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EMBEDDING RESEARCH-INTO-USE IDEAS IN THE POLICY SPACE: THE CASE OF RIU IN NIGERIA AND SIERRA LEONE

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Utiang P. Ugbe[1]

Abstract

The DFID-funded Research Into Use (RIU) programme can be characterised as 'a new type of organisation performing a blend of new roles'. In a broad sense, RIU's role in brokering agricultural innovation involved serving as an interface between policy and practice, involving research, capacity building, business incubation, network facilitation, policy advocacy, and facilitation of the use of agricultural research. However, instead of a cookie-cutter approach across all Africa country programmes, this paper examines how implementation strategies and thematic priorities varied with each context, and takes the instances of Nigeria and Sierra Leone, in particular. This paper reveals that although the Nigeria and Sierra Leone country offices were literally embedded within national agricultural agencies, each country programme developed its own unique links to the agricultural policy arena. Both country programmes' strategies proved effective in getting the desired results, although the successes were, perhaps, due to different reasons. In Nigeria, the effectiveness of the RIU programme in the policy arena was, possibly, due to the maturation and readiness of the national agricultural research system (NARS), coupled with other forces coalescing serendipitously. In Sierra Leone, the challenges of post-war rehabilitation and revitalisation of the NARS and related systems created a situation in which the national government had been very receptive to the ideas of innovation thinking and having these incorporated into the new national policy on agriculture.

Key words: Research Into Use, Agricultural Research, Innovation, Policy, Institutional Learning, Nigeria, Sierra Leone,

JEL Codes: N5, N57, O13, O19, O22, O31, O32, O33, O38, O55, Q13, Q16

RIU DISCUSSION PAPER SERIES

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LIST OF ACRONYMS

AA Group	-	Agricultural Advisory Group, Sierra Leone
ADB	-	African Development Bank
ADP	-	Agricultural Development Programmes
AFAAS	-	African Forum of Agricultural Advisory Services
ARCN	-	Agricultural Research Council of Nigeria
ARMTI	-	Agricultural and Rural Management and Training Institute, Nigeria
ASTI	-	Agricultural Science and Technology Indicators
AT Team	-	Agricultural Technical Team, PAID
CAADP	-	Comprehensive African Agricultural Development Programme
CGIAR	-	Consultative Group on International Agricultural Research
COOPI	-	Cooperazione Internationale
CRT	-	Central Research Team, RIU
DFID	-	Department for International Development, UK
ECOWAS	-	Economic Community of West African States
EU	-	European Union
FAO	-	The United Nations Food and Agriculture Organization
FARA	-	Forum for Agricultural Research in Africa
FDF	-	Federal Department of Fisheries, Nigeria
FFRC	-	Freetown Fisheries Research Centre
FIM	-	Facility for Inclusive Markets
FMA&RD	-	Federal Ministry of Agriculture and Rural Development,

		Nigeria
GDP	-	Gross Domestic Product
GTZ	-	Deutsche Gesellschaft für Technische Zusammenarbeit, now called the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
IDB	-	Islamic Development Bank
IDRC	-	International Development Research Centre
IFAD	-	International Fund for Agricultural Development
IFPRI	-	International Food Policy Research Institute
IITA	-	International Institute of Tropical Agriculture
ILO	-	International Labour Organization
IP	-	Innovation Platform
JICA	-	Japanese International Cooperation Agency
KFTCRC	-	Kenema Forestry and Tree Crops Research Centre
KHCRC	-	Kabala Horticultural Crops Research Centre
KIT	-	Royal Tropical Institute (Koninklijk Instituut voor de Tropen)
LINK	-	Learning INnovation Knowledge
MAFFS	-	Ministry of Agriculture, Forestry and Food Security, Sierra Leone
MDGs	-	Millennium Development Goals
MLWRC	-	Magbosi Land and Water Resources Research Centre
MoU	-	Memorandum of Understanding
NACRDB	-	National Agricultural Cooperative and Rural Development Bank, Nigeria
NAIC	-	National Agricultural Insurance Company, Nigeria

NALDA - National Agricultural Land Development Authority, Nigeria

NAPEP - National Poverty Eradication Programme, Nigeria

NARC - Njala Agricultural Research Centre

NARI - National Agricultural Research Institute

NARS - National Agricultural research Systems

NEEDS - National Economic Empowerment Development Strategy

NEPAD - New Partnership for African Development

NFRA - National Food Research Agency, Nigeria

NGOs - Non-Governmental Organisations

NIPC - Nigerian Investment Promotion Council

NRS - National Recovery Strategy

OFID - Organization of the Petroleum Exporting Countries Fund for International Development

