
Association for Strengthening Agricultural Research in Eastern and Central Africa
2014
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### Abbreviations and acronyms

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AFAAS</td>
<td>African Forum for Agricultural Advisory Services</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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<tr>
<td>CAADP</td>
<td>Comprehensive Africa Agriculture Development Programme</td>
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<tr>
<td>ECA</td>
<td>Eastern and Central Africa</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>KACE</td>
<td>Kenya Agricultural Commodity Exchange</td>
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<tr>
<td>KAINet</td>
<td>Kenya Agricultural Information Network</td>
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<tr>
<td>KARI</td>
<td>Kenya Agricultural Research Institute</td>
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<tr>
<td>KMUS</td>
<td>Knowledge Management and Upscaling Programme</td>
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<td>KRA</td>
<td>Key Result Area</td>
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<tr>
<td>M&amp;E</td>
<td>Monitoring and evaluation</td>
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<tr>
<td>NARI</td>
<td>National Agricultural Research Institute</td>
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<td>NARS</td>
<td>National Agricultural Research System</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<tr>
<td>NPPs</td>
<td>Networks, Programmes and Projects</td>
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<td>OFSP</td>
<td>Orange fleshed sweet potato</td>
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<tr>
<td>OP</td>
<td>Operational Plan</td>
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<tr>
<td>QPM</td>
<td>Quality Protein Maize</td>
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<tr>
<td>SMS</td>
<td>Short Message Service</td>
</tr>
<tr>
<td>TUUSI</td>
<td>Technology Uptake and Upscaling Initiative</td>
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<tr>
<td>UNECA</td>
<td>United Nations Economic Commission for Africa</td>
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Foreword

From the time the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) was founded 20 years ago, its role has been facilitation, coordination, capacity development and mobilisation of financial and other resources for the sub-region’s agricultural research and development. However, throughout implementation of its first operational plan (2009–2013) under its strategic plan 2008–2018, ASARECA and its national agricultural research system (NARS) stakeholders have been under mounting pressure to achieve greater impact with its research and development effort. Such impact can only be realised through greater efficiency and effectiveness not only of the generation but also of the delivery and utilisation of the research outputs. The strong commitment of ASARECA to improving the delivery, utilisation and impact of science and technology in order to bring about agricultural transformation in the sub-region is evident in its mission. The Association has responded to these concerns in various ways.

Among the responses is a study ASARECA conducted in the sub-region to understand the causes of the low adoption, scaling up and impact of proven technologies and innovations. The study provided insights into the root factors that contribute to low adoption and came up with recommendations for improvement. In its second operational plan (2014–2018), ASARECA is focusing more of its interventions in research and development on scaling up. This strategy draws on the insights from the findings of the study on causes of low adoption and borrows experiences and lessons from other regions to provide a holistic way to spur technology uptake and scaling up in ways that will trigger agricultural transformation in sub-Saharan Africa.

About ASARECA

The Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) is a not-for-profit sub-regional organisation comprising 11 countries: Burundi, the Democratic Republic of Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, South Sudan, Sudan, Tanzania and Uganda. Its mission is: To enhance regional collective action in agricultural research for development, extension and agricultural training and education to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources in ECA.

ASARECA brings together scientists and other partners to generate, share and promote knowledge and innovations to solve common problems in agriculture in member countries and contribute to productivity and growth of the sector. Its partners include farmers, national, regional and international research, extension, and training
organisations, public and private sector actors, non-governmental organisations (NGOs) and development agencies.

Dr Fina A Opio
Executive Director, ASARECA
Executive summary

Background

The Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) is a sub-regional not for profit member organisation comprising 11 countries: Burundi, the Democratic Republic of Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, South Sudan, Sudan, Tanzania and Uganda. Its mission—to enhance regional collective action in agricultural research for development, extension, training and education to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources in Eastern and Central Africa—reflects the strong commitment of ASARECA to improve delivery and utilisation of science and technology to bring about agricultural transformation in the sub-region. This commitment is contained in its purpose, to facilitate enhanced utilisation of agricultural research and development innovations in its member countries.

