have a lasting impact.

Trust and transparency

Another enabler of expanded seed access is trust. Trust is the vital ingredient for the kind of collaboration required to deliver seed to farmers along a multi-stakeholder value chain.

Alluding to its trade arrangements with the Netherlands, Ian Barker pointed out that Suera pays royalties back to Dutch companies to maintain innovation in rose breeding. But in Africa, in the staple crop market, breeders receive no such royalties. So, how does one create the conditions in which more trusted, mutually beneficial in-country partnerships can be formed?

According to Richard Jones, the first step is to discourage any government and NGO interventions that are too short-term. These often disrupt the seed market and break the relationship between seed producers and buyers. “If you don’t have that relationship,” said Jones, “you don’t have trust. And trust is essential.”

Panel members also suggested that PPPs need to be more equitable and transparent. Paying royalties to research bodies that already receive public funding, for example, or prioritizing high-margin seed varieties over those of greatest value to smallholders, can also erode the trust required for successful partnership. As Anushka Ratnayake observed, “both the seed producers and the seed companies need to think of the customers. They are the ones who either continue to purchase or stop doing so, based on quality. So the connection here is important.”

One suggestion was for increased transparency around evolving market demand for agricultural products. This would enable seed producers and intermediaries like myAgro to guide smallholders in their seed use, which in turn would shape future investments in breeding and seed production.

"We have all the pieces and all the key players in place – the farmers, the seed producers, the private enterprises, and organizations like the Syngenta Foundation. What we need now is to improve the connections between these people to really make things happen."

Susan Mureithi

Seeds of change

With the debate opened up to the audience, additional voices reaffirmed some of the points articulated by the panelists. Jonathan Moss of Kisima, a producer of certified seed potatoes, explained that the nature of the market in Kenya, where 300,000 tonnes of potatoes are planted annually, enables his company to have a non-exclusive licensing arrangement with KALRO. For Moss, improving access to seed requires private breeders to be more responsive to the needs of farmers, and public breeders to be more mindful of those of the urban processing market.

Denis Kyetere, of the African Agriculture and Technology Foundation (AATF), declared that bottlenecks around foundation seed hamper the entire system for high-quality seed. Regulation, it seems, has not kept pace with liberalization of the seed sector. The quality of seed coming out of the system is often inferior to that which farmers can produce themselves. "And why," asked Richard Jones, "would farmers buy something of inferior quality?"

Improving function and regulation within the sector is therefore critical. So is the exploration of alternative funding models – such as that offered by myAgro – to enable farmers to purchase inputs. Susan Mureithi also suggested that seed producers should consider offering tailored and longer-term financing options, for example, for customers facing difficulties borrowing from banks.

Finally, panelists agreed that social enterprises have a crucial role to play. myAgro's efforts to aggregate demand for seed, take seed the 'last mile' to the village, and link sales to flexible credit, offer valuable lessons in how external, well-conceived interventions can help to bridge some of the gaps in the value chain.

In Kenya, 68% of smallholder farmers use hybrid maize, which they can obtain from 35 different seed companies. Such choices are still unavailable in most other crops.

Conditions for disseminating weather insurance at scale

Opening remarks by Annette Detken, KfW.

Panel: Rien Hazeleger, Oikocredit, Dan Osgood, Earth Institute, Reto Schnarwiler, Swiss Re, Marc Tison, Zing, James Wambugu, UAP.

Moderator: Olga Speckhardt, SFSA

According to the World Bank, a billion people have been taken out of poverty over the last 15 years. But in the same period, natural disasters pushed 400 million people into poverty. Providing a vital safety net for farmers and rural communities, climate and agricultural insurance is becoming an increasingly effective risk-mitigation mechanism.

To introduce this panel session, Annette Detken from KfW Development Bank opened with a quote from Mark Twain, who once said: "A banker is a fellow who will lend you his umbrella when the sun is shining, but wants it back the minute it begins to rain."

Keen to prove the 19th century American author wrong, Annette spoke of her deep personal passion for insurance, and described its rising profile and importance in the world of development finance, based on three key indicators:

- Firstly, insurance has been officially endorsed at international level as an essential and effective instrument for reducing the financial impact of natural disasters.

