AGRICULTURE
Realising Africa’s potential

FINANCE
Bridging the funding gap

PERSPECTIVES
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INNOVATION
Finding the game-changers
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While the majority of the African population is heavily reliant on agriculture, the continent has lagged behind other developing regions in progressing this essential sector. Research and development specific to the continent’s varied ecosystems and crops has been chronically neglected, as has infrastructure and education to support farmers. As Harvard professor and Kenyan national Calebson Juma has argued: “Neglect of agriculture has been a defining feature of Africa’s economic policy over the last four decades.”

But that may be changing. Public and private sector alike are now taking a renewed interest in agriculture, and this focus is not without basis: according to the African Development Bank, when agriculture stimulates growth it is twice as effective at reducing poverty than any other sector. Scientists are making advances in seed and fertilizer technologies, but creative solutions are also needed to improve market access and coordination, as well as to mitigate the impact of climate change. But which solutions have the potential to instigate real change? Here, is Africa profiles some of the potentially catalytic innovations.

Crop management

As part of the drive to improve productivity, cutting edge scientific research methods are being leveraged to improve crop performance. In one example, food manufacturing giant Mars is assisting in the quest to boost the continent’s cocoa yields through genetics. Using its production base in Côte d’Ivoire, the world’s leading cocoa producer, Mars publicly released the cacao tree genome that the company’s agricultural research department mapped in partnership with the US Department of Agriculture and IBM in 2010, so that scientists everywhere can have access to it for their research.

“The fact that we had this fundamental tool to help us in the breeding of water- and nutrient-efficient trees is a huge breakthrough for any commodity,” says Howard-Yana Shapiro, chief agricultural officer for Mars. “Our goal in the next generation is a yield of 1,500-2,000 kg per hectare, although the end target is much higher.”

Mr Shapiro acknowledges the importance of improving farmers’ cocoa output simply because it makes good business sense to secure Mars’s supply chain well into the future – and to meet growing demands from emerging markets. “We had seen that cocoa production had stagnated at 450 kilos per hectare. You live in poverty if that is your production. If there was a similar scenario in corn, or wheat, or rice, nobody would grow it,” he says. “We need another whole Côte D’Ivoire in terms of cocoa production volume in 2020, because you have this sleeping giant called China waking up, you have India starting to develop a taste for chocolate.”

Whereas most cocoa in Africa is produced for export as a cash crop, rice is a staple in many countries. But due to low productivity and growing demand, consumption far outpaces domestic production. Import rice accounts for roughly 40 percent of local consumption, eating up billions in scarce foreign exchange. But here too, the outlook is improving. Paddy rice production growth in sub-Saharan Africa has shot up from 3.2 percent per year before the 2000-2007 rice crisis to 6.4 percent per year since, according to research by the Africa Rice Center.

While 71 percent of this improvement can be explained by yield increase, 29 percent is accounted for by the expansion of the areas under cultivation – a complete reversal of pre-crisis figures, according to Marco Wopereis, deputy director general at Africa Rice. “This is evidence of increased use of technological innovation, such as improved varieties and better crop management in general,” he says. One management technique that has yielded notable results is the rice nucleus model pioneered by Olam Nigeria. As part of Nigeria’s bid to increase its domestic production of the staple up from 65 percent of consumption, the nucleus model combines the scale and quality assurance of a central commercial farm with an outgrower programme that engages small farmers. The nucleus farm currently has 20,000 farmers in its outgrower programme, and is on track to become the largest rice farm in Africa. If projections are accurate and the model is taken to scale and replicated ten times over, self-sufficiency in rice production for the whole country could be achieved.

Confronting catastrophes

But innovations also have to take into account longer-term challenges to the sector. Any discussion of agriculture and productivity across Africa has to incorporate a conversation about the impacts of climate change. The continent is no stranger to environmental catastrophe, but as climate impacts begin to accelerate, the hottest, driest regions of the world will experience acute dangers, while the weather patterns farmers depend on will become increasingly unpredictable. A number of innovations offer possibilities for mitigating these changing conditions.

Notably, the West Africa Seed Programme (WaSeP) run by the Economic Community of West African States (ECOWAS) provides farmers with access to improved seeds with a particular focus on developing varieties that will be able to better tolerate the shifts in weather patterns created by climate change. WaSeP also seeks to streamline West African countries’ seed laws, as well as partnering with the private sector to develop seeds and pilot them on demonstration plots.

Risk mitigation and insurance tools are another piece of the puzzle. Oxfam and the World Food Programme’s R4 Rural Resilience Initiative in Senegal and Ethiopia helps poor rural communities to improve their management of risk as climate shifts threaten their crops and livestock. The programme offers a package of tools geared to provide insurance, credit, savings services, and disaster risk reduction measures to those living on less than $1 a day while building stronger commercial markets for these services. “We would not be in a position to create a microfinance or an insurance market, but we do have the capacity to strengthen it and make it more effective, more able to reach the most vulnerable farmers in the country,” says Kate Naeve, a policy advisor for the initiative at Oxfam America.

R4 ensures everyone in the community has access to insurance – including those who cannot pay for it. Cash-strapped farmers who cannot afford a premium are offered a means to pay by contributing to their communities through disaster risk reduction activities, such as composting, irrigation channel digging, and planting vegetable gardens. The idea is that, over time, by reducing their financial vulnerability, farmers will be able to pay for insurance premiums with cash instead.
of labour. In Ethiopia, where the programme first started, about one third of farms now pay their premiums entirely in cash, while the rest pay in a mix of cash and labour. Solutions to food security and plantcker in the face of the changing environment need not be solely dependent on rural production, either. Cities like Kampala, the capital of Uganda, are actively encouraging the development of urban agriculture through a new series of ordinances aimed at remunerating urban gar- dens, livestock and fish production. Similarly, according to data from Economist Intelligence Unit’s 2013 report, Pretoria, Sienna Leone, got the number one spot on the urban agriculture indicator, with 98 percent of vegetables con- sumed in the city grown there as well.