PAID - Partnership for Agricultural Innovation and Development

PIC - Presidential Initiative on Cassava, Nigeria

PRSP - Poverty Reduction Strategy Plan

R&D - Research and Development

RARC - Rokupr Agricultural Research Centre

RBDA - River Basin Development Authority

RIU - Research Into Use

RNRRS - Renewable Natural Resources Research Strategy

RRRS - Rokupr Rice Research Station

S&T - Science and Technology

SCP	-	Smallholder Commercialisation Programme
SLARI	-	Sierra Leone Agricultural Research Institute
TLRC	-	Teko Livestock Research Centre
UK	-	United Kingdom
UN	-	United Nations
UNDP	-	United Nation Development Programme
UNEP	-	United Nations Environment Programme
UNICEF	-	United Nations Children's Fund
USA	-	United States of America
WAAPP	-	West African Agricultural Productivity Programme
WARDA	-	West African Rice Development Association, now the Africa Rice Centre
WECARD/CORAF	-	West and Central African Council for Agricultural Research and Development
WFP	-	World Food Programme
WHO	-	World Health Organization
WPGRRC	-	Woama Plant Genetic Resources Research Centre

1. INTRODUCTION

In most African countries the role of agricultural innovation brokering has, historically, been performed by public agencies, particularly agricultural development programmes (ADPs) which were orchestrated and driven by donor funding in the 1970s and 1980s. Critics have pointed out that the role of the ADPs, during that era, reflected what was characterised as a pipeline or top-down approach to agricultural advisory services — a two-step system in which research was first done in isolation and then 'disseminated' by the extension system for 'adoption' by the end users of new knowledge and technologies. This linear approach, which was also supply-driven rather than demand-led, has become increasingly less popular because of its failure in generating and promoting innovation.

The Research Into Use programme (RIU), funded by the UK's Department for International Development, was conceived as an initiative to broker agricultural innovation through a blend of strategies, which included:

1) The orchestration of multi-stakeholder networks, known as Innovation Platforms, to increase a shared understanding of challenges in development and collectively proffer effective solutions

2) The building of various forms of local institutional capacity to demand and supply needed knowledge and technology for innovation

3) The incubation of entrepreneurial ideas to promote local agricultural livelihoods, thereby addressing poverty

4) Supporting national policies, priorities and processes that promote agricultural innovation and development

Given the dominant role of the state in agriculture as described above, the RIU country programmes in Nigeria and Sierra Leone were deliberately embedded within key national agencies as part of the fourth strategy listed above, which is complementary to the other three strategies. The underlying assumption was that a paradigm shift or positive

institutional change would generate the desired innovation and development in the agricultural economy.

This paper sets out to describe the embedded arrangements of the RIU country programmes in Nigeria and Sierra Leone and examined the context within which the programme was embedded in each country. It then describes the various programme activities that were carried out and explores their contributions to national agricultural policies, priorities, processes and institutional change and learning. The paper then discusses the opportunities, challenges and lessons learned by the two country programmes in trying to broker agricultural innovation.

One of the key findings is that despite the differences between the contexts in Nigeria and Sierra Leone — in terms of how the RIU programme was embedded in the host national agency and the national agricultural policy arena — the results in institutional learning and change have been somewhat similar and equally effective. This result seems to suggest that the RIU programme was right in not developing a cookie-cutter approach for application across the six African country programmes, as that was not necessary to produce the intended institutional learning and change in the agriculture sector of each country.

2. REGIONAL CONTEXT

Nigeria and Sierra Leone are both former British West African colonies and achieved political independence, respectively, in 1960 and 1961. Both have an Atlantic coastline and some similar agro-ecological conditions, thereby enabling some historical similarities in agricultural crops and practices. Both countries are multi-ethnic, although Nigeria is perhaps more so, and both have gone through a destructive civil war and the subsequent challenges of national reconciliation and rebuilding. Nigeria has a bigger national population size, landmass, more oil and other natural resources, and a more robust agricultural research infrastructure.

For example, agriculture is the main employer of labour in the two countries and accounted for at least 40% of the national GDP in both Nigeria and Sierra Leone in 2008, 2009 and 2010. Nearly half of the total population in each country is now classified as urban-based and the trend of rural-to-urban migration is expected to continue. Relative to international averages, efficiency in agricultural production and post-harvest value addition in both countries is still very low, reflecting systemic inefficiencies in the sector.

The national agricultural research systems (NARS) profiles of both countries, as presented in the following sections, depict the context within which the respective RIU country programmes interventions have taken place, the unique opportunities or challenges facing each country programme, and some of the emerging impacts of the work done so far.

