FARA@15: Shaping Africa’s Future Through Agricultural Innovation
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FARA and Agricultural Research in South Africa
The year 2014 marked the 15th anniversary of FARA, a milestone that calls for reflection on how the organisation has evolved and contributed towards shaping and advancing a transformative agenda for African agriculture. FARA is a pan-African apex organisation, mandated by the African Union Commission to coordinate agricultural research for development, as outlined in Pillar IV of the Comprehensive African Agriculture Development Programme (CAADP), and adopted by African heads of state in 2003. FARA has functioned as a continental platform, bringing together the many diverse actors within the African agricultural sector. These actors include the National Agricultural Research Institutions (NARIs) that drive agricultural research within each country, and the Sub-Regional Organisations (SROs) that link these efforts at the regional level.

In the fifteen years of its existence, the scope of FARA’s engagement expanded to encompass not only research, but also the entire agricultural innovation system: farmer organisations, government ministers, policy-makers, extension workers, universities, agribusiness, processors, traders, NGOs, and development agencies. Over time, FARA has grown into playing a strategic role in and through this system; cultivating relationships with all these key actors, and coordinating their efforts to realise the potential of agriculture, especially for small-scale farmers who comprise around 70 percent of Africa’s population.

Through FARA’s work and partnerships with the SROs and other stakeholders, the sphere of its influence now extends from the grassroots community level to the World Bank, the GFAR, and other global institutions. This book highlights FARA’s achievements, experiences, lessons learned, challenges, and opportunities. It also maps the way forward for the next 10 years.

FARA recognizes that the performance of its partners in their collective and diverse roles is the key to shaping the fortunes of the agricultural sector as a whole. Therefore, FARA has designed fresh and multi-pronged approaches to tackle the complex and deeply embedded problems of the African agricultural sector. Some of these efforts have created important links between agriculture and nutrition in the Democratic Republic of Congo, empowered sorghum farmers in Uganda to mobilise themselves and demand relevant research and land use policies; and have generated innovative and ecological entrepreneurial business models to engage youth in Ghana and elsewhere.

One of FARA’s most pivotal achievements is the Integrated Agricultural Research for Development (IAR4D) method; a holistic approach that involves the entire agricultural innovation system in building thriving, high quality, and evidence-based, agricultural enterprises along every step of the value chain. As IAR4D has been applied in different communities over the past 10 years, success stories have emerged, showing the potential of well-designed and well-functioning innovation systems that engage and support local farmers. Some of these stories will be profiled in this publication, along with the efforts that are underway to scale up and entrench these successes so that they become the norm.
Dr. Yemi Akinbamijo, FARA’s new Executive Director, encapsulates the importance of this achievement in this manner:

“There is no country I know that has broken the food insecurity barrier without paying due attention to agricultural research and development, and no country has retained its food security edge without an accompanying agricultural research and development programme. Africa should not think it will be an exception.”

The road ahead shows both dazzling opportunities and daunting crises on the horizon. Africa is young and growing: the population is expected to more than double to two billion people by the year 2050\(^1\). This has been described as an era of economic growth in which the world’s fastest-growing economies are in Africa\(^2\), and innovations in banking and other technologies are propelling a rising new middle class. The rate of urbanisation is equally staggering.

The rapid demographic shift and the mounting needs of feeding an urban population that increasingly demands meat and other processed foods, is generating both an opportunity and a need to pull new kinds of investment into agriculture.

Climate change is another spectre that is here and now. Its unpredictable and non-linear effects are likely to exacerbate many of the problems that contribute towards farmers’ poverty, such as erratic rainfall and crop pests and diseases.

Tackling these problems is likely to require unprecedented levels of cooperation across national boundaries, drawing on the very institutional capacities that FARA has helped to build. “No single country can address the challenge alone,” says FARA’s Deputy Executive Director Dr. Ramadjita Tabo. “People are seeing it as a challenge that can unite Africa, and an opportunity to build regional integration.” This is a challenge that FARA has accepted.

In line with its CAADP mandate, FARA has facilitated the development of an African Science Agenda to outline priorities for strategic investments in scientific research that is capable of advancing the African agricultural agenda. IFAD President, Dr. Kanayo Nwanze, described FARA’s leadership role in drafting the new Science Agenda as a new “flagship achievement.” The Science Agenda was approved by African leaders in July 2014.

FARA’s Key Achievements and Opportunities at a Glance

• FARA’s demonstrated ability to mobilise its diverse stakeholders has helped Africa’s ARD systems to improve their policy planning, coordination, and communication and to achieve greater cohesion and integration with the CAADP framework. The IAR4D concept has been piloted and proven successfully in different sites around the continent, and has increasingly been adopted and implemented by the SROs in collaboration with the NARIs, at national and regional levels. The model has improved the cohesion of value chains, enabling farmers to access improved technologies and markets.

• FARA’s advocacy role has created avenues to bring universities, farmers’ unions and the private sector into the ARD system. Through approaches such as the Innovation Platforms, FARA is widening the scope of the agricultural innovation system and bringing more diverse voices to the conversations that are shaping the future of agriculture.

• FARA has helped to bring improved levels of policy integration across the African agricultural sector. It has provided key support for the establishment of other continental platforms for extension (AFAAS); education (TEAM-Africa); farmer organisations (PAFO); agribusiness (PanAAC); and NGO’s (PANGOC).

• FARA coordinated a comprehensive, holistic approach to capacity strengthening appropriately named: Strengthening Capacity for Agricultural Research & Development in Africa (SCARDA). The SCARDA programme provided an effective model and tools for the NARIs to improve governance, mentor and utilise their staff, and improve technical and managerial capabilities. SCARDA’s model for strengthening individual, institutional and organisational capacity has since been ‘mainstreamed’ by SROs.

• The technical and managerial capacities of the NARIs and SROs have been strengthened through the implementation of programmes such as the Sub-Saharan African Challenge Programme; DONATA; RAILS; SCARDA; UNIBRAIN; SABIMA and IFAT. These institutions have also been strengthened through increased financial assistance through FARA’s resource mobilisation for programmatic support.
• FARA has utilised its mandate to support African governments in their efforts to create sound policies and support mechanisms and to create broad-based agricultural growth for development.

• FARA’s leadership in developing the Framework for African Agricultural Productivity (FAAP), has provided policymakers with a practical tool for aligning their national plans and programmes to CAADP and to apply the CAADP principles increasing sound, evidence-based agricultural policies.

• FARA’s facilitation and technical support has assisted approximately 40 countries in developing their CAADP investment plans and in aligning their national policies to CAADP. Such policy support has helped several countries, including Ghana and Rwanda, to move closer to achieving food security.

• FARA has convened dialogues amongst high-level policy-makers with a good grasp of such hot-button issues as trade policy, biotechnology and bioenergy. These dialogues have resulted in government support for the ARD sector.

The Next Level

How should FARA build on the work of the past 15 years, while evolving to meet new demands arising from a changing economic, political, environmental and social context? What will it take for the Forum to function as a think tank and to continue its strategic coordinating role in the African agricultural innovation system?

The first step will be to focus on the Strategic Priorities:
• visioning Africa’s agricultural transformation
• integrating capacities for change
• building an enabling environment for implementation.

Specific issues of importance will include funding, research, gender mainstreaming, international and inter-agency advocacy, and agricultural entrepreneurship, among others. The push towards meeting these challenges has already begun in the form of the Science Agenda.

The three new Strategic Priorities come together in the Science Agenda, which proposes ways of building Africa’s scientific and innovative capacity; and mobilising leaders and policy-makers to secure the political commitments needed for such investments.

All previous and future successes and lessons will be applied at every level and every initiative. The future of African agriculture is bright, and FARA will continue to be a major player.
In Sierra Leone, two young mothers moved briskly among cassava plants, bent over double, uprooting weeds from the dark red soil. Both women grew up performing this back-breaking and time-consuming labour, producing cassava tubers by hand to sell by the side of the road for a pittance, frequently going to bed hungry. The basic method of their work has changed little over generations. More recently, though, the two women have seen their lives and prospects improve markedly.

Membership in a cooperative, access to more productive plant varieties, and support of the government has helped them to take advantage of new opportunities from burgeoning local markets. As a result, they now earn between four and ten times more than they used to (depending on the season and market prices), and find they can afford nutritious food, healthcare and schooling for their children. In short, they are steadily building better lives, made possible through incremental improvements to the agricultural system in which they are entwined.

This snapshot of transformation in Sierra Leone captures a key essence of the FARA story thus far. Over the past 15 years, FARA has worked to advance the concept of agricultural research as a tool for development, serving the needs of African farmers. It has served as a coordinating body for agricultural research in Africa; working with the mandate of the African Union Commission and the New Partnership for Africa’s Development to help strengthen agricultural research systems across the entire continent.

Working within a nested structure of sub-regional organisations and national agricultural research institutions, FARA has engaged with farmers, researchers, extension workers, business men and women, and other actors in dozens of countries and in all the four sub-regions of the African continent. These diverse people and institutions constitute what is termed the Agricultural Research for Development (ARD) sector; and FARA and its partners have dedicated themselves to strengthening the integration of these systems, and bringing their work in line with the needs of farmers.

A Strategic Platform

Agriculture is a practice as ancient as human civilisation itself, and the transformation of the sector over time reflects humanity’s historical journey from ancient hunter-gatherer societies to the massively complex globalised economy of the present. Typically, as countries have developed, they have diversified their economic bases, and agriculture’s share of GDP has diminished. Much of global agriculture has followed a trajectory of industrialisation, mechanisation and consolidation over the past 60 years, evolving to form the basis of a multi-billion dollar globalised food industry.

3 In Britain and the United States, for example, agriculture is only one percent of national GDP (UNCTAD).
Africa’s path has been different. About 80% of the population earns a living from agriculture, directly or indirectly. An overwhelming majority are farmers who practice labour-intensive, rain-fed agriculture on small plots of land, struggling to feed their families year-round, hard pressed to find reliable markets and fair prices for their meagre surpluses. Poor historic performance in the agricultural sector has kept millions of Africa’s small farmers mired in poverty, due in part to chronic under-investment in the sector and in infrastructure to support farmers.

The African continent is a massive area of breath-taking diversity; comprising of 54 countries, each with its unique mosaic of languages, cultures, politics, agro-ecologies and landscapes. Yet, the agricultural research systems in nearly every country have long been constrained by similar problems. Hampered by structural adjustment throughout the 1980s and 90s, governments invested in industrialisation and primary education, but neglected agriculture. Hundreds of tiny national research institutions scattered across the continent were hamstrung by the same things: meagre budgets, skeletal staff, and scientists working in silos with limited institutional or infrastructural support. Local markets were poorly developed, and university graduates were not equipped with the skills needed for 21st century farming. The different actors in the system worked in isolation, failing to understand one another’s challenges. As a result of these disconnects, farmers toiled on their tiny plots, unaided by the ideas, technologies, infrastructure and market access that could help them produce income-generating surpluses and escape poverty.

Over the past 15 years, FARA has worked to change the status quo. Holding the position that agriculture has a key role to play in transforming Africa’s future, FARA has provided a platform for building linkages across the national, regional, pan-African and global agricultural research systems; aiming to strengthen the sector as a whole, so that agriculture can drive broad-based and sustainable economic growth across Africa. Agriculture-driven growth has been shown to be three times more effective in reducing poverty than GDP growth in other sectors.4

This sentiment was succinctly stated by FARA’s Executive Director, Dr. Yemi Akinbami jo,

“Africa has the largest potential for agriculture on the planet, and we are the least food secure. We can easily see where the missing link is: it’s investment in research. Africa must pay attention.”

The Actors in the System

The purpose of this publication is to document the achievements, experiences, learnings, challenges and opportunities that have shaped FARA over the past 15 years. It will also trace the story of FARA’s evolution through the diverse, multi-level changes taking place within the agricultural landscape. It is an attempt to synthesize some of the experiences and lessons learned in the process of strengthening the building blocks of the agricultural innovation systems, all within complex variables such as politics, policy, and ecology.

4 www.ifpri.org/sites/default/files/publications/ib73.pdf
The story of FARA is a story of people. All kinds of people. It is a story that is unfolding across different parts of the continent, from the arid reaches of the Sahel and the Horn of Africa to the savannahs, lush highlands and tropical lowlands that comprise its diverse ecologies. The story has many facets, reflected in many faces, and from many different places. Here are the faces of FARA.

- The NARI plant breeding scientist who completed his master’s degree under FARA’s flagship capacity strengthening programme, SCARDA, and now aspires to create a new hybrid of maize that is adapted to thrive in his country’s unique highland ecology, thus helping to ensure long-term food security.

- The Agriculture Minister who grew up tilling the soil, and is now advocating for ways to modernize the agricultural sector in his country, and to shift the entrenched patterns that lead to chronic underproduction and regular seasons of hunger among small farmers. This is a result of FARA’s policy advocacy work through the Ministerial Policy Dialogue initiated in 2011.

- The female Member of Parliament who has fought so that women’s crucial contributions to the agricultural sector will be recognised and supported, and so that issues facing female farmers would be addressed by policy-makers. This is also resulting from FARA’s policy advocacy work through the Parliamentarian Dialogue.

- The public-private produce marketing company executive who, through FARA’s regional policy dialogues on promoting access to markets for agricultural products, is now working to develop robust and competitive markets for Africa’s commodities in a manner that not only improves product quality, but also adheres to Fair Trade principles and ensures small-scale farmers a healthy profit.

- The livestock researcher whose horizons have been expanded from the narrow concerns of his own research, to the bigger picture of how his science fits in with a broader national innovation system that includes farmers, business, academia, NGOs and government. His new-found passion is for dreaming up business ventures that stem from his research, whilst mentoring young entrepreneurs from a nearby university to help these ventures take flight.

- And finally, as part of SSA-CP and UniBRAIN work, there is the smallholder farmer who faces her own challenges, practicing rain-fed cultivation on a small plot hoping to raise enough money to feed her family and educate her children. Once she is able to meet these needs and produce a surplus, new opportunities open up for her to diversify her income sources, for example by raising poultry and livestock, and adding value through processing cassava into flour and a nutritious porridge called gari, to name just a couple of possibilities.