Mobilising solutions from a tech revolution

Africa’s decade-old mobile revolution like- wise offers tools for adapting to the chang- ing natural environment. Africa’s mobile money market was valued at over $60bn in 2012, opening up a wealth of opportunities. “People in rural areas are now using mobile money to receive payments, as start-up capi- tal for their agricultural businesses, and even for crop insurance,” says Gavin Kruel, chief executive officer at mobile fi- nancial services provider Fundamo.

In this domain, the GSMA Mobile for Development programme has set up the mFarmer initiative to encourage mobile phone operators to partner with private and public sector agriculture organisations. Operators including Airtel, Tigo and Orange have all launched mAgri services in Africa, and the mFarmer initiative aims to benefit more than 2 million farmers. These services provide under-served farmers with significant information on markets, weather patterns and pest outbreaks.

Services are also being developed that use mobile technology to detect counter-feit seed and fertilizer, and to provide easy direct payments to farmers. These will be gam-changers due to their unprecedented reach, according to GSMA Mobile for Development pro- gramme manager for GSMA Mobile. “Many countries only have one agricultural exten- sion officer for every 4,000 farmers,” she says. “These new mobile services allow farmers to access and share information via their phones at any time, by talking to an expert gateway, to helping local communities in Malawi tackle deforestation by training them to map their villages using GPS de- vices.

Market movements

Despite the boost to connectivity that the proliferation of mobile phones across the continent has provided, the supply-side challenges of connecting agricultural goods with markets remains problematic in many parts of Africa—whether for foreign export or to sell in the nearest town centre. Fragmentation in Africa’s agricultural sector has long been an impediment to im- proved farm productivity and marketability, with smallholder farm plot sizes across the continent averaging 1.6 hectares and making up about 80 percent of all farms on the continent. Lack of infrastructure, storage and processing facilities, as well as high transport costs and trade barriers, can often be prohibitive.

Groups such as the Dutch Agricultural Development & Trading Company (Dadtco) are developing solutions to overcome these constraints: in this case, in the firm of of autonomous Mobile Processing Units (Ampu), which brings a cassava processing factory to farmers’ doorsteps. The Ampu, which is currently being used in Nigeria, Ghana and Mozambique, operates in a cargo container that can be moved from one area to another during harvesting, allowing cass- aro to be processed into a high-quality cake that keeps for at least six months—whereas fresh cassava rots within a day. Currently, all the cassava cake in Mozambique produced by Dadtco is being used to brew SAB Miller’s Impala beer. There is potential for a much wider rollout of the technology, with the brewing giant interested in replicating its success in countries such as Tanzania and Zambia over the next few years. And supplying breweries is only part of the picture. “We can produce very good starch from the cassava cake, and cassava flour,” says Susan Vlakelb, Dadtco’s value chain manager. “The politicians in Nigeria are very much in favour of us. That is the way they forward for them, so they can be less depen- dent on imports.” Currently, the company is in negotiations to establish a number of starch factories, in addition to the two flour factories already in operation. Other storage-related enterprises are underway elsewhere. In Kenya, the East Af- rica Dairy Development (EADD) initiative plans to double the income of 110,000 farm- ers by improving the health of livestock, or- ganising farmers into business collectives, and developing social insurance and credit access schemes. In order to create a collec- tive, farmers must raise 10 percent of the $125,000 in initial capital needed to pur- chase a chilling station and a building. An additional 30 percent is financed by Heifer International and the Bill & Melinda Gates Foundation through an interest-free loan, and the remaining 60 percent by a commer- cial interest-bearing loan. Each Dairy Farm- er Business Association (DFBA) has about 2,000 shareholders and operates as a co- operative, whereby members purchase shares and become owners of the dairy, with full membership earning dividends based on their milk sales. The Nyagatare Maize Innovation Plat- form in northern Rwanda also uses collec- tivisation to tackle the challenges confront- ing smallholders. In this remote area, credit is often so scarce that farmers would go so far as to sell their crops before harvest— below market value—in order to get cash.

Now, through the platform, members have established a private company, the Nya- gatare Maize Investment Group (Nyami), which allows them to market their produce, and includes a storage facility that farmers can use to store maize as collateral for loans. Nyami also finds bulk buyers for farm- ers’ crops, provides extension experts for training, and generates income for members as shareholders on profits from maize sales. The initiative’s success has allowed it to grow rapidly: it now has 83 members, 19 of which are cooperatives with 25 to 100 members each.

Going to scale

The success and scalability of such initia- tives will rely on the buy-in of governments across the continent. ‘What we need is slow private developments down, despite improvements. “We are going to have to deal with that, we are going to have to get more honest about analysing who wins and who loses, and then we are going to have to find ways to incentivise politicians to do the right thing,” says Paul O’Brien, vice presi- dent for policy and campaigns at Oxfam. “That will sometimes mean celebrating the champions of good agricultural policy, but it will sometimes mean having the courage to hold the bad actors accountable— the guys who get rich by keeping good innova- tions from scaling.”

Even with public support in place, each existing innovation alone will not represent a seismic shift. It is collectively and when taken to scale that ideas such as these have the cumulative potential to be transfor- mative for a sector that remains the bedrock of livelihoods across the continent. “Technological solutions are showing how technology can be harnessed for economic growth, environmental pro- tection and social wellbeing,” says Jamal Saghir, the World Bank’s director for sus- tainable development, solutions, who notes “They are not revolutionary. The real innovation lies in how these are integrated through new, radical collaborations for welfare and environmental initiatives to achieve a lasting impact that transforms farmers from mere producers to more profit- able commercialised operations.” He cites Oxfam’s Livelihood Charter, which pledges sustainable investment in areas ranging from market access to finance, as one such example.