- Secondly, insurance contributes to one-third of the 17 Sustainable Development Goals (SDGs), and is recognized as a valuable component of risk management strategies across a range of sectors.

- Thirdly, 90% of disasters are related to weather and climate risk, and in the UN's 2015 Paris Agreement the value of insurance was recognized, for the first time ever, in an international document[8].

As a result of growing international awareness, the German government has promoted a G7 initiative to provide climate insurance to 400 million poor and vulnerable people by 2020. Having advised on these commitments, KfW has now shifted its emphasis from policy guidance to tangible action. The bank is currently setting up projects to develop climate risk and agricultural insurance products with partner countries. These efforts include mobilizing private investment, and could help demonstrate that, as Detken said; "There are, in fact, bankers who will lend you an umbrella when you need it most!"

A virtuous cycle of resilience

Agriculture is a risky business, and yet few farmers in developing countries have insurance. As Reto Schnarwiler from Swiss Re explained, in 2016 the total economic damage from natural catastrophes was around $166 billion. But only around about a quarter of this amount was insured, leaving a burden of roughly $120 billion on individuals, typically the poor, together with governments and international donors. In such situations, uninsured farmers often have to sell land or other assets to cover their losses, leaving them even less able to earn a living or cope with future disasters.

With insurance, however, farmers have a safety net to help mitigate weather and climate risks. Once claims are paid out to cover their damages, they can repurchase the inputs they need, and reinvest in their crops. But beyond just being a buffer, insurance can also have a catalytic impact. As Detken remarked, it has the potential to "shift entire systems to higher growth trajectories and development." Indeed, insurance leads to increased adaptive capacity, enabling farmers to boost savings while encouraging investments in higher-risk and higher-return activities. In this way, Detken concluded, it "keeps productivity and wealth in-country, and creates a virtuous cycle of resilience".

Delivering at scale

But how do companies disseminate insurance programs and products at the scale required in developing countries?

In answer to this question, all panel members agreed that collaboration is key. James Wambugu, from UAP, noted that local and national bodies often struggle to deliver at scale, whereas the pooling of public and private expertise, with additional international support, often succeeds. “We also need significant farmer education,” said Wambugu, “and we need to work with aggregators.” He also noted that the public sector needs to invest in supportive infrastructure, expanding the density of weather stations, for example.

Reto Schnarwiler concurred, adding that alignment of interest between collaborating parties is essential. “While Swiss Re can design the products,” he explained, “we need organizations like ACRE Africa[9] to raise awareness, explain how insurance works, and distribute products on the ground.” Schnarwiler also said that, whereas Swiss Re used to work with small pilot schemes and NGOs, its support now depends on the potential for scalability. “We need to reach hundreds of thousands of people to really make a difference and have an impact. ACRE Africa already serves 1.3 million smallholders, so there really is huge potential.”

Rien Hazeleger from Oikocredit said that linking micro-insurance with microcredit can provide great opportunities: “Microfinance institutions offer a really effective distribution channel for scaling up, [and could also enable] the delivery of a broad set of financial services to low-income people.”

“Insurance keeps productivity and wealth in-country, and creates a virtuous cycle of resilience.”

Annette Detken

Harnessing technology and data

Technology is also integral to the successful dissemination of weather insurance. Introducing this theme, Reto Schnarwiler described how in northern Kenya, early-detection satellite systems measure the greenness of pastures. When the grass is thin on the ground, those farmers whose animals no longer have enough fodder receive pay-outs to replenish their stocks. This innovative scheme means that farmers do not have to wait with a claim until their animals die. During recent droughts, 12,000 farmers benefitted from these pre-emptive payments. Using technology in this way, Schnarwiler described how "we always try to be very creative and push the limits of what is insurable, and what is most useful for the farmer."

Rien Hazeleger and Marc Tison (Zing) said the sale and payment of insurance via mobile technology can encourage take-up. Tison described how innovative index insurance models enable claims to be paid in under four minutes. With the use of social data and on-the-ground assessors, Zing is able to verify claims at speed and make payments via mobile networks. This not only attracts new policy holders but "changes the way actuaries think." As Tison reflected: "You have to be super-efficient to get into new markets with insurance, so technology becomes key."