From its founding in 1994, the role of ASARECA has been facilitation, coordination, capacity development and mobilisation of financial and other resources for agricultural research and development, with the implication that delivery of its mission would be principally through partnerships. Before 2007, implementation was through commodity-oriented regional Networks, Programmes and Projects (NPPs) most of them hosted at CGIAR (formerly Consultative Group on International Agricultural Research) centres. After 2007, with the aim to consolidate efforts, increase efficiency and in line with its strategy 2007–2017 and the first ASARECA Operational Plan (OP1) 2009–2013, ASARECA reorganised its implementation arrangement whereby NPPs were integrated into seven programmes, based at the Secretariat. The former Regional Agricultural Information Network (RAIN) and the Technology Uptake and Upscaling Support Initiative (TUUSI), which dealt with information, communication, facilitating technology uptake and upscaling, were merged to form the current Knowledge Management and Upscaling (KMUS) Programme. This consolidation and centralisation was expected to ensure greater efficiency and effectiveness not only in generation of new technologies and innovations, but also their adoption, scaling up and impact.

Throughout implementation of OP1 (2009–2013) ASARECA remained under pressure from its stakeholders, including development partners, to enhance effectiveness of its role in agricultural technology uptake and upscaling. Partners increasingly demanded that ASARECA’s work should be seen to directly benefit farmers, especially poor rural smallholder farmers. ASARECA has a mandate to provide leadership in addressing these expectations and specifically in respect to enhancing scaling up and to implement the elements in the Comprehensive Africa Agriculture Development Programme (CAADP)
Pillar IV that deals with technology dissemination and adoption, agricultural extension, education, training and empowerment. KMUS therefore prepared a comprehensive strategic plan titled *Turning Agricultural Knowledge into Action, 2009–2014* (ASARECA 2009). During the four or so years of implementation of the KMUS strategic plan, significant achievements in technology dissemination and scaling up were made, such as: 1) promising approaches and models for catalysing uptake and scaling up of technologies and innovations through Innovation Platforms for Technology Adoption (IPTAs) were developed and validated. In particular, uptake pathways for quality protein maize (QPM) and orange fleshed sweet potato (OFSP) were promoted where these technologies were scaled up; 2) farmer-led seed enterprises were validated and scaled up, especially for African indigenous vegetables where participating farmers were able to earn an average annual income of US$ 3,500; 3) developed and published an inventory of proven agricultural technologies and innovations that are ready for dissemination and scaling up; and 4) facilitated empowerment of farmers through their organisations to have strong and beneficial market linkages and to engage in high end value chains more profitably.

**Need for an ASARECA scaling up strategy**

These achievements notwithstanding, the concern about the low rate of technology uptake, scaling up and impact persisted, and in a sense intensified. Among the responses to these concerns, the Board of Directors of ASARECA tasked the Secretariat to conduct a study that would provide insights into the causes of the low adoption, low scaling up and low impact of proven technologies and innovations in the sub-region and provide recommendations. The study identified systemic problems centred on: 1) lack of effective market linkages between farmers and consumers; 2) lack of effective strategies for engagement with the private sector; and 3) weaknesses in technology dissemination and scaling up to reach a wider range of target users. Compared to approaches used in countries in other regions such as Asia (China and India), the conventional approaches to agricultural research and extension used in Eastern and Central Africa (ECA) have failed to link smallholder farmers to agribusiness value chains and, as a consequence, are not motivated to produce more than they need for their subsistence. This has remained a broader root cause for the continued low adoption and impact of technologies in the sub-region. Thus, a comprehensive scaling up strategy is needed that borrows experiences and lessons from other regions to provide a holistic way to address these challenges, and spur technology uptake and scaling up in ways that will trigger agricultural transformation in sub-Saharan Africa.

**Defining scaling up**

The strategy provides multiple definitions of scaling up from the literature. The concept has been defined as “expanding, adapting and sustaining a successful technology,
innovation or policy in different places and over time to reach a greater number of people” (Holcombe 2012:18)1. Another definition is from a 2004 Shanghai conference, cited in Jonasova and Cooke (2012:5)2: “expanding and sustaining successful policies, programs and projects in different places over time to reach a greater number of people”. Linn (2012:1)3 defined scaling up as the “expansion, replication and adaptation that sustains successful policies, programmes or projects to reach a greater number of people”.

All these definitions imply that scaling up process involves: 1) horizontal expansion of an adopted technology, innovation or policy within a given geographical area; or from one geographical area to another; 2) vertical expansion of an adopted technology, innovation or policy from local to national or across national boundaries. In other words, the scaling up process entails expansion in usage that is driven by systematic replication. In addition, the strategy recognises that the above definitions are by no means exhaustive and that some practitioners and authors refer to “scaling up” and “scaling out” as different processes, while others prefer to use only the term “scaling out”. However, in either case it is the same approach of systematic adoption, adaptation and learning. In this strategy, the term “scaling up”, which integrates vertical expansion and learning is used consistently. In addition, scaling up initiatives require enabling environments in terms of policy, markets, institutional capacities, culture and gender, partnerships, and learning in which to thrive. While ASARECA may not be in a position to influence some of the policies, an analysis of the significant policy constraints is always essential while assessing the scalability of a technology or innovation. The strategy further emphasises that to be successful, scaling up initiatives should ensure that these principles are embedded.