Whether an improved seed variety, a green initiative, a new mobile app or a cre- ative business model, the power of a few good ideas should not be underestimated.
In a speech to members of the Zimbabwean farming community in 1994, then-South African president Nelson Mandela remarked: "There are few better ways to show one’s love for one’s country and the well-being of one’s nation than by working on the soil."

Indeed, agriculture has been a critical driver of well-being for centuries, ensuring the food security central to human health and catalysing the productivity needed for economic prosperity. As such, agriculture has been a critical part of The Rockefeller Foundation’s mission to "promote the well-being" of humanity over the course of our first 100 years – from the economic development of the southern United States in the early 20th century to the seeds that sparked the Green Revolution and fed a billion people throughout Latin America and Asia.

Africa is poised for the world’s next green revolution. Across the continent, there has been a renewed commitment from governments, non-governmental organisations and the private sector to move agriculture from a development challenge to a business opportunity. As a result, countries such as Nigeria are moving to once again become net exporters, rather than importers of agricultural commodities. Agriculture has become among the most powerful engines for Africa’s economies, many of which have experienced rapid growth over the last decade.

Despite these developments, many smallholder farmers, who form the backbone of Africa’s agriculture sector, remain trapped in poverty without access to financing and other tools to increase their productivity and profitability. In 2006, The Rockefeller Foundation partnered with our colleagues at the Gates Foundation to launch the Alliance for a Green Revolution in Africa (Agra), with the aim to ensure that millions more smallholders have access to the better seeds, healthy soils, profitable markets, storage and transport, and support policies needed to transform agriculture and drive sustainable economic growth.

But more must be done to break down the barriers that remain to scaling up innovation and investing in farmers on a large scale. To do so, the agricultural and financial sectors must form new linkages and better align their visions, blending those who can implement innovative approaches to boost agricultural productivity and supply inputs such as seeds, fertiliser, and water; and outputs including storage, processing and distribution facilities, and access to markets, with those who can finance these activities.

To help bridge these sectors, in July The Rockefeller Foundation hosted a summit in Abuja, Nigeria, titled ‘Realising the Potential of Africa’s Agriculture: Catalytic Innovations for Growth’. The summit, one of our centennial convenings focused on forward-looking solutions to challenges that will define our second century of strategic philanthropy, brought together agriculture and finance ministers, along with other leaders, from more than 23 African nations, in an unprecedented conversation to identify concrete ways to strengthen African agricultural markets and value chains to benefit smallholder farmers.

Over the course of the summit, participants identified a number of innovative solutions and financing models that can encourage increased lending to farmers. One such model, known as credit guarantees, was pioneered by The Rockefeller Foundation and has been taken to scale by Agra with promising results. For example, the Nigeria Incentive-Based Risk-Sharing System for Agricultural Lending (Nirsal) offers strong incentives and technical assistance to banks, building the confidence and agricultural understanding of lenders with the goal of increasing the percentage of bank lending to farmers and agricultural enterprises from 1.4 percent to 7 percent in the next 10 years. Nirsal has already helped to unlock additional investment: earlier this year, USAID and the Nigerian government each provided guarantees to increase private financing and leverage up to $100m in commercial lending.

These innovative finance models will go a long way to replicate and scale many of the agricultural innovations already happening across the continent. The Dutch Agriculture Development and Trading Company, for example, developed a technology that brings a mobile cassava processing plant to villages and enables farmers in Mozambique to process their roots into cassava cakes that can be stored for up to two years – opening new markets that were once limited because of root spoilage during transportation. In another example,
Financing agricultural growth

After years of neglect, banks, private equity funds and microfinance institutions are bringing capital to African agriculture

BY ADRIENNE KLASA AND ADAM ROBERT GREEN

Africa’s agriculture sector has struggled to access the financing it needs for sustained growth. In part, a perceived combination of high risk and modest returns – as well as the costs of extending traditional banking infrastructures in rural areas – has deterred many banks and financial institutions.

“There can be failures in critical infrastructure such as inadequate cold storage facilities, unexpected disruptions in commodities trading, lack of adequate feeder roads to production areas, inadequate dry storage facilities, and congested ports prohibiting the export or import of products on time,” says Chomba Sindazi, director of Standard Chartered’s solutions structuring team for Africa. “And there can also be delays in the supply of critical inputs such as fertilisers, seed and fuel because of difficulties in getting goods to market.

Standard Bank, which has operations in nearly 70 countries worldwide, has also reviewed processes to suit the kinds of financial information more commonly found in the informal and small-scale sector. It has also broadened its range of services to include technical expertise for lenders. The combination of lending and advisory services is critical, helping the bank protect its portfolio, and helping customers gain credit and repayment track records.

Standard Chartered showed the same trend. Instead of looking to traditional collateral, Standard Chartered uses the value of the commodity being financed as collateral for input financing – as opposed to conventional mechanisms where collateral is secured through physical assets and balance sheets. According to Mr Chomba: “Risks associated with the cultivation of a range of soft commodities are mitigated through a customised multi-peril insurance policy, and operational issues are addressed through physical inspection and regular reporting by a team of independent specialised contract managers and insurance companies.”

The arrival of major banks bodes well for the efficiency of the sector overall. “Banks are interested in investing in businesses and entrepreneurs that are going to make money and are going to pay them back – either interest or return on some form of an equity. As businesses that are profitable come into the agricultural value chains, that is going to bring in the financing that will support those businesses,” says Gary Toenniessen, managing director at The Rockefeller Foundation.

Taking equity

Equity financing provides an interesting – and fast-growing – source of capital. According to the Emerging Markets Private Equity Association, total private equity capital raised for sub-Saharan Africa in 2012 was $1.4bn. Agribusiness is proving one of the primary draws. The Carlyle Group, one of the world’s largest private equity firms, made its first Africa play late last year, as part of a consortium that included Pembani Remgro Infrastructure Fund and Standard Chartered Private Equity.