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5 UniBRAIN Brief no.2: Agribusiness innovation incubator consortia, http://www.fara-africa.org/publications/
7 Success Stories from SSA-CP Innovation Platforms, Retrieved from http://www.fara-africa.org/search/?q=SSA-CP&go.x=0&go.y=0
Each of these individuals and countless others like them, has a part to play in helping to move the sector forward.

The Problems of the System

Africa has an abundance of hard-working farmers who possess intricate knowledge of their land. It enjoys increasing access to improved technologies and cropping systems. Yet, crop yields per hectare remain the lowest in the world due to such factors as poor soils, lack of irrigation and seeds, prolific pests and crop diseases, and poor post-harvest handling.

Even though rapid urban expansion is creating new local markets for agricultural products, and globalisation has opened markets abroad, African farmers often face obstacles that prevent them from benefitting from these opportunities. These obstacles range from poor roads and high input prices, to incoherent policies and weak institutional support structures. Such hindrances stem from decades of chronic underinvestment in the agricultural sector, as cash-strapped African governments during the 1980s and 90s invested their meagre resources elsewhere, urged on by development partners who preferred areas with more immediate bang for buck, such as primary education.

As a consequence, NARIs, universities, and extension offices – all to varying degrees on life support – never developed much aptitude for working collaboratively with farmers, NGO’s or industry. The years of neglect have taken their toll, as millions of African farmers remain trapped in structural poverty, stuck producing low-quality commodities for export, or low-yielding staples for local consumption – neither of which, given rock-bottom prices, offers much scope for economic betterment.

Within this challenging context, FARA’s work has planted seeds of change across the continent, demonstrating what can be accomplished when agricultural innovation systems work well. Programmes devised by FARA have created new value chains based on improved varieties such as quality protein maize and orange-fleshed sweet potato, which provide farmers with better nutrition for their children and a steady income. FARA’s efforts have led to revitalised NARIs where scientists are motivated and supported in producing good science that will have a positive impact. They have supported government leaders who recognise the importance of having a strong agricultural sector, and seek to craft policies to support burgeoning local entrepreneurs.

If there is a single lesson to be drawn from all of FARA’s diverse engagements, perhaps it is that igniting transformation within a complex and varied system like agriculture requires an approach that is multi-dimensional, responsive to change, and encompassed within a coherent framework.

The context of African agriculture continues to change as many areas of the continent advance towards middle income status, and as concerns about long-term global food, water and energy security trigger scrambles for access to Africa’s land and water resources. These
trends highlight the need for FARA to continue evolving in response to emerging challenges and opportunities.

In some ways, the two women from Sierra Leone, glimpsed in the opening of this chapter, have also begun to see themselves as part of a larger innovation system, in which there is plenty of opportunities to develop and diversify. Their local cooperative supplies a local processing company from which they are now seeking help with developing their farm products into a commercial poultry feed. In a working agricultural innovation system such as the kind spear-headed by FARA, farmers can be entrepreneurs.
PART TWO: THE EVOLUTION OF FARA

The Rise of SPAAR

As African nations gained their independence during the 1950s and 60s, starting with Ghana in 1957, a number of NARIs were established in Cote d’Ivoire, Ghana, Kenya, Senegal, and in other places. Some of these newly minted institutions were colonial creations, while others were the progeny of new independent governments. Some national systems were stronger than others, yet most of the NARIs were under-resourced from the start. Scientists were in short supply (Zambia, for instance, had a total of just 70 university graduates at independence in 1964), and research budgets were generally thin, as new and cash-strapped governments balanced competing priorities. The need to focus on industrial growth, health and education systems, and social support systems was obvious to government leaders, agriculture less so.

The periods of political turmoil – social unrest and poor governance ideologies in Uganda; military dictatorship in Nigeria – economic collapse and structural adjustment during the 1970s and 80s hollowed out African research systems even further. Governments were spending, on average, a mere 5% of their budgets on agriculture. Donors also neglected the agricultural sector, preferring to invest in areas where clear impacts could be shown quickly, rather than wait years for scientists to be trained and for research programmes, with their requisite institutional apparatus, to be built. Industrialization and urbanization were imagined to be the pathways towards development. Farmers, it was assumed, had worked their land for centuries, and could for the most part muddle on well enough, if left to their own devices.

Meanwhile, modern industrial agricultural methods were spreading across much of the rest of the world, as were the necessary institutional supports, as exemplified, in 1971, by the rise of the Consultative Group on International Agriculture (CGIAR), an international organization dedicated to advances in international agricultural research.

Around the same time, the Green Revolution, which utilised new, fast-growing, high-yielding hybrid varieties of wheat and rice, coupled with modern irrigation and inorganic fertilisers and pesticides, was flourishing across Asia and Latin America, with striking results.

Yet, all of these changes held little relevance for Africa with its diverse ecologies and cultures and thinly spread NARIs. An external review by the CGIAR confirmed that its research was not being utilised by Africa’s NARIs. The trouble, it concluded, was that most of the NARIs lacked the resources to ‘validate, adapt and adopt’ these new technologies. A group of donors, led by the World Bank, set out to rectify this by creating a single organisation through which they could pool their efforts and funds to support African agricultural research institutions. This entity, called the Special Programme for African Agricultural Research (SPAAR), was housed within the World Bank alongside the CGIAR, and counted some 23 multilateral and bilateral donor agencies as its members.

http://www.cgiar.org/who-we-are/history-of-cgiar/
Chronicles of FARA
As recounted by Dr. Mouctar Toure, a Senegalese soil scientist who was recruited from the Africa Rice Centre to the World Bank to head SPAAR in 1989, in those early days, Africans had little representation within SPAAR.

“It was considered to be a platform under the shadow of the CGIAR, to coordinate funding and support to African agricultural research. SPAAR worked as a donor group with only a minor connection to African leaders, who were only there as guests,”

Toure’s appointment was the first step towards making SPAAR a genuine collaboration. The World Bank’s intention was to transform SPAAR slowly into a multi-stakeholder platform, and to evolve it towards becoming an African-owned entity, located somewhere on the African continent. Under Toure’s tenure, SPAAR mapped out frameworks and processes for strengthening the capacities of agricultural research systems, and building efficient NARIs in each of the four African sub-regions. The aim was three-fold: to focus on getting functional systems and institutions in place with sound management; to train more scientists; and to secure more funding for the National Agricultural Research Systems (NARS).

“The NARS were so small and so weak that there was no way they could individually make it through,” recalled Toure.

“The idea was, how could we promote regional cooperation to have a more effective way of sharing resources and knowledge? How could we not only help the national systems to be more effective through regional cooperation, but how could we develop the cross-fertilization between the regions at the continental level?”

**African Ownership**

When FARA was first conceptualised during the 1990s, very little communication or coordination existed between scientists, policymakers, businesspeople and farmers. The National Agricultural Research Institutes (NARIs), for the most part, operated as under-resourced islands, isolated from one another and from global discourses. How was any single NARI, with just a handful of trained scientists on a shoestring budget, going to address challenges as diverse as crop disease, water access and soil erosion? There was an urgent need to address the fragmentation within Africa’s agricultural landscape.

Mouctar Toure counted himself among a core group of senior scientists and administrators across the different NARIs, SROs and CG Centres who also wanted to see greater African ownership of the agricultural research agenda and greater pan-African cooperation and collaboration in the sector.
Others in the group included Dr. Joseph Mukiibi, who liked to say that he was the midwife at FARA’s birth; Dr. Papa Seck, who headed the Institute Senegalais de Recherches Agricoles (ISRA) and later the head of Africa Rice and now Senegal’s Minister of Agriculture; Dr. Kanayo Nwanze, who headed WARDA at the time and is now the President of IFAD; Dr. Cyrus Nderiu who was head of the Kenya Agricultural Research Institute (KARI); his successor Dr. Romano Kiome; Dr. Florence Wambugu, a founder of the NGO Africa Harvest; Dr. Regina Gata, Director of Zimbabwe’s Research and Specialist Services; and Dr. Shadrack Moephuli, who heads South Africa’s Agricultural Research Council.

A number of the discussions that led to the formation of FARA were held in South Africa, where, in addition to those listed above, two dynamic women within the Department of Agriculture, Mme. Bongiwe Njobe and Mme. Njabulo Nduli were also committed advocates of the process. SPAAR had provided an avenue for all of these scientists to connect with the FAO and CGIAR. They saw one another regularly at international meetings, and would meet on the side-lines to devise a strategy for raising the profile of agricultural development both within the CGIAR and their own governments. Central to this strategy was the need to have an institution like SPAAR situated within Africa in order to facilitate the spread of knowledge and ideas among the SROs and NARIs.
Njabulo and her colleagues also believed that a new African body that would replace SPAAR and represent Africa in the Global Forum for Agricultural Research (GFAR) would provide a much-needed platform for sharing research findings, learning and experience. It would also lend a stronger voice to African interests in global dialogues.

But not everybody was convinced. Some feared that the move was a ploy by donors to pull back from supporting agricultural research. She and her colleagues kept pushing and prodding. Njabulore called:

“Looking back, you needed drivers who had the space to make decisions and could see the long-term picture. It could not have come through the universities or the Ministries of Agriculture. It had to come through at the highly strategic level with people like Mouctar, who had that exposure,”

Finally, in 1997, the Forum for Agricultural Research in Africa (FARA) was voted into existence at the 17th Plenary of SPAAR in Bamako, Mali.

What followed was a period of gestation and preparation. An organisational vision had to be crafted and endorsed. Legal arrangements had to be agreed upon as well as practical details, such as where to locate the new FARA Secretariat. Other details had to be hammered out as well, such as how FARA would be managed, and what the criteria, roles and responsibilities of membership would be. No less pressing, of course, was the question of who would lead FARA.

A Rice Breeder Takes the Helm

In the late 1970s, a surge in the price of rice in Liberia had sparked a wave of food riots that triggered a political crisis in which Samuel Doe seized power in a military coup. The crisis illustrated just how vulnerable many African institutions and governance structures were, to shocks and disruptions to the food supply, and the ease with which these could easily trigger social unrest. Prof. Monty Jones, at that time a secondary school student in neighbouring Freetown, Sierra Leone, followed the crisis closely in the newspapers, and made up his mind that he was going to study agriculture and help to produce food for Sierra Leone and the world.

More than two decades later, in 2002, it was time to recruit FARA’s first Executive Director. By then, Monty Jones had fulfilled his childhood ambition and was looking to take on a new challenge. First recruited to Sierra Leone’s National Rice Research station, he obtained a PhD working on rice breeding and genetics, and focused on developing new rice varieties suited to the country’s coastal mangrove swamps. However, it was his recruitment to the West Africa Rice Development Association in Cote d’Ivoire (WARDA, now the Africa Rice Center, based in Benin) that provided him the chance he desired to “do something big.”
Rice was a popular staple in West Africa (and Sierra Leone was the region’s highest consumer), but yields were poor, due partly to the low productivity of African varieties. Some 3,500 years ago, African farmers had domesticated a native variety of rice, *oryzaglaberima*, which had naturally adapted a hardy resilience to the continent’s pests, diseases and acidic soils. Asian rice, *oryzasativa*, introduced much later in Africa, offered far higher yields of around 250 grains per panicle, but tended to wither in the harsh tropical climates.

For decades, plant breeders had been trying to combine the hardiness of the *glaberima* with the bountiful yields of the *sativa*, without success. The genomes were too far apart and the progeny were always sterile. At WARDA, Monty Jones led the team that cracked this challenge during the 1990s, with funding from the World Bank, JICA and the Rockefeller Foundation. An anther culture method, which Jones learned about during a visit to China, was developed; and it finally successfully allowed for the exchange of genetic material between the two plant types. The result was NERICA, a fast-growing, high-yielding, drought and pest resistant hybrid that raised upland rice yields by as much as 50%.

The achievement cemented Jones’s reputation as a globally renowned scientist (and won him the World Food Prize in 2004). When he sought the position of FARA’s first Executive Director, as MouctarToure recalls, the search committee was hesitant to hire him at first. He had proved himself as a scientist, but Toure and his colleagues also wanted to be sure he would be a capable manager, with the right combination of doggedness, diplomacy and charm required to ensure that FARA, though a newly formed organization, was taken seriously. “He was so full of enthusiasm; and that gave us confidence that he could be a good leader,” Toureremiscses.

Monty Jones’s appointment brought instant credibility to an organisation that otherwise had no track record. The international collaboration that had produced NERICA, involving dozens of scientists from the International Rice Research Institute, the Yunnan Academy of Agricultural Science, the International Centre for Tropical Agriculture, the French Institute of Research and Development, and Cornell University, was just the sort of international collaboration that FARA’s founding fathers and mothers envisioned.
In March 2002, Monty Jones was appointed as Executive Secretary at the FARA General Assembly held in Maputo, Mozambique. In July 2002, he took the helm of a tiny new seedling organisation, transplanted to African soil. “The idea was that FARA should continue to do what SPAAR was doing, but this time in Africa. It should be African owned and African led,” recalls Monty Jones. But first, there was the whole process of getting the institutional apparatus of FARA itself up and running.

The first task was to develop a strategy that would cover the first 10 years of operation for the new organisation, from 2002 to 2012. The strategy had three key components: advocacy for support to agricultural research (development was not included at the time); collation and dissemination of information on research activities; and the development of partnerships and strategic alliances among African institutions and the Global North and South.

This first phase of FARA was also an important period of capacity-building within the organisation itself. When Jones took the organisational reins, he was by himself for the first two months. FARA occupied a few rooms along a corridor within the FAO Office in Ghana.

“The budget of $310,000 provided for FARA by FAO was enough to cover salaries, but not much more. Donors such as the CGIAR and the African Development Bank wanted to support FARA, but the funds had to be channelled through the FAO, which led to frustrating delays in developing agreements and funding for new programmes.

A year later, FARA moved into its own headquarters in Accra, Ghana. The government of Ghana recognised FARA and awarded diplomatic status. It was a period of gaining recognition from the government and from other African countries, and at the same time building the capacity of FARA. The organisation continued to struggle to develop the support base — financial, political and institutional — that was necessary to carry out its broad mandate. It was particularly crucial to develop a strong relationship with the African Union Commission, also a budding organisation at the time, and to promote the idea of increasing governments’ investment in agriculture and agricultural research.