Envisaged role of ASARECA in scaling up and knowledge management

The role of ASARECA in scaling up and knowledge management is expected to be supportive and catalytic, assisting other actors in the agriculture sector to play their respective roles more effectively and efficiently, and in some cases helping recruit other actors. In addition, due to the varying capacities across member countries, capacity development is an integral intervention area in the scaling up strategy to help beef up

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scaling up capabilities, especially in the less resourced NARS. Thus, the ASARECA roles would be: 1) facilitating the sharing of available knowledge on new technologies and innovations; 2) facilitating the development and sharing of scaling up methodologies; 3) coordinating the sharing/movement of new technologies and innovations across borders; 4) facilitation of networking amongst extension service providers in the sub-region; 5) where possible, facilitating the development of agribusinesses along commodity value chains; 6) advocating for a policy environment that will facilitate scaling up in all member countries; 7) strengthening institutional and individual capacities for scaling up; and 8) mobilising and allocating resources for scaling up activities.

**Expected outcomes of the ASARECA scaling up strategy**

The design of this strategy is based on the desired outcomes of ASARECA’s interventions that will together lead to the attainment of its overall **Goal** as stated in OP2, namely: *Competitiveness of appropriate agricultural systems improved*. The envisaged outcomes include: 1) modalities and enabling environment for sharing research information and knowledge by stakeholders across Eastern and Central Africa (ECA) and beyond established; 2) knowledge exchanges that stimulate uptake and scaling up of technologies and innovations by stakeholders fostered; 3) emergence of new agribusinesses that take advantage of gaps in commodity value chains facilitated; 4) adoption of new technologies and innovations by ongoing agribusinesses facilitated; 5) institutional and individual capacities for scaling up built; and 6) efficient market linkages between farmers and consumers fostered.

**Key result areas**

The strategy has five key result areas (KRAs):

**KRA 1: Access to knowledge and information facilitated.** This is about the processes and practices concerned with acquisition, archiving and sharing of knowledge. It is an integral part of the agricultural knowledge and information hub to be established in the implementation of OP2.

**KRA 2: Emergence of new agribusinesses facilitated.** This result area is about research activities that can deliver value chain products and innovations (product development), and nurture the resulting products into fully-fledged agribusinesses. The mechanisms include *agribusiness incubation* by which a product or innovation from a research process is assessed for suitability and adapted for commercialisation.

**KRA 3: Partnerships with scaling up service providing institutions enhanced.** This output recognises that dissemination of information and scaling up of technologies are
complex and in some cases specialised processes which ASARECA cannot undertake alone. Potential partners include: non-governmental organisations (NGOs); actors in commodity agribusiness value chains; seed value chain actors; and the African Forum for Agricultural Advisory Services (AFAAS).

**KRA 4: Capacity for enabling environment and skills for scaling up enhanced.** This result area deals with improving capacity of NARS, particularly the less resourced ones, for technology adoption and scaling up. It includes development of methods and approaches for scaling up and using them to enhance capacity of NARS in scaling up.

**KRA 5: Efficient market linkages between farmers and agribusinesses fostered.** The focus here is to use innovative technologies including information and communication technology (ICT) tools and methods to provide producers, especially small-scale farmers with real-time market information and to link them to markets. The strategy borrows experiences from India, which show that provision of market information can greatly assist such farmers to choose what commodities to produce, what production technologies to apply, when to produce, and indeed for whom to produce. In other words, for smallholder farmers to change their situation and improve their livelihoods, provision of market information to them will be key to their transformation.

### Action plan and financing

The strategy provides strategic direction and priority intervention in scaling up in the ECA sub-region. Like all ASARECA interventions, its implementation will largely involve partnerships and collaboration with other stakeholders. Thus, for each result area, priority activities are identified and those to be implemented directly by the Secretariat indicated and the external ones also stated. In line with OP2, scaling up initiatives will be the primary focus of projects. Appropriate partnerships and processes will be developed to scale up prioritised technologies and innovations. Moreover, research projects will integrate scaling up from the design stage.

An appropriate monitoring and evaluation (M&E) system that captures performance information at different operational levels and documents progress towards achievement of higher level objectives, outcomes and impact of the ASARECA scaling up activities will be developed to support the scaling up initiatives. Key objectives in the M&E plan include: 1) to track implementation of scaling up activities and effectiveness of delivery for each key result area; 2) track the outcomes and impacts of the ASARECA scaling up efforts; and 3) facilitate lesson learning.