For technology to succeed in this way, high-quality data is essential. Dan Osgood, from the Earth Institute at Columbia University, uses climate science and climate knowledge to inform economic development and insurance programs. Helping institutions and individuals understand remote sensing and climatic data, Osgood and his team enable insurance providers to "focus on the things that really matter for the end user".

"Insurance has to be engineered to a very specific problem," explained Osgood. "When using data, farmers' voices have to drive the process, to know that the satellite is seeing the thing they need insured. As we harness these big data technologies, it's about finding the story to address issues of accuracy with information, and finding the solution where insurance makes sense."

A combination of these technological innovations with multiparty collaboration, a marriage of microfinance and micro-insurance, and encouragement to lending institutions to engage more actively may together provide the ingredients required to build the market for smallholder weather insurance.

Dan Osgood warns, however, that even with the most advanced data and systems, "there's still plenty of heavy lifting ahead". As he concluded: "We have these technologies that give voice to farmers, but we're going to have to take them to a much higher level to meet demand as the world gets tougher."

In 2016 the total economic damage from natural catastrophes was around $166 billion. But only about a quarter of that amount was insured.

Additional panel perspectives

In addition to the panels on seed access and weather insurance, *Scaling up through enterprise* hosted discussions on a number of related topics. Here, we summarize some of the key messages and insights that emerged from these sessions.

In a panel discussion entitled **Private profit, public benefit? Companies' role in smallholder development**, John Atkin from the SFSA Board spoke of the difficulties of encouraging private companies to engage with "people who don't farm profitably". At the same, he highlighted NGOs' opposition to government cooperation with the private sector. Citing the reputational damage to companies related to issues with pesticides, GMOs, etc., Atkin said that NGOs "don't want any errors of industrial farming to be translated into the developing world". While acknowledging that mistakes have been made in the 70-year evolution of the industry, Atkin asserted that the development of technology in seeds, chemicals, equipment, and agronomy has all been for the good. Blocking smallholders' access to such technology for ideological reasons would be reprehensible.

"The world is changing, and we must not deploy the same solutions as we have in the past."

Mohamed Ait Kadi

Michael Hamp explained that his organization, IFAD, is the only financing institution within the UN, and has the goal of eradicating rural poverty in developing countries. In support of this goal, IFAD's main mandate is to empower young people in agricultural value chains. IFAD also focuses on expanding the definition and composition of Public-Private Partnerships. Producers, he said, are often not fairly represented in PPPs. So, at IFAD they refer to, and focus on building, "Public-Private-Producer Partnerships".

For Maurice Maloney, from the Global Institute for Food Security (GIFS), a major step change is needed in the food system: "We can't achieve the 70% increase in food production required by 2050 by relying on conventional plant breeding". The answer, perhaps, is to accelerate the shift of discovery science into the developing world, where it could play a vital role in delivery chains. As an example, Maloney referenced recent projects to deliver high-quality chickpeas in Ethiopia. Enhanced quality control and distribution, and a focus "on every piece of the value chain", have provided a sustainable source of nutrition.

Juan Gonzalez-Valero from Syngenta agreed. He explained how the company's Good Growth Plan helps, among other activities, to provide farmers with the tools they need to make a decent living. In addition, Gonzalez-Valero noted that collaboration with adjacent sectors is required to deliver at scale and unlock future potential. He also suggested that such collaboration needs to include impact evidence from evaluative assessments. In the *Good Growth Plan*, Syngenta works with a range of partners worldwide.

"More scale up, less slow down: what should the private and public sectors do better?"

Kicking off the final panel discussion, SFSA's new Executive Director, Simon Winter, said "We need to move beyond technology to address the challenges we face, and focus on improving the quality of production and engagement with markets".

For the private sector, Winter continued, the identification of partners is critical. Companies need to build multi-stakeholder platforms and consider how different partners will work together. Day-by-day measurement of progress is also vital, rather than impact assessment "way down the line".

Regarding the public sector, engagement with private companies brings not only innovation, but all the capacity-building and facilitation that surrounds it. Individuals and organizations within the public sector need to be agile in their learning processes. "They mustn't underpin risk with a one-size-fits-all guarantee, [but instead] need to pick each risk apart."