The fund invested $210m in the Export Trading Group (ETG), a Tanzanian agribusiness with interests in 29 African countries. ETG, which manages both in-
ture has been quite gender-blind. Women were not taken into account, they were invisible in the agricultural supply chain. But more and more, people are realising that women do most of the work. More than 70 percent of the labour is done by women.

When it comes to finance, we need to apply a gender lens, says Mr Late. “When you look at how people get access to financial services, especially here in Africa, agriculture is underserved. But for people who get access, they tend to be mostly male. When it comes to property rights, for example, providing zero interest loans to farmers as part of the commitments laid out in the Singapore-based company’s Livehood Charter. According to Chris Brett, global head of corporate responsibility and sustainability at Olam, the company has provided $18.6m in micro-financing and advances for crop purchases as well as longer-term asset investments. In addition, Olam’s position on the ground is an advantage, according to Mr Brett: “We can provide the cash, either through the cooperative or directly to the farmer. And because we are there, we know when it is needed and where it is going.”

Local presence has also given Olam insights into the psychology of small-scale farmers. “Farmers see the value of a continued relationship rather than the short-term temptation of a one time deal by selling elsewhere,” he says. Still, Mr Brett concedes that defaulting may simply be a question of needing cash fast in resource-deprived areas.

Clustering into cooperatives, however, helps mitigate these risks, not only by making farmers dependent on each other and therefore less likely to default on a group, but also giving them greater negotiating strength. “[Farmers] are also less likely to go against their peers and initiate transactions elsewhere or default on a payment, particularly if the microfinance has been channelled through the coop itself,” he says.

Public-private finance partnerships are also leveraging funds to the continent’s agricultural sector. Grow Africa, launched in 2011 by the African Union Commission, the New Partnership for Africa’s Development (NEPAD) and the World Economic Forum, is a coordinating body for public-private initiatives backing agricultural growth. According to the initiative, 2012 witnessed a historic shift in the quality and quantity of private sector engagement, with companies announcing more than $3.5bn of planned investment in agriculture across countries supported by the platform.

A business mindset

Whether it is traditional bank lending or private equity and from major agribusiness to microfinance, one theme stands out – a change in mindset is needed, in which African agriculture is seen as a business opportunity, not a charity sector.

“What we have seen is a shift towards agricultural development as an engine of economic growth so that agriculture can provide jobs for other sectors as well – for education, for health, for overall advancement,” says Mr Toenniessen at The Rockefeller Foundation. “And that requires private sector involvement to a much greater degree. If you are trying to do is provide food relief, then that goes through governments and UN agencies. But if you really want economic growth then you need a private sector that is working across the agricultural value chain.”

Wiebe Boer, chief executive officer of the Tony Elumelu Foundation, concurs. “My first engagement with agricultural development was in 2007, when I was part of a team at McKinsey working on developing the national strategy of Kenya. Agriculture was one of the six sectors we chose to focus on. Nobody else on the team wanted to touch agriculture, because they thought it was not interesting; it was not sexy. So I took on the sector.”

Back then, he recalls, the assumption was that agriculture was a development sector drawing in government and donor money. Fast forward six years and all that has changed. “If you were doing an agricultural strategy now, the primary focus would be getting investors in, domestic or foreign, whether for large or small-scale agriculture, and then the government role is more unlocking, providing incentives etcetera. Completely different.”

The tools to finance agriculture in Africa have expanded and multiplied in recent years. Still, despite this progress, the sector’s fundamental insecurity remains an obstacle that will require more than funding mechanisms to overcome, according to Mr Sindazi of Standard Bank. “The risks in the sector are so high that it is difficult to predict which investments will fail and which ones will succeed,” he says. But as focus on agricultural development in Africa continues to grow, so does the expertise and the range of risk taken on across project portfolios.

Despite his caution, Mr Sindazi concludes that concrete steps can be taken to mitigate risks to lenders and keep funds flowing to where they are needed in the sector. Such steps include “the use of innovative funding structures that hinge on securing a solid off take before we fund; using a team of specialist contract managers to manage the farmers and crop growing; using appropriate insurance policies that help to offset most of the perils associated with farming; and appropriate due diligence. The monitoring and control provided by a team of back-office experts required to continue the provision of funding to the agricultural sector.”

Enabling environment

Governments remain large in Africa. Agricultural and financial ministries are critical to creating the enabling conditions for agribusiness to grow. In 2003, African governments pledged to spend 10 percent of their budgets on agriculture under the terms of the Comprehensive Africa Agriculture Development Programme. But for finance ministries, the challenge is one of prioritisation. With so many demands on the public purse, each ministry – be it health, education or agriculture – must pitch for funds.

Robert Sichinga, agricultural minister for Zambia, says: “Personalities and relationships between individual [ministers] are important in how the two ministers work together. But I need to convince the minister beyond my personal relationship. I need to know he will understand where I am coming from.”

But Maria Kiwanuka, minister of finance for Uganda, points out that the agriculture sector not only benefits from direct funding but also from other areas of public spending which improve the pub- lic goods environment. Strictly speaking, only 3 percent of Uganda’s budget goes to agriculture. But, she says, when factoring in additional funding on rural infrastructure, it is more like 12 percent. About 30 percent of our budget goes into infrastructure, which is energy and roads. But a lot of that is directed towards rural areas, rural roads and rural electrification which helps agriculture,” says Ms Kiwanuka. “That is the reason why we are doing our feeder roads, so that inputs can go in easier, and crops and other outputs can come out easier. And by rolling elec- trification up-country, it means that agro-processing plants can be set up around the country and not just concentrated in the capital city and the other main towns.”