Implementation of this strategy must therefore be high priority for ASARECA personnel and in allocation of financial resources. To reflect the ASARECA commitment to implementation of the strategy and ensure that financial resources are not a limiting
factor, the strategy proposes creation of a special “scaling up fund” to ensure that scaling up activities proceed uninterrupted. The advantage of having such a fund is that donors and philanthropists interested in scaling up activities can directly support it. The total budget for implementing the strategy is approximately US$ 13,900,000. This gives an indication of the magnitude of the scale of funding that the strategy requires.

**Expected outcomes and impacts**

The main impacts anticipated from the scaling up activities include, but are not limited to, the following:

- At least 5% annual increase in agricultural productivity of selected commodities. This is marginally below the target growth rate stated under CAADP. This is mainly because some of the targeted areas are within low to medium agricultural potential.

- The number of households whose income is expected to increase due to successful scaling up intervention is estimated at 1.8 million. With the anticipated increase in income through adoption of selected technologies, innovation and management practices (TIMPs), about 5.5 million people in ECA are expected to be moved above the poverty line of US$ 1.5 per day.

- On improvement of nutrition, the number of people in ECA whose nutrition level is expected to improve through the research and scaling up interventions is estimated at 11 million (with a ratio of 5 (men):3 (women)). Within this group of targeted individuals, at least 5.5 million children under 5 years are expected to be reached and supported to access foods of nutrition standards.

In support of the above impacts, the following key outcomes are also anticipated from the interventions:

- At least 15% change in water use efficiency by men and women farmers (5:3 respectively), contributing to the targeted improved productivity mentioned above.

- At least 30 million stakeholders are targeted to benefit from the information and knowledge disseminated and shared through activities of the knowledge and information hub (KI-hub). The KI-hub is a major intervention under the first key result area.

- The strategy also anticipates that the scaling up interventions will further benefit at least 25% of the stakeholders adopting selected TIMPs, and introduce or connect at least 1.1 million stakeholders to access new markets.
The Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) is a sub-regional not for profit association established in 1994 by 10 Eastern and Central Africa (ECA) member countries represented by their national agricultural research institutes (NARIs). The Republic of South Sudan joined the Association in December 2011, bringing the membership to 11 countries of ECA. The mission of ASARECA is: to enhance regional collective action in agricultural research for development, extension, training and education to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources in Eastern and Central Africa. The ASARECA focus is on delivery and contribution to outcomes and impact of improved scientific knowledge, technologies and policy options for the agriculture sector. The focus of the mission is reflected in the ASARECA Strategy (2007–2017), which portrays the Association’s commitment to overcome poverty and hunger in the ECA region. ASARECA sees improved delivery and impact of scientific knowledge, policy options and technologies as powerful instruments to drive the sub-region towards meeting the Comprehensive Africa Agriculture Development Programme (CAADP) agenda of the New Partnership for Africa’s Development (NEPAD) and that of the Millennium Development Goals (MDGs). ASARECA in collaboration with the Common Market for Eastern and Southern Africa (COMESA) is committed to implementation of CAADP Pillar IV in line with the principles of the Framework for African Agricultural Productivity (FAAP).

The purpose of ASARECA is to facilitate enhanced utilisation of agricultural research and development innovations in its member countries. This will be achieved through regional collective action in agricultural research for development, extension, training, and education to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources in ECA.

The ASARECA mission fully supports Pillar IV of CAADP and the New Partnership for Africa’s Development strategy for revitalising, expanding and reforming Africa’s agricultural research, technology dissemination and adoption. ASARECA has developed a strategic plan, which has as its purpose the sustainable competitiveness of ECA agricultural systems through support to prioritised areas of research for development.

In planning how it would deliver its work, ASARECA has so far developed two successive five-year operational plans, OP1 (2009–2013) and OP2 (2014–2018), which give detailed modalities for implementation of the strategy. Whereas OP1 emphasised the operationalisation of the programmes (ASARECA 2008), OP2 dwells on the key changes to research and management structures and systems necessary for good performance under changed circumstances (ASARECA 2012). OP2 also emphasises more collaboration and teamwork by programme personnel. Implementation of the scaling up strategy will provide an organised way of implementing OP2, and therefore a situation where collaboration and team effort will need to be fully upheld.