3. PROFILE: THE NATIONAL AGRICULTURAL RESEARCH SYSTEM IN NIGERIA

There are currently 18 national agricultural research institutes in Nigeria. The institutes were established in four waves, the two oldest being founded in 1924, followed by two more between 1939 and 1956. Four additional institutes were created between 1960 and 1968, while the remaining 10 were established between 1970 and 1977. These agricultural institutes had about 2,000 full-time employee researchers in 2008-09, compared to about 1300 in 2000. However, the composition of this category of staff has shifted toward those qualified with a Bachelors' degree only, as opposed to those qualified with a Masters' or Doctorate, thereby indicating a sector brain-drain or an inability of the Nigerian education system to produce high-level agricultural researchers fast enough (ASTI-IFPRI, 2010a).

Although Nigeria went through a civil war that lasted three years, it did not have as devastating an impact as the one in Sierra Leone, given that none of the national agricultural research institutes were destroyed. The country's research system was spared this perhaps because the war was concentrated in the secessionist southeast quadrant of the country, where there was no National Agricultural Research Institute (NARI) at the time. In contrast, in Sierra Leone, agricultural research institutes and research centres were completely destroyed during the civil war.

In addition to the national agricultural research institutes (NARIs), federal colleges and universities of agriculture and expansive faculties of agriculture in federally-funded traditional universities, the Government of Nigeria has, over the decades, created and funded various organisations to provide a variety of specialised support services for agricultural innovation and development. Among these were the National Agricultural Land Development Authority (NALDA), the National Agricultural Cooperative and Rural Development Bank (NACRDB), the National Agricultural Insurance Company (NAIC), the National Food Research Agency (NFRA), the Agricultural and Rural Management and Training Institute (ARMTI), 37 Agricultural Development Programmes (ADPs), numerous

River Basin Development Authorities (RBDAs) and a host of other agricultural support agencies across the country. Although the Federal Ministry of Agriculture and Rural Development (FMA&RD) is the apex agency for agriculture in Nigeria, each of these constituent agencies retains considerable autonomy and can wield a significant degree of power in decision-making. Within this nexus of a large number of semi-autonomous constituent agencies, the FMA&RD faces an enormous challenge in terms of complete control over the sector.

The large number of national agricultural research and extension agencies created the need for centralised research management, streamlined research agendas, links forged between research and the private sector, and the integration of the NARS agendas with national and international agricultural development agendas and processes. In 2007, the Government of Nigeria established the Agricultural Research Council of Nigeria (ARCN), which was actually created by military decree in 1999 but was not yet established. ARCN's statutory functions include advising the federal government on national policies and priorities on agricultural research, training and extension. Part of this broad role involves coordinating the functions of national agricultural research institutes and federal colleges of agriculture. ARCN's statutory role includes preparing periodic, national master plans for agricultural research, training and extension, and collaborating with relevant national and international resource organisations to promote agricultural research or get existing research outputs into use (Federal Republic of Nigeria, 1999).

Since 2007, ARCN has, in addition to national research management functions, forged links and collaborations with international organisations, agendas and processes, including the Consultative Group on International Agricultural Research (CGIAR), the United Nation Development Programme (UNDP), the Food and Agriculture Organization (FAO), the International Institute of Tropical Agriculture (IITA), the International Fund for Agricultural Development (IFAD), the Forum for Agricultural Research in Africa (FARA), the New Partnership for African Development (NEPAD), the Comprehensive African Agricultural Development Programme (CAADP), the DFID-funded RIU Programme, the Africa Rice Centre (formerly West African Rice Development Association – WARDA), the World Bank's West

African Agricultural Productivity Programme (WAAPP), the West and Central African Council for Agricultural Research and Development (WECARD/CORAF), and the ECOWAS (Economic Community of West African States) Directorate on Agriculture.

4. PROFILE: THE NATIONAL AGRICULTURAL RESEARCH SYSTEM IN SIERRA LEONE

Prior to the eleven-year (1991-2002) civil war, eight agricultural research stations were functioning across Sierra Leone. The oldest of these, now known as the Rokupr Agricultural Research Centre, was established in 1934 as the Rokupr Rice Research Station (RRRS). Other research stations were subsequently set up at various times and with differing mandates.

After the war, the Sierra Leone Agricultural Research Institute (SLARI) was founded with a mandate to coordinate and manage the nation's agricultural research system. SLARI was also mandated to reopen and revitalise the research stations that were vandalised during the war and initiate new centres to address the agricultural needs of the nation.

Consequently, SLARI has regulatory and coordinating functions responsibilities over eight or more research centres, which include: the Freetown Fisheries Research Centre (FFRC), Woama Plant Genetic Resources Research Centre (WPGRRC), Kenema Forestry and Tree Crops Research Centre (KFTCRC), Magbosi Land and Water Resources Research Centre (MLWRC), Kabala Horticultural Crops Research Centre (KHCRC), Teko Livestock Research Centre (TLRC), Njala Agricultural Research Centre (NARC) and Rokupr Agricultural Research Centre (RARC). Without exception, these research centres were damaged during the war, and are now in varying stages along the process of rehabilitation and reactivation (Asenso-Okyere et al., 2009; ASTI-IFPRI, 2010b).

