THIS IS

Africa

A GLOBAL PERSPECTIVE SPECIAL REPORT

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PRIVATE SECTOR
Commercialising smallholder production

POLICY
Enabling environment is key to growth

COMMENT
Andris Piebalgs, Michael Hailu, Ram Bhavani and Khalid Bomba

AGRICULTURE

Smallholder value chains

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The Technical Centre for Agricultural and Rural Cooperation (CTA) is a joint international institution of the African, Caribbean and Pacific (ACP) Group of States and the European Union (EU). Its mission is to advance food and nutritional security, increase prosperity and encourage sound natural resource management in ACP countries. It provides access to information and knowledge, facilitates policy dialogue and strengthens the capacity of agricultural and rural development institutions and communities. CTA operates under the framework of the Cotonou Agreement and is funded by the EU.
For more information on CTA visit, www.cta.int

CONTENTS

Andris Piebalgs
p10

Michael Hailu

Director of the CTA

"As value chains become more inclusive, smallholder farmers can access markets that would previously have been denied to them"

As smallholder farmers provide the bulk of food produced in developing countries — up to 80 percent in sub-Saharan Africa — and agriculture employs the majority of the labour force, real transformation in the sector will not happen without the integration of smallholders into markets. Farming must be transformed from a largely subsistence activity to one that is run as a business and generates enough income that smallholders can improve their livelihoods and make a greater contribution to the national economy. For the poorest people, GDP growth originating from agriculture is about four times more effective at raising incomes than growth outside the sector.

On the other hand, populations in urban areas are expanding and the urban middle class is growing rapidly, becoming increasingly affluent and demanding new kinds of foods. Meanwhile, rural areas are suffering from an ageing farming population and a reluctance of young people to work in agriculture. Rising food prices suggest that productivity is not keeping up with demand. Clinging to the old ways of farming is simply no longer feasible. A transformation is required.

Value chains can play a vital role in such a transformation. Improved linkages between farmers and buyers can ensure that farmers tailor their production to meet the demands of the market, rather than simply hope that they can find a market. This will reduce wastage. As value chains become more inclusive, smallholder farmers can access markets that would previously have been denied to them. They can become more actively engaged in adding value to products, by improving quality, packaging and presentation.

Value chains can facilitate input supply and finance. This means that processors have greater assurance of raw material supply, thus increasing the use of their processing capacity, reducing costs, and offering reliable employment opportunities. Moreover, developing strong linkages with buyers such as importers and supermarkets provides scope for processors, wholesalers and exporters to innovate. Last but not least, issues of environmental sustainability can be more easily addressed through collaborative chains than when farmers produce in an ad hoc way.

The international conference, 'Making The Connection: Value Chains For Smallholder Agriculture', held in Addis Ababa in November 2012, brought together around 500 participants representing the private sector, governments, civil society, donors, international organisations, farmer organisations, academia and the media. About 70 percent of the participants came from Africa. CTA was gratified not only by the large number of participants but also by the support provided by many other organisations.

During the conference there was much talk about the importance of improving 'enabling environments' in order to facilitate the ease of doing business for agricultural value chains. It was noted that policy changes, while welcome, are not always sufficient as they can be frustrated by poor implementation or by misinterpretation at provincial levels. Artificial barriers to trade can be particularly costly when trying to promote intra-regional trade. These comprise slow and bureaucratic customs procedures, excessive regulation, official and unofficial road blocks and high transport costs. Participants felt that with appropriate policy conditions and supporting infrastructure, African farmers would be well-placed to exploit both intra-regional and national markets, competing with supplies presently coming from other continents.

CTA attaches considerable importance to the improvement of training and training materials for agricultural development. Training at all levels is essential if greater value chain efficiency is to be achieved, including training in techniques for analysing value chains themselves. It was good to note that universities are already upgrading agribusiness curricula but more could be done and there remains a shortage of appropriate training materials. The weakness of agricultural extension services was once again highlighted and participants also noted that extension support needs to become more market-oriented. The potential for extension to be provided through contract farming arrangements was also noted.

A further priority for CTA is the promotion of improved communication. The conference highlighted the important role that Information and Communication Technologies (ICTs), in particular web and mobile-based solutions, can play in improving the sharing of information and the linkages between the various actors in value chains. ICT-based market information services were considered as key when it comes to boosting agricultural trade. Discussions clearly showed that Africa is a leader in providing innovative ICT services in agriculture.

Successful value chains depend on the willingness of all chain actors to communicate, coordinate and collaborate. There is much scope for multi-stakeholder action, either to address weaknesses in individual chains or to bring together those involved with a particular commodity, including farmer representatives, into associations to resolve common problems and to act as a forum for policy dialogue. We also hope to build on the excellent collaboration shown by those involved in running the conference in order to promote improved coordination among donor agencies and a better alignment of their work to Africa's priorities.

We are determined that the conferenc will not turn out to be 'just another meeting' and we are taking steps to ensure that the contacts made at the conference and the issues raised will be fully followed up. *This is Africa's* decision to produce a Special Report on agricultural value chains emphasises the importance now being attached to the topic in Africa and will help to expose the issues discussed at the conference to a wider audience. On behalf of CTA I would like to express our appreciation for the support shown by the publication.

PHOTO: GETTY

CLOCKWISE FROM LEFT:
Mayasa Ayoub Simba of the Tanzanian Dairy Board discusses smallholder participation in livestock value chains at CTA's 'Making The Connection' conference

An audience of 500 delegates see Ambassador Gary Quince, EU representative to the African Union, bring the conference to a close

Ethiopian entrepreneur, Daniel Gad, gives a keynote speech

"Successful value chains depend on the willingness of all chain actors to communicate, coordinate and collaborate"

Commercialising smallholder production

Smallholders can play a role in delivering food to meet growing demand, but a proactive business mindset will be needed to link producers to consumers

Smallholder farmers can play an important role in meeting growing food supply challenges. In fact, they already provide up to 80 percent of the food produced in sub-Saharan Africa. But there is a need for improved skills in financial management, marketing and business to turn agriculture from a subsistence or low-yield activity into a viable business proposition.

Across Africa, the Caribbean and the Pacific regions, product marketing is still largely informal, quantities supplied are not always consistent and a lack of access to credit is a perpetual problem. Add to this the problems of poor infrastructure, unproductive growing techniques and a lack of technology across many countries, and it is clear why so many smallholder producers are caught in a low-yield trap: less produce means less cash, which reduces their appetite to invest or take production risks.

Of course, smallholders are entrepreneurial; they depend for their livelihood on their own efforts. But they are also at the mercy of exogenous factors, be those weather, price changes or infrastructure. Farmers are risk-averse when it comes to adopting new technologies and techniques because they have no margin for error. However, efforts are being made to change that.

In Ethiopia, the Agricultural Transformation Agency has sought to demonstrate new technologies at farmer training centres; patches of land on which farmers are shown modern planting techniques and are able to practice on small comparison sites. This enables them to see first hand the effects of new methods before taking the gamble of trying the techniques on their own land.

"Using the services given by the development agencies, we are planting in a row with reduced seed rate and also using transplanting," says Engida Kelkile, an Ethiopian farmer of tef – a local cereal – in Debrezeit, a city in the Oromia region. Another farmer working in the same plot, Worko Mojo, says he called in to participate in the scheme of his own volition. "What I see here, I apply on my farmland," he says. Yield has increased two- to three-fold.

These smallholders argue their living conditions are improving, and that the gaps between rural and urban living standards are starting to narrow. "Even in the urban population, there are many people living below the level of farmers," says one agricultural extension officer. "We have a good house compared to urban people," another farmer adds.

Might these improvements help encourage young people to go into agriculture? It is a challenge, the farmers admit. "Our agriculture is labour-intensive; it needs you to work to the maximum, not like in offices. It is dirty work, you don't have a lot of machines," says Mr Kelkile. "Youngsters want clean work."

Mechanisation could change that. "If we use machinery and our agriculture is less labour-intensive, youngsters will come," he argues. "We will have to bring back the youngsters with a better way of working."

Across the continent in Sierra Leone, smallholders are also picking up skills in business and marketing via farmer-based organisations and agriculture business centres. These bodies provide support with inputs such as seeds and fertiliser and the opportunity to pool money together to purchase equipment and to sell produce in bulk. Leaders of the group receive business training, which they take back to the farm families in their local areas.

"We're learning methods on how to make a profit. We've learned how to do a SWOT analysis," says Saika Fornia, an ABC leader from the Kenema District in the eastern part of the country.

Consumer preferences

In some contexts, marketing knowledge is insufficient. While there is demand for milled rice in Sierra Leone, for example, it does not seem to be encouraging the private sector. "They don't process it because they don't know people want it, so it's a Catch-22," explains Francis Bereaa, regional manager for the African Foundation for Development in Sierra Leone (AFFORD-SL), a business-focused NGO.

In Ethiopia, marketing knowledge is growing. Around 75 percent of Ethiopian tef goes to market, with the rest consumed by the farmer and his or her family. Tef farmers are responsive to consumer preferences. Some have begun to prioritise growing white tef, for instance, for which demand is higher.

Further up the value chain, market preferences are also being recognised. Hailu Tessema is managing director of Mama Fresh Injera, which processes a traditional Ethiopian bread made from tef. The company's name signals its global ambitions. "We picked Mama Injera because we are thinking of an international market. All people call their mother 'mama'. It's easy to catch! And everyone loves his mama. So Mama Fresh Injera loves everyone," he laughs.