A FARA, NEPAD, AUC Nexus and the Inception of CAADP

FARA’s creation and inception coincided with, and reflected the broader coalescence of a pan-African vision, particularly as South Africa’s Thabo Mbeki advocated for an African Renaissance to be built under the auspices of the New Economic Partnership for Africa’s Development (NEPAD), which also came into being in 2002. NEPAD was established by the African Union, designed to be another vehicle for driving a Pan-African economic growth agenda. Governments recognised the need to establish “a framework for channelling and
focusing development efforts so that they are not dissipated across disconnected and competing piecemeal activities as happened in the past,”\textsuperscript{11}.

At this time, policy coordination was almost non-existent, and governments lacked the cohesion and the capacity to lobby effectively for better terms of trade internationally. For example, tomato production in Ghana withered on the vine as the support structures for local farmers fell away, allowing cheaper, heavily subsidized European imports to barnstorm the market between 1995 and 2000\textsuperscript{12}.

By the early 21st Century, there was a palpable movement towards strengthening the governance structures and institutions across Africa; and Monty Jones, as the head of FARA, took this as an opportunity to lobby government leaders to make agricultural growth a priority. “No country had ever advanced to middle income status without a strong agrarian base to grow from,” he argued. Furthermore, agriculture, would be key to achieving progress towards the Millennium Development Goals, particularly the goal of reducing extreme poverty and hunger by half, by 2015.

Setting a new milestone, about thirty six African leaders signalled their commitment at the African Union Summit in Maputo, Mozambique, in 2003, by pledging to invest 10\% of their national budgets in agriculture. It was a landmark commitment, indicating a new level of political will. The Maputo Declaration then paved the way for NEPAD to create a continent-wide policy framework for agricultural development, in the form of the Comprehensive Africa Agriculture Development Programme (CAADP).

According to Dr. Ibrahim Mayaki, the CEO of NEPAD, “CAADP represented the return of the concept of planning in Africa’s development. The consequence of structural adjustment was the total erosion of capacity to plan.” In this case, planning began promptly, as a core team of scientists and policy makers, including Monty Jones, Richard Mkanadwire, David Nielson, Mme Njabulo and Mme BongiweNjobe, helped to formulate the research component of CAADP.

\textsuperscript{12} UNCTAD: 255 (Khor)
CAADP was conceived to provide a coherent framework to mobilise the necessary investment in agriculture, and reverse the grim trends of falling incomes, increasing food insecurity, and degradation of land and water resources. The basic purpose of CAADP was to create a common framework to guide national agricultural policy towards the aims of diminishing poverty, hunger and food insecurity, and towards generating environmentally sustainable economic growth within the agricultural sector. It contained four “pillars”:

I. Land and water management
II. Infrastructure and market access
III. Food supply and hunger
IV. Agricultural research

African leaders adopted CAADP in 2003, also setting themselves the target of reaching 6% annual growth in the agricultural sector through 2015, and a further commitment to spend one percent of agricultural GDP on research and development. In 2005, FARA was mandated by the African Union to serve as the lead coordinating body for Pillar IV of CAADP, which called for strengthening research systems to improve the dissemination of “appropriate” new technologies. Even though FARA now had its marching orders, a clear set of guidelines for accomplishing the aims of CAADP still needed to be established.

**Subsidiarity**

The consensus at the beginning was that FARA should be organised in a way that would add value to the SROs, avoid duplication and work as a platform for the three regions to come together and devise a common line of thinking. The aim was also to share successes, problems, failures and lessons across the different regions, and to benefit from the wisdom of each of the three main regions.”

It was obvious that there were many areas that could be addressed far more effectively through the economies of scale provided by a pan-African network namely, capacity building; narrowing the divides between research, extension and training; and knowledge management. These were the “glue” that gave common cause to FARA’s constituencies.

The next step was to decide how FARA would best interface with the SROs and NARIs. Because the African ARD systemswork at different levels within local communities as well as at the national, regional and pan-African levels, and because the value of FARA would lie in the quality of its collaborations with all these groups, it was agreed that FARA’s work with the SROs and NARIs should be guided by a principle of subsidiarity, which meant that the implementation of ideas and programmes was to be devolved to the most appropriate local level. FARA would conceive ideas and programmes for implementation across the continent, but would hand over responsibility for running these programmes to the SROs as soon as possible. Since that time, subsidiarity has been a defining principle in all of FARA’s engagements.

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13 MouctarToure’s recollections
Introducing IAR4D: The Sub-Saharan Africa Challenge Programme

The introduction of the Integrated Agricultural Research for Development (IAR4D) framework is one of FARA’s flagship achievements. At the time of FARA’s inception, the established model of agricultural research and technology transfer was unmistakably top-down. New techniques and technologies would funnel from the research institutions through the extension system to the farmer, in a one-way, linear flow. Farmers were treated as passive recipients at the bottom of the hierarchy, often working within systems in which seeds were distributed, instructions given and prices set by government. Unsurprisingly, the system broke down often, and farmers often mistrusted it. Scientists typically considered their job done once they published their findings. If those findings remained on the shelf, it did not seem to matter.

As Adewale Adekunle, FARA’s Director for Partnerships and Strategic Alliances puts it: “The strength of a chain will only depend on the weakest point. And there were so many weak points.”

As early as 2003, an important and related criticism of FARA’s work had emerged: why was the organisation concentrating just on agricultural research, but not on channelling that research towards development? This argument came from David Nielson who took Monty Jones to task at a meeting in Sandton, South Africa.

The two men were not alone in their criticisms of traditional technology transfer. Monty Jones had himself come to appreciate the value of multi-level interaction between farmers and researchers during the painstaking development and field trials to produce NERICA. It was clear that FARA had to broaden its engagement beyond the NARIs and SROs. However, there was no clear model for seamlessly folding extension, the universities, and the other actors into a participatory research processes.

Ralph von Kaufman, one of FARA’s first employees, who had joined the organisation from the International Livestock Institute (ILRI) in Nairobi, was a key architect of the IAR4D methodology. The IAR4D approach had the potential, they realised, not only to help with
the uptake of specific technologies, but also to address more complex and interlinked issues such as food insecurity and poverty. A key problem arose regarding how to bring all the entities to work together.

Enter the CGIAR Challenge Programme. It was a new programme unveiled by the CGIAR, aimed at producing high impact research into complex issues. FARA saw in it an opportunity to secure funding to test drive the idea of transforming the traditional linear chain of technology transfer into a more integrated network in which feedback passed back and forth between farmers, scientists, extension workers and the private sector.

Integrated Agricultural Research for Development (IAR4D) was the term coined by FARA during a proposal workshop in Accra, in March 2003. The intention was that it would bring together everybody along the value chain – research, extension, farmers, organisations, policymakers and NGO groups – to conceive the problem, develop, and implement the protocol.

First, however, the CGIAR had to be persuaded to accept the proposal, and it was not an easy task. At this time, the CG was after cutting-edge science, not innovative methodologies concerned with the impact of that science on the ground. The prevalent thought at that time was that science and development were mutually exclusive.

After some delay, the CGIAR Science Council was finally persuaded to approve and fund the IAR4D proposal in October 2004. However, funding the $2.2 million project was contingent upon FARA’s ability to provide a proof of concept. A scramble ensued: there was no concrete methodology in place for implementing IAR4D.

The Sub-Saharan Africa Challenge Programme (SSA CP) was the first actual programme developed by FARA, and it aimed to do nothing less than revolutionize the way in which research and technology transfer processes were conducted. It was designed to address widespread market failures and environmental degradation caused by poor policymaking and poor integration of national innovation systems. Importantly, it constituted a concrete materialisation of the vision of CAADP.

At that stage, Adekunle, a systems agronomist working on maize and cassava systems at IITA in Ibadan, Nigeria, was recruited by FARA to lead the effort. At IITA, he had conducted field research using a method he dubbed the Innovation Platform (IP). An IP is a forum where farmers, scientists, extension, buyers, sellers, transporters, input suppliers gather to discuss and work out solutions to the gaps in the value chain. It was an informal group, its members brought together by a common interest in making their overall system work, rather than by any formal legal arrangement.

FARA tested this approach in the proof of concept phase with the Sub-Saharan African Challenge Programme in 2005. It involved establishing a pilot learning site in each of the three sub-regions: Kano-Katsina-Maradi for CORAF/WECARD; Lake Kivu for ASARECA; and Zimbabwe-Malawi-Mozambique for SADC-FANR.
It was quite a challenge to find the right methodology to compare the results of the IP approach with results from farmer cooperatives or enterprises that were using a different approach. CGIAR wanted FARA to demonstrate that IAR4D worked, and that it worked better than conventional approaches of organising farmers into cooperatives. It also wanted assurances that IAR4D results could be scaled up at no greater cost than conventional approaches.

Proving these three things was an intricate exercise that involved comparing the use of the Innovation Platforms approach in all three sub-regions against two different controls: farmer groups who were organised into conventional cooperatives, as well as farmers who were not organised at all.

IAR4D was a resounding success, and has since become a FARA cornerstone. At the Lake Kivu project site, implemented between Uganda, the Democratic Republic of Congo and Rwanda, the IP led to collaborations between CIAT, Makerere University and ICRISAT, leading to successful sorghum value chains. One of the products of this collaborative effort was a drink called Mamera, now a popular choice in supermarkets across the region. IAR4D has been a key element in the design of many subsequent FARA programmes, including DONATA and PAEPARD.

Creating a Framework for African Agricultural Productivity (FAAP)

In 2005, FARA was formally tasked by the African Union Commission (AUC) and NEPAD with implementing Pillar IV of CAADP, which dealt with research and technology. There were four aspects to Pillar IV:

1. Integrated natural resource management
2. Adaptive management of appropriate germplasm
3. Development of sustainable market chains
4. Policies for sustainable agriculture

To determine the parameters for moving ahead, FARA utilised a participatory process to draft a Framework for African Agricultural Productivity (FAAP). Preparations for the FAAP document was another important milestone for the young organisation. It tested FARA’s abilities to lead a high-level consultation process where the diverse views of all the FARA stakeholders were to be aired and shaped into a practical framework. FAAP was expected to be the guiding framework for implementing CAADP, with a huge influence over policy development. It was to become “the Bible for agricultural research in Africa,” as put by Dr. Emmanuel Tambi, the Director of Policy and Advocacy.

The FAAP document argued for rapid productivity growth as the key driver of development, away from traditional to modern agricultural production methods. The rationale was that the more farmers produced, the more their own incomes would rise, and the more competitive they would become in both local and global markets. Furthermore, as locally-produced food became more affordable to the local populace, nations would be less dependent on food aid.
and imported foods.

The document projected that achieving 6% growth as required under CAADP would require a total factor productivity growth rate of 4.4% per year, which was far above the 1.3% rate of growth that had been achieved during the 1990s. Productivity in Africa had been growing, but this was mostly due to increasing the land area under cultivation, rather than to the payoffs of mechanisation and intensification, with the result that the adoption of modern varieties in Africa was responsible for only 28% of yield growth, compared with 88% growth in Asia between 1960 and 1998. The causes of this gap were identified as institutional weaknesses, systemic fragmentation in the innovation system, ineffective farmer support services and insufficient end user involvement. The FAAP document recommended that the problems be addressed through a reform of institutions for the purpose of increasing productivity; total investment; and harmonising the use of the funds.

Nine principles were then identified to accomplish this:
1. Empowerment of end users
2. Planned subsidiarity among regional, national and local institutions
3. Pluralism in the delivery of agricultural research, extension and training, involving universities and NGO’s, for example
4. Evidence-based approaches
5. Integration of agricultural research with extension, the private sector and other actors, along the lines of the IAR4D approach
6. Fiscal, economic, social and environmental sustainability
7. Systematic use of improved management information systems
8. Introduction of fees to farmers for provision of seed, extension and other services
9. Integration of gender considerations

Recognising the link between agricultural research and development, FARA, through FAAP, effectively institutionalised the IAR4D approach and outlined clear roles for all the actors in the system. For example, the FAAP document discusses the growth and empowerment of farmers:

“The role of extension systems will shift from prescribing to facilitating. Instead of trying to ‘sell’ predefined packages, extension will increasingly focus on building capacity among rural people to identify and take advantage of opportunities (both technical and economic) and to cope more effectively with risk and adversity... Their focus will be centred on helping farmers to better understand their own farming challenges, and to access and utilise information and associations which can help them to improve their own livelihoods sustainably.”

A creditable FARA achievement, the FAAP has served as a crucial tool for countries in crafting their CAADP investment plans. As teams of experts worked with countries on the design and review of these plans, the FAAP document provided a clear set of principles to follow, which ensured that governments were following an agreed-upon set of ‘best practices,’ and also

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that a level of cohesion was beginning to take shape in African policy-making. In the words of David Nielson from the World Bank,

“The fact that the FAAP was developed was major, and it influenced the whole idea of supporting governments with CAADP national investment plans hugely. There is an extremely powerful and important idea that underlies what CAADP has been all about – the notion that you could have a touchstone for technical discussions: are you in step with the African view as it’s expressed in the FAAP?”

The NARS Assessment

With the FAAP in place, plans for turning around the agricultural sector looked good on paper, but there was still no clear picture of how the different countries were actually positioned to begin working towards CAADP’s aims. More needed to be done to understand the specific strengths, weaknesses, needs and potential of each national system.

Meanwhile, other actors in the system besides the SROs and the NARIs were taking note of CAADP, and wanted to get involved. One of them was Professor Adipala Ekwamu, the Executive Secretary of The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), a new network of universities in eastern and southern Africa, whose secretariat is based at Makerere University in Uganda.

The opportunity came during FARA’s General Assembly, held in Entebbe, Uganda in 2005. A meeting between Professor Monty Jones and Professor Ekwamu opened the door to developing stronger partnerships with universities, and building the natural linkages of ARD to the education and training sector.

RUFORUM was then a bourgeoning network of universities. It had recently become an autonomous organisation after a decade as a programme of the Rockefeller Foundation, through which principal investigators at universities were awarded competitive research grants for the training of MSc students. It was an innovative approach to building the research and post-graduate training capacities of universities. As Ekwamu recalls, RUFORUM was looking for an entry point to link universities to the CAADP process. FARA provided this, in particular through the process of developing the FAAP. “FARA clearly spelt out what was needed to re-engineer tertiary education in support of a continental agenda for agriculture.”