The stated national economic development objectives for the establishment of SLARI include the promotion of agricultural mechanisation and commercialisation, and the mobilisation of private sector participation in agriculture. Under SLARI, the priority of the various research centres will focus on increasing the productivity of farmers, post-harvest value addition, and the development of respective value chains. Despite the enormity and urgency of SLARI's mandate, there were only 72 full-time employee researchers in Sierra Leone in 2009 (ASTI-IFPRI, 2010b). It would, therefore, appear that SLARI would have to

pursue ambitious human resource development strategies in order to meet the medium- and long-term manpower needs of the Sierra Leone agricultural research system.

The post-war context in Sierra Leone, and the need to rebuild the agricultural sector from the ashes of war, seems to have thrust the Ministry of Agriculture, Forestry and Food Security (MAFFS) into adopting a robust, centralised control of the NARS. Unlike Nigeria, where the NARS is relatively well-established, SLARI and its eight research centres are still in a formative stage — a context which further accentuates the need for centralised control by MAFFS.

5. THE RIU PROGRAMME IN THE MIX

In both Nigeria and Sierra Leone the RIU country offices are embedded within a key national agricultural agency. The Sierra Leone country programme is housed within the Ministry of Agriculture, Forestry and Food Security (MAFFS) headquarters in Freetown, and the RIU field office in the northern town of Makeni is housed within the MAFFS field office for that region. The RIU Nigeria country programme is housed within the office annex block of the Agricultural Research Council of Nigeria in Abuja. In both countries the hosting arrangement was envisaged and spelled out in a Memorandum of Understanding (MoU) between the RIU programme and the host agency. In Sierra Leone, that agency was MAFFS, while in Nigeria it was ARCN under the Federal Ministry of Agriculture and Rural Development (FMA&RD).

RIU-Sierra Leone has strong programmatic links to the national agricultural policy arena. For example, the RIU-orchestrated Partnership for Agricultural Innovation and Development (PAID) has, within its membership, a team of agricultural policy experts known as the Agricultural Technical Team (AT Team). The AT Team's functions included working with — and making inputs into the work of — a MAFFS agricultural policy think tank known as the Agricultural Advisory Group (AA Group), which advises the country's Minister of Agriculture, Forestry and Food Security (See Figure 1 for an illustration of these relationships).

In Nigeria, the RIU programme has a strong and cordial relationship with ARCN — a legally autonomous agency under the federal ministry. Hence, there is no direct relationship between the Ministry of Agriculture and the RIU-Nigeria Country office as is the case in Sierra Leone. However, RIU-Nigeria has good and effective working relationships with respective government agricultural departments, such as the Federal Department of Fisheries (FDF), which are directly relevant to the work of RIU-assisted innovation platforms. During the RIU programme ARCN's Director of Extension Services was the day-to-day or routine interface between RIU and ARCN, dealing with consultations and discussions on strategic, technical and operational issues relating to the RIU-Nigeria programme. The director regularly conveyed these issues to the Executive Secretary of ARCN, who

sometimes is personally available for meetings with the RIU-Nigeria country team if the matter to be discussed is very important. Therefore, in both countries, the national host agency is a champion of and very supportive of the mandate of RIU.

Globally, the RIU Programme has thematic and representational links with the Comprehensive African Agricultural Development Programme (CAADP), and the respective RIU country offices are well placed to forge operational links with CAADP processes such as the African Forum of Agricultural Advisory Services (AFAAS). The RIU country programmes in both Nigeria and Sierra Leone have participated in CAADP-sponsored activities in which host national agencies are also very involved. However, RIU-Sierra Leone has been much more involved in AFAAS activities than RIU-Nigeria.

At the start of RIU programme implementation in Nigeria, ARCN sent letters to national agricultural research institutes and other relevant federal agencies introducing the RIU-Nigeria programme and soliciting cooperation and support of these agencies with the programme processes and the country team members. This high-level lobbying facilitated access and goodwill for the RIU-Nigeria programme and helped to galvanise downstream partners — including state and local government agencies — to participate in the formation of the three innovation platforms[2] in the country. This impetus enabled the RIU programme to attract relevant private sector partners and various agricultural occupational associations into the platforms, thereby making them truly multi-stakeholder networks.

The discussion above shows that although the RIU programme is embedded in both Nigeria and Sierra Leone, their links to the respective national agricultural policy arena are dissimilar (see Figure 1 for an illustration of these relationships), reflecting the differences in the contexts and the best-fit options for each context.