From the company's premises in Cherkos, an outskirt of Addis, Mama Fresh Injera supplies major hotel chains including the Sheraton and the Hilton. The company has seen marked export growth to the US, Sweden, Canada and Israel.

Established in 2003 as a micro enterprise, it is an encouraging example of the ability of actors in the value-added chain to move to scale. Today the company has 135 employees, mostly women, and had revenues of 16 million birr in 2011 ($881,439). The Ethiopian government assisted the company in its growth drive with a $200,000 award, part of the 'Ethiopian Competitive Facilitator' initiative. Mr Tessema proudly displays pictures in which he is bestowed with awards from Meles Zenawi, the former prime minister, and the mayor of Addis Ababa.

A well-managed workforce and organisational know-how are also critical to break into international markets.

"We put an office in each chiefdom, along with drying and fermentation facilities...almost everything needed to grow, process, bag, market, transport to Freetown and ship," says Medgar Brown, managing director of Balmed Holdings Ltd, an indigenous Sierra Leonean trading company that has morphed into a full-scale grower, processor and packager of cocoa, coffee, cashew nuts and most recently, pineapples.

Mr Brown notes that having all the processes close to the fields allows for the enhanced traceability needed for the various fair trade certifications, a key stamp for many developed market consumers.

But while some producers look to rich market exports, it is worth noting that a high growth rate in Africa, and other emerging areas, means producers can look to meet regional demand first. "The domestic market here in Ethiopia, especially with its growing population and changing tastes and demand from the urban centres, offers a huge opportunity for smallholder farmers," says Khalid Bomba, CEO of the Ethiopian Agricultural Transformation Agency. This is a helpful dynamic for the likes of landlocked Ethiopia, where many goods are exported by ship from Djibouti, a three day truck journey away.

That said, local and regional agricultural markets are often dysfunctional in Africa, affecting perishable produce, as well as inputs such as fertiliser. Farmers in Africa, and in landlocked countries especially, pay far higher prices for fertiliser than farmers in most other developing regions, pushing up other costs. In coastal Sierra Leone, high petrol and diesel costs – at about $5 a gallon ($1.05 per litre) – drive up the price of trade. One agribusiness group at Nongowa, for instance, sells a single 50-kilogram bag of fertiliser for 117,250 leones ($27), which includes a base cost of 87,000 leones ($20) and 2,500 leones (58 cents) for transporting each bag slightly under 200 miles from Freetown.

Employment

Stakeholders are also focusing on job creation via agri-processing, and some companies are achieving employment outcomes even in modest value-added activities. In one bean processing plant in Nazret, in the Oromia region of Ethiopia, the employment benefits of international value chains become apparent. In this business, which supplies the multinational company ACOS Italy, women sift and sort the beans, weeding out dust, grass, stones, and identifying beans that are off-colour, stained or of deficient quality while men operate the fumigators and lug the heavy sacks around the buildings.

For the female workers, pay is modest – around 600 birr ($33) a month – but they get free schooling for their children, subsidised food, medical insurance and a pension. In the canteen, where a television quietly hums in the corner, they pay 5 birr per meal, as compared to around 15 to 20 birr on the open market.

Back in Sierra Leone, Balmed Holdings, has an impressive employment impact. The company has developed a block farming system in which it leases land directly from local landowners and employs the local youth to tend to the crops on it. Sixty percent of the market price of cocoa is divided into thirds. The first third goes to the landowner, who doesn't have to do anything but allow the youth to care for the crops. The second third goes to pay the youth who toil the land and receive meals, adult literacy classes and business training from Balmed. The final third goes to the company to cover costs, as Balmed pays for processing, marketing and shipping. The company has planted 1,500 acres using this model and is looking to expand by another 1,000 annually going forward.

Partnerships

Partnerships will prove central if value chains are to be transformed. NGOs are emerging as key agents in supporting agricultural producers and are delivering business management services through coaching programmes. They can also be trail-blazers. "NGOs are well placed to try out new approaches and experiment and when their initiatives work they can be taken up by the private sector," says Larry Attipoe, a value chain specialist at SNV Netherlands.

Private sector players are providing business services too. Sustainable Management Services is one firm which conducts farmer training to improve yields. However, over time, the setup may need to evolve as a subsidy is still provided.

"We hope that we will get to the stage where farmers are willing to pay modest sums for the extension services," says Thomas Delbar, assistant manager at ECOM, a multinational that funds farmer training from its trading margins, and subsidises the activities of Sustainable Management Services. "Ultimately, there can be no free lunches."

Large companies also need to change how they look at the smallholders' place in the supply chain. Incorporating large numbers of dispersed producers without incurring high transaction costs is testing. However, as demand for food increases, businesses in the food and beverage sector are faced with the challenge of expanding their supply base.

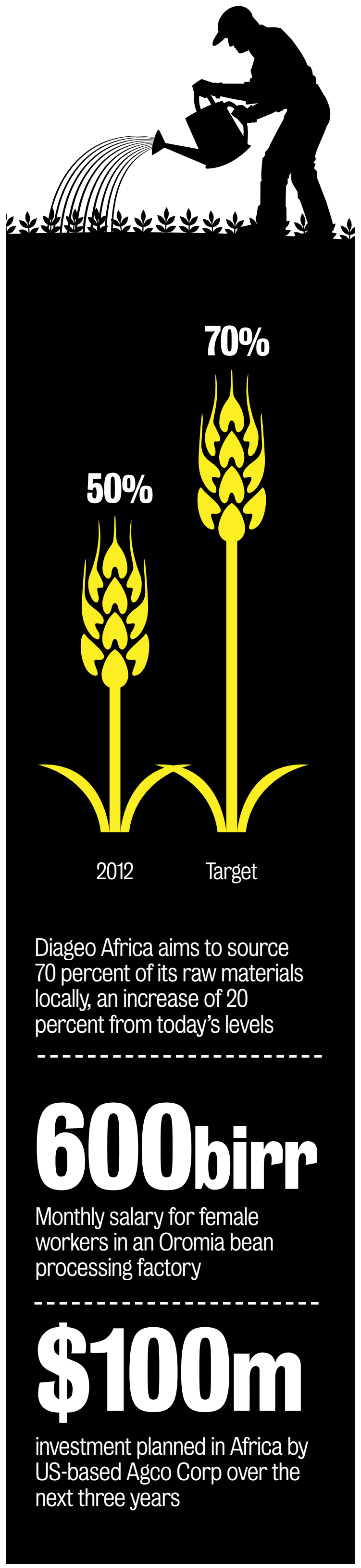
Aware of constraints to land, water, growing seasons and productivity, more and more multinationals are forming synergies with smallholders, often through contract farming schemes which offer control over supply and quality, and reduce production and transaction costs. In some cases, smallholder-based production is rewarded by governments with excise tax breaks.

Brewers, which require large amounts of agricultural raw materials, are noteable in this space. In Africa, Diageo, the world's biggest drinks company by sales, sources about 50 percent of its raw materials locally – a 10 percent increase since 2007. It aims to increase local sourcing to 70 percent. Its competitor SABMiller, meanwhile, procures inputs including barley and sorghum directly from 20,000 smallholder farmers in Africa, and aims to increase local sourcing of raw materials to 50 percent over the next two years.

"Many of our smallholder farmers have previously been subsistence farmers and by creating market opportunities for subsistence farmers in our value chains, we are able to increase their productivity, allowing them to... generate an income for the first time," says Andy Wales, senior vice president of sustainable development at SABMiller.

The company pioneered the smallholder sourcing approach with the launch of Eagle Lager in 2002. Using locally grown sorghum instead of more expensive imported barley, Eagle Lager today accounts for over 30 percent of the market in Uganda and supports 9,000 smallholder farmers.

Last year SAB became the first brewer to produce commercial-scale beer from cassava. Named Impala lager and brewed in Mozambique, the venture created new employment for 1,500 smallholder farmers. "This has the potential to be developed in many other markets around Africa, where cassava is the most widely-grown, but least commercialised, crop," Mr Wales points out.



SABMiller's success will be dependent on its local value chains, he argues. "Beer is a local business and our success is inextricably linked to that of the communities in which we operate. So we work to build value chains that drive economic growth and stimulate social development. By doing this, we can generate long-term returns for our business while also creating wealth for our local communities."

Like its rival, Diageo is also building contract farming models that connect local smallholder farmers with large, dependable commercial markets. This year, the group has signed memorandums of understanding for a scalable barley farming project in Ethiopia and a sorghum value chain project in Tanzania.

Other companies have played a more controversial role. When Walmart announced its acquisition of South African retailer Massmart in 2010, concerns regarding the undercutting of local producers abounded. However, the US retail giant won regulatory approval of its $2.4bn deal in March 2012 with the consensus that there was value for South African suppliers in accessing a global supply chain for the first time.

Walmart is now introducing a direct farming project in South Africa. The scheme has been a success in India and other emerging markets, bringing more locally grown food into the group's supply chain, reducing input costs, and raising farmer profits, the group argues. Massmart aims to source 30 percent of its fresh produce from smallholders through the project, it says – a number that would require 1,500 farmers to be connected to the group's value chain by 2016.

It is not only consumer goods groups who are involved. Machinery makers are also eyeing opportunities on the continent. With only 10 percent of cropped land in Africa prepared by tractor, and only 4 percent of land irrigated, there are major openings. US-based Agco Corp., the world's third-largest farm equipment maker, is responding to this with plans to invest $100m in Africa over the next three years.