Over the years, ASARECA, through grants from its development partners, has supported many research projects, which have been implemented by the national agricultural research systems (NARS). Many of the projects have generated potentially useful technologies and innovations. Some NARS, with support from their governments and other sources, have generated even more technologies and innovations. However, most of these technologies and innovations have either remained unused due to failure to disseminate them or their use is limited owing to low or no adoption, hence exhibiting low or no impact. Even where there has been evidence or signs of adoption, this has been localised, leaving the question of how to extend these outcomes to scale.

A Multi-Donor Trust Fund (MDTF) was established at the World Bank in 2008 to support a programme of integrated agricultural research for development as described in ASARECA OP1. The MDTF facilitated donor interaction, coordination and harmonisation (including harmonisation of procedures and formats to be applied by ASARECA), which was essential for effective institutional development of ASARECA. The MDTF has indeed contributed substantial resources for agricultural research, but as in the past, the promotion of and wider access to research outputs by the sub-region’s agricultural systems is still wanting. This is a situation that ASARECA must address, not only for its own reputation, but also for the benefit of the agriculture sector in ECA.
HISTORICAL PERSPECTIVE

2.1 Overview of ASARECA

Founded in 1994, ASARECA’s specific roles were envisaged as:

- Facilitating the development of a shared vision and regional goals for agricultural research in ECA
- Facilitating cooperation and coordination in agricultural research in ECA
- Coordinating research to produce regional public goods
- Facilitating networking amongst researchers in the sub-region
- Facilitating sharing of research outputs and benefits
- Facilitating cooperation in scaling out of agricultural technologies and innovations for the benefit of all the ECA
- Mobilising and allocating resources for research
- Strengthening institutional and individual capacity for agricultural research

In other words, the role of ASARECA was envisaged as that of facilitation, coordination, capacity building and mobilisation of financial and other resources for agricultural research. Hence, its mission would be delivered principally through partnerships.

Before 2007, ASARECA programmes were based on commodity-oriented regional Networks, Programmes and Projects (NPPs). By 2005 there were 17 NPPs, most of them hosted by partner institutions (mostly the CGIAR (formerly Consultative Group on International Agricultural Research) centres based in the region) and dispersed throughout the region. Only three NPPs—Eastern and Central Africa Biotechnology and Biosafety Programme (ECABIO), Eastern and Central Africa Programme for Agricultural Policy and Advocacy (ECAPAPA) and Regional Agricultural Information Network (RAIN)—were based at the ASARECA Secretariat in Entebbe and administered by the Association. Although the NPPs were expected to generate agricultural technologies and innovations and to disseminate them to target end users, especially farmers, the success of their efforts remained limited, leading to the concern that it was perhaps due to their dispersed efforts. As a response to the concern, a decision was taken in 2007 to re-organise the structure of ASARECA. All the NPPs were subsumed into the current seven programmes, all of which are based at the Secretariat. The hope then
was that this centralisation would make the programmes more efficient, not only in generating new technologies and innovations, but also in scaling up the technologies and innovations to the end users for the betterment of the latter’s livelihoods.

Meanwhile, as the re-organisation proceeded ASARECA decided to initiate, as an interim measure, the Technology Uptake and Upscaling Initiative (TUUSI) whose role would be to:

1. Scale up farmer-led seed enterprises
2. Undertake farmer empowerment activities
3. Develop innovative approaches to agricultural advisory services
4. Scale up sustainable market chain approaches for smallholder farmers
5. Transfer and disseminate proven and emerging agricultural technologies

However, before TUUSI could effectively establish itself on the ground, the process of reorganising the whole of ASARECA began, and TUUSI along with all the NPPs were subsumed in the new programme structure and their mandates incorporated into those of programmes. TUUSI was subsumed within the new “Knowledge Management and Upscaling (KMUS) Programme, which was seen as the ASARECA vehicle through which to address the acknowledged weakness in agricultural technology uptake and scaling up.

The key message here is that ASARECA, both at the time of NPPs and later under the programme structure, has remained under pressure to beef up its agricultural technology uptake and scaling up roles, so that its achievements can be seen or be reflected at farm level. The expectations by stakeholders, including development partners, is that ASARECA’s work should be seen to directly benefit farmers, especially poor rural smallholder farmers who need to be assisted to come out of abject poverty through increased agricultural output and therefore increased income.

2.2 Overview of KMUS under OP1

As indicated earlier, the KMUS Programme was established as one of the seven programmes of ASARECA and mandated to address issues of technology uptake and scaling up, and knowledge management. The programme was further mandated to implement the elements in CAADP Pillar IV that deal with technology dissemination and adoption, agricultural extension, education, training and empowerment.