With a stable policy environment and the growth of a diverse range of financial actors, Africa’s agriculture sector could pro- vide a shot in the arm for the continent’s growth trajectory.
Akinwumi Adesina
Minister of Agriculture, Nigeria

“Agriculture is not a social sector. It is a business”

Interview by Adam Robert Green

In the 1960s, before it turned to oil, Nigeria was one of the most promising agricultural producers in the world. Between 1962 and 1968, export crops were the country’s main foreign exchange earner. The country was num-
er one globally in palm oil exports, well ahead of Malaysia and Indonesia, and exported 47 per-
cent of all groundnuts, putting it ahead of the US and Argentina.

But its status as an agricultural powerhouse has declined, and steeply. While Nigeria once provided 18 percent of the global produc-
tion of cocoa, second in the world in the 1960s, that figure now is down to 8 percent. And while the country produces 60 percent of tomatoes in west Africa, it is now the largest importer of tomato paste.

Nigeria’s minister for agriculture, Akinwumi Adesina, reaps these statistics with rogery as he discusses the country’s deteriorating ag-

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Nigeria’s oil has come at the detriment of the agriculture sector, he claims, “and that is why we had a rising poverty situation. We were having growth, but without robust growth able to influence millions of people because it is not connecting to agriculture.”

That might explain why Nigeria’s eco-
nomic statistics are so puzzling. While the country has been posting high growth figures, and makes it into Goldman Sachs’ “Next 11” emerging markets group, absolute poverty is rising, with 60.9 percent of Nigerians in 2010 living in absolute poverty, up from 54.7 percent of all groundnuts, putting it ahead of the US and Argentina.

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horticulture sector. “Nigeria is known for nothing else than oil, and it is so sad, because we never used to have oil – all we used to have was agri-
culture,” he says.

Nigeria’s oil has come at the detriment of the agriculture sector, he claims, “and that is why we had a rising poverty situation. We were having growth, but without robust growth able to influence millions of people because it is not connecting to agriculture.”

That might explain why Nigeria’s eco-
nomic statistics are so puzzling. While the country has been posting high growth figures, and makes it into Goldman Sachs’ “Next 11” emerging markets group, absolute poverty is rising, with 60.9 percent of Nigerians in 2010 living in absolute poverty, up from 54.7 percent of all groundnuts, putting it ahead of the US and Argentina.

But its status as an agricultural powerhouse has declined, and steeply. While Nigeria once provided 18 percent of the global produc-
tion of cocoa, second in the world in the 1960s, that figure now is down to 8 percent. And while the country produces 60 percent of tomatoes in west Africa, it is now the largest importer of tomato paste.

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Can Africa feed the world?

**The Potential**

- 50 percent of the world’s remaining uncultivated land is in Africa.
- 450m hectares of this land are not forested, protected, or densely populated.
- The current value of food markets on the continent is estimated at $313bn.
- By 2030, the World Bank estimates that Africa’s agriculture sector could constitute a $1trn opportunity.

**The Sector**

- 65% of Africa’s labour force is employed in agriculture, which accounts for 32 percent of GDP.
- Smallholder farmers provide up to 80 percent of food produced in sub-Saharan Africa.
- 6% of cultivated land that is irrigated.
- Irrigation alone could increase output by up to 50%.

**Momentum**

- Africa’s share of globally tracked land deals totaling 58m ha since 2000.
- Private investment is up but has become a contentious issue, with frequent accusations of “land grabs” by foreign governments and firms.
- Agricultural GDP growth in sub-Saharan Africa has accelerated.

Sources: World Bank, Land Matrix.
Local processing

A
rising middle class and expanding population are pushing Africa’s food import bill to worrying highs. While rising capital imports suggest growing productive capacity, booming consumption imports — especially for products that can be produced domestically — are a red flag. According to Jean-Louis Ekra, president of the African Export-Import Bank in Cairo, they suggest economies are failing to keep pace and running up unnecessary trade imbalances.

Africa lost its status as a net exporter of agricultural products in the early 1990s when prices for raw commodities fell and local production stagnated. Since then, agricultural imports have grown faster than agricultural exports and by 2007 reached a record high of $47bn, yielding a deficit of $23bn. The value of agricultural exports from Thailand is now 45 percent in the recent past. “That means an increase in production in Sierra Leone, and the low yields currently being achieved because of the lack of inputs such as fertiliser and lime, means that there is milling capacity which is unused.”

Mr Ekra says: “Africa is growing at a base of 5 to 6 percent a year, which translates into a growing middle class with an increase of consumption.”

But rising food imports are also a consequence of wealth and one of its ill effects: a taste for protein. Produce import growth last year was around 12 percent, driven by higher incomes in the Siles Angola, Benin, Ghana, and the Democratic Republic of the Congo. “Africa is growing at a base of 5 to 6 percent a year, which translates into a growing middle class with an increase of consumption.”

Mr Ekra: “In west Africa, for instance, you see an increasing taste for Luxury Thai rice.”

This is not only the case in the more affluent economies in Sierra Leone, which languishes towards the bottom of the United Nations’ Human Development Index, rice imports have run to about 15 percent of consumption in the last five years, and have reached as much as 43 percent in the recent past. “That means an import bill of several hundred million dollars, a truly frightening percentage of the $13bn GDP,” says Paddy Docherty, chief executive of Phoenix Africa, a company investing in post-conflict countries.

Companies testify to the challenges of agricultural import-dependence in their continental operations. “We have 13 factories in Africa that use products like soft oils, tomatoes or starch-based compounds on a daily basis, but much of this is imported, wasting foreign exchange and increasing our carbon footprint,” says Marc Engel, chief procurement officer at Unilever.