For many emerging regions, the Green Revolution has been elusive for decades. Working together, businesses, governments and agricultural producers across the Africa, the Caribbean and the Pacific could deliver the agricultural renaissance their populations need.

Regional markets: transport barriers

The trucking industry in Pakistan shares similarities with Africa, including ageing trucks, poor transport infrastructure, and low wage levels for drivers. Yet Pakistani transport prices are a fraction of those in sub-Saharan Africa

On-the-road barriers

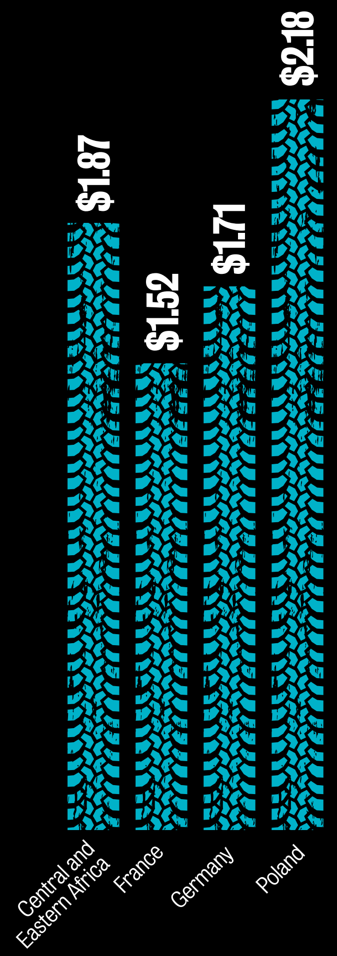
- Checkpoints
- Administrative procedures
- Export and import bans, variable import tariffs and quotas, restrictive rules of origin, and price controls
- Illegal payments, intimidation and harassment at border crossings

Bribes

Tanzanian transport companies each pay $12,640 per month in bribes to authorities. Their Kenyan counterparts pay an average of $6,715 a month each in bribes to revenue authorities, police officers and customs officials

Source: Transparency international, IFAD, World Bank

Average transport costs per km



Cost of transport along major corridors is not significantly higher in sub-Saharan Africa than in some European countries. However, profit margins for trucking companies are often very high, reaching 118 percent on the Ngaondere-N'Djamena corridor

50%

World Bank estimates suggest that reform delivering a more competitive transport sector could halve the cost of moving staples in West Africa within 10 years. This could transform productivity.

A 50 percent reduction in transport costs in Mozambique would increase real agricultural GDP by 7 percent

Checkpoints, bribes and delays on corridors in West Africa

Source: West African Trade Hub

Andris Piebalgs

Commissioner for Development at the European Union

"We must strengthen countries' resilience towards food price shocks and changing climate patterns"

INTERVIEW BY ELEANOR WHITEHEAD

When *This is Africa* travelled to Brussels to meet Andris Piebalgs to discuss agricultural development, the streets were blocked by striking Belgian farmers. The country's agriculturalists may be facing their own constraints, but the thoughts of the European Union's commissioner for development are further afield.

The Latvian-born politician has put agriculture at the core of the EU's development policy, and his vision is clear: the invigoration of the sector in African, Caribbean and Pacific countries must be led by the smallholder.

"We should not be arrogant against the smallholder – 80 percent of Africa's agricultural production today is actually created by these smallholder farmers, so it gives employment and these are the traditional structures," Mr Piebalgs says from his European Commission office.

"We should not say that the EU agricultural pattern will be replicated in Africa or the Caribbean and Pacific. We should not think that it will be just a couple of farmers, hundreds of hectares of land and huge productivity. It should be looked on with respect that they will use a model which suits their needs, and that they will not necessarily repeat our pattern."

For this reason, the Commission prioritises smallholder development and food security. "Agriculture gives roughly 70 percent of employment and 30 percent of the GDP of a lot of these countries," Mr Piebalgs explains. "By 2050, even with urbanisation, 40 percent of Africans will still live in rural areas. That means 900m people who need jobs and a means to live. So there is a challenge and at the same time an opportunity in this sector for creating jobs, prosperity and welfare."

The EU and ACP agriculture

The EU cannot single-handedly support whole value chains, and the approach going forward will be to target constraints on a case-by-case basis, Mr Piebalgs says: "We will be looking in a lot more detail at the bottlenecks in each country. Is the problem access to finance? If so, let's deal with this. Is it access to energy? Let's deal with this. Is it roads? It will be a tailor-made approach. It will not cover each and every area, but what it must do is strengthen countries' resilience towards food price shocks and changing climate patterns."

Apart from prioritising water supply across the continent, the EU's work varies by country. In Rwanda, for instance, it is investing in land productivity through capital-intensive terracing. It also supports coffee production. In Ethiopia, it focuses on rural roads and access to markets, while supporting that market via the Ethiopia Commodity Exchange, which was established in 2008.

Regions that are particularly vulnerable to climatic shocks will be at the top of the EU's priority list. "We are very concerned at this stage with desertification, for example in the Sahel, where we focus on increasing investment in agriculture and productivity," Mr Piebalgs explains.

In areas requiring regular emergency humanitarian food aid – foremost the Sahel and Horn of Africa regions – the Commission integrates emergency response with longer-term market-building

PHOTO: CORBIS

by delivering cash and purchasing food as close as possible to the crisis area, rather than importing it.

"We are trying not to decouple those areas of emergency response and longer-term development, and in this way we support agricultural producers as well as delivering emergency aid," Mr Piebalgs says. "I think that makes us unique in humanitarian aid."

The game changers

Despite being the biggest donor in the agriculture space, the EU's funding for agriculture and food security is relatively low at €800m ($1.03bn) and Mr Piebalgs acknowledges that "the needs are much higher". However, the commissioner is optimistic about changes, including the increasing penetration of ICTs, which are modernising the food sector.

"There are a lot of things that have changed and that is why we do not exclude the smallholder opportunity in the world and particularly in the ACP," he argues. "Mobile phones have changed things completely because farmers are more aware of information; there is much more predictability with prices."

The commissioner also pins his hopes on the G8's New Alliance for Food Security and Nutrition. This global initiative aims to increase private investment in African agriculture and enhance the sector's productivity, with the hope of lifting 50 million sub-Saharan Africans out of poverty in the next 10 years. Since its launch in May, more than 60 private companies, many of them African, have pledged over $3.5bn worth of investment in the continent's agricultural sector.

"The New Alliance is what will accelerate the change, because it is about government policy reforms: we deliver financing, and the private sector delivers the necessary investment, but it's about government delivering reforms, not just promising to," Mr Piebalgs argues.

ACP policy reform

Those reforms are desperately required, he says, "because private capital can be unlocked only if the country is stable in its policy reforms".

Chief among the continent's policy constraints has been the problem of land ownership; an area the commissioner urges African countries to focus on. "Eighty percent of smallholders are women, but they own only 2 percent of land in Africa," Mr Piebalgs says.

"It is clear from global experience that farmers should have an interest in the land they work on. It increases productivity if land belongs to the farmer, or if it could be passed to his or her family. Only then does the farmer really feel responsible for it, and study the market situation, and look to cultivate it better. If it is not the farmer's, it will never move forward."

Clarity around land ownership would also diminish concerns about land grabbing; another area of concern for the commissioner. "Large scale agriculture investment requires a lot of transparency and legal certainty, and that is what is lacking most of the time," he says. "We have seen that large-scale investment coming – I'm not saying that it is wrong, but it should be very clearly covered by countries' legislation. Contracts should not be one-off cases, because then the comprehensive approach to agricultural development could be jeopardised."

Economic Partnership Agreements

On the European side, there have also been hopes that trade policy could impact on the development of ACP agriculture.

The Economic Partnership Agreements, trade agreements between the EU and ACP countries which were first tabled in 2000, were supposed to render existing preferential trade agreements WTO-compliant, and promote trade between and within the two groups. However, negotiations between the EU and regional groupings have, for the large part, stalled.

Mr Piebalgs notes that ACP countries still have duty-free quota-free access to European markets under an 'everything but arms' system, but argues that this mainly benefits large exporters: "Basically this opening is for big farmers. For smaller farmers it does not change too much."

The problem lies in intra-African trade, he argues: "Intra-African trade is really the biggest challenge in the trade space. That is not going well, partially because of lack of infrastructure, but partially also because of tariff barriers. What we wanted to do with the EPAs was not only help the region with access to EU markets, but also strengthen the regional economic dimension. Without that only the big producers will be able to export, and if you are a small producer the best you will expect is to sell in a local market."

The CAP study

The commissioner argues that the EU's Common Agricultural Policy, the subsidy programme for European farmers, could also be used by ACP countries as a study for domestic policy.

"CAP provides a lot of good elements that people across the world could study, because we learnt from the mistakes of the past and today it provides farmers some guarantee to continue their business," he argues. "It is my opinion that it can be used to suggest what steps to take for agricultural production, and what shouldn't be taken. It is crucial to learn from the EU experience on how to balance traditional life, food security, income and also some predictability in the whole process."

But CAP spending – although falling – still accounts for around 30 percent of the EU's budget, and the scheme formed a point of dispute in the EU's recent budget negotiations. The farmer protests in Brussels also point to dissatisfaction with Europe's milk quota system.

"CAP is still up and down," the commissioner concedes, "but I think it is a more sophisticated policy than exists anywhere else in the world. And it is implemented by 27 different countries so it is productive for others to study."