One of the key roles in which universities were naturally indispensable was in training the scientists who were needed to staff the NARIs. Africa’s universities had suffered just as much as the NARIs during the 1980s and 90s, and those lost years had thinned the ranks of African scientists and academics considerably, leaving future generations of scientists short
of mentors. Although anecdotal stories of the woeful states of many of the NARIs abounded, little was understood about their specific strengths, weaknesses and needs.

This severe shortage had been a key topic of discussion at the first annual retreat between FARA and the SROs, held in 2003. Following the retreat, FARA commissioned an assessment of the NARS, an extensive study of the performance of the national agricultural research systems of 26 African countries, seeking to identify their strengths and weaknesses so that these could be addressed systemically. The NARS Assessment specifically sought ways of strengthening governance and management; financial management; scientific capacity; and collaboration, for the purpose of intervening and strengthening the systems.

The NARS Assessment, released in 2005, revealed widespread dysfunction throughout the NARS, with only a few exceptions. A generation of ageing scientists who were on the verge of retirement were not being replaced. Management practices were weak and ineffective, and the available manpower in the system was poorly used. Research staff were trained at a low level and were overwhelmed by the enormity of their tasks. Technicians were poorly trained and they worked on outdated equipment. Morale was often low. Small and post-conflict countries in particular suffered from acute shortages of funding and trained staff 15.

On the basis of the results of the assessment, RUFORUM and the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE), were engaged as service providers and invited to assist FARA in designing a programme to build capacity within the NARS. These university networks for advanced research and training would have a vital part to play in shaping a next generation of NARI scientists.

**SCARDA Breaks New Ground**

The Strengthening Capacity for Agricultural Research and Development in Africa (SCARDA) programme, launched in 2007, was designed as a bold and comprehensive response to the findings of the NARS Assessment. As recalled by Dr. Irene Annor-Frempong, FARA’s Director, Capacity Strengthening (NSF4),

> “Before we did our strategy in 2007, we had analysed and realised that there was no coherent strategy at the continental level to help Africa see its way forward in capacity strengthening. There was no regional mechanism for exchange and learning. The very poor human capacity and institutional capacity was not talked about.”

15 Agricultural Research Delivery in Africa: An Assessment of the Requirements for Efficient, Effective and Productive
SCARDA, coordinated by FARA, was a short-term, intensive programme of change, which focused on strengthening a handful of specific research institutions within each of the three sub-regions. Through SCARDA, new models of intervention and capacity strengthening were developed. The programme was designed to focus on countries with small research systems that had huge gaps. It gave particular emphasis to post-conflict countries. Rwanda, for example, had lost most of its research scientists in the genocide. Neighbouring Burundi had just one PhD-holder within its NARI system. It was critical to revive the agricultural sectors of these tiny post-conflict countries in order to lift their economies and help secure prospects for future peace.

“SCARDA responded to gaps,” recalls Dr. Irene Annor-Frempong, who played an instrumental role in SCARDA’s design. “The lessons from previous capacity strengthening efforts showed that we needed a new way of doing business that would bring about change.”

Previous efforts at capacity strengthening had focused heavily on providing advanced training for individual researchers, while ignoring the wider context in which they worked. The wider context was such that researchers that received scholarships to obtain advanced degrees often lacked training in areas of strategic need; or their originating institutions were too poorly equipped to retain them and utilize their expertise once they returned to work. This further exacerbated the inefficiencies within the system, as well as promote brain drain.

SCARDA, by contrast, was envisioned as an “integrated and holistic” model of capacity strengthening. At that time, capacity strengthening was understood to mean “training,” However, Annor-Frempong realised that there was also a strong institutional aspect to capacity building, and fought to ensure that SCARDA addressed this bigger picture...

SCARDA was uniquely wide and ambitious in its sweep. However, due to funding considerations, it had to be squeezed into a tight four-year time frame, from February 2007 to March 2011. In order to remain manageable in scope, the programme focused on only twelve different “Focal Institutions,” along with their key partners in the national agricultural research systems in ten different countries across the three sub-regions. Included in the programme were Focal Institutions from Burundi, the Democratic Republic of Congo, Rwanda and Sudan in the ASARECA region; Botswana, Lesotho and Zambia in the SADC region; and Gambia and Mali in the CORAF/WECARD region.

The SCARDA approach was grounded in processes of institutional analysis, which then fed into a tailor-made programme of change management for the specific institution. This involved studies of each focal institution to identify its weaknesses and needs, and to determine how best to address those needs by building on the resources already available within the institution. The institutional analyses were then used to design processes of organisational change in a purposeful and planned process.

The National Agricultural Research Institution (NARI) in The Gambia, for example, prioritised advanced training for their staff, particularly at the master’s level; while other institutions, such as the National University of Lesotho, invested their efforts in strengthening relations

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with small farmers and other actors across the value chain; and still others focused on providing short-term training to improve the competencies of their technical staff.

SCARDA also offered employees of the Focal Institutions specialised short courses in strategic areas of need, such as leadership development; research management; planning, monitoring and evaluation; finance, and better mentoring of young researchers; thus strengthening the institutions from within.

SCARDA embedded the process of change management into its approach, introducing the structures for organisations to continually reflect on and learn from their experiences. “SCARDA was a process-broker,” says Annor-Frempong. “You are continually picking up lessons and ploughing them back into the processes.”

**SCARDA Casts a Wide Net**

Even institutions more peripherally involved with SCARDA benefitted from the programme’s innovations. In The Gambia, for instance, the National Agricultural Research Institute (NARI) was the SCARDA focal institution; yet other local institutional collaborators with NARI, such as the West African Livestock and Innovation Centre (WALIC), which conducts research on animal diseases across the Sahel region, were also included in the short courses offered through SCARDA.

Lamin J. Janneh, a livestock officer at WALIC, participated in workshops on writing scientific papers, marketing, and business proposals. These, he said, helped WALIC researchers understand how to attract opportunities and funds for research. “It was eye-opening,” he said. “We depended a lot on international funding, so we were not in a position to look at our own environment and our own research needs.”

WALIC had originally been established with international affiliations and funding, but it had lost those international links. The SCARDA-sponsored trainings helped to reinvigorate both the organisation’s relationship with NARI and its own sense of purpose, continued Janneh. Since then, in collaboration with NARI, the organisation was successful in its bid to take part in a project supported by the International Livestock Research Institute (ILRI), called PROGEBE, looking at endemic ruminant livestock living in tsetse-infected areas.

SCARDA was an ambitious programme; perhaps too ambitious, according to some critics who faulted the programme for trying to accomplish too much with limited funds and a limited time frame. There is no denying that SCARDA put both FARA and the SROs through their paces. Funding was tricky; and the donor arrangements sometimes required FARA to put up funding and claim back the expenses. This resulted in shortfalls and delays.

At the end of the day, SCARDA proved to be a powerful vehicle for capacity strengthening across the FARA family. Its impacts were transformative for a number of NARIs, and it provided a proven approach to capacity strengthening. It gave universities a platform to integrate their training programmes into system-wide effort building.
SCARDA and the University Training Networks

By the time the SCARDA programme reached its completion in 2011, the programme had stacked up numerous accomplishments. Dozens of individual scientists had been trained; NARS in Rwanda, Burundi, Gambia, Lesotho, Botswana and Sudan had been strengthened. The university networks, RUFORUM and ANAFE were also highly impacted.

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) was formed in 2004 as an outgrowth of a decade-long programme supported by the Rockefeller Foundation to strengthen research and MSc-level training within a handful of African universities. RUFORUM’s involvement with SCARDA was timely. By 2009 when SCARDA was in operation, RUFORUM, a growing network of universities, was pioneering a regional approach to MSc training programmes. The initiative was based on the logic that no single university was strong enough to offer its own solid postgraduate training programmes in such diverse areas as plant breeding, soil science, and bioinformatics, because expertise in these areas was spread so thinly within the universities. It made more sense for the universities to pool their resources and establish a single programme within a university that already had strength in that area, and then open the programme to all the universities within the network.

At this time, the implementers of SCARDA needed to find MSc programmes where NARI researchers, with scholarships through SCARDA, could study. RUFORUM, on the other hand, needed students, preferably with funding, to populate its new programmes. Therein began a relationship of mutual benefit. This joint capacity-building effort provided the avenue to bring the universities into the CAADP process.

The universities’ involvement in providing SCARDA training made a strong case for the universities to be considered as key players in the agricultural development agenda. It soon became necessary to make the case to government leaders. With support from FARA, in November 2010, RUFORUM convened a Ministerial Conference on Higher Education in Agriculture in Africa, which brought together Ministers of Agriculture, Higher Education and Finance from around the continent to Entebbe, Uganda, to propose a new strategy for revitalising agricultural education in universities and strengthening higher education’s linkages to the CAADP process.

Getting education to be included on the CAADP agenda was no mean accomplishment. Irene Annor-Frempong and her colleagues worked on the side lines at the Ministerial Conference to draft a concept note urging Ministers to recognise a key position for education within CAADP Pillar IV – paving the way for universities and technical training institutions to also be recognised within the CAADP Pillar IV and the FAAP.

FARA had developed an Africa-wide Action and Investment Plan, which had gathered some momentum among donors at a first workshop in Nairobi, and later on in Zurich, Switzerland. FARA was requested to present the plan to the World Bank – which decided to focus on the tertiary education component of the plan, paving the way for TEAM-AFRICA.
TEAM-AFRICA was established by the Ministers at the conference as a new coordinating body which will involve numerous organisations, including ANAFE, RUFORUM, USAID, DFID and FAO, in strengthening agriculture in higher education.

Prof. Ekwamu Adipala is already looking ahead:

“But this is just the beginning. We are working with NEPAD to see how the universities could support CAADP at the country and sub-regional levels. We need platforms and mechanisms for better coordination of capacity.”

A New Direction for FARA

As FARA grew, it needed new financial structures to enable it fulfil its role. Implementing CAADP was a huge and multidimensional job. Yet by 2007, FARA still relied mainly on piecemeal project funding from various donors. It needed more resources.

The donors and FARA’s leadership alike began to think that it would make more sense if all donor funds poured into the same large pool, instead of having many small, piecemeal funding streams for distinct programmes. The former approach was putting a strain on FARA’s small staff, which had to keep on top of different reporting requirements from many different donors. The system was onerous and inefficient.

This led to the creation of the Multi-Donor Trust Fund (MDTF). In early 2008, twelve donors signed an aid MOU with FARA, and began negotiations to establish a Multi-Donor Trust Fund in which donors would pool their contributions towards meeting FARA’s operating costs. The move away from bilateral funding promised to provide FARA greater flexibility and autonomy. However, there was a time lag between when bilateral support ceased, and when MDTF funding began. It became necessary to use project money to sustain FARA for a while. Funds continued to dwindle precariously while funders began to raise eyebrows that their contributions were being used to keep the lights on. As a result of these seeming irregularities, FARA was subjected to nine different financial reviews that year, and it passed them all with flying colours.

In 2009, the establishment of the MTDF gave FARA a new quantum of growth. The MTDF made FARA less dependent on piecemeal project funding, and therefore more able to concentrate on its core strategy. By this time, FARA was no longer a start-up, running on a skeleton staff. There was a need for a much stronger focus on strengthening its internal governance and on establishing monitoring and evaluation systems.

The MTDF included a review of FARA’s organogram, which led to an expansion of the organisation’s professional staff from just a handful to 24. They would develop FARA’s programmatic work along the lines of the five Networking Support Functions (NSFs) that had been identified in an external review previously commissioned by FARA, (the EMPR)

to assess FARA’s accomplishments and future potential, and a Joint Review in collaboration with major donors.

Both the EPMR and Joint Reviews used the Strategic Plan of 2007 to identify the following Network Supporting Functions as the areas in which FARA should concentrate its efforts:

- NSF 1 Advocacy and Resource Mobilisation
- NSF 2 Access to Knowledge and Technologies
- NSF 3 Regional Policies and Markets
- NSF 4 Capacity Strengthening
- NSF 5 Partnerships and Strategic Alliances

The NSFs were created in order to respond to the directives of CAADP Pillar IV. For example, programmes in policy and advocacy support addressed the continent’s gaps in governance, and capacity strengthening focused on aligning the scientists and universities with the CAADP vision and mandate.

However, it became necessary to convince policymakers that the CAADP agenda was viable. They had to be shown that it worked on the ground, among the people. They wanted to be assured that there was a demonstrably clear and concrete link between strengthening the institutions and improving farmers’ lives. FARA needed to engage its partners to ensure that IAR4D was working in practice, in rural farming communities. They were successful, and the stories abound.

17 Subsequently NSF 1 and 3 were combined
PART III: STORIES FROM THE FIELD

IAR4D and Sorghum

In western Uganda, in the Bubare local government offices, a group of approximately 30 local farmers were having a meeting. The walls were adorned with flip chart paper displaying the current business and future aspirations of the Bubare Sorghum Innovation Platform. The group’s governance structures, loan schemes, balance sheets, research priorities and attendance rules were catalogued neatly on hand-written sheets for all to see.

At this Ugandan location, the Innovation Platform (IP) approach had brought together farmers, researchers, university lecturers and local government officials in creating a value chain around sorghum, a highly nutritious local staple that had previously been disregarded by officials as a ‘peasant’ crop. Now, thanks to the Innovation Platform, sorghum was beginning to show its commercial potential. Mamera porridge, made from red sorghum, became a popular household staple throughout western Uganda. So hardy and nutritious is this porridge that locals feed it to infants whose mothers died in childbirth or are unable to breastfeed.

Until the IP convened in 2008, nobody had ever tried to develop sorghum commercially; but now, traveling around the area, one would see sorghum drying in the sun on mats in front of nearly every household. The creation of the sorghum IP introduced new stakes. A local industrialist was willing to invest in producing a commercial version of the sorghum porridge, mamera; and instantly, farmers had a steady demand for their sorghum. As farmers organised themselves through the IP, a whole system of mutual benefit fell into place. Farmers gained access to a small warehouse where they collected sorghum in bulk, and stored it to sell whenever prices were high.

“When we started as an IP, we set up a work plan: we said researchers do this, local government do this, farmers do this, business community do this,” recalls Atuheire Julius, a sorghum farmer who is the Chairperson of the Bubare Sorghum IP. “We have so many partners; and farmers know that after we have produced our sorghum, we have a ready market.” A chief buyer is Huntex Industries, whose commercial product, Mamera, is now stocked on supermarket shelves throughout the area.