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[2] The three innovation platforms set up in Nigeria are: Cowpea, Cassava and Aquaculture. For more on these see Ugbe (2010)

Figure 1. RIU Programme Links to Policy Arena in Nigeria and Sierra Leone
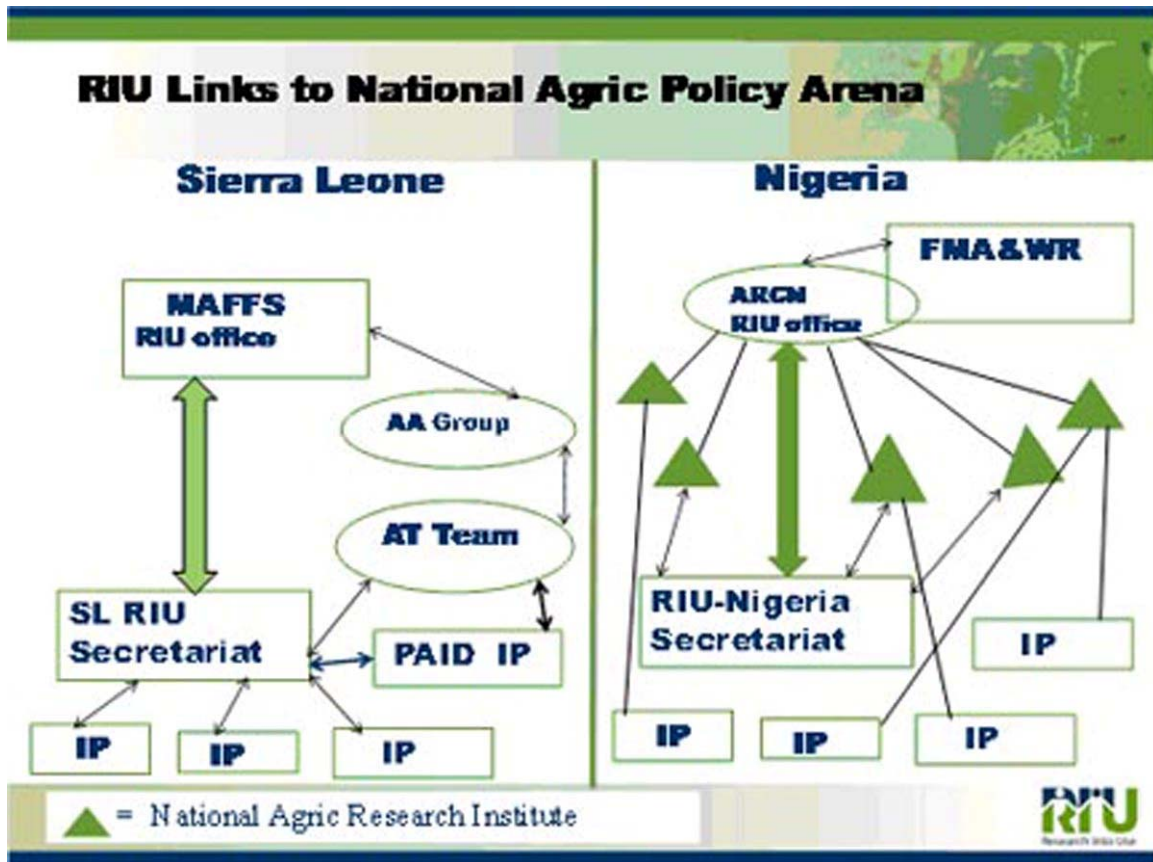
6. RIU'S CONTRIBUTION TO NATIONAL PRIORITIES, POLICIES AND PROCESSES

The embedded arrangements of the RIU country programmes in both Nigeria and Sierra Leone with their national host agencies and the policy arena enabled RIU to make inputs into some of the national policies and processes, as well as international collaborations being pursued by the national governments.

For example, In Sierra Leone the RIU programme, through the AT Team which is part of the Partnership for Agricultural Innovation and Development (PAID), performed a key role in drafting and finalising the Smallholder Commercialisation Programme (SCP) Investment Plan, which is a major plank of the new national agricultural policy document.

In both Nigeria and Sierra Leone, RIU has participated in and supported some linkage initiatives between the host national agency and international processes. For example, RIU-Sierra Leone has been a part of the synergies that link the Food Security Policy to other high-priority initiatives, such as the National Recovery Strategy (NRS), Vision 2025, the Millennium Development Goals (MDGs), Poverty Reduction Strategy Plan (PRSP) and AFAAS-CAADP events. Being a post-war reconstruction environment, Sierra Leone is a theatre for a host of development resource agencies. Therefore, the Smallholder Commercialisation Programme provides for linkages with agencies such as the European Union (EU), World Bank, African Development Bank (ADB), World Food Programme (WFP), the International Fund for Agricultural Development (IFAD) and the Islamic Development Bank (IDB). Other donor agencies in the mix include the Japanese International Cooperation Agency (JICA), Irish Aid, the Italian Cooperation, Governments of China, Germany and Nigeria, and NGOs such as Action Contre le Faim, ACDI/VOCA, Africare, BRAC, Care, Concern, COOPI, Catholic Relief Services, Christian Aid, Heifer International, OFID, Oxfam, and World Vision. There are also a host of multilateral agencies, such as the FAO, ILO, UNDP, UNICEF, UNEP, WHO and WFP, with a significant presence in Sierra Leone (Government of Sierra Leone, 2010).