The scheme has been controversial, facing decades of criticism for distorting markets and destroying the competitiveness of farmers in developing countries. However, the European Union has now removed 95 percent of export subsidies, retaining the last 5 percent until global export subsidies are cut, it says.

"The EU policy has made a lot of important changes but I think we still face opposition because we have still not totally abolished export subsidy schemes. As long as those subsidies exist the perception will be that CAP does not allow the farmers in developing countries to evolve," Mr Piebalgs argues. "That is not true, but it would help that export subsidies were abolished globally, because I think they jeopardise the market and that has an impact, no matter how small."

The issue of agricultural subsidies has been a central point of contention in troubled global trade negotiations, known as the Doha Round, which were first tabled in 2001.

Development budget cuts?

These are testing times for Europe, and the commission's development budget faces potential cuts over the next seven years. Some 80 percent of the EU's ODA comes from national budgets, and Mr Piebalgs is reassured by individual nations' willingness to maintain their pledge to commit 0.7 percent of GNI per capita to development aid.

"I would be more than happy if they would allocate more money for development on the European level and at this stage negotiations are still ongoing," he says. "But when there is overall streamlining of the budget then you have some collateral damage."

The commissioner argues that aid levels should be preserved, and the €800m currently spent on agriculture and food sustainability will not take a hit, he stresses. "Food security and agriculture will get more funds whatever happens, because it is very clear as a priority. We will spend less money on a sector like roads because it is very capital-intensive, and at this stage I see more value added emerging in agriculture. Agriculture is much more beneficial for a country's economy, and countries themselves say the same."

FAR LEFT: Andris Piebalgs at a high level meeting on the Sahel food crisis; visiting Zagtouli, west of the Burkinabe capital Ouagadougou

80%
of smallholders are women, but they own only 2 percent of land in Africa

70%
of Africans are employed by the agriculture sector

40%
of Africans will still live in rural areas in 2050

Source: European Commission

Raising the bar

Technological innovation, especially in mobile, will be critical to improving agricultural productivity, but R&D funding must be ramped up after years of neglect

BY WENDY ATKINS

When Ismail Serageldin, director of the Library of Alexandria, told the World Intellectual Property Organisation (WIPO) that global population growth meant food production would have to increase by 70 percent by 2050, using the same amount of water, he identified agricultural innovation as the key to solving the problem. With global efforts to improve fertiliser quality, harvesting technology and water resources, what role can R&D and mobile communications play in transforming agriculture in Africa?

"Mobile technology can radically transform smallholder farmers' access to critical and timely information," says Fiona Smith, mAgri programme director at GSMA, an association of mobile operators. "New mAgriculture services being developed allow farmers to call a helpline and get advice from an agriculture extension service provider or receive personalised daily agriculture alerts through SMS or voicemail. They can exchange up-to-date information on pests and diseases, seed and input varieties, weather, market prices and so on. In many African countries, agricultural extension agents are stretched to service up to 4,000 farmers each, which results in long delays between visits. Mobile phones provide a complementary way to reach farmers with timely and personalised information."

In Nigeria, Nokia is active in this area with Nokia Life, a phone-based information service that provides updates tailored to the subscriber's needs, such as weather reports; advice on when to sow crops, use fertiliser and harvest; and current prices for crops and fish.

ABOVE LEFT: A Kenyan coffee farmer checks prices on his mobile

ABOVE RIGHT: Indian grape and tomato farmer Sanjay Sathe phones an agri-call centre to check the weather forecast

PHOTO: GETTY

Meanwhile, Sustainable Harvest, an Oregon-based coffee importer, has rolled out mobile-based technology to farmers across Latin America and Africa. Its Relationship Information Tracking System collects coffee data, including information on where coffee was washed, dried and stored, to help smallholder producers increase their cooperative's competitiveness and transparency. It has piloted the technology with the Kilicafe cooperative in Tanzania.

"By tracking key data, starting from individual farmers, Kilicafe received the information it needed to maximise the availability of their highest quality coffees and identify areas for quality improvement overall," says Pam Kahl, director of communications at Sustainable Harvest Coffee Importers.

"To date the programme has registered almost 3,400 farmers and tracked 131,485 kilograms of coffee – $170,472-worth – all using the RITS Producer system. Additionally, we found that RITS Producer reduced the time spent collecting information for grower certification schemes by 65 percent."

Mobile technology is playing a role too, with mBanking and mPayments revolutionising the way people send and receive money. More sophisticated financial services are emerging, which allow rural citizens to make and receive payments without travelling long distances or carrying lots of cash.

The implactions are huge, GSMA's Ms Smith says. "Previously, the majority of smallholder farmers lacked access to financial services. Input suppliers are now able to collect and manage payments from farmers; in turn farmers can aggregate their demand for inputs. Large buyers can pay thousands of producers. Governments and development agencies can distribute vouchers for fertiliser, seeds or other inputs," she explains.

"For example, the Nigerian government provides fertiliser vouchers to 10 million of the poorest farmers in the country via mobile phones. Weather-indexed micro-insurance allows them to insure the cost of their input supply purchases against the risk of bad weather and the payouts are provided through their mobile phone."

"Mobile gave birth to mobile money and this is feeding into areas such as mAgriculture, mHealth and mInsurance," agrees Gavin Krugel, chief customer strategy officer at Fundamo, the technology company. "What we're seeing is the unintended consequence of mobile money: people in rural areas are now using it to receive payments, as start-up capital for their agricultural businesses and even for crop insurance."

NGOs, governments and banks still play an important role. Akinwumi Adesina, Nigeria's minister of agriculture and rural development, has said publicly that banks should diversify their current agricultural portfolio to meet the needs of the sector. He adds that agricultural lending is currently heavily skewed to agribusinesses, while smallholders, commercial farmers and other small and medium-sized enterprises are unable to access affordable financing.

"The time has come for Nigeria to consider raising long-term bonds to finance the agricultural sector. The rising domestic debt is certainly of concern. However, this should not be used to argue against agriculture bonds. Many countries in the world are using the so-called green bonds to power their agriculture, including China and India," he says.

NGOs are also playing a role. Researchers from Michigan State University in the US, for example, are using a $7.8m grant from the Bill & Melinda Gates Foundation to help eight African nations improve their sustainable farming methods. Over the next four years, the team will work with 10 African universities, institutes and ministries to promote effective government strategies that help local farmers become more productive and food secure. They also aim to improve the capacity of national policy institutes to guide and support their own countries' agriculture ministries and eventually to accept and manage international grants.

The emergence of mobile applications is also helping to fuel a more tech-savvy workforce in Africa. "This is enabling greater uptake of new ideas, more localisation of agency work, and more innovation through the local private sector that is increasing market options and employment," says Shaun Ferris, senior technical advisor agriculture and environment, at Catholic Relief Services. "This is all fertile ground for R&D products and processes."

"After a decade of stagnation during the 1990s, investment and human resource capacity in sub-Saharan Africa's public agricultural R&D increased by more than 20 percent between 2001 and 2008," says Nienke Beintema, head of the Agricultural Science and Technology Indicators (ASTI) initiative, which is facilitated by the International Food Policy Research Institute. But most of this growth occurred in a handful of countries and was largely the result of increased government commitments to boost very low salaries and restore neglected infrastructure. It did not translate into more funds for research.

"Agricultural research and development projects in sub-Saharan Africa are still heavily dependent on donor funding and agricultural, science, technology and innovation systems are weak," says Judith Francis, senior programme coordinator, Science and Technology Policy, at the ACP-EU Technical Centre for Agricultural and Rural Cooperation (CTA).

Ms Beintema adds: "Private sector participation in agricultural R&D remains fairly limited in sub-Saharan Africa, and only a few companies operate their own research programmes, most of them in South Africa." Although there has been an increase in agricultural R&D, she says governments should address persistent underinvestment.

"This should comprise increased long-term and consistent levels of funding to agricultural R&D. Countries with serious capacity gaps will need to address the high turnover of agricultural scientists through a series of measures. They also need to develop innovative means of training to build sufficient human resources for agricultural R&D as well as improving take-up of existing technologies. National universities also have a role to play."

There may be reason for optimism, Catholic Relief Services' Mr Ferris says: "Given the complex nature of how R&D support changes, each of the R&D partners is steadily improving their methods and means of providing solutions. They are all getting to grips with the more modern communications in Africa, which is a very transformational process."

David Hughes

Global agribusiness trends: Implications for smallholders

Smallholder farmers are disadvantaged but not doomed. They will find opportunities where they can maximise their intrinsic advantages

Over the next 40 years, the global population will increase by 2 billion, but that will not be evenly spread. Africa's population will double from 1 billion to 2 billion people and the jury is out on whether this will offer an exceptional food marketing opportunity for African farmers or translate into massive social problems in the overgrown cities and rural areas abandoned by younger adults.

Cities in Africa will mushroom in size and the hope is that the burgeoning urban populace will have paid employment and plenty of it. If not, shanty town social unrest will inevitably result. That could be exacerbated if, as pundits and the Food and Agriculture Organisation predict, global food prices are both increasingly volatile and higher.

Accelerated urbanisation suits supermarket companies. Walmart's arrival in South Africa with its purchase of Massmart is a statement of intent to expand rapidly across the sub-Saharan region. It will experience competition from regional mass retailers who have in-depth knowledge of the purchasing preferences of local shoppers. This is good news for consumers who should see lower grocery prices, but will be tough for duka (small store) owners who will lobby government to keep the big global retailers out (as has been attempted in India).