The steady guarantee of fair prices and a reliable market oiled the whole IP machinery, and
most crucially empowered farmers to demand relevant research and policy support from local authorities. According to Gard Turyamureba, a senior research officer at the nearby Kazardi station,

“When the platform was created around sorghum, the processors came in and the farmers realised that there is a market for the product. They realised that they could not improve their productivity, so they came to researchers and asked what we could do. One of the factors that is reducing productivity is low soil fertility, so the farmers are now demanding that we go and address

Jenniffer Twebaze, the district production officer for the Kabale District Local Government, also part of the IP, explained the relationship:

“Extension, research and farmers never used to interact directly, but now they can demand varieties of sorghum which are high-yielding. They can demand new by-laws which are now being enforced. This is a group we want to support, because we know they will progress and bring back dividends to the community.”

Researchers are now testing several new, more productive and drought and pest-tolerant varieties of sorghum for release.

DONATA, Quality Protein Maize, and the Orange Fleshed Sweet Potato

In the area of Ruhindo in Rwanda, Margaret Muhayimana used to grow sweet potatoes to bridge the lean months between planting and harvest time. Stuck in a subsistence holding pattern, she would till her small family plot to feed her seven children and the three orphans she cared for. It was always a struggle to make ends meet, but these days, she is able to feed everyone, thanks to the sturdy reliability of the sweet potato.

As Margaret crossed the sweet potato fields where she and her neighbours worked, she explained how sweet potatoes had come to provide so much more than just basic subsistence. Cultivating new improved varieties of the Orange Fleshed Sweet Potato (OFSP), Margaret and fellow members of a cooperative called Cotemu, of which she was the chair – comprised of 13 members, 11 women and two men – had seen the health of their children improve, and their incomes more than double.
The difference was the introduction of a simple technology: a new variety of orange-fleshed sweet potato, which is more prolific, tastier, and more nutritious than the ones she used to grow.

The orange-fleshed sweet potato (OFSP) is a product of FARA’s Dissemination of New Agricultural Technologies for Africa (DONATA) programme, launched in 2007 as part of the $23 million Promotion of Science and Technology for Agricultural Development programme, and supported by the African Development Bank. DONATA was designed to utilise the Innovation Platform for Technology Adaptation approach (IPTA), to disseminate promising new varieties to farmers. It was implemented by the SROs across the different sub-regions. In the ASARECA region, the OFSP was piloted in Rwanda, Mozambique, Kenya and Tanzania; while a second variety of Quality Protein Maize (QPM), produced with marker-assisted selection of genes to yield high quality protein, was introduced to farmer groups in the Democratic Republic of Congo and Uganda (CHQ).

In the case of Rwanda, the choice of adopting OFSP was fitting. The country has the highest per-capital sweet potato consumption in Africa, and because tubers grow and can be harvested year-round, the crop had always served as an important backstop to food security. Both the Orange-Fleshed Sweet Potato and Quality Protein Maize programmes were designed with a focus on nutrition. For example, the OFSP, first developed by the International Potato Centre of the CGIAR, in Lima, Peru, was bio-fortified with beta carotene, a precursor of Vitamin A. In the early stages of the programme, the Rwanda Agricultural Board (RAB) partnered with World Vision, Africare and the Catholic Relief Services to reach nutrition centres where the OFSP could help boost the health of people with HIV/AIDS, undernourished children and others in need of OFSP’s immune-boosting qualities.

In the Democratic Republic of Congo, the Quality Protein Maize, (QPM), as rich in protein as skim milk, proved effective in combatting malnutrition among children and nursing mothers. The dissemination of QPM to vulnerable people helped to establish a strong and important link between agriculture, health and nutrition. Through the Mweneditu Innovation Platform for Technology Adoption (IPTA), NGOs and clinics used the QPM; and its nutritional boost gave breastfeeding mothers the strength to feed orphaned babies and their own babies. A mother of quadruplets whose babies had become undernourished was able to supplement her diet with QPM and nurse all four children back to health.

The QPM also generated new enterprises as women’s groups were taught to bake bread and cakes using QPM flour. As farmers groups gained access to the QPM, they too succeeded in developing new uses for the nutritious and affordable maize. The QPM was even developed into a high-quality, low-cost feed for pigs. This led to increased piglet production, which provided farmers with additional income. In the Democratic Republic of Congo, the QPM has successfully improved the nutrition of nursing mothers and small children, reducing kwashiorkor and other indicators of malnutrition.

A similar result was obtained in Rwanda by Margaret Muhayimana who adopted the OFSP. In her case, the most immediate benefit was a noticeable improvement in her children’s health. Vitamin A deficiencies are a leading cause of blindness in Rwandan children, andas
Margaret recalled, she and her neighbours frequented the clinic because their children were sick often and had eye problems; but that is a thing of the past.

Focusing first on nutrition, the NGO Catholic Relief Services, a DONATA partner, introduced the OFSP to pregnant mothers and children through its community feeding schemes, and the results were immediate. The Orange Fleshted Sweet Potato was found to significantly boost the immune systems of pregnant women and children.

Today, Muhayimana and the other members of the cooperative now produce surpluses which they are able to sell to a local factory at almost double the market price of the traditional varieties. These sweet potatoes also save on labour because their leaves spread out and cover the soil, blocking weeds. A kilogram of traditional sweet potato fetches 80 Rwandan francs, but the OFSP sells for 150 francs a kilogram.

Muhayimana says she now earns enough money to pay all the children’s school fees, as well as national health insurance fees, and can now afford a proper mattress and gumboots for working in the fields. To Muhayimana and others in her group, the benefits of a fair price and a steady reliable income are important. The group earns 30,000 Rwandan francs every week supplying a nearby factory, where the sweet potato is transformed into breads and cookies. Through the factory, Muhayimama’s group now has access to a reliable distribution network: the factory owner, Sina Gerald, is also the proprietor of a network of supermarkets across Rwanda. The group is beginning to save some capital in the bank, and there is always cash available now.

New formulas are also being tested for sweet potato juice, which could increase the demand for the OFSP. As the products and the distribution diversify, demand for the OFSPs will only continue to grow.

Because of its low status in the past, the sweet potato was considered a women’s crop. The 2007-08 food crisis focused attention back on the production of crops key to food security, as unglamorous as they may be. As new market opportunities develop, men are seeking to claim their share of the OFSP business too.

The goal of DONATA was not only to introduce new varieties, but also to generate value-addition. To that effect, the factory is now producing juice from the sweet potatoes and extracting the pulp to use as an ingredient in biscuits. The changes and successes are no accident. They are the result of a process designed to work at the local level.

One of the regional benefits of DONATA is that it has paved the way for researchers in each of the countries to share new derivatives of the OFSP varieties they have developed. The materials used by the Rwanda Agricultural Board (RAB), for example, include five orange varieties produced by Mozambican plant breeder Maria Andrade. These varieties were bred particularly for drought tolerance, and perform well in Rwanda. While RAB leads the primary multiplication of planting materials, secondary and tertiary multiplication is now carried out in communities by farmers trained by RAB and NGOs who provide the OFSP to vulnerable populations. In the communities, the group maintains clean planting materials,
having been trained through the OFSP programme.

The farmers have learned to generate profitable enterprises from sweet potatoes, producing breads as well as crispy fried donuts called mandazi. The sweet potato leaves also serve as an animal feed, which is a boon to farmers in light of Rwanda’s zero-grazing policy. They were also trained to maintain their own clean planting materials, also selling clean cuttings to surrounding communities for extra income. Farmers in the area once exchanged traditional seeds freely. Now, however, plant cuttings are sold for a small fee of 30 Rwandan francs each.

The process was modified in accordance with each situation and locality. For example, traditional firewood ovens were once promoted to enable communities to form baking cooperatives. However the scarcity of wood scuppered the plan. Electric ovens were the next option; and one group has been able to access a loan from the Rural Development Bank for an electric oven for a similar programme.

The groups are also expanding into processing. Jean-Marie’s cooperative group, Iwacu Enterprises, has been producing mandazi, a popular fried donut, from the sweet potatoes. The cooperative started with 15 members who each invested 1000 RW francs (approximately $1.45) in 1998. Between then and now, the group has expanded to 52 members, each of whom has a share that is now worth around $300 USD. The group also recently obtained a bank loan to install a mechanical slicer and industrial fryer in order to scale up production of the popular mandazi donuts. The extent of the enterprise was described by Dr. Fina Opio, the Executive Director of ASARECA.

"Through the OFSP now in ASARECA, we have learned from IPs, and are scaling it out to other countries. In Kenya the famers are selling the OFSP into supermarkets in Nairobi because of the way the platform is done, because of links to markets, and the farmer access to credits. Working with FARA and SROs we can cover lots of ground."

The DONATA programme reached approximately 400 farmer groups, impacting about 12,000 people within Rwanda, including family members and children. The DONATA program itself ended in 2013, but it left the model and structures in place to continue and expand in a partnership between RAB and the International Potato Center (Peru)(CIP), overseen by ASARECA, and facilitated by FARA.

**RWANDA: A Shining Example**

As a small country in Central Africa, with huge climatic variation and a population of 11 million, Rwanda in many ways serves as a microcosm for many of the issues playing out over the continent. Some of the key issues facing Rwanda are population growth, food security and access to land. It is one of the most densely populated countries in the world. Therefore, its predominantly smallholder farmers are squeezed onto ever-tinier plots averaging half a hectare in size. Every square inch of available land is under cultivation. Agriculture is integral to the economy and employs more than 80 percent of the labour force, yet the land
pressures have multiplied. A single hectare of land has to feed nine people; and that number will only grow as the population expands. In the face of such challenges, Rwanda has made remarkable progress in achieving food security.

However, the country remains vulnerable to environmental stresses – particularly biotic stress and soil erosion. Facing these converging challenges in the aftermath of the 1994 genocide, Rwanda has looked to CAADP for achieving the levels of productivity that will sustain both food security and economic growth. The small country has been a leader in implementing CAADP at the country level, and has tied its agricultural policies to its broader national development strategy; contained in the National Economic Development and Poverty Reduction Strategy and Rwanda’s Vision 2020 document.

Rwanda had a tough place from which to climb up. The genocide decimated Rwanda’s agricultural research system. As the sector began to regroup in the late 1990s, officials realised that most of the country’s scientists had fled, been killed, or were jailed. SCARDA was a lifeline, not the least because sponsorship for postgraduate trainings helped to train six young researchers who have since returned to fill senior positions in plant breeding, livestock breeding, soil science, and innovation systems within the NARS.

Rwanda’s efforts at reforming its agricultural sector began in the early 2000s, with the paramount aim of achieving food security, as the country reached a level of post-conflict stability. The year 2008 saw the development of the first agricultural sector-specific strategic plan, which outlined five programmes, all aimed at securing food and nutrition security. The programmes’ focus included intensification of crop and livestock systems, land improving post-harvest handling practices, mechanization across the value chain, and the development of infrastructure.

When the strategy was first unveiled, 21 out of Rwanda’s 30 districts were food insecure; but within five years, food security for the entire country was achieved. Work still remains to be done on accomplishing nutrition security, such that food is not only plentiful, but is also varied and rich in micronutrients.

Inspired by FARA’s advocacy on CAADP Pillar IV, Rwanda re-organised its research and extension systems along the lines of the IAR4D approach, and integrated these services into a single organisation: Rwanda Agricultural Board (RAB). It was the first country to create a CAADP investment plan, and is one of a handful of countries, including Sierra Leone and Ethiopia, to obtain funding from the Global Agricultural and Food Security Programme. The country is now finalizing a second investment plan for CAADP.

“Thanks to strong policy coordination, we know where the sector needs to be in 10 years’ time,” said Dr. Jean-Jacques Mbonigaba-Muhinda, the Director-General of RAB. “We have to sustain the system now”.

Institutional reform, aligned with CAADP principles, has been “key to Rwanda’s success, and has helped Rwanda achieve its goal of food security,” concluded Mbonigaba-Muhinda.
Rwanda has also been the only country to successfully implement all four of FARA’s major initial programmes: the SSA CP, DONATA, RAILS and SCARDA. Therefore, the tiny country is perhaps one of the places where the impact of FARA’s integrated approach to research and development and the resulting linkages are most visible.

Lessons taken from Rwanda’s participation in the Lake Kivu SSA CP pilot cemented IAR4D as the national approach. The learning site, which established milk and potato value chains along the border areas of north western Rwanda, eastern Congo and south western Uganda, helped to provide Rwanda with a blueprint for taking up the IAR4D approach. The country now has the benefit of a well-functioning programme that is now being replicated in other agricultural areas like maize and fisheries.

“There is no need to go back to business as usual. The concept of IAR4D has proved a success, so let’s scale it up!” enthused Mbonigaba-Muhinda.

**Rwanda and the Innovation Platform**

Even though the Sub-Saharan Africa Challenge Programme (SSA CP) has formally ended, the innovation platform is still going strong in the community of Mudende in north western Rwanda, a stone’s throw from the Congolese border.

Eliphase Munyanshoza, a member of a local cooperative (Hujuka Mudende) recalled that before the Innovation Platform started, local farmers, involved mainly in potato farming and milk production, faced problems. Lacking established markets, most families sold their milk piecemeal to traders, earning 80 Rwandan francs per litre. Their potato seeds were of poor quality.

Cows are central to the culture and an important sign of wealth, but they are also expensive to feed and maintain, which means that most families are only able to keep two or perhaps at most five of them.

Through the innovation platform, members of Hujuka Mudende, meaning “get some knowledge”, have learned new techniques to help them increase milk production. Through a training on keeping animal fodder; Eliphase now grows maize, which provides fodder for the cows. He has since purchased two more cows, as well as three one-hectare parcels of land. His cows produce 10 litres of milk a day. He has 9 children, ranging in age from 23 to 5 months. All of his school-age children are in school, and food is plentiful. Even though land pressure constitutes a great challenge to local farmers, Eliphase says, he is pleased to be able to educate his children.

The Innovation Platform project began with the distribution of potato seeds. The farmers sold the potatoes and were able to raise enough money to purchase cows. Each day, Eliphase and any combination of the 200 small farmers in the area take milk to the processing centre.