In Nigeria, RIU country team members have participated in some activities related to processes under WAAPP, CAADP, FARA, UNDP-FIM (Facility for Inclusive Markets), the National Poverty Eradication Programme (NAPEP), the Nigerian Investment Promotion Council (NIPC), the Presidential Initiative on Cassava (PIC), ARCN, and ECOWAS Agriculture.

In other words, RIU has served as an interface between agricultural policy and praxis. The programme piloted new models of working to promote higher efficiency in farm production, post-harvest storage, value addition and other market-linked entrepreneurial activities. Each country programme then tried to draw lessons and evidence from these activities and report these findings to national agricultural policy-makers and other key partners, including DFID. Lessons drawn were fed into the national agricultural policy loop through national host agencies and other partner agencies in order to enable institutional learning and change that would support sustainable agricultural innovation and development. The understanding was that an enabling policy space would, as a result of this intermediation by RIU, evolve to either scale out successful new models of working or institutionalise the changes that would sustain and support these and future innovations in agriculture. In Nigeria, for example, two policy reports, which derived their evidence from the cassava and cowpea/soybean innovation platforms, were submitted to ARCN and relevant agencies.

Therefore, engagement with the national policy arena was supposed to be in the context of a feedback loop, so that national agencies could decide if they wanted to adopt, adapt, replicate and up-scale any of the successful trials. It turned out that embedding RIU programmes within key national agricultural policy agencies created unexpected opportunities for contributing to national institutional learning and change. For example, ARCN in Nigeria, after monitoring and observing the RIU-orchestrated innovation platforms for two years, decided to adopt/replicate and mainstream the aquaculture platform under the World Bank-funded West Africa Agricultural Productivity Programme (WAAPP).

7. CONTRIBUTIONS TO INSTITUTIONAL LEARNING AND CHANGE

Perhaps the most appropriate way of evaluating the impact of the RIU country Programme
is through the lens of an analytical framework on institutional learning and change proposed
by the Central Research Team of the programme (see Adwera et al., 2011 forthcoming).
According to the framework, institutional learning and change in agriculture can occur in a
variety of ways, the indicators of which can include: (1) new forms of financing rural
agricultural innovation; (2) relevance to poverty alleviation; (3) market-related institutional
change; (4) new types of organisations performing new roles; (5) old types of organisations
performing new roles; (6) changes in agricultural research practice; (7) changes in the policy
space, either in the form of new agency for agricultural policy advocacy or new donors
seeking to sponsor the up-scaling of successful trials; (8) new network configurations about
value chains or sector-wide; (9) changes in formal agricultural policy, and; (10) changes in
donor or government behaviour related to focal themes.

Based on this framework, it can be seen that the presence of RIU as an independent broker
within the agricultural policy space was something new, an innovation in itself.
Furthermore, the RIU-Sierra Leone programme contributed to the development of a new
national agricultural policy document and the development of a national poverty alleviation
programme in the form of the Smallholder Commercialisation Programme. PAID
represented a new type of organisation performing a new brokerage role, making technical
inputs to the formulation of agricultural policy and having the potential to be self-sustaining
beyond the short-term.

Equally evident was the emergence of new network configurations in both Nigeria and
Sierra Leone in the form of the innovation platforms. These networks performed new and
effective roles in brokering agricultural innovation in various ways and straddled policy and
practice. For example, in Nigeria, UNDP and the World Bank are proposing to fund a new
nationwide programme patterned after the template of RIU-assisted innovation platforms
as a means of promoting value chain development in various crop systems. ARCN is

introducing the 'Adopted Village' initiative to ensure the establishment of innovation platforms in various villages, whereby the private sector and agricultural research institutes could work together on specific initiatives.

These examples suggest that despite differences between the contexts in Nigeria and Sierra Leone — in terms of how the RIU programme was embedded in the host national agency and the national agricultural policy arena — the results in institutional learning and change have been somewhat similar and equally effective. This flexibility seems to indicate that the RIU programme was right in not developing a cookie-cutter approach for application across the six African country programmes as that was not necessary to produce the intended institutional learning and change in the agriculture sector of each country.