But rapid population growth and urbanisation in Africa will place enormous strain on food security across the continent. Africa's food imports are increasing and food self-sufficiency is declining. Clearly, this should create substantial local and regional marketing opportunities for African farmers, and this will include smallholders, but only if certain conditions are met. Roads, transport and post-harvest infrastructure must be improved; regional trade agreements within Africa must be forged and trade between African countries encouraged and not constrained (it is easier to ship produce to Europe or the Gulf than it is to move it within the continent or, indeed, the next door country). Slowly and painfully, the structure of farming and wholesaling will rationalise as in all other parts of the globe, with or without government facilitation.

Supermarkets will accelerate the transformation of supply chains for fresh food as they seek greater quantities of consistent quality produce. Can smallholder farmers survive in a modern food marketing era? Some will, some won't. Those heading for the cities will be pleased to leave the land. Smallholders remaining will expand but will require help in terms of access to credit, technology and so on. They must work together and with modern wholesalers to meet big buyer requirements.

Smallholder farmers are disadvantaged but not doomed. They will find opportunities where they can maximise their intrinsic advantages, such as use of family labour, attention to detail on finicky crops, and close proximity to markets as towns and cities expand rapidly. Traditional markets have decades of life in them and will continue to offer wholesale and retail market opportunities for the smaller producer. Within Africa, the processed food industry will grow quickly and prove a reliable market outlet for large- and small-scale producers.

Extra-regional markets will continue to offer good prospects for African farmers. Fresh fruit and vegetables destined for developed countries and, increasingly, the fast-growing middle classes of emerging countries will be most likely captured by larger-scale farming enterprises with opportunities for "outgrowers" supplementing nucleus estate production. But tea, coffee and cocoa are grown largely on smallholder farms across Africa and elsewhere. Worrisomely, not all is well on these farms. Incomes are low and unstable, reflecting poor on-farm productivity, volatile prices and inefficient supply chains; and farmers are ageing and their children are seeking jobs in towns, and not on the land.

But there is a silver lining – major companies such as Nestlé, Unilever, Mars, Kraft and Barry Callebaut recognise that continuing poor productivity at the farm-level presents a threat to the long-term sustainability of their own big branded businesses.

These global companies share common commercial interests with small-scale farmers in working together to improve quality, quantity and farm-level prices to ensure that the raw materials for mega-brands such as Mars bar, Magnum ice cream, Kit-Kat, Cadbury's and Milka chocolate are available in years to come. Global food and beverage companies forging closer partnerships with small-scale African farmers may seem most unlikely but, in fact, it is the emerging model for the coming decades.

David Hughes is emeritus professor of food marketing at Imperial College London

Ken Powell

What can General Mills do for Africa?

We were already having an impact in Africa, but we believed we could do more

If you knew how to help feed the hungry, would you? Most of us would, I think. But often we just don't know how.

General Mills has a legacy of community engagement and food is what we do. It's a core value that stretches back more than a century. We are nourishing lives every day.

Even so, it was difficult at first to see how General Mills, half a world away in North America, could play a meaningful role in addressing hunger in Africa. But I was motivated to try, and I was inspired – as usual – by our employees. I found they were already reaching out to Africa. General Mills employees were packing meals for children in Africa, and partnering with organisations such as CARE, Land O'Lakes, and World Vision, to build grain storage systems and dig community wells.

We were already having an impact in Africa, but we believed we could do more. Our next idea was better. Could we share what we know – our knowledge and expertise as a food company – with small and mid-sized food producers in Africa? By helping local food processors produce safer and more nutritious foods, could we help expand markets for African smallholder farmers? And could that boost farmer incomes, strengthen food security, and increase the supply of affordable, nutritious foods in local economies?

This is the idea behind Partners in Food Solutions (PFS). This new non-profit has three features we think are unique. First, the name – Partners in Food Solutions – describes our business model. We've recruited world-class companies to join our effort, including our US neighbour Cargill and Dutch-based DSM. We've received support from bilateral and multilateral agencies, such as USAID and the World Food Programme. We've partnered with international NGOs, such as TechnoServe, and social investors like Root Capital. Each partner brings different expertise, but together we can accomplish far more than any of us could alone.

Second, by embracing technology, we are able to communicate and collaborate virtually. General Mills food scientists and engineers may be 8,000 miles away, but we work with our African partners as if standing side-by-side. Our partner, TechnoServe, engages our African partners directly on the ground. It's an entirely new approach to collaboration.

Third, though some may see this work as philanthropy, we see it as something more. We're striving to create shared value – and that's when the impact really multiplies, because more successful African food processors also help thousands of smallholder farmers grow and reach their potential.

Let me give you an example. Nyirefami, in Tanzania, is a company that mills flour. General Mills knows flour. We've been in the milling business 142 years, and with Gold Medal, we're still America's leading flour brand. When PFS volunteers provided the expertise needed to install a quality control lab, and improve washing and pre-drying operations, we were able to help.

PFS helped Nyirefami increase

We're striving to create shared value – and that's when the impact really multiplies

their milling capacity five-fold, paving the way for Nyirefami to buy more grain from local farmers, while also earning the highest level of food certification available in Tanzania.

Helping African food processors helps smallholder farmers, and that helps entire communities. Veronica Banda is one impressive farmer I met recently in eastern Zambia. Veronica sells her cotton to Cargill, and her corn to COMACO, a local non-profit that markets food to consumers while also striving to save wild animals and ecosystems.

Farmers work hard, and Veronica certainly does. She also cares for her family, including several children she has taken into her home who have lost parents to HIV/Aids. Because PFS is helping COMACO grow, creating markets for her crops, Veronica's income is rising. Today, she not only feeds her children, she can also send them to school.

This positive impact on Veronica's life and the lives of her children is what PFS is all about. It is a powerful idea – and it's playing out with more and more small companies. PFS is working with 40 food processors on more than 130 projects in Kenya, Zambia, Tanzania and Malawi and we are looking for more. Our vision is big, and our journey is long. But I believe the role General Mills is playing is exactly the role we can play best.

How can you learn from our journey and apply what you do best to reduce poverty and increase economic activity in the developing world? Here are some ideas.

First, leverage your core expertise. As one of the world's largest food companies, we knew we could help African food processors and smallholder farmers by sharing our food processing expertise. What valuable expertise can your company share?

Second, enlist on-the-ground support. In partnership with USAID and PEPFAR, our in-market partner, TechnoServe, is hiring and managing small, in-country teams to identify promising companies. They also help develop and implement projects that PFS volunteers can address back home. Find a quality local partner who can guide you in understanding and addressing local needs.

Third, embrace technology. We can do things today we couldn't dream of five years ago. Technology is allowing us to successfully partner virtually from 8,000 miles away. Use it. Then, seek out like-minded partners. We knew we could make a greater impact if we brought on world-class partners. Be thoughtful in selecting partners who share your vision, but who offer capabilities and expertise that you couldn't provide on your own.

Fourthly, engage and empower employees in leading the effort. General Mills employee volunteers have such a strong stake in our philanthropic efforts that they lead our programmes. Employees can be your engine to keep programmes moving forward.

Lastly, jump in with humility and get started. Much of our success stems from our willingness to "stumble forward" and learn as we go. Be willing to think big and move quickly, albeit imperfectly. We hope you'll join us on this journey, because, for us, it has proven to be some of the most gratifying work of our careers.

Ken Powell is the chairman and CEO of General Mills

Ellen Olafsen

Value chain innovation

Why is it that Tanzania exports raw cashew nuts and imports processed cashew nuts, the ones they actually sell in stores? And why does Senegal's largest juice processor import mango pulp, when mangos are rotting by the tonne a few miles down the road? Processing raw materials into market-ready products would create more jobs, capture more value locally, and reduce the tremendous post-harvest losses affecting farmers and traders.

Many attempts at converting raw materials that are in abundant supply into consumer products have gone wrong. Africa has many examples of so-called 'White Elephants' – expensive factories that have never been fully operational because the business concept was flawed. A recent study by the World Bank reports that 60 percent of 87 failed agribusiness projects reviewed were brought down due to a flawed business case. The fact that you have a tomato surplus does not mean you can enter the ketchup market.

So we have learned that we need to start with the market. In the Tanzania and Senegal cases, the market is there and the customer requirements are clear. As an aside, it is notable that 'the market' in these cases means Tanzania and Senegal and their surrounding regions rather than Europe and the US, where the barriers to entry are higher. Projections show that most increases in food demand will come from urban markets in developing countries. Perhaps it is time to devote more attention to growing in these markets first.

Leaving the product destination aside, from a development perspective, advancing the processing segment of the value chain is an excellent investment in jobs and incomes. If a company processes fruit pulp, jobs are created, farmers get income from produce that would otherwise be lost, suppliers of packaging material and trucks experience increased demand, and so forth. The multiplier effect is significant.

How do we unlock market opportunities? Policymakers must invest in infrastructure – roads, electricity and irrigation – and regulators must at least remove disincentives for entrepreneurs, industry and financiers to invest. We also need to ensure productivity and consistent quantity and quality at the farm level.

Market intelligence, business capacity and technology access are also key. Say a country produces excellent quality papaya as evidenced by growing exports to 'picky' markets. Now, it turns out that demand is increasing for papaya enzymes in the cosmetics industry. How do the papaya farmers and entrepreneurs learn about the opportunity and requirements to enter this market? And do they have the business capacity to be the cosmetology company's counterpart? Or take something a little less advanced; demand for healthy cooking oil is increasing in a country with excellent oilseeds production. How do farmers and entrepreneurs know, and how can they get the knowledge, resources and networks to produce, package and distribute oil in line with consumer preferences?