The gleaming and modern milk collection centre was established in 2010 with funds
contributed by the farmers themselves, with the help of a government grant and a loan from the Rwanda Development Bank. This is where the density of the milk is tested; and if found to be of good quality, the farmer can walk away with cash in hand, opt to be paid weekly, or opt to place the funds into the cooperative’s savings account. The milk is then sold on to several markets and factories in Gisenyi, located at the border with the Democratic Republic of Congo.

The IP brought new knowledge and resources to the enterprise. For example, a food scientist from Makerere University trained the farmers on hygiene and quality assurance at the collection facility. Also, an agent of the Equity Bank was introduced to the IP, paving the way for farmers to obtain credit at favourable terms, invest in upgrading the milk processing shed, and to install industrial coolers. The cooperative is aiming to purchase its own vehicle for delivering the milk to clients.

The potato was not left behind. There continues to be a potato bonanza in the region. Markets are burgeoning across Burundi, Uganda and South Sudan, and prices have shot up to 300 Rwandan Francs per kilogram, with about 900 farmers supplying a potato value chain. FARA initiatives continue to make a difference.

CAPACITY BUILDING

Rwanda

In Rwanda, the SSA CP and DONATA programmes provided practical laboratories for testing and validating the Integrated Agricultural Research for development (IAR4D) concept and the Innovation Platform for Technology Adoption (IPTA) approach. Yet a system is only as effective as the people who are in it. Therefore, the SCARDA programme filled a critical gap in Rwanda’s agricultural research system. The beneficiaries of the programme continue to make valuable contributions.

Martin Gafishi was a SCARDA beneficiary who did his master’s degree work in plant breeding at Makerere University in Uganda, and now coordinates the maize breeding programme for the Rwanda Agricultural Board (RAB).

>“Farmers in the country’s high altitude zones want to cultivate maize, but the only available variety to grow at such an altitude is an open-pollinated variety introduced from CIMMYT in 1986; and the grain is of poor quality. Today Rwanda is importing a lot of seed from the big seed companies from Kenya and South Africa. The country is spending a lot of money to import hybrid seeds because hybrids have higher yields.”

Gafishi is now attempting to produce a maize hybrid that is suited to Rwanda’s high altitude zones, can feed the local people and reduce reliance on imports. Even though the process is long and arduous, involving painstaking hand pollination of multiple cross lines. Since returning from obtaining their MScs, he and his fellow SCARDA graduates have gained
confidence to work independently; and are making important contributions.

Soil fertility is another particular challenge for the country, as 60% of the soil is acidic. Two other SCARDA graduates are tackling this challenge from different angles: Mathilda Uwizerwa studies the effects of the soil bacteria rhizobium on the productivity of soya. Her colleague, Cyamwesh Rusanganwa Athanase, works on soil erosion issues, concentrating on developing methods of mechanisation and infrastructure development that don’t cause soil erosion. These are just some examples of the local impact of FARA’s initiatives.

UNIBRAIN: Universities, and Business, and Business Incubators

Substantial learning had been amassed through SCARDA, DONATA, SSA CP and the IPTA approach. However, it soon became obvious that there was a need for a programme that would distil some of the knowledge that had emerged around how capacity strengthening worked; how it could be integrated into the Innovation Platform approach; and how the universities’ contributions could be collected and introduced into the value chains, possibly also towards entrepreneurship. This was one of the goals of UNIBRAIN, the DANIDA-funded programme.

Aribo Chicken and CCLEAR in Ghana

The opportunity came in the form of chicken. At the Council for Scientific and Industrial Research (CSIR) on the outskirts of Accra, Ghana, stood a large chicken shed, where some birds fluttered around, pecking at corn. These were a locally adapted breed of chicken, known as the Aribo, developed by researchers at the Animal Research Institute (ARI), in response to a surge in demand for chicken meat from Ghana’s growing urban middle class. The producers of the Aribo say that their chicken is superior to foreign breeds because it has been adapted to withstand the local climate, including the heat wave and disease outbreaks that tend to decimate less hardy birds.

Under the UNIBRAIN programme, a business incubator was established within ARI: Creating Champions in Livestock Agribusiness (CCLEAR). The CCLEAR is a consortium of entrepreneurially-minded local farmers and students, as well as the NGO, Heifer International. The aim is for all these actors to pool their strengths and bring ARI technologies including the Aribo chicken, to the marketplace, to strengthen Ghana’s burgeoning food industries.

Dr. Aissetou Yaye, the Executive Secretary of ANAFE and Ralph von Kaufmann, championed the UNIBRAIN programme and worked closely with FARA to develop and design it, and present the concept to donors. She reflected:
“Tertiary agricultural education didn’t have a big role in the previous 10-year implementation of CAADP, but now it has come back strongly, and we have realised that education is key to everything. Africa lacks critical mass. Research is a high level activity and it needs a minimum of capacity and skills. Only tertiary education can bring that critical mass.”

For Dr. Emmanuel K. Adu, the ARI Deputy Director who also serves as CEO of CCLEAR, the programme has brought out an entrepreneurial streak he never knew he had.

“For my 20 years working in the research institute as a scientist, I have always been happy to do publications and get my promotions. Whether the farmer would take my technology or not, that was not really my thinking. Now I am being forced to look at the business side of everything I do. If there is no business to it, it doesn’t mean anything to me anymore. My whole research is looking at how we can translate the research we are doing into business: how to get entrepreneurs to take up the technologies we have here.”

The incubator employs different strategies for working with entrepreneurs. Some come forward to pitch their ideas, seeking support from the incubator. For others, ARI provides financing or acquires a share of the business. Contracts between entrepreneurs and the ARI are formalized. Already, valuable business lessons have been learned through the incubator. One key lesson is to interpret price signals correctly. According to Adu,

ARI researchers are confident about the quality of the Aribo, but they need to pay attention to what the market wants: “It may be a better chicken, but if it costs more than people are prepared to pay – forget it”

The programme is also helping the university to break out of its traditional mode of focusing only on book learning. For example, the first intern from the University of Ghana, Legon recently completed a stint at CCLEAR, during which time he developed and pitched his own business plan. He had this to say:
CCLEAR was only one of six business incubators established across the continent under UNIBRAIN. All the programmes are aimed at strengthening value chains, including: coffee in Uganda; sorghum in Kenya; bananas in Uganda; mangoes and tomatoes in Zambia; livestock in Ghana; and agroforestry products in Mali. The projects were selected competitively, and each one was established to run as a business.

Banana Value Chains in Uganda

In Uganda, another UNIBRAIN project concentrates on the banana value chain. In 2012, a group of academics, researchers and business people got together to launch a consortium called AfriBanana Products Ltd with the idea of generating new business opportunities in the banana value chain. Across Uganda, starchy green bananas are regularly cooked to produce a popular staple called ‘matoke’, but at some point, it became evident that the value of these plants is severely under-utilized. As rhizomes, bananas produce a lot of biomass that is constantly regenerating itself – but typically only the fruit is used, and the rest of the plant goes to waste. AfriBanana Products Ltd was designed to address such problems.

AfriBanana Products also ran a business incubator. Moses Tumsime, an incubator participant, walks amidst gleaming machinery and the steady hum of industry, explaining the process for preparing the vacuum-packed matoke: the bananas are first peeled by hand and visually inspected for quality and length. Then they are cleaned and cooked. Then the matoke is soaked in a metabisulfate solution to avoid oxidation before vacuum sealing.

Nearby is Chris Tomrami, a Ugandan who recently graduated from the Sokoine University of Agriculture and Technology in Morogoro, Tanzania. He has gained valuable experience producing banana wine.

“We are interested in fresh, green matoke. This is a variety that has been of low value, so we get it from farmers who are stranded with it. We bring it here, ripen it, and do the peeling. We add sugars and test it for acidity and add yeast, and in two weeks or a month’s time, it should have fermented.”
The project gives farmers better prices and a guaranteed market for their produce. The incubator participants also benefit by gaining hands-on experience. As described by Tomrani,

“In my class at the university, we were 53, and we had only one laboratory of this size. You couldn’t do anything hands-on. With this enterprise, I’ve gotten experience. I would love to begin my own enterprise. I want to be a job creator. If this job ends tomorrow, I won’t look for a job. Instead, I will create jobs for other people with the skills I have.”

One of the UNIBRAIN partners and consortia member of Afri Banana Products Ltd, a company called AfriHort Consult, produces banana juice. It has a separate facility where interns and the programme’s incubator participants, mostly recent university graduates, hone their business and food processing skills, producing a range of banana products including banana bread, banana cakes, wine and animal feeds. Others sister companies such as Frevassem Ltd produces vinegar and vacuum-packed matoke that is exported to the UK and the USA. The AfriBanana project/business provides opportunities throughout the value chain.

Another cluster of innovation and enterprise in Kasokoso, Kampala focuses on generating value from the remaining biomass from the banana plants. Godfrey Atuheire Korinako, a research officer with the Uganda Industrial Research Institute (UIRI) makes a range of paper products from the banana stem fibres. These include shopping bags emblazoned with colourful screen-printed designs and sometimes custom printed with corporate or conference logos. He has also developed a method of treating the same fibres to produce highly absorbent paper that can be used in girls’ sanitary pads.

The waste that is generated from the Korinako’s products is eagerly absorbed by two young incubator participants who have set up shop just down the road. Doreen Nituswima is a participant who makes jewellery beads; fashioned into colourful earrings, necklaces and handbags from the banana fibre paper offcuts discard. She trained in bead-making techniques in China for three months, and has passed her skills on to impoverished women from rural areas, estimating that her enterprise now provides a livelihood for at least 80 other women around the country.
A stone’s throw from the small, one-room building where Doreen Nituswima fashions her jewellery, Tugumisireize Simon, another incubator participant burns banana waste in a large metal drum. He makes charcoal briquettes from banana waste, and has involved the whole neighbourhood in his business model. He and Godfrey Atuheire Korinakoat UIRI have developed machinery for carbonizing banana fibre waste and discarded peelings, and fashioning briquettes. These are then sun-dried. The creates income and employment to young graduates hence wealth creation and poverty reduction through agriibusiness

Several years ago, Tugumisireize had dropped out of school because his parents could not afford to pay his fees. He has since enrolled part-time at a local university, and is able to support himself and his family, and to pay his neighbours for the waste they supply him.

“I’m a small man, but I’m a winner because of this technology. Women and children are collecting peels and bringing them to me, and I pay money. Some people buy food, buy water, buy clothes and pay school fees from the money I pay them. Garbage is gold!”

The Innovation Fund for Agricultural Transformation and Sierra Leone

One of the gaps that emerged from the practice of IAR4D was the lack of affordable finance faced by many farmers. Banks have typically been reluctant to lend to farmers, whom they view as a risky bet. For many small farmers living at subsistence margins, a single season’s bad harvest or a year of drought could wipe out profit margins and leave a farmer in debt. As Innovation Platforms developed, farmers were brought together with banks. However, the banks were requiring high interest rates on their loans. Commercial lending rates have been known to be as high as 30%. FARA’s solution was to establish the Innovation Fund for Agricultural (IFAT), being pioneered in Sierra Leone, and planned for several other countries.

A walk through a supermarket in Freetown would show cashews from London, Swiss chocolate, Greek olives, Thai rice, French wine etc. It is a snapshot of a heavily globalised food industry. Apart from the fact that most of the people outside on the street could not afford the products being sold here, a number of these products could be produced locally. The absence of local products from these shelves reflects the missed opportunities resulting from poorly developed market systems.

The first task of IFAT was to put Sierra Leonian rice on these supermarket shelves – a task that has proved to be quite challenging due to the lack of organisation within the sector. Rice, in Sierra Leone, is mainly produced by small-holders, many of whom are not formally organised.

IFAT has started small, with $100,000 in start-up funding from FARA and $200,000 committed by the government; but the plan is for IFAT to grow, and to build the sector along with it. The funding is open to any part of the value chain. In Sierra Leone, funds from IFAT are being employed as a catalyst for professionalising the rice production industry in a manner that empowers small farmers and creates an efficient local industry that can hold its own against the vast quantities of cheap Asian rice that gets dumped into the country.
IFAT’s model is that the repayment of the loans, at 10%, will remain affordable to businesses, but will also provide the fund with a basis to grow. Five percent of the profit recouped is ploughed back into the organisation for running costs. Otherwise, the money is re-lent to new ventures. Ultimately, the aim is to enable farmers to build their assets and develop structures through which they can access funds, so that they themselves become the investors that the sector so badly needs. Two loans of $50,000 each have been made to two companies producing rice.

The hurdles to building the industry are numerous. Farmers still use mixed seed varieties, which affects the quality and uniformity of the rice, and puts off some urban customers. Modern machinery is needed for sorting out foreign particles, polishing and packaging the rice. Farmers’ cooperatives are not well-organised, and the supply of rice is not constant or reliable. Yet slowly the industry is building, as evidenced by the brand new red-labelled packages of Nerica rice piled up in the organisation’s anteroom. They are bound for the supermarket, where they will compete side by side on the shelf with the Asian varieties.

The government has built large-scale mills in agricultural business centres across the country, making it possible for the processing of rice that is free of pebbles and foreign particles, and is therefore acceptable to discerning urban customers. Rice production in Sierra Leone has turned around.

**Advocacy and Policy: Sierra Leone**

Like Rwanda, Sierra Leone is on a mission to transform its sector from its current smallholder base to a modern, mechanised sector. Sierra Leone embarked on the CAADP process in 2008. According to the Hon. Minister for Agriculture, Forestry and Food Security, Dr. Joseph Sam Sesay, FARA provided crucial direction in articulating the vision of Pillar IV. The result was a 20-year long-term National Sustainable Agricultural Development Programme, released in 2010. Through FARA, Sierra Leone also secured support from the Africa Rice Centre and the Kenya Agricultural Research Institute in preparing a comprehensive assessment of Sierra Leone Agricultural Research Institute (SLARI), which has resulted in fresh strategic, operational and investment plans for the institute.

In addition, Sesay projected that programmes like IFAT will help to generate opportunities that attract young entrepreneurs in the farming sector—a task that is essential for securing the long-term future of post-conflict Sierra Leone. He described efforts in Sierra Leone to get the youth engaged: one of the rice companies, for instance, ARUL, is owned by a young Sierra Leonian who returned from London and invested in the business, and the country’s second strategic prong of securing large-scale private investment in agriculture has also generated opportunity for youth, in the form of some 20,000 jobs created in the past year.
FARA and Agricultural Research in South Africa

As CARDESSA, the SRO for Southern Africa, formed in 2011, the fledgling organisation needed FARA’s considerable experience with getting programmes and methodologies established.