Mohamed Ait Kadi, from the SFSA Board, described Morocco as "a shining example of what can happen in agricultural development." Through the *Green Morocco Plan*, his native country has transformed its agricultural sector to generate wealth and gainful employment. In doing so, it has made a decisive break with dominant development models – models which, in other parts of the world, have left behind the large proportion of small-holders and inhibited innovation potential. But increasing support to smallholders does not mean ignoring large farms; both are important for growth and food security. "What's critical is that governments guide agricultural reforms, and enable stronger partnership with the private sector", added Ait Kadi, who is President of Morocco's General Council of Agricultural Development.

Chris Brett from the World Bank said that with every partnership, "people fear they may lose proprietary knowledge, ownership and control; so there has to be an understanding of both the public good and the private good; we have to be very clear on this."

For Markus Palenburg of IfDS, his evaluation of Harvest Plus[10] in 2006 showed him "that 'delivery' is all about the sustainable integration of a seed and a crop into a country". Such projects take long-term commitment, and Palenburg warned of "the scourge of short-termism". Observing that projects often get stuck with short-term funding, he said that one-off, quick-hit investment is never enough to create a sustainable project platform. But Palenburg added that he took heart from what others had said during the conference: "We've heard from doers, not donors – real concrete examples and solutions, not just theoretical talk, and that is really inspiring."

"Listening to the discussions, I'm optimistic – but it's clear there's a lot of work to be done. Index insurance is complex and we need to be realistic about the challenges ahead."

Dan Osgood

"I had not given much thought to the shift towards the urban markets, and how these markets require new standards and focus. The insight on this from the keynote speeches was really interesting."

Felister Makini

Conclusion and outlook

In the closing session, Marco Ferroni, as SFSA Executive Director, reflected on the day's discussions, key messages, and implications.

Our goal is to drive transformational change in agriculture. But agriculture, as we know, is complicated. Supply-driven, externally imposed solutions do not work, and investments in agricultural value chains rarely deliver results in their first phase. The agricultural sector is also far less homogenous than, say, finance, which means the transaction costs of working in this space are necessarily high.

So, we have to engage in a differentiated analysis of farmers, locations and agro-ecologies, and accept that transformation has left certain smallholders vulnerable – some more so than ever before. Yes, the medium-sized, entrepreneurial farmers have advanced, consolidating their landholdings, engaging with technology, and achieving an incipient level of concentration in production – all of which makes it easier to link them to markets. But their progress means it is even more difficult now to work with pre-commercial farmers, those who have been left behind.

A sea of subsistence farmers

When I started my career, agriculture in the developing world was a sea of subsistence farmers. Now, with economic growth in Africa since 2000, and in India since the early 1990s, accelerated change in agriculture is achievable. We cannot go back to the development philosophy of subsistence farming, because that is a recipe for poverty.

So, the question is, how can we bring dynamism into agriculture to reach those who are at the poorest end of the social spectrum? How do we encourage and enable the private sector to work not only with the commercial small farm population, but with the pre-commercials as far down in the direction of subsistence-oriented farming as possible? And how do we raise subsistence farmers up to a higher level of development and market articulation, with increased productivity and use of technology – to the level where we as a Foundation operate and where we can make a difference?

Meeting unmet need

The panel discussions at our conference attempted to tackle many of these questions. Of course, our operational work at SFSA goes much deeper into specifics than was possible to elucidate in the sessions on insurance and seeds. But the discussion on seeds in particular was really clear with respect to Africa: there is a huge unmet demand for seed, and the gaps that exist can only be bridged by developing seed industries. Indeed, with the exception of city states like Singapore or Monaco, there are no fully food-secure countries that do not have a functioning seed industry. And to build such industries in developing countries, we need to make the interface between the public and private sector more agile.

The other clear message was that we need to do as much as we can in weather insurance to reduce risk for the farmer. At the same time, we need work on crop genetics to develop and introduce drought-tolerant varieties. At SFSA, we need to think more about index insurance and how can we apply our tools, and the tools of our partners, to the task of reducing risk to a point where insurance becomes more defined and residual, and therefore by definition more affordable for the farmer.

Overall, ***Scaling up through enterprise*** generated many inspiring discussions, and identified many tangible action points regarding the future direction of private enterprise support for smallholder development.
I would like to thank all our panelists in US, moderators, and everyone else involved in making the conference such a valuable and enjoyable occasion.

Marco Ferroni

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