And across Africa, weak infrastructure hinders markets. But rising food imports are also a consequence of wealth and one of its ill effects: a taste for protein. Produce import growth last year was around 12 percent, driven by higher incomes in the Siles Angola, Benin, Ghana, and the Democratic Republic of the Congo. “Africa is growing at a base of 5 to 6 percent a year, which translates into a growing middle class with an increase of consumption.”

“Processing capacity alone is no good without milling,” says Mr Ekra. “In west Africa, for instance, you see an increasing taste for luxury Thai rice.”

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Local processing means being able to process raw commodities which make sense to process locally. “Local processing is technically advanced, otherwise it can never work,” says Mr Docherty. “Processing capacity alone is no good without milling.”

The primary production in country to feed the mills. I know from experience that the tiny area in production in Sierra Leone, and the low yields currently being achieved because of the lack of inputs such as fertiliser and lime, means that there is milling capacity which is unused.”

One Beijing-funded demonstration farm in the 8 region has a decent rice mill which is shut because it lacks the raw product to justify keeping it in operation, says Mr Docherty: “Processing capacity alone is no good without sufficient volumes of local production. I do not imagine the economics would work if raw rice was imported for local processing. Processing capacity must grow alongside local production, and the two together are essential for achieving full agricultural security and more efficient markets in Africa.”

It is also important to ensure local processing is technically advanced, otherwise it can consume large amounts of labour without a value payback. Cassava processing, for example, is often low productivity — and traditional processing methods can lead to contamination of cassava crops.

Practitioners must distinguish between commodities which make sense to process locally, and those that do not. Technoserve, the NGO, has conducted analysis across several African markets and their findings challenge the view that local processing is always best. Measuring the domestic resource cost of a range of Mozambican commodities throws up a number of interesting insights. Local processing of cashew nuts was seen to be highly advantageous, while local varieties of rice (Chosole and Zambian varieties) were not found to be financially profitable without credit access and technical assistance. Potatoes command low prices but production costs are modest, suggesting a good market, while paprika was found to be “somewhat profitable” for farmers, although pesticide and fertiliser interventions would be needed.

Simon Winter, senior vice president for development at Technoserve, says market dynamics signal where and how to go about value addition. “Once you have identified the market and where processing needs to be, then you optimise your logistics,” he says. It does not make sense, for instance, to develop cashew roasting and packaging facilities too close to the production source if the consumer market is far away, due to the damage that will be caused during transportation. “If cashew kernels are in vacuum packed 2kg bags, they are less likely to get broken and crushed than in a small foil packet,” Mr Winter notes. Chocolate, on the other hand, would make more sense to process locally currently, Europe and North America dominate this segment. While high temperatures are a struggle in west Africa, there is less risk of product damage during transportation of chocolate. “You have to understand this commodity by commodity,” says Mr Winter.

There are many constraints to value addition, even where economic arguments are strong. First is a lack of resources, including refrigeration and cold storage, vehicles and skilled personnel. Then there are deficient or confusing standards, especially between countries. And there are serious health dangers to some locally-grown produce, such as aflatoxin that can be found in large quantities in maize and nuts.

Local processing means being able to identify and have the means to flush out such health dangers, for instance through aseptic processing. Important assistance here can come from government agencies. The Kema Agricultural Research Institute, for instance, provides disease and pest management support, as does Carobol, the cocoa sector agency in Ghana.

When exploring the market dynamics of local processing, it is also important for companies and practitioners to distinguish between producer versus buyer-driven chains. Buyer-driven chains can be evident in agriculture, where freshness standards and protected varieties are important, when there is high product differentiation, when packaging and logistics are complicated, or when R&D and other knowledge elements in production or processing are critical. So it may well be large retailers and brand companies – such as Massmart to Unilever – who could provide the impetus to local processing in Africa, saving themselves money and reducing supply chain complexity.
Jane Karuku
President of the Alliance for a Green Revolution in Africa

"Africa requires investment in scientists and in research institutions, which receive very little funding by government."

Interview by Eleanor Whitehead

In northeastern Brazil, the dry bush of the Cerrado – a huge swath of savannah covering 21 percent of the country – has given way to vast farmlands which have turned the nation into a world-leading agricultural producer. In under 30 years, the development of this one-time wasteland has powered Brazil’s transformation from an importer of food into one of the world’s biggest breadbaskets.

Across the Atlantic, in contrast, Africa’s agricultural story has been one of unequal potential. Despite employing 65 percent of the continent’s workforce, and accounting for more than 30 percent of GDP, the sector is struggling. Poor and degraded soils, non-existent irrigation systems, crumbling public infrastructure and insufficient access to credit are all hampering the growth of a sector that has the potential to redefine the continent’s development trajectory.

Clearly, there are lessons to be learnt from the likes of Brazil, and Agra (The Alliance for a Green Revolution in Africa) has set itself the task of replicating the green revolutions of the nations of Latin America and Asia across the continent.

The organisation, which began life in 2006 through a partnership between The Rockefeller Foundation and the Bill & Melinda Gates Foundation, aims to support smallholder farmers and develop breadbaskets regions in order to meet Africa’s growing food security issues. That involves the creation of whole value chains – from fertiliser distribution to market access.

It is a big task, and Jane Karuku, Agra’s president, favours taking a scientific approach to the problem. She wants to see research and development – an often neglected part of the agricultural story – put at the top of the agenda, both by countries and donors.

The first and most important thing is that we have to continue building on the capacity of Africans themselves to do agricultural research,” Ms Karuku argues. “That requires investment in scientists and in research institutions, which receive very little funding by government, so that we can breed more seed varieties that are high yielding and resistant to pests and diseases."

Further support must be provided throughout the value chain if those appropriate varieties are to be distributed across the continent, she says: “We have to think about the whole chain: who is going to do the work, how we are going to breed that better variety, how we are going to multiply that variety, and how we are going to distribute that variety to the farmer?”