Let's accelerate innovation and growth at the processing segment of the value chain, by creating role models that other entrepreneurs can follow

Our thinking is this: let's accelerate innovation and growth at the processing segment of the value chain, by creating role models that other entrepreneurs can follow. We do this by identifying high growth potential value chains and high growth potential local enterprises, and helping them to test products and build market linkages vis-à-vis suppliers (farmers) and buyers (industry, wholesalers and retailers).

Beyond facilitating market linkages, what infoDev has termed Agribusiness Innovation Centres (AICs) are unique from the perspective of providing growth-oriented entrepreneurs with a holistic service offering. This includes financing – or 'patient' capital – to enable pioneers to prove their business model and build a financial track record that makes the enterprise less risky and more attractive to commercial financiers. It also includes assistance with tricky issues for small growing firms such as technology identification, business management, and navigation of standards. Finally, it leverages the fact that it works with many processors to achieve economies of scale with regard to procurement of raw materials, packaging, and transportation services.

Implementation of an AIC necessitates dialogue between entrepreneurs, farmers, financiers, government, academia and industry to resolve business bottlenecks. This may initiate systemic change bottom-up while other endeavors start from the top-down.

Africa has great potential to climb many value chains and create thousands of new jobs. It is time to test a new approach to realising this potential.

Ellen Olafsen is a programme coordinator with infoDev, a global entrepreneurship and innovation programme in the World Bank

LEFT: Indian workers in a tea garden in Jorhat, east of Guwahati

ABOVE: Workers on the Unilever tea estate at Jericho, in north west Kenya

PHOTOS: GETTY IMAGES

Sourcing tomorrow's supplies

Multinationals are looking to source their inputs from smallholder producers. Adam Green speaks to Vikram Agarwal and Cherie Tan at Unilever about the company's outreach efforts

As demand for commodities and raw materials grows around the world – and as agricultural production struggles to keep pace – forward-thinking multinationals are looking to secure their supply base directly. Unilever, the Anglo-Dutch company making everything from toothpaste to tea, is developing an outreach programme involving hundred of thousands of smallholders.

"Agricultural produce, whether tea, tomatoes or palm oil, are commodities which are slowly moving into scarcity," says Vikram Agarwal, Unilever's vice president for procurement in Asia and Africa. "Rather than just staying in a position where we out-buy everybody else, the long-term commercial option is to get to the grassroots of production and promote increased cultivation and yields."

A second commercial reason for smallholder engagement is the growing consumer interest in sourcing. "In developed markets, but even beginning to take shape in developing markets, people are asking for traceability. So when there is a bottle of ketchup produced, increasingly the consumer wants to know: 'Where did the tomatoes come from and have they been sourced in a responsible manner?' Unless we have traceability we cannot answer that question."

Today, Unilever's smallholder programme in Africa focuses on tea, but also spans palm oil, cocoa, cassava, fruit, vegetables and dairy products. The company is one of the largest buyers of tea in the world, purchasing about 12 percent of the global volume produced, with around 750,000 smallholders engaged in its supply chain. Its technical collaboration with the Kenya Tea Development Agency reaches over 500,000 smallholders in Kenya.

But for such an enormous, input-hungry company, it is a challenge to ensure smallholders can produce at the quality and quantity needed. "If I look at Africa, there are some very large gaps in agricultural practices and yields if I compare them to best in the world benchmarks, for example southeast Asia in palm, or even in tea," says Mr Agarwal.

Plant hybrids are not extensively utilised in Africa, and introducing them is easier said than done. "It's a very large investment for the farmers, and large-scale replanting leads to large-scale loss in a given year and therefore there are losses of cash cycles involved," he explains. In the long-term, though, there could be handsome yields. Southeast Asian productivity is almost twice as high as in Africa in part due to hybrids. But encouraging a change of mindset takes time, Mr Agarwal warns. "It is something which has to be communicated to the farmers. Gradually one has to set targets for example, by saying: 'Let's work towards a 2 percent or a 5 percent replacement rate every year so that at least you have some hope of getting there at the end of the tunnel.' And the long-term investment leads to much higher yields which make it beneficial for farmers."

There are technical questions regarding crop growth. "If you go to Kenya you will find that the density of the bushes is far higher than it would be in Rwanda or Tanzania. Of course, there is always a balance to be struck in terms of soil health management, but there is learning that is needed, in terms of saying 'Look, why are you leaving gaps between the bushes? You should plant one more in the spaces.'"

Pesticide use is another issue. Food regulations around the world, and in the EU especially, are becoming less tolerant of pesticide contamination in products such as tea leaves. "What that means is that, if you look at each of the tea-growing areas around the world, some of them have got tropical pests which need pesticide treatment and traditionally farmers have been used to using particular pesticides which we want to now eliminate," Mr Agarwal explains. "So, I think there is a big need to be educating farmers against use of pesticides and getting them into more sustainable practices. Either they could move on to less harsh chemicals, or move on to agronomy practices which are less aggressive than the ones they have been used to."

Overall, agronomy work between Unilever and its suppliers encompasses "getting better plant stock in, cultivating fields in a manner which brings greater incomes to the farmers, and making crops more compliant with a global market rather than just a local offtake, but insisting on things like non-usage of pesticides," he says.

Apart from crop growth, the continent has other productivity and business challenges. First and foremost, there is the infrastructure deficit. "If I look at East Africa, which is maybe five times the size of Europe, there is effectively just one port which is operational today: Mombasa. Bearing in mind the port inefficiencies which add huge costs to every container shipped, without urgent action this risks being a major bottleneck to our efforts to increase exports and raise smallholder incomes."

> "Agricultural produce, whether tea, tomatoes or palm oil, are commodities which are slowly moving into scarcity"
> **Vikram Agarwal**

The second challenge is labour, Mr Agarwal says: "It may sound strange because Africa is a fairly well-populated continent, but in the pockets which are amenable to agricultural growth, you find there just aren't enough people to do intensive farming. Added to that are issues around land title and land rights, and of being able to obtain access to large commercial tracts of suitable agricultural land, which does not infringe on forested areas."

While Africa presents an agricultural challenge, it is also the last major frontier for cultivating new land. "Most of Asia's arable land is already being used. It is either Africa or to some extent Latin America. Other than that, you do not really have land where you could, in the next 10 year horizon, be able to plant enough crops to meet growing global demand," he argues.

While Unilever's smallholder outreach is based on sound commercial logic, it should be understood in relation to a broader mandate of the company to contribute to social and economic development around the world. Its CEO Paul Polman – who sits on the UN's High Level Task Force on the post-2015 Millenium Development Goals strategy – has been a driving force behind the company's 'sustainable living plan'. The ambition is to double the size of its business and reduce its environmental impact.

"Our 2020 vision will really focus on three goals," says Cherie Tan, Unilever's global procurement operations director for renewables and smallholder development. "One is to help a billion people take action to improve their health and wellbeing. Then, to halve the environmental footprint of our product use, from a 2008 baseline. The third is about enhancing the livelihoods of hundreds of thousands of people as we really grow our business.

"When we focus on enhancing livelihoods, our commitment is really to source 100 percent of our agricultural raw materials sustainably by 2020, and also to engage with at least half a million smallholders within our supply network," Ms Tan explains.

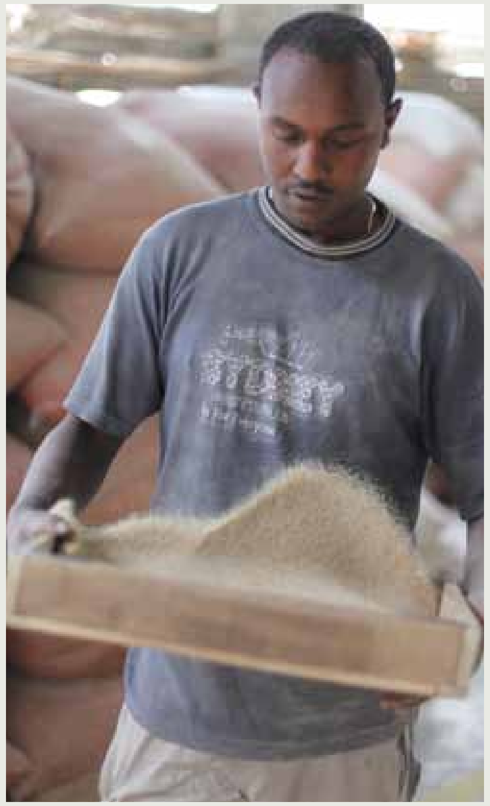
Several years into its smallholder programme, Unilever is now assessing its impact. It awaits results, but the company is asking big questions. "Is it really reaching where we intended it to reach?" asks Mr Agarwal. "And what is the kind of impact it is having in society in general? For example, are the health levels going up, are children's education improving, are family income levels going up?"