For the programme to map out how it would implement the given mandates, it prepared a comprehensive strategic plan titled *Turning Agricultural Knowledge into Action, 2009–2014.*
During the four or so years of implementation of the KMUS strategic plan, the major achievements have been:

1. Disseminated and facilitated uptake of emerging proven agricultural technologies. This included the development and validation of promising approaches and models for catalysing uptake and scaling up of technologies and innovations through Innovation Platforms for Technology Adoption (IPTAs). Uptake pathways for quality protein maize (QPM) and orange fleshed sweet potato (OFSP) were promoted in this way across six countries in ECA.

2. Scaled up farmer-led seed enterprises, especially for African indigenous vegetables in Kenya and Tanzania where participating farmer were able to earn an average annual income of US$ 3,500.

3. Facilitated empowerment of farmers through their organisations to have strong and beneficial market linkages and to engage in high end value chains more profitably.

4. Assembled and published an inventory of available agricultural technologies and innovations that are ready for dissemination and scaling up.

5. Disseminated proven agricultural technologies to end-users in post-conflict and post-disaster areas, mainly in northern Uganda and South Sudan.

6. Produced and disseminated information on agricultural innovation in form of posters and brochures, especially on QPM and OFSP.

However, these achievements notwithstanding, the concern about the low rate of technology uptake and scaling up has persisted, and in a sense intensified.

As a response to that concern, the Board of Directors of ASARECA tasked the Secretariat to conduct a study of the factors that contribute to the low adoption, low scaling up and low impact of proven technologies and innovations in the sub-region. The request for the study was a culmination of a series of expressed concerns about the matter by various external reviews and supervision missions by ASARECA’s development partners. The study conducted by Odame et al. (2012) identified the following few key causes of low technology adoption:

- Lack of effective market linkages between farmers and consumers.
- Lack of effective strategies for engagement with the private sector.
- Weaknesses in technology dissemination and scaling up to reach a wider range of target users.

These constraints do not refer to ASARECA’s work alone. The analysis in the study showed clearly that these are systemic problems for the agriculture sector of entire sub-region. In other words, the burden is not ASARECA’s alone. Nevertheless, ASARECA must endeavour to play its part as effectively as possible while, at the same time, it lobbies the other players to do theirs.
The World Bank (2008) reported that the potential for agricultural growth to reduce poverty is probably four times greater than the potential for growth from other economic sectors. Yet, despite this huge potential, the sector is usually given low priority by African governments. In sub-Saharan Africa, for example, crop yields have generally remained stagnant at levels of the 1960s, or even in some cases declined (AATF 2010). This is amidst the problem of ever rising human populations with the attendant problem of increasing food insecurity, which in recent times has been exacerbated by unprecedented rises in food and fuel prices. High populations, high food prices and low production at the farm level create daily hardship for many African families both in rural and urban areas, leading to food insecurity and malnutrition, susceptibility to diseases and abject poverty.

The irony, however, is that under current realities, the potential for poverty reduction in sub-Saharan Africa through sectors other than agriculture is very low. The region would therefore do well to prioritise agriculture, more so given the damaging levels of food insecurity that it often experiences, especially in rural areas where most people live. According to a United Nations Economic Commission for Africa (UNECA) report, 70% of the people in sub-Saharan Africa live in rural areas where they mainly depend on agriculture (UNECA 2007). Therefore, for sub-Saharan Africa to grow out of poverty and commence on the path of development, it must prioritise the agriculture sector by investing more effort and resources in it.

Part of sub-Saharan Africa’s problem is that conventional approaches to agricultural research and extension have failed to address the chronic problem of low agricultural productivity. A major challenge is that smallholder farmers who are the majority are not linked to agribusiness value chains, and as a consequence, are not motivated to produce more than they need for their subsistence. Experience from other regions (e.g. China, India and others) indicates that without that motivation, smallholder farmers have no incentive to increase their production through, for example, adoption of new technologies and innovations. Therefore, in addition to the call for increased investment largely addressed to policy makers, another key step is for the agricultural research and development community to work out ways and means of helping transform smallholder farmers from the traditional subsistence farming to market-oriented farming. Such transformation will itself become a strong incentive for farmers to innovate and adopt
new ways of doing business, including adoption of new technologies and innovations that emanate from research processes such as those managed by ASARECA.

A large body of literature talks about what needs to be done to trigger agricultural transformation in sub-Saharan Africa. The key ones are summarised in Figure 1.