8. OPPORTUNITIES AND CHALLENGES

The RIU country programmes in Nigeria and Sierra Leone have presented a number of opportunities for further work, and some challenges can also be identified. These are discussed below:

Opportunities

Advantages of being embedded

By positioning itself within the agricultural research and policy arena in Sierra Leone and Nigeria, the RIU programme, through formal and informal interactions between the country team members and agricultural research management policy-makers, contributed significantly to national agricultural priorities, policies and processes in a cost-effective manner. In Nigeria, ARCN's decision to adopt, adapt and mainstream some aspects of the RIU-assisted innovation platform model as 'Adopted Villages' under the World Bank-funded WAAPP initiative is an example of the leverage that embedded programmes can generate.

Embedding the RIU country programme within national agencies with links to other agricultural development agendas has enabled RIU to participate in, and learn from, various shades of innovation thinking and approaches. In Sierra Leone, this tied into value chain innovation platforms formed under the Smallholder Commercialisation Programme — a major plank of the new national agricultural policy. In Nigeria, it tied into the National Economic Empowerment Development Strategy (NEEDS) (Government of Nigeria, 2004), the National Poverty Eradication Programme (NAPEP) and other assistance programmes such as the Kano-Katsina-Maradi (KKM) Programme sponsored by the Forum for Agricultural Research in Africa (FARA).

In both Nigeria and Sierra Leone, the RIU-assisted value chain innovation platforms fitted into national priorities related to the MDGs and poverty alleviation programmes (PRSP on Sierra Leone and NAPEP in Nigeria). ARCN in Nigeria also emphasised the message that agricultural research in Nigeria must become demand-led, nested within multi-stakeholder

networking, more responsive to the specific needs of the agricultural sector, and led by private sector innovation brokers who are independent after its association with RIU. It is important that such a broker is perceived by all parties as competent, independent and neutral in order to be credible and respected — as the RIU programme was.

Bringing about changes in policy

In Sierra Leone, despite the agony, destruction and loss caused by the civil war, there is now an opportunity to positively rebuild and get things right. The fact that the national agricultural research system in Sierra Leone was literally being reconceptualised, redesigned and redeveloped from the ruins of war presented a rare opportunity for the RIU programme to contribute to the embedding of research-into-use and innovation thinking into the NARS architecture. Such an opportunity was place-bound and time-sensitive and did not exist in any of the other five RIU country programmes in Africa.

The role of the RIU programme in Sierra Leone, therefore, included a contribution to processes leading to a new national policy on agriculture, and linking this to the country's wider development agenda. This rare opportunity, being time-sensitive, will cease to exist as soon as the emerging agricultural research management and policy processes have been developed and enshrined into practice. Compared to the slow pace usually associated with change in policy, the Sierra Leone case made it seem easier to make a new national policy than to change an existing one. In fact, lessons from RIU's work on cassava and soybean policies in Nigeria show that due to nested and contesting interests and objectives it is very difficult to bring about a change in national agricultural policies (Ugbe, 2010).

Challenges

Inefficiencies persist, despite massive public investments

Nigeria's relatively expansive agricultural research and training sector probably poses a major challenge for research management in the country. The overarching strategic policy objective of creating so many public agencies, including the various support agencies, was, no doubt, to develop or facilitate the effectiveness of agricultural innovation. Finding effective incentives for the participation of the organised private sector in agriculture

without creating opportunities for rent-seeking has been a big challenge for the Nigerian government. So, too, has been the challenge to engineer the right symbiosis between research and the organised private sector so that research outputs can be put into use.

The persistence of Nigeria's low agricultural productivity, slow pace of innovation, poor management practices, poor uptake of research outputs, minimal post-harvest value addition and other inefficiencies, suggests that the effectiveness of the country's configuration of public investments in creating these myriad agencies in agriculture has not yet been optimised. This situation justifies the proposition that a sustained and long-term investment in institutional development is required to fully transform the innovation capacity of the national agricultural system.

Hence, RIU's role in brokering agricultural innovation by serving as an interface between policy and practice involved research, capacity building, business incubation, network facilitation and policy advocacy, as well as facilitating the use of research and others roles. In other words, the RIU programme was 'a new type of organisation performing a blend of new roles', in the sense that it was both a development programme and a research programme.

Independent innovation brokers? Ways to go!

In Nigeria the role of agricultural extension and rural advisory services has historically been under the purview of the state's Agricultural Development Programmes (ADPs). These agencies received funds and marching orders from the state or an international donor, and followed the script dictated. Then they would wait for another round of funding and new marching orders. In Nigeria, some of the ADPs have almost lost their relevance to the agricultural sector because they are starved of state money. But the notion of an innovation broker calls for an entrepreneurial role that does not entirely depend on a blueprint from elsewhere, but rather studies a situation, identifies a niche and works to bring about improvement or innovation. In theory, if the service is valuable to the parties involved, the beneficiaries would pay for it and a 'market' would thrive.