Ethiopia's transformation

This is Africa traveled to Debrezeit in the Oromia region, and Cherkos in Addis Ababa, to explore the public and private initiatives supporting cereal and bean value chains. It found growing support for local farmers, and improved linkages to regional and global markets

TOP LEFT AND CENTRE: Engida Kelkile, an Ethiopian tef farmer, claims yield has increased two- to three-fold as a result of the agricultural techniques learned on government-sponsored demonstration plots

TOP RIGHT: One of Ethiopia's 60,000 agricultural extension officers working with farmers on agronomy techniques



ABOVE: Children receive classes at a bean-processing factory in the Oromia region, enabling more female employees to work on-site

ABOVE: Workers sift and sort beans, weeding out dust, grass, stones, and identifying off-colour, stained or deficient produce. The factory supplies produce to ACOS Italy, a commodity supplies firm

ABOVE: Using tef from Ethiopian smallholders, Mama Fresh Injera supplies major hotel chains including the Sheraton and the Hilton. The company has 135 employees, mostly women, with revenues of 16 million birr in 2011 ($881,439)

LEFT: Hailu Tessema, managing director of Mama Fresh Injera

An enabling environment

Governments are under pressure to create policy environments that facilitate agricultural development. Positive examples are emerging from the ACP regions

PHOTO: GETTY

African governments have not always given high priority to agriculture. Keen to build industrial powerhouses in the early days after independence, many leaders viewed the agricultural sector – with its primary commodities and raw materials shipped off to global metropolitan centres – as a sign of the past rather than the future. Agriculture often provided a source of revenue for industrial development initiatives, funded through pricing schemes which paid farmers less than the world market price for their goods and put the difference in the government's budget; sometimes for development spending, sometimes for less noble ends.

But now, many governments in the region are looking to agriculture as a route to job creation and even a potential take-off point for agriculture-led industrialisation of the kind experienced by Malaysia.

Victory in Sierra Leone's recent presidential election will enable the incumbent government to move forward on its 20-year roadmap for sustainable agriculture. The crux of the $403m plan is commercialising the efforts of smallholder farmers through improvements in infrastructure, engagement with the private sector and a more favorable investment code, explains Prince M.A. Kamara, national coordinator for the smallholder commercialisation programme at the Ministry of Agriculture, Forestry and Food Security. "It's the flagship programme for the government," he says.

It is almost impossible to develop efficient value chains without an appropriate environment, says Andrew Shepherd, a value chaain expert at the CTA. But in practical terms, what must governments provide to support the sector? "From everything we know about agricultural development policy, there are two fundamental things government has to do," says Steve Wiggins, research fellow at the Overseas Development Institute. Speaking at the 'Making the Connection' conference organised by CTA in Addis Ababa, he said: "The first priority is building a conducive rural investment climate, which includes peace and security, macroeconomic stability and support for basic institutions of contracts, property rights, weights and measures, quality standards, labour laws and the overarching framework for financial institutions."

While this may sound a demanding wish-list, countries do not need "perfection" for growth, Mr Wiggins argues. China's 1978 reforms, for instance, were partial measures. "Had the Chinese government gone cap in hand to the World Bank and IMF, their mission would have left them with 68 difficult things to do in the Memorandum of Understanding. Instead, it moved about four levers and the result was a runaway train," he says. There was enough improvement for smallholders in China to invest, leading to rapid farmer output growth, which was in turn sustained by further reforms. Chinese agronomists are now working in the likes of Senegal, as part of a collaboration between the two governments to develop the West African states' agricultural sector.

Secondly, Mr Wiggins argues, the government has to provide classic public goods in the form of rural roads, electricity, education, healthcare, clean water and sanitation, as well as contribute to the generation of knowledge in agricultural research and extension, which can have surprisingly high returns. Every dollar spent during and since the Green Revolution in Asia has had a high cost-benefit ratio, perhaps in the region of 10 or even 20:1 on some estimates.

Security is another vital public good. Countries across Africa have reduced the levels of conflict significantly, which has a major bearing on agriculture, since insecurity reduces farmers' confidence in the sanctity of their land and property, reduces their willingness to make long-term investments such as tree crops, and hampers the trust and trade movements needed for the extensive interactions between producers, sellers and consumers.

Security also encompasses larceny. As the value, quality and quantity of smallholder output increases with new technologies and techniques, it creates opportunities for lucrative theft. In the Caribbean, the St. Lucia government has now stepped in to tackle larceny in the agricultural sector. Around half of the island is covered under the mandate of a new specialised crime office, with a number of arrests already made. More may be needed across the ACP regions.

> "When we have debates about the disappointments of African agricultural growth, we don't necessarily have to learn from Asia"
> **Steve Wiggins**

Ghana's path

Asian economies are often cited as models from which less developed economies can learn. That may do a disservice to African initiatives. "When we have debates about the disappointments of African agricultural growth, we don't necessarily have to learn from Asia.

There are some important lessons from Africa," Mr Wiggins argues.

Ghana is an example: a government which has worked hard to build the enabling conditions for agriculture, with impressive results that show up in the country's overall development indicators. The country's 1983 reforms generated an increase in investment in rural roads and electricity with stand-alone, donor-funded projects focusing on the provision of feeder roads and irrigation facilities.

The government's goal was to forge "modernised agriculture culminating in a structurally transformed economy and evident in food security, employment opportunities and reduced poverty," says Ram Bhavani, Ghana's former agriculture minister.

"These strategies were based on the notion that the majority of Ghana's working population continues to depend on smallholder farming for their livelihood and typically they cultivate small acreages," he says. "Yields for most of the crops in Ghana have been below international averages, suggesting strong potential for productivity-driven growth."

Given the importance of cocoa in Ghana's agricultural sector, reforms to the specialised agency Cocobod were key to improving the productivity of smallholder farmers. Now, Cocobod is tasked with controlling minimum prices, maintaining quality and managing exports, and has pushed ahead with the promotion of high technology hybrid seed packages, better tree husbandry practices, and increased adoption of fertiliser, pesticide and fungicide recommendations.

The government has also upgraded the country's primary ports at Tema and Takoradi to facilitate exports. This has been backed by improvements in producer prices, farmer credit support for fertiliser acquisition, and cocoa disease and pest control programmes funded from the cocoa tax. The food and agriculture minister is a Cabinet member, meeting with the president once a week. The results are impressive. Rural poverty in Ghana has fallen, food production per person has increased and child malnutrition has dropped. The country is now in a position to meet the first Millenium Development Goal on extreme poverty and hunger, in part due to its agricultural reforms.

Market fixing

Some practitioners argue the government should not just be an 'enabler' but also, where necessary, an interventional force. In some ACP states, for instance, commercial imports may be undercutting local producers. "Throughout the Caribbean countries, the most powerful group are commercial importers. These importers will fight the development of businesses that will reduce their imports," says Donald Keith Amiel, president of the Caribbean Agribusiness Association.

This means domestic producers may be failing to access new opportunities. "As you go from rural to urban, from primary to tertiary education, from women staying at home to going to the workplace and working with men, the food mix that is required changes dramatically and of course we are seeing food import bill changes," he says.

Rural diets tend to be carbohydrate-heavy, often high in starch, while urban diets include more fruit, vegetables and meats, including pork and chicken. But, he goes on, "this food is not being produced locally because we are in primary production mode. It is being made in metropolitan countries. Our challenge is to create these vertical food chains within the country to satisfy the needs of the new emerging middle class. Unless agricultural production changes to match this, we are going to lose the market to external forces."

The Caribbean islanders may have acquired their taste for activist government through their proximity to the Latin American region, whose UN agency CEPAL first developed and incubated the idea of 'import-substitution industrialisation', a development model predicated on state intervention to build markets and strengthen home-grown entities. Under the intellectual leadership of Argentine economist Raul Prebisch, this proved a productive strategy for the likes of Brazil. Import substitution has now been highlighted as a goal for the Pacific Islands, says Tim Martyn, an economist with the Secretariat of the Pacific Community.

State activism need not only entail market 'creation' or shaping. Mr Amiel wants to see more government involvement in scientific research into the pharmaceutical and cosmeceutical potential in the developing world's considerable forestry resources. Again, Brazil has shown the powerful role that state-sponsored research can play in strengthening commercial capacity, as is evidenced by Embrapa, its agricultural research agency. But Mr Amiel points out that the entire discussion of agricultural value chains should not be pursued in isolation, but must be linked to other government agencies dealing with such cross-cutting issues as intellectual property rights, product differentiation and industrial policy.

The challenge comes in execution. Jacqueline Mkindi of the Tanzania Horticultural Association argues that while her government has introduced policies to stimulate agricultural production, there are often problems in how policies are implemented due to institutional failures and lack of capacity. National rules are often not enforced at the local level. Moreover, agricultural ministries are often weak units within government.

Relations with producers, meanwhile, are often fractious. There have been recent strikes over pay and conditions among agricultural workers in South Africa and Liberia. Tea producers in Kenya are protesting against a crackdown on the trade in illegal green leaves. In Zimbabwe, farmers complain about a lack of inputs. Ghanaian farmers, meanwhile, are aggrieved about the lack of compensation payment as they closed shop to make way for work on the Accra-Kumasi Highway.

The challenge for governments will lie in understanding what they can realistically provide in order to enable markets to flourish.

ABOVE LEFT: Local farmers weigh dried cocoa beans before selling them to merchants in Ghana

PHOTOS: GETTY

ESSENTIAL ENABLERS

- General legal and regulatory frameworks
- Infrastructure
- Land tenure
- Trade policy

IMPORTANT ENABLERS

- Agribusiness finance: availability, access and conditions
- Risk management
- Taxes and tax management
- Food safety and quality standards and associated infrastructure
- Research and development

USEFUL ENABLERS

- Agrifood chain coordination mechanisms
- Investment support services
- Human resource development
- Policies to promote responsible business conduct

Khalid Bomba

CEO of the Ethiopian Agricultural Transformation Agency (ATA)

"We must think about agriculture not only from the production point of view, but also from the many business opportunities that are available on the post-harvest side"

INTERVIEW BY ADAM GREEN

TIA How has the thinking of the Ethiopian government evolved with regards the role of smallholder agriculture?