**Figure 1: A schematic representation of some of the prerequisites for agricultural transformation.**


Focusing more on the prerequisites, the following are examples of their respective contributions to agricultural transformation:

- **Introduction of production enhancing technologies.** This refers to research aspects such as plant or animal breeding for higher yielding plants or animals, farm management techniques, soil conservation, and the like. Most of the research undertaken in ECA has largely addressed these aspects, and therefore a large body of knowledge and a range of technologies and innovations are available that can help enhance farm production. What is needed is the dissemination of this knowledge, technologies and innovations to facilitate their access, especially by smallholder
farmers who need them most to facilitate production of enough food to meet their household needs and surplus for the market.

- **Development of commodity value chains.** This describes the situation whereby a commodity is processed as raw material for production of a variety of marketable products. The products usually cost more than the unprocessed raw material and usually have longer shelf lives. The existence of such processing facilities provides opportunities for farmers to sell all their surplus produce because the facilities need. This outlet for raw materials thus acts as an incentive for the farmers to produce more surplus for more income to themselves.

- **Facilitating the functioning of farmer organisations.** Farmer organisations are key to the development of the agriculture sector because they not only help in mobilising and training of farmers in farming methods, but they can also help negotiate better prices for agricultural inputs and for farm produce. In other words, the organisations can help make farming a more profitable venture for farmers and hence, develop the sector. Farmers who are mobilised and organised are more likely to use better farming methods than those who are not.

- **Facilitating the emergence of large-scale agribusinesses.** The existence of large agribusinesses which purchase large quantities of produce (especially those that process agricultural produce to add value to it) means that a greater market for farm produce is available, which acts as an incentive to farmers to produce more. This is precisely what is needed to achieve the transformation. It has been demonstrated the world over that the existence of large-scale agribusinesses provides important stimuli for agriculture sector development.

The generally held view is that until these transformation factors begin to come into play, transformation and the process of uptake and scaling up of new technologies and innovations will remain dogged with difficulties. In other words, for sub-Saharan Africa, and specifically the ECA countries, to realise the much needed agricultural transformation, attention must be focused on the fundamental challenge that farmers face, namely the disconnect between farm production and market opportunities. To bridge this disconnect the sector needs inputs into the development of these pre-requisites, namely:

- The development of new and revamping of existing commodity value chains.
- The need for mobilisation of farmers through farmer-based organisations.
- Meeting the farmers’ need for exposure and access to production enhancing technologies.
- Participation of large-scale agribusinesses.

Therefore, as a key actor in the agriculture sector in the sub-region, it is imperative for ASARECA to embrace these transformation factors and to identify contributions that it
can realistically make in bridging the gaps that hinder agricultural transformation in the ECA. There is no doubt that ASARECA’s effective engagement in these activities would contribute significantly to achievement of some of the missing transformation factors.

A criticism levelled at the performance of OP1 was its failure to spread successful technologies and innovations outside the immediate project areas and to share them with a wider range of stakeholders. Uptake and scaling up were not performed to acceptable levels under OP1.

However, whilst it is in order for ASARECA to respond positively to the criticisms and expectations of its stakeholders, the Association must at the same time have a way of managing those expectations that go beyond its mandate and its capabilities. As the Odame et al. (2012) study clearly shows, the constraints to scaling up of agricultural technologies and innovations are mostly systemic in nature, which means that ASARECA on its own cannot address them fully. This is either because some of the issues fall outside the ASARECA mandate or because of the sheer magnitude of the work for even those that are within its mandate. For example, the lack of effective market linkages is a big and long-term problem that needs to be handled by policy makers and the business community together. If, for example, the policy environment is not conducive for growth of agribusinesses, no matter how much ASARECA may wish to delve into the issue of markets, no significant success can be registered. Similarly, although farmer empowerment is well within the ASARECA mandate, the scale of the need requires concerted effort by all actors in the sector if significant impact is to be achieved in a relatively short time. Nevertheless, as ASARECA seeks to enhance the process of technology adoption by farmers in ECA, its approach must be one that addresses itself to the disconnect between farm production and market opportunities.
There are multiple definitions of scaling up in the literature. It has been defined as: “Expanding, adapting and sustaining a successful technology, innovation or policy in different places and over time to reach a greater number of people” (Holcombe 2012:18).

A definition from a 2004 Shanghai conference, cited in Jonasova and Cooke (2012:5) defines scaling up as: “Expanding and sustaining successful policies, programs and projects in different places over time to reach a greater number of people”.

Linn (2012:1) defines scaling up as the “expansion, replication and adaptation that sustain successful policies, programmes or projects to reach a greater number of people”.