The RIU programme has formed innovation platforms and has demonstrated that it is possible to stimulate demand for agricultural research outputs and innovation. However, the orchestrated innovation platform and synergies are still less than two-years-old, and they face the risk of fizzling out before they become more matured, established and self-perpetuating.

9. CONCLUSION

One of the unique features of the RIU programme is that, unlike many international development assistance programmes, it did not prescribe a specific dogma or 'approach' for the country programmes. This paper has shown that although the Nigeria and Sierra Leone country offices were both embedded within national agricultural agencies, each developed its own links to the agricultural policy arena. Although both of these strategies proved effective in getting the desired results, the successes were for different reasons.

In Nigeria, the effectiveness of the RIU programme in the policy arena was perhaps due to the maturation and readiness of the National Agricultural Research System and agencies such as ARCN and other parties coupled with other forces coalescing serendipitously. In Sierra Leone, the challenges of post-war rehabilitation and revitalisation of the NARS and related systems created a situation in which the national government had been very receptive to the ideas of innovation thinking and having these incorporated into the SCP policy document. Of course, some credit must go the RIU country teams for skilfully tapping into the priorities and interests of the respective key partners, such as ARCN, NARIs, ADPs and other stakeholders in Nigeria, the MAFFS and the various PAID-SL members in Sierra Leone.

The role of RIU as an interface between agricultural policy and practice, and as blend of development and research, accentuates the programme as a 'new type of organisation performing a blend of new roles'. That, by itself, was an innovation in the way that agricultural innovation and development can be brokered in Africa.

In both Nigeria and Sierra Leone the failures of state-owned enterprises in West Africa been well documented (see, for example, World Bank, 1995). Therefore, responsible public agencies should proactively solicit private sector participation and leadership in the application and utilisation of research outputs and toward innovation in the agricultural sector (World Bank, 2006). There needs to be a conscious effort to embed private sector

participation, with opportunities for both micro and big enterprise involvement. The successful results of private sector participation in promoting improved storage of cowpea and in the dissemination of improved cowpea seeds in Nigeria (Ugbe, 2010) are indicators of the potential effectiveness of creative public-private partnerships.

However, in advocating for private sector involvement, Hall et al. (2009) point out the necessity of seeing innovation as a way to deliver diverse, blended services to address social, economic, environmental and political objectives. These authors further explain that socioeconomic development and environmental sustainability are not necessarily antagonistic to each other, and blended approaches are, indeed, becoming required as the standard elements of a good economy.

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APPENDIX I

Table. 1: Nigeria and Sierra Leone: Selected Comparative Data

PARAMETER	NIGERIA	SIERRA LEONE
POLITICAL:		
Year of independent from the UK	October 1960	April 1961
Civil War	1967 – 1970 (2.5 years)	1991 – 2002 (11 years)
DEMOGRAPHICS:		
Population (July 2010 est.)	151.22 million	5.3 million
Median age	19 years	19 years
Urban-based population	48% of total population	38% of total population
Life expectancy	47 years	47 years
Annual rate of urbanization	3.8%	2.9%
GEOGRAPHICAL:		
Land area	Approx 924, 000 sq km	Approx 72,000 sq km
Coast line	853 km	402 km
Arable land as % of total area	33.02%	7.95% arable land
Irrigated land area	2,820 sq km	300 sq km
Area covered by permanent crops	3.14%	1.05% permanent crops
Area covered by other crops	64% (2005 est.)	91% (2005 est.)
LIST OF NATURAL RESOURCES:	Natural gas, petroleum, tin, iron ore, coal, limestone, niobium, lead, zinc,	Diamond, titanium ore, bauxite, iron ore, gold, chromite
ECONOMIC: (2010 est.)		
GDP	US$370 billion	US$4.8 million
Per capita income	US$2,400	US$900
Agriculture as % of GDP	40%	49%
Structure of Workforce:		
Agriculture	70%	75%
Industry	5%	N/A
Services	25%	N/A
MAIN AGRICULTURAL PRODUCTS:	Cocoa, groundnuts, cotton, palm oil & kernel, corn, sorghum, millet, cassava, yams, rubber, cattle, sheep, goats, pigs, timber, fish	Rice, coffee, cocoa, palm oil & kernel, groundnuts, poultry, cattle, pigs, sheep, fish

Note: Online sources for data used in the above table include: UNDP http://hdr.undp.org/en/reports/; Official website of the Government of Nigeria http://www.nigeria.gov.ng/; The CIA Factbook https://www.cia.gov/library/publications/the-world-factbook/geos/sl.html; DFID-Nigeria http://www.dfid.gov.uk/nigeria; DFID-Sierra Leone http://www.dfid.gov.uk/Where-we-work/Africa-West--Central/Sierra-Leone/Key-facts/

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