Specifically, in order to multiply new inputs, more funding needs to be provided to local seed companies. To this end, Agra already offers grants for investments in capacity building and technology. That has yielded some results, spearheaded by successful groups like Kenya’s Western Seed Company and Tanzania’s Tansese, which are producing varieties to meet their countries’ specific conditions. “In 2007, we supported less than 10 companies, producing about 2,500 tonnes of seed across the continent. Now there are about 80 of them, and together they have aggre-
gate production of about 55,000 tonnes of seed,” Ms Karuku says.

Agro-dealers are also springing up, deepening the local private sector. “When we started, there were few viable agriculture dealers who could take those seeds from one point to another. Now we have trained about 15,000 of them. That is still very few, but it is a good step from a low base,” she argues.

And the impacts of these developments are beginning to be reflected in an uptick in farm yields, Ms Karuku says. “We can see a lot of improvement, starting from adoption of high yielding seed varieties. If you think about maize, in Malawi, Kenya, Zambia, the adoption rate for hybrid seeds is almost up to 90 percent. In cassava, mostly grown in western Africa, there is a high adoption rate of seeds, and yields have increased up to 40 percent. In rice, Tanzania is seeing high productivity by using technology and better agronomic practices, and we are hearing figures of 9-10 tonnes per hectare, which is really high,” she states.

But there is a lot further to travel in support of these areas. “There is a bigger challenge to get those effects across the continent,” Ms Karuku continues.

The G8’s New Alliance for Food Security and Nutrition, which aims to lift 50 million Africans out of poverty over the next 10 years by means of private investment, has already tabled billions of dollars in commitments from international investors since its launch last year. In Nigeria alone, $8bn has been invested in the agriculture sector since 2011, with money now flowing into new crop processing zones from the likes of Cargill and Unilever. Initiatives like the Green Africa partnership also aim to leverage private capital for African farming.

But Ms Karuku believes there is further to travel. “We need a lot more investment and a quickened pace in terms of deliverable actions, so that it is not just talking and we are actually going to do it,” she says.

Not everyone is pleased with Agra’s stance on commercial investment, though. Some civil society organisations argue that the private-led approach is the wrong solution to Africa’s growing hunger crisis. As with Brazil’s Cerrado, or other developing agricultural economies, they fear a new era of land grabs, and argue that the smallholder producers who produce the majority of the continent’s food could be pushed off their land to make way for big investors whose aim is to control African food supplies.

Ms Karuku refutes these concerns. “The way I see it, there is a big role for the private sector in African agriculture,” she says. “First, we have a growing local private sector that is playing an important part in making farming sustainable and profitable. Second are the multinationals that come to buy production of Africa, and this has been happening for a long time. The tradition of companies like Nestlé and Unilever linking their suppliers to their supply chains to African farmers has been a long one, and is positive.”

Rather than fearing private investment, more needs to be done to support governments at a policy level, she says: “The deals have to be worked out in an equitable and transparent process, but we cannot do without our local and international private sector.”

With these growing investment flows, coupled with increasing commitments by African governments to agriculture, Ms Karuku sees reasons to be optimistic. “There is evidence that things are starting to change. The only challenge is that it is happening in pockets, and it is not wholesome – so it is a question of replicating that to get those effects across the continent,” she says. “My dream is to make sure that all of this trickles down, so that the smallholder is touched by these initiatives.”
Commodity exchanges take root

A handful of African countries are setting up commodity exchanges in an effort to develop agricultural markets and improve food security. Are they the key to Africa’s agricultural growth?

BY ELEANOR WHITEHEAD

When Ethiopia set up its now famous commodity exchange in 2008, few foresaw the ripple effect it would generate – least of all its founders. But in five years, the Ethiopian Commodity Exchange (ECX) has convinced stakeholders that bourses can improve food security in Africa, and catalysed global dialogue about the development of agricultural marketplaces across the continent. Other countries are now looking to set up their own exchanges.

The ECX, whose trading volumes hit $1.4bn in 2012, up from $1bn in 2011, has given farmers access to real time pricing information, improved profits and productivity, reduced market segmentation and boosted export quality, advocates say. The stabilisation of domestic supply chains is also supporting agro-processors and exporters, diminishing concerns about once rampant contract default. Ethiopian coffee exports increased to $797m in 2011/12 from $529m in 2007/8, when the exchange was established, according to the International Coffee Organisation (ICO).

First to follow in Ethiopia’s footsteps has been Rwanda. Its East Africa Exchange (EAX), unveiled in January, has recently appointed a management team and will start trading agricultural and mineral commodities this summer. The EAX is being run by Africa Exchange Holdings, a company co-founded by investors including the Nigerian Heirs Holdings and New York-based Berggruen Holdings, whose aim is to develop a network of commodity exchanges across Africa.

Africa Exchange Holdings thinks that bourses can help develop agricultural markets by helping farmers sell at the right price. “We want to set up commodity exchanges across Africa because the continent is largely agrarian – agriculture is the largest contributor to GDP as a whole and also the largest employer on the continent,” explains Sam Nwanze, chief executive of Heirs Holdings.

“But one of the problems that we see in the agriculture value chain is that the price discovery mechanism is not efficient: farmers will grow crops and sell them at a price based on how desperate they are for cash at the time – they do not play a role in determining the price even if their product commanded a premium on the international markets,” he says.

“One of the things that we think will develop the agricultural economy is if we could fix the issue of price discovery through commodity exchanges. That would also solve financing issues for the farmer, because he could take his products to a warehouse and get a receipt issued to him which becomes a financial instrument to gain capital to finance another cycle.”

The group hopes to position the EAX as a regional hub. “There is already a lot of intra-regional activity going on in east Africa, and we expect the EAX to serve the region. An exchange will help to enhance and put greater transparency on a lot of the activities taking place,” Mr Nwanze explains.