FARA’s expertise was particularly useful in the area of monitoring and evaluation. For example, in evaluating the results of the Sub-Saharan Africa Challenge Programme (SSA CP), the SRO had some difficulty in separating the impact of the project itself from other factors. FARA evaluators looked at a range of factors to measure how farmers’ ease of access to markets shifted and the effect this had on their socio-economic status, their household food security and wealth status. Inception data was collected at two sites, and using an econometric approach, surveys were conducted to measure the changes. CARDESSA was able to adopt the systems of management, monitoring and evaluation developed by FARA, cutting out years of effort in these areas.

SABIMA and Biotechnology

FARA Secretariat also launched the Strengthening Capacity for Safe Biotechnology Management in sub-Saharan Africa (SABIMA), a 3-year Syngenta Foundation-funded initiative working in six African countries to facilitate strengthening in biotechnology and biosafety. Support from SABIMA was essential in securing Ghana’s adoption of a bill in 2011 to facilitate the uptake of biotechnology.

Throughout the region, FARA’s value chain approaches have been successfully adopted such as in support of both small-scale and industrial bee-keepers in Botswana, Mozambique and South Africa; and small-scale wastewater irrigation in Botswana, which is enabling farmers to produce high-value horticultural products.
PAEPARD: Promoting Demand-Led Agricultural Research

The Platform for African-European Partnerships in Agricultural Research for Development (PAEPARD) that started in 2007 is an intercontinental initiative that promotes demand-led agricultural research between African and European ARD stakeholders contributing to achieving MDGs for Africa. PAEPARD is a joint initiative of FARA and EFARD and is funded by the European Commission (EC). The initiative aims at increasing the involvement of African and European organizations in research programmes of the two continents, and of organizations from civil society and the private sector in agricultural research. The end users (farmer organizations, private sector organizations) involvement aims to move from the supply-driven approach in ARD towards a demand-driven approach. It works with consortia of partners interested in specific research themes by identifying relevant research questions, funding sources and preparing research proposals.

PAEPARD partners have worked out the approach known as the Users Led Process (ULP) that gives the leadership of consortia to non-research actors so as to make sure research is needs-based which is likely to increase the adoption of technology generated by research. So far more than 25 consortia involving African and European stakeholders (researchers and non-researcher) have been facilitated by PAEPARD through the Agricultural Innovation Facilitators (AIFs) that were inducted by PAEPARD in multi-stakeholder partnership facilitation. More than 40 proposals were developed by African and European ARD actors and submitted to donors for funding. However few won the funds because of the current high competition in funding award.

ABRIM: Africa-Brazil Agricultural Innovation Marketplace

Launched in July 2010 during the 5th Africa Agriculture Science Week and FARA General Assembly the ABRIM is a model of south-south collaboration that focuses on the generation of benefits to African smallholder producers based on research-for-development projects between African countries and Brazil. The initiative involves Brazilian Agricultural Research Corporation (Embrapa); Forum for Agricultural Research in Africa (FARA); African Research for Development Institutions; International Fund for Agricultural Development (IFAD); United Kingdom Department for International Development (DFID); The World Bank; The Bill and Melinda Gates Foundation (BMGF)

The objective is to enhance agricultural innovation and development on the African
continent through the establishment and strengthening of partnerships between African and Brazilian organizations (Embrapa). The expected outputs include:

- The development of a mutually agreed framework for sustainable Africa-Brazil collaboration.
- The generation of innovative research-for-development projects involving African and Brazilian organizations to support smallholder producers.

The ABRIM process is based on 3 pillars:

- **A policy** dialogue with the main stakeholders including policy makers and research and development institutions.
- **A forum** to present and discuss research for development ideas.
- **Support of Africa-Brazil collaborative projects** in the following thematic areas:
  - Productivity Enhancing Technologies
  - Natural Resource Management Improvements
  - Policy, Institutional Strengthening, and Knowledge Management
  - Smallholder/Poverty-Alleviation Targeted Technologies

The first call for proposals and formation of partnerships between African and Brazilian researchers was launched in 2011. From this call only 10 were selected and funded by Africa-Brazil Marketplace. This batch of projects was closed in April 2014 during the Marketplace Forum. Results were satisfactory and around 4 projects are likely to be selected for scaling out of their results.

Another call was made in 2012, and this attracted 116 responses. A review of the responses showed that they were, on the whole, more qualitative than those received the previous year although the final selection retained 10 proposals. On-going activities under this batch of projects have started to produce results; for example, work on the assessment of Rhizobia in Northern Ghana has identified some useful strains of this inoculant. The team is now ready to supply cowpea and soybean farmers in the savannah of West Africa, with the potential to reach 11 million hectares.

In December 2013, another call was launched that attracted a hundred applications from which 16 projects were selected. FARA has supported the assessment of the concept notes and full proposals from which 10 projects were funded.

The most important achievement of ABRIM is the exchange of germplasm between the African and Brazilian partners. For long time African partners couldn’t have access to the Brazilian germplasm whose a part originates from Africa. This South-South collaboration initiative offered an opportunity of exchange. Some varieties of banana, soy-bean and Brachiariasp were exchanged. Likewise, African germplasm was sent to Brazil.

Expect the fund mobilized for the first and second batch of projects, partners have secured 9 million USD additional funds from Bill and Melinda Gates Foundation (7million) and DFID (2million). Pilot projects will be funded but consideration is made to scaling out results from the 4 promising projects of the first batch including the rhizobium targeting 11 million hectares.
PART IV: THE WAY FORWARD

In 2013, internal and external reviews of FARA highlighted the need for FARA to strengthen its coordinating role amongst all the organisations in the sector. In addition, consultations with FARA stakeholders highlighted three strategic areas upon which the organisation should focus:

- **Visioning Africa’s agricultural transformation**: with foresight, strategic analysis and partnerships to enable African agricultural stakeholders to determine how the industry should develop and plan how to get there, based on evidence and the combined strength of all stakeholders

- **Integrating capacities for change**: by making the different actors aware of each other’s capacities and contributions, and helping them to exploit their relative collaborative advantages to mutual benefit while also strengthening their own human and institutional capacities

- **Enabling environment for implementation**: through advocacy and communication to generate enabling policies and ensure that they get the stakeholder support required for their implementation.

These are expected to guide FARA’s activities as the next few years unfold. There will be strategies and initiatives directed at specific areas that have also been identified as key areas of need.

A Medium-Term Operational Plan and a Strategic Plan

From the interviews conducted and the documents examined for this project, including FARA’s Strategic Plan 2007-2016\(^\text{18}\) and the Medium Term and Operational Plan (2008–2012)\(^\text{19}\) (MTOP), a number of areas were highlighted as areas where FARA has an opportunity to continue to add value:

- **Funding**: Establish innovative financing mechanisms that will provide it with greater autonomy and resilience in an increasingly uncertain global financial climate and that will cushion it against an inevitable decline in donor funding. There is a particular need to mobilise more support from African governments and the private sector.

- **Gender Mainstreaming**: Increase efforts towards gender mainstreaming across the board.

- **The Subsidiary Principle**: Improve the implementation of the Subsidiarity Principle. It should devolve responsibility for managing and implementing programmes to the


\(^{19}\) [Advancing FARA’s 2007–2016 Strategic Plan for Enhancing African Agricultural Innovation Capacity June 2008](http://www.fara-africa.org/search/?q=MTOP&go.x=0&go.y=0)
SROs, and maintain its focus on coordinating a pan-African strategy.

- **Pan African Relationships**: Seek opportunities to build relationships with the African Union’s burgeoning Pan African Parliament, which is expected to play a key role in harmonising regional policies in agriculture and trade. FARA should also continue to help support and strengthen the voices emerging from continental platforms such as PanAAC, PANGOC, AFAAS and others.

- **Research**: Make new efforts to increase research on climate-smart and agro-ecological farming, and explore the potential of incorporating such approaches into IAR4D platforms while preserving and enhancing them in places where they already exist. Research must be diversified to investigate how appropriate inputs and machinery might be developed locally.

- **Climate Change Resilience**: Boost climate change resilience by exploring avenues such as the genetic diversity and natural resilience provided by traditional crops like amaranth and sorghum (RUFORUM research) that may be better adapted to survive in harsh conditions.

- **Biodiversity**: Support the preservation of indigenous biodiversity, while shunning imported, unsustainable seed and fossil-energy based inputs.

- **Research Dissemination**: Expand the focus of research dissemination beyond improved varieties to include techniques for soil restoration to reduce dependence on external inputs, and agro-forestry techniques such as tree cropping. Integrate farmers more deeply into the research system and harness farmers’ knowledge more effectively within the system.

- **Agricultural Entrepreneurship**: Deepen support for nascent African agricultural entrepreneurs who have been developed through programmes such as UNIBRAIN and have the potential to serve as new generations of entrepreneurs who may potentially provide an indigenous support base for FARA itself.

**Advocacy and Policy**

From FARA’s inception, advocacy and policy issues were core to its mission. CAADP was largely about securing greater commitments from governments to the agricultural sector, including agricultural research. It calls for countries to sign the CAADP Compact and then to prepare country agriculture investment plans. FARA’s Advocacy and Policy unit has the role of shepherding national governments through this process. FARA gathered a pool of experts from across the continent and from different fields whose responsibility is to evaluate each country’s plans and make sure that the plans cover all nine aspects of the Framework for African Agricultural Productivity (FAAP), a framework established by FARA to guide the implementation of CAADP Pillar IV. At the last count, 40 countries had signed the CAADP compact; 30 had developed investment plans and 29 countries had completed the CAADP
review process. A regional compact for the ECOWAS region was also developed. FARA will continue to facilitate these initiatives.

The Advocacy and Policy Unit of FARA initiated a series of Ministerial and Parliamentarian Dialogues that brought senior government officials together for discussions on key issues in agriculture. Dialogues have been held on topics such as catalysing investment into the agricultural sector, and integrating agricultural research in the CAADP country process. The Ministerial Dialogues have encouraged governments to invest more in AR4D, and helped them integrate the budgets for research, extension, education into their countries’ Agriculture and Food Security Investment Plans (AFSIPs).

In spite of these successes, there remains more work to be done. Dr. Emmanuel Tambi described the continent’s challenges as follows:

By 2050 Africa will need to more than double the quantity of food available to be able to feed its population. As long as population is growing faster than food production, there will be need to increase productivity and this is where research and technology dissemination comes into play.

FARA is positioned to continue to work towards meeting these challenges.

As a new strategic direction was shaped for the organisation, a new leader also took the helm. Dr. Yemi Akinbamijo took over as Executive Director of FARA in July 2013, after serving as head of the Agriculture and Food Security Division of the African Union Commission Headquarters in Addis Ababa. Outlining his vision for FARA, Akinbamijo commented:

“Having the mandate of the African Union and the NEPAD coordinating agencies puts us on a unique footing. We have the convening power of all the research organisations on the continent, and that gives us the leverage to venture into the responsibilities of defining a common agricultural agenda for the continent. That is a huge task and a huge responsibility that we are happy to take on.”

For Akinbamijo, many of these key issues converge around the issue of youth involvement and engagement:
“In the coming dispensation, Africa will be the continent that has the strongest potential to address food issues on the planet. Looking at the high proportion of youth, we have to channel this energy in a very constructive and purposeful manner. Let the youth become engaged in agriculture, not just in the manner of business as usual, but in an innovative way that will attract youth into agribusiness. Then we will be solving multiple issues of unemployment and food insecurity and many other things with only one approach.”

The Science Agenda

As part of the next phase of advancing the CAADP framework, FARA has spearheaded a process of shaping a Science Agenda to build on the FAAP and guide countries’ investments in scientific research in accordance with. IFAD President, Dr. Kanayo Nwanze, who co-chaired the expert panel that drafted the Science Agenda, explained that the document will provide a strategic framework for investment in the rural economy where the bulk of the African population is employed.

The Science Agenda is aimed at strengthening synergies in the AR4D agenda. It looks at building sustainable intensification and foresight capabilities. FARA’s work over the next five years will be shaped extensively by the Science Agenda. In facilitating the process of formulating the agenda, FARA’s advocacy work has helped ensure that CAADP priorities for agricultural research, extension and innovation are embedded in national investment plans, AFSIPs and other policy tools.

Still speaking about the Science Agenda, Dr. Nwanze continued,

“If you really want to eliminate poverty and hunger you have to invest in the rural areas and in smallholder agriculture. To reverse this situation will require systematic coordination amongst governments as well as all the institutional players of the agricultural innovation system – and the Science Agenda provides the guiding framework that will make this level of coordination possible.

The Science Agenda promotes the idea of making strategic investments in the kinds of science that will advance the AR4D agenda. The process will draw on all three of FARA’s new strategic priorities, and the Subsidiarity Principle will be used to map out a way for all the various stakeholders to contribute towards the Science Agenda. FARA’s Executive Director, Dr. Yemi Akinbamiyo had this to say:
“The time has come to put form and structure in place that will guide us in a systematic way,” says Yemi Akinbamijo. “We need a systematic approach to drive wealth creation, agribusiness, and re-orient our peasant farmers from subsistence to an agribusiness psychology. We think that the Science Agenda will provide the framework to every member state for achieving this objective.”

The adoption of the Science Agenda will enable Africa to advocate as a bloc both in discussions of the post-2015 Sustainable Development Goals and the new global development agenda that follows.

**Conclusion**

The challenges of the future will only add new levels of complexity. As a coordinating platform, FARA has a key role to play in sharing information and facilitating the dialogues which will help African leaders and other actors within agricultural innovation systems to grapple with the challenges they face, and to formulate intelligent responses. The need is not only for greater productivity in agriculture, but also for agriculture’s potential to provide for economic diversification while meeting the food and nutrition security of citizens even under increasingly harsh conditions. Urban population growth, changing dietary habits and rising demand for animal products all signal a new context in which these growing needs will have to be met.

Government policies will naturally influence the extent to which Africa succeeds in taking the opportunities and mitigating the threats presented by its changing context. This is another area where FARA has a strong role to play. FARA’s position has consistently been guided by CAADP, which encourages the support of local entrepreneurs, and advocates for the expansion of regional trade.