KB The ATA was created to help address the systemic bottlenecks in the agricultural sector. Ethiopia is growing so quickly – you have agricultural growth increasing at an annual rate of over 8 percent, and the country has over 30 different agro-ecologies, across a landscape that covers over 100m hectares. So, there was the need identified for a separate organisation that really stepped back and thought strategically about the systemic changes that needed to occur, the systemic bottlenecks that existed, so that the growth we are experiencing now could be institutionalised, and could be built upon so that it could be sustainable over the long-term.

As a new organisation, we don't pretend to have all the answers, so we rely strongly on partners to come together and think about these types of issues and come up with solutions jointly. What we try and do is bring international best practices. We can say: 'Here are things that have worked in Mexico, in India, in China, in Vietnam, in other parts of the world', and then we contextualise them for Ethiopia. But we rely a lot on local experts, because they have been here. They know the unique context of Ethiopia and the challenges it faces.

TIA Some farmers are complaining that it is difficult to get young people to go into farming. Is that something you are looking at?

KB One of the strategies we are developing recognised the need to commercialise the sector. That commercialisation in most instances includes the introduction of new technologies, like improved seed, or complex fertilisers. But we've also realised the level of mechanisation in Ethiopia is so low that the introduction of mechanised threshers or harvesters or planters is something that can be offered as a business to smallholder farmers by youth entrepreneurs.

So for us, the critical mindset shifts that we are trying to bring about is the fact that, number one: agriculture is a business. It is not a subsistence activity that you do just for the household. You have to think about market opportunities, and that deals with quality, with cleanliness and with reliability, as a business.

"The level of mechanisation in Ethiopia is so low that the introduction of mechanised threshers or harvesters or planters can be offered as a business to smallholder farmers by youth entrepreneurs"

Second: think about agriculture not only from the production point of view, but also from the many business opportunities that are available on the post-harvest side, be it about value-addition, or be it about linking smallholder production to markets, and how do we do that more efficiently. We think there is a huge opportunity for entrepreneurs, for cooperatives and for youth to be involved in that kind of business activity which is fundamentally part of agriculture.

TIA Do you see good historical precedents for agriculture-led industrialisation?

KB Every country is unique, every country has unique contexts, a unique history, strengths and assets. And we believe that Ethiopia's assets, particularly when it comes to agriculture, lend themselves to agriculture-led industrialisation. Now the question is: How do we make that transition? How do we leverage the strengths that we have, but at the same time ask what is the five, 10, 15 year plan, not only to go to a more diversified economy, but one with a more commercially-oriented agriculture sector? Agriculture-led industrialisation certainly plays a part in that. I don't think that any of us would advocate for 100 percent agriculture-driven industrialisation, and that's why you do see diversification of industrialisation here in Ethiopia already.

TIA We've got used to this idea that developing countries try to sell into rich countries, but that's maybe not the best approach and with Africa growing so quickly, there is a huge opportunity right here, both in Ethiopia and the region.

KB That is, from our experience, absolutely true. The domestic market here in Ethiopia, especially with the growing population and changing tastes and demand from the urban centres, offers a huge opportunity for smallholder farmers. Improving the link in the access to those markets so that farmers can capture a greater share of the end price that domestic consumers pay could substantially increase the income that farmers generate from their produce. To us, it is simply about making that link between the farmer and that domestic market. It doesn't have to be in Addis Ababa, it doesn't have to be the major capital, just that link between the farmer and the local market, and shortening that chain to make sure the smallholder farmer accesses a greater percentage of that end price. We think that can have a significant contribution to a farmer's income.

Now, from our perspective – both the government and ATA – we are working on a dual perspective. One, on the market side: increasing that access to market and shortening that chain. Now just in the last year, there are five sizeable transactions that we have already facilitated between tef farmers through cooperative unions, and Mama Fresh Injera [a specialist producer of Injera, an Ethiopian food product]. That was a transaction that I think everybody speaks very highly of and now we have more and more injera producers that want to be linked to smallholder producer farmers.

We have been working with the World Food Programme, to access 30,000 metric tonnes of maize for their Purchase for Progress project, directly from smallholder farmers through cooperatives. So these are two domestic market opportunities

A significant part of the investment we are making at the moment is in strengthening the cooperative system. Cooperatives are farmer-owned organisations that act as the natural link between producers and markets. However, they haven't been very efficient in the past because they haven't been run as businesses. That's why we're working really hard to make sure that these cooperatives understand that they are businesses; that they need to be financially viable; but also and most importantly that their shareholders – their equity holders – are the smallholder farmers. That's who they have to report to at the end of day. So that's one part of the equation that we are working on.

The other part of the equation is on the production side. Despite the major efforts that many development organisations are making on new technologies, which we completely applaud and think are absolutely a good investment to make, we believe there are many technologies on the shelf right now that can at least double the production of the key cereals in the country that just need to be pushed out and popularised with farmers making sure the farmers have the skills, tools and institutions to support them in making use of these technologies.

So we're spending a lot of time in strengthening the public extension system, and the knowledge dissemination networks like farm radio, to make sure farmers have these technologies and awareness of these technologies to leverage them for best use.

TIA Outside of the capital city there isn't a lot of technology. What is the bottleneck? Is it money? Is it conservatism among the farmers?

KB I think it's a combination of those things. The first and the biggest constraint at the moment is the ability to reach farmers with the technologies and to make sure that they see it with their own eyes. Now, I have often said that farmers are the ultimate entrepreneurs because their income at the end of the year relies 100 percent on what they do themselves personally on their own plots. They are dependent on so many other factors as well. They are dependent on the weather, which none of us can control. They are dependent on the availability of the right inputs on time, which is something we absolutely can control. But they are also dependent on the availability of these new technologies. And, given the risks that they face, they are very risk-averse.

Despite what they might be told, despite what they might be trained in, unless they see it on farmers' fields, on their neighbours' fields, they might not be willing to adopt these technologies as quickly as some of us would like.

TIA The risk is both productivity and the cost of paying for the technology?

KB Yes, that's right. So there is that mindset aspect to this which is not unique to Ethiopia – it's unique to all smallholder farmers because they tend to be conservative and risk-averse. The additional challenge that we face in Ethiopia – that the government has done an incredible job over the last five years in trying to address, and now it is about trying to get it to scale – is the development of the institutions to help reach those farmers both from a knowledge and an inputs point of view. From a knowledge point of view, Ethiopia has the largest public extension system in the world, with approximately 60,000 extension workers that are in nearly every single district in the country. The challenge they face concerns the operational resources to get the demonstration parks up and running.

One of the things we are working on is looking at international experiences, particularly in Vietnam and China who have tremendous experience in this area in terms of how to get these extension workers and development agents with farmer training centres and demonstration plots to be financially sustainable.

The institutions to make these technologies available represent the second major challenge. Extension workers are certainly one part of the equation in terms of knowledge dissemination and promotion. However, we're working on developing business-oriented entities that can make improved seeds, fertiliser and mechanisation available to farmers in a financially sustainable way. I think the government is making a huge stride forward in recognising that it can't do everything and the thing that it can do is create an enabling environment for small businesses and entrepreneurs, for cooperatives, to succeed in making these types of technologies available both from the input side as well as the market access side.

TIA How well do land markets work in Ethiopia? Can land be transferred other than via resettlement or within families?

KB There are many alternative ways in which land can be transferred and it is not just through resettlement programmes or family – although those are the two most obvious, and the two most widely used.

However, within each region, where they have come up with their own land regulations – or refined the national, federal land regulation into regional-oriented implementation of that – there are additional guidelines that have been put in place that allow land to be rented. So, a widow or somebody who realises that they can't make full use of that land can now rent it to somebody else who can produce and then pay a rent to the person who has the official title to use that land. So there are mechanisms such as this that are becoming more widely used, particularly in Amhara region.

Now, I would completely agree with most of the conversation on the issues of land; that in order for farmers to appropriately invest in the land to make sure they get the highest yield, land tenure and use rights have to be transparent and clear so that a farmer is able to reap the returns from an investment over multiple years, not just investing for one year. Now in Ethiopia, the government recognises that. And although the 'ownership' of the land continues to rest with the people and with the state, there are certification levels Ethiopia is aggressively pushing, so that farmers have that confidence in their use-rights.

TIA The Ethiopian financial sector is somewhat puzzling for outsiders. It is very different to what is going on in the rest of Africa and it has very limited foreign involvement, and very limited involvement of e-payments. How big a bottleneck is that in terms of looking at the financial part of these questions?

KB Finance is certainly a bottleneck. I think we have to recognise that, because you can only deal with a problem once you recognise it. Now, I'm not sure that the issues related to the structure of the financial system are really the bottleneck. Whether there is this huge international presence or whether its domestically dominated, I'm not sure is the problem.

The problem, in my personal view – because this is an area that we've just started to look at – is more related to the types of products and services that financial institutions are making available to the different parts of the value chain. This is not a unique issue only to Ethiopia. I think that most financial institutions in Africa see other sectors of the economy as more lucrative, and as a result, the financial products made available to the export market, for example, or to commercial construction, are a lot more sophisticated and meet the needs of industries compared to the agricultural sector which tends to be very complex.

The types of products and financial services that a smallholder farmer needs are very different...I don't think the financial system throughout Africa has evolved to understand those opportunities and create products for those opportunities quite yet.

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