Nigeria is following suit. In May, the country’s National Council on Privatisation approved the privatisation of the beleaguered Abuja Securities & Commodity Exchange. The Nigerian government is currently developing the national storage infrastructure to facilitate the operation of a better-functioning, private-run exchange, after more than a decade of lacklustre public performance. “We expect that the first investment in the commodity exchange will kick off this year,” says the country’s agriculture minister Akinwumi Adesina.

“Coffee farming in Kabati, Kenya.”

“In Nigeria, the [new] commodity exchange will allow farmers to have access to markets on a more regular basis; it will improve price discovery in the marketplace, because you know the prices of all commodities in different areas; and it will improve the transparency and efficiency of market dealings, because the farmers will know who they are selling to and there will be formal delivery contracts – so I think that the exchange will also help ensure quality of produce especially for international markets,” he says.

Africa Exchange Holdings will also be involved in the running of this new bourse, according to Mr Nwanze. Like Rwanda’s exchange, it has regional
Commodity markets

am bounds: “We expect that exchange to serve west Africa,” he says.

But other private investors have shown interest as well and the size of the market in Africa’s second biggest economy could warrant the development of exchanges. “The privates are not up on the bandwagon. In June, Kenya’s cabinet approved laws to establish futures markets for commodities trading, paving the way for an exchange that the government hopes will help farmers manage price risk. “We are in discussions in Kenya, Tanzania and Uganda,” Mr Nevanza explains. Competing with that group is Eleni Gabre-Madhin, whose structures are not up on the bandwagon. “When the ECX was established, the farmers were paid for their coffee at $529m in 2007 /8 after losses of scale and liquidity.”

As good as it sounds?

But the exchange approach faces criticism, from the structured trade expert, who asked not to be named. “I can’t help but think that this exchange approach is being sold to the project, trade policy?,” says one Malawi-based examiner. “There are a number of issues that need to be duced what, where and when.”

New exchanges may be able to implement traceability measures – the ECX is already trying – but other factors may make its scale harder to replicate in other bourses. “From an Ethiopian perspective, the ECX is unlikely to be repeated in African free markets. “Ethiopia is unique in that it has a very centralised view of the way things are run, and when you have those forces in your favour then you can make it happen at the exchange develops is a lot harder. When you don’t have that centralised control there will be a lot of forces working against you.”

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“The idea of having 54 different exchanges in 54 different countries, with 54 different policies and laws, is a disaster waiting to happen because it will just create an artificial price arbitrage that can be taken advantage of by traders who have enough capital,” Ms Menker argues. “What we need is for exchanges to create economies of scale and liquidity.”

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Africa accounts for less than 3 percent of global emissions, yet our continent is widely recognised to be the most vulnerable to the effects of climate change. Natural disasters, driven by climate change, threaten to undermine the hard-fought gains made over the last decade, just as Africa is beginning to realise its vast agricultural potential.

Smallholder farmers, who constitute the bulk of the sector across our continent, are especially vulnerable to changing weather and require government assistance to deal with it. As currently structured, the system for responding to natural disasters is not as timely or equitable as it should, or could be, with much of the cost borne by farmers. International assistance through the appeals system is secured on a largely ad hoc basis after disaster strikes, and we are forced to reallocate funds in national budgets from essential development activities to crisis response. Only then can relief be mobilised toward the people who need it most – and it is often too late. Lives are lost, assets are depleted, and development gains reversed – forcing more people into chronic hunger, malnutrition and destitution across the continent.

It need not be this way, and insurance may be a key element in protecting both people and our environment from the increasingly severe impact of climate change-related disasters. Nations on the continent have joined together to establish the African Union’s African Risk Capacity (Arc), a mutual insurance company to trigger readily available funds for disaster response when and where we need them.

The Arc allows African governments to break out of their current cycle. By offering modern financial tools, it allows us to transfer the burden of climate risk away from the most vulnerable and least equipped to shoulder it – the farmers and pastoralists – to a risk pool that can handle it much better.

In a multi-year effort supported by the United Nations World Food Programme, the African Union has established a continental disaster risk insurance programme for drought, to be extended to other natural disasters in the years ahead. Risk pooling reduces the cost of contingent capital by almost half, translating into cost savings for member governments on their insurance premiums.

One dollar spent on early intervention through the Arc saves three and a half dollars spent after a crisis is allowed to evolve, according to analysis by Oxford University and the International Food Policy Research Institute. Members of the Arc Agency can only join our mutual insurance company when they have demonstrated credible operational planning and response capacity through a peer review process led by the Arc’s governing board.

While the Arc provides cost-effective contingency financing through risk pooling, it also brings our shared African experience and aspirations to bear on the planning, execution and monitoring of the funds’ use in the event of a disaster. It is an example of the kind of pan-African solidarity that is transforming the continent’s fortunes in the 21st century.

Through a nationally regulated mutual insurance company providing policies to its members, we combine this solidarity and peer-to-peer sharing of best practices with the financial credibility of a well-regulated insurer. The Arc insurance company itself will seek reinsurance coverage in the international financial markets, further crowding in the private sector to meet the risk management demands of Africa’s growing economies.

With the support of Africa’s key donors such as the United Kingdom, Sweden, Switzerland, Germany and other partners, our continental sovereign disaster risk pool will be ready to issue its first round of policies to qualified African states for agricultural seasons beginning in 2014.

Later this year, world leaders will gather in Warsaw for the United Nations’ Climate Change Conference, and the agenda will include regional risk pools. Any effective mechanism for adapting to climate change needs to provide timely and reliable funding linked to weather events. Fundamentally this is an insurance proposition. The Arc and its Caribbean sister institution, the Caribbean Catastrophic Risk Insurance Facility (CCRIF), stand at the forefront of this effort. Africa has a technically and financially sophisticated, fair and well-governed contribution ready.

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