These challenges will test the strength of governments’ commitments to the Maputo Declaration. They also pose complex questions about the key issues with which policymakers need to engage: namely, what kind of future do they envision for the agricultural sector, and how do they create a roadmap for getting there?

Mark Holderness, Executive Secretary at GFAR, weighed in:

“There’s a big rush to invest in agribusiness in Africa, which is a good thing. But there are a lot of underlying questions: What does agriculture mean for Africa’s future? Are the small farmers going to be left behind? How do we support farmers who are not well-equipped to deal with this future? The political future and the agricultural sector of Africa are very closely tied together. That’s where an organisation like FARA has a very important role to play in advocacy and in engaging with the question of what kind of future does Africa want?”
This not only involves analysing the data and indicators, but also requires envisioning different possible scenarios, and imagining how these might unfold, while also recognising the highly emergent, contingent nature of complex processes of change.

Considering the interlinking of highly unpredictable forces of climate change, demographic transition, urbanisation and globalisation, and other unforeseen situations, African policymakers, scientists and citizens must cast their vision to the far future and begin planning how they will not only cope, but prosper in the face of these multiple uncertainties. FARA will remain a key player in the process.
## APPENDIX 1: Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>AFAAS</td>
<td>African Forum for Agricultural Advisory Services</td>
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<td>ANAFE</td>
<td>African Network for Agriculture, Agroforestry and Natural Resources Education</td>
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<tr>
<td>AR4D</td>
<td>Agricultural Research for Development</td>
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<td>ARD</td>
<td>Agricultural Research and Development</td>
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<td>ARI</td>
<td>Agricultural Research Institute</td>
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<tr>
<td>ASARECA</td>
<td>Association for Strengthening Agricultural Research in Eastern and Central Africa</td>
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<td>AUC</td>
<td>African Union Commission</td>
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<tr>
<td>CAADP</td>
<td>Comprehensive Africa Agricultural Development Programme</td>
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<tr>
<td>CCARDESA</td>
<td>Centre for Coordination of Agricultural Research for Development for Southern Africa</td>
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<tr>
<td>CCLEAR</td>
<td>Creating Champions in Livestock Agribusiness</td>
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<tr>
<td>CGIAR</td>
<td>Consortium of International Agricultural Research Centres</td>
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<tr>
<td>CIAT</td>
<td>International Center for Tropical Agriculture</td>
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<tr>
<td>CIMMYT</td>
<td>International Maize and Wheat Improvement Center</td>
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<td>CIP</td>
<td>International Potato Center</td>
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<tr>
<td>CORAF/WECARD</td>
<td>ConseilOuestet Centre Africain Pour la Recherche et le Developpement Agricoles/ West and Central African Council for Agricultural Research and Development</td>
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<tr>
<td>CSIR</td>
<td>Council for Scientific and Industrial Research</td>
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<tr>
<td>DFID</td>
<td>Department for International Development</td>
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<tr>
<td>DONATA</td>
<td>Dissemination of New Agricultural Technologies in Africa</td>
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<td>FAAP</td>
<td>Framework for African Agricultural Productivity</td>
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<td>FAO</td>
<td>Food and Agriculture Organisation</td>
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<td>FARA</td>
<td>Forum for Agricultural Research in Africa</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GFAR</td>
<td>Global Forum for Agricultural Research</td>
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<tr>
<td>IAASSTD</td>
<td>International Assessment of Agricultural Knowledge, Science and Technology for Development</td>
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<tr>
<td>IAR4D</td>
<td>Integrated Agricultural Research for Development</td>
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<tr>
<td>ICRISAT</td>
<td>International Crops Research Institute for the Semi-Arid Tropics</td>
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<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
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<tr>
<td>IFAT</td>
<td>International Fund for Agricultural Transformation</td>
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<tr>
<td>IITA</td>
<td>International Institute of Tropical Agriculture</td>
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<tr>
<td>ILRI</td>
<td>International Livestock Research Institute</td>
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<tr>
<td>IP</td>
<td>Innovation Platform</td>
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<td>IPTA</td>
<td>Innovation Platform for Technology Adaptation</td>
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<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<tr>
<td>KEPHIS</td>
<td>Kenya Plant Health Inspectorate Service</td>
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<tr>
<td>MAPP</td>
<td>Multi-Country Agricultural Productivity Programme</td>
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<td>MDGs</td>
<td>Millennium Development Goals</td>
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<td>MDTF</td>
<td>Multi-Donor Trust Fund</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>MSC</td>
<td>Master of Science</td>
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<tr>
<td>MTOP</td>
<td>Medium-Term Operational Plan</td>
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<td>NARI</td>
<td>National Agricultural Research Institute</td>
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<tr>
<td>NARS</td>
<td>National Agricultural Research Systems</td>
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<td>NASRO</td>
<td>North African Sub-Regional Organisation</td>
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<tr>
<td>NEPAD</td>
<td>New Partnership for African Development</td>
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<td>NERICA</td>
<td>New Rice for Africa</td>
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<td>NSF</td>
<td>Networking Support Function</td>
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<td>OFSP</td>
<td>Orange Fleshed Sweet Potato</td>
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<tr>
<td>PAEPARD</td>
<td>Platform for African European Partnership on Agricultural Research for Development</td>
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<tr>
<td>PAFO</td>
<td>Pan-African Farmer’s Organisation</td>
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<tr>
<td>PanAAC</td>
<td>Pan-African Agribusiness and Agro-Industry Consortium</td>
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<tr>
<td>PANGOC</td>
<td>Pan-African NGOs Consortium on Agricultural Research</td>
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<tr>
<td>QPM</td>
<td>Quality Protein Maize</td>
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<tr>
<td>RAB</td>
<td>Rwanda Agriculture Board</td>
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<tr>
<td>RAILS</td>
<td>Regional Agricultural Information and Learning System</td>
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<tr>
<td>RUFORUM</td>
<td>Regional Universities Forum for Capacity Building in Agriculture</td>
</tr>
<tr>
<td>SABIMA</td>
<td>Strengthening Capacity for Safe Biotechnology Management in Sub-Saharan Africa</td>
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<tr>
<td>SADC</td>
<td>Southern African Development Community</td>
</tr>
<tr>
<td>SADC-FANR</td>
<td>Southern African Development Community/ Food, Agriculture and Natural Resources</td>
</tr>
<tr>
<td>SCARDA</td>
<td>Strengthening Capacity for Agricultural Research &amp; Development in Africa</td>
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<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<tr>
<td>SLARI</td>
<td>Sierra Leone Agricultural Research Institute</td>
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<tr>
<td>SPAAR</td>
<td>Special Programme for African Agricultural Research</td>
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<tr>
<td>SRO</td>
<td>Sub-Regional Organisation</td>
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<tr>
<td>SSA CP</td>
<td>Sub-Saharan Africa Challenge Programme</td>
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<tr>
<td>TEAM-AFRICA</td>
<td>Tertiary Education for Agriculture Mechanism</td>
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<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>UNIBRAIN</td>
<td>Universities, Business and Research in Agricultural Innovation</td>
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<tr>
<td>WALIC</td>
<td>West African Livestock and Innovation Centre</td>
</tr>
<tr>
<td>WARDA</td>
<td>West Africa Rice Development Association</td>
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<tr>
<td>YPARD</td>
<td>Young Professionals for Agricultural Development</td>
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</table>
APPENDIX II: People Interviewed

FARA Secretariat:

Dr. Yemi Akinbamijo, Executive Director
Dr. Tabo Ramadjita, Deputy Executive Director
Dr. Irene Annor-Frempong
Dr. Emmanuel Tambi
Dr. Adewale Adekunle
Dr. Ifidon Ohiomoba
Dr. Aggrey Agumya
Dr. Clesensio Tizikara
Dr. Gbadebo Odularu
Solomon Bangali
Ann Dela Apekey
Idowu Ejere
Dady Demby

FARA Partners and Stakeholders:

Prof. Monty Jones
Moctar Toure, former director of SPAAR
Paco Sereme, former Executive Director CORAF/WECARD
Dr. Ibrahim Mayaki, NEPAD Executive Director
Dr. Kanayo Nwanze, IFAD President
Bongiwe Njobe, former South Africa Director-General for Agriculture
Njabulo Zwane, PANAAC
David Nielson, World Bank
Dr. Silim Nahdy, AFAAS Executive Director
Mark Holderness, GFAR
Prof. Adipala Ekwamu, RUFORUM Executive Secretary
Dr. David Ractcliffe, European Union
Harry Palmier, GFAR/FAO
Dr. Fina Opio, ASARECA Executive Director
Dr. Assiteou Yaye, ANAFE Executive Director
Dr. Harold Roy McCauley, CORAF/WECARD Executive Director
Dr. Tim Simalenga, CCARDESSA Executive Director
Consolata Muzaga, PANGOC Vice President
Sylvie Mbog, PANGOC Executive Director
Field-based interviews:

Ghana:

Dr. Emmanuel K. Adu, CCLEAR Executive Director
Akwasi Mensah-Bonsu, lecturer in agricultural economics, University of Ghana Legon

Rwanda:

Margaret Muhayimana, Chairperson of Cotemu Cooperative
Jean Ndirigwe, DONATA IP Facilitator, RAB
Dr. Jean-Jacques Mbonigaba-Muhinda, Director-General, RAB
Eliphase Munyanshoza, HujukeMudende dairy farmer, IP
Martin Gafishi, maize scientist, RAB
Mathilda Uwizerwa, RAB
Cyamwesh Rusanganwa Athena, RAB
Faustin Ntakazarimara, Chairperson HujukeMudende dairy IP

Sierra Leone:

Prof. Monty Jones, former FARA Executive Director
Hamed Noh, Sierra Leone Chamber of Agriculture Executive Secretary
Henry Kamara, Sierra Leone Produce Marketing Company Managing Director
Lansana Sesay, SLARI, DONATA IP Facilitator
Dr. Joseph Sam Sesay, Minister for Agriculture
Hon. Bernadette Lahai, Member of Parliament
Agnes I. Kamara, SLARI Nutritionist

Uganda:

Atuheire Julius, Chairperson of Bubare Innovation Platform
Turyamureba Gard, Senior Research Officer, Kazardi Research Station
Twebaze Jeniffer, production officer, Kabale District Local Government
Jean-Marie Habamunemyi, Chairperson, Iwacu Enterprise Co-op
Atunkunda Joshua, Manager AfriBanana Products Ltd
Tumsime Moses, UNIBRAIN Incubatee
Tomrami Chris, UNIBRAIN Incubatee
Kwarikunda Evelyn, sorghum farmer, Bubare Innovation Platform
Tushabe Bertha, treasurer, Bubare Innovation Platform
Tugumisirize Simon, UNIBRAIN Incubatee
Nibuswima Doreen, UNIBRAIN Incubatee
Dr. Andrew Ainomugisha, CEO Excel Hort Consult Ltd.
Asaph Mugizi, banana farmer
Adams Nkwatisibwe, production manager, Excel Hort Consult Ltd.
Proscovia Twijukye, unit head/product designer Eco-Friendly Banana Textile
APPENDIX III: Works Consulted

Chronicles of FARA
FAAP: Framework for African Agricultural Productivity
FARA Annual Reports 2002-2011
FARA External Evaluation and Programme Management Review
FARA Medium-Term Operational Plan 2007
FARA Medium-Term Operational Plan 2013
FARA Ministerial Dialogue Reports
FARA NSF Publications (various)
FARA Strategic Plan 2007
FARA Strategic Plan 2013
Making Things Happen: Stories from the Field
Science Agenda for Agriculture in Africa Report (S3A) 2013
About FARA

The Forum for Agricultural Research in Africa (FARA) is the apex continental organisation responsible for coordinating and advocating for agricultural research-for-development (AR4D). It serves as the entry point for agricultural research initiatives designed to have a continental reach or a sub-continental reach spanning more than one sub-region.

FARA serves as the technical arm of the African Union Commission (AUC) on matters concerning agricultural science, technology and innovation. FARA has provided a continental forum for stakeholders in AR4D to shape the vision and agenda for the sub-sector and to mobilise themselves to respond to key continentwide development frameworks, notably the Comprehensive Africa Agriculture Development Programme (CAADP).

FARA's vision: Reduced poverty in Africa as a result of sustainable broad-based agricultural growth and improved livelihoods, particularly of smallholder and pastoral enterprises.

FARA's mission: Creation of broad-based improvements in agricultural productivity, competitiveness and markets by continental-level strengthening of capacity for agricultural innovation.

FARA's Value Proposition: Strengthening Africa's capacity for innovation and transformation by visioning its strategic direction, integrating its capacities for change and creating an enabling policy environment for implementation.

• FARA's strategic direction is derived from and aligned to the Science Agenda for Agriculture in Africa (S3A), which is in turn designed to support the realization of the CAADP vision. FARA's programme is organized around three strategic priorities, namely: Visioning Africa's agricultural transformation with foresight, strategic analysis and partnerships to enable Africa to determine the future of its agriculture, with proactive approaches to exploiting opportunities in agribusiness, trade and markets, taking best advantage of emerging sciences, technologies and risk mitigation and using the combined strengths of public and private stakeholders.

• Integrating capacities for change by making the different actors aware of each other's capacities and contributions, connecting institutions and matching capacity supply to demand to create consolidated, high-capacity and effective African agricultural innovation systems exploiting relative institutional collaborative advantages to mutual benefit while also strengthening their own human and institutional capacities.

• Enabling environment for implementation, initially through evidence-based advocacy, communication and widespread stakeholder awareness and engagement and to generate enabling policies, and then ensure that they get the stakeholder support required for the sustainable implementation of programmes for African agricultural innovation.

Key to this is the delivery of three Key Results, which respond to the strategic priorities expressed by FARA's clients. These are:

Key Result 1: Stakeholders determine how the sector should be transformed and undertake collective actions in a gender-sensitive manner

Key Result 2: Strengthened and integrated continental capacity responding to stakeholder demands within the agricultural innovation system in a gender-sensitive manner

Key Result 3: Enabling environment for increased AR4D investment and implementation of agricultural innovation systems in a gender-sensitive manner

FARA’s donors are the African Development Bank (AfDB), the Danish International Development Agency (DANIDA), the Department for International Development (DFID), the European Commission (EC), the Consultative Group for International Agricultural Research (CGIAR), the Norwegian Agency for Development Cooperation (NORAD), Australian Agency for International Development (AusAID), and the World Bank.