All these definitions can be paraphrased to involve the following:

- The horizontal expansion of an adopted technology, innovation or policy within a given geographical area.
- The horizontal expansion of an adopted technology, innovation or policy from one geographical area to another.
- The vertical expansion of an adopted technology, innovation or policy from local to national or across national boundaries.

In other words, the scaling up process entails expansion in usage that is driven by systematic replication. It is not merely a wild expansion of a technology or innovation over a geographical area, but a systematic process that involves adaptation and learning as need arises.

However, the above definitions are by no means exhaustive. Hence the need for the following clarifications:

1. Some authors (e.g. Lilja et al. 2004) refer to “scaling up” and “scaling out” as if they are different processes. Others (e.g. Miller and Connell 2010) prefer to use only the term “scaling out”. However, in either case, the authors are discussing the same approach of systematic adoption, adaptation and learning. In this strategy, the term
“scaling up”, which integrates the vertical expansion as well and learning, is used consistently.

2. Technology adoption and dissemination has two phases: the testing and validation phase whereby the efficacy of a technology or innovation is demonstrated to farmers or agribusinesses; and the scaling up phase during which the technology or innovation is disseminated as defined earlier. This strategy is premised on the understanding that the technologies and innovations presented for scaling up will have gone through and passed the first phase.

Upscaling initiatives also require enabling environments in which to grow. These are summarised by Jonasova and Cooke (2012) as:

- **Policy**: Policy issues typically cause obstacles to scaling up initiatives, in particular in areas of value chain development. Policies such as price regulation, burdensome regulatory requirements, subsidies directed to selected market actors, or monopolies in processing or trading can act as disincentives. The policy and legal frameworks in the countries of focus must be adopted to support scaling up activities. While ASARECA may not be in a position to influence some of the policies, an analysis of the significant policy constraints is always essential while assessing the scalability of a technology or innovation.

- **Markets**: When trying to scale up agricultural products, potential market constraints need to be considered and addressed to avoid negative price effects.

- **Institutional capacities**: Institutional and organisational capacities must be up to the task, and the staff must have the requisite skills.

- **Culture and gender**: Potential cultural or gender obstacles should always be identified and adaptations made to allow scaling up.

- **Partnerships**: Key partners in scaling up must always be mobilised and brought on board. Partnerships are essential, especially for reaching out to end users. Non-governmental organisations (NGOs), for example, have become key agents in supporting agricultural producers, delivering not only new technologies and innovations to farmers and other value chain actors, but also offering farm and business management services through coaching and training. NGOs are well placed to try out new approaches.

- **Learning**: Knowledge about what works and what does not in scaling up is essential and must be harnessed through a continuous process of monitoring and evaluation (M&E), and sharing the knowledge with the relevant actors.

Moreover, experience has shown that successful adoption of technologies and innovations requires a degree of behavioural change by all actors along the scaling up pathway (Mackedon 2012). For example, at farm level, a farmer in the process of
adopting a new technology must adopt an unusual way of doing business. Similarly, an industrial concern seeking to use an alternative raw material in its industrial process may need to adopt a new way of processing the material. This underlines the need for continuous learning and adaptation as the scaling up process proceeds.

Some lessons have been learnt and principles drawn about the process of scaling up in respect of such behavioural change. These are:

1. For successful adoption to occur there is need to prioritise simplicity in implementation. In other words, implementation or use of the technology or innovation should be as simple as possible.

2. There should be a clear and testable theory of change. Anyone adopting the technology or innovation should be certain of the anticipated benefit following adoption. This calls for a thorough validation process before releasing a technology or innovation for scaling up.

3. The greater the required change in practice from the norm, the greater will be the time and resources to effect the adoption. This is because people, whether they are farmers or entrepreneurs, tend to be conservative in their behaviour therefore the greater the required change, the longer it will take them to effect it through adoption. This calls for greater patience and more sustained effort by those “marketing” the technology as implementation becomes more complex.

To achieve successful adoption, therefore, it will be advisable for ASARECA to always embed these principles in its scaling up activities.
In line with its mandate, the role of ASARECA should be supportive and catalytic, assisting other actors in the agriculture sector to play their respective roles more effectively and efficiently, and in some cases helping recruit other actors. This catalytic role becomes even more apparent when the ASARECA structure and modus operandi are considered. As indicated earlier, ASARECA is an association of member countries represented by their respective NARIs. The Association’s work is facilitated and coordinated by a small Secretariat comprising 15–20 agricultural professionals. Hence, a scaling up strategy for ASARECA should be informed by the understanding that it will be driven by a small but capable Secretariat whose role will be to coordinate, support and catalyse.

In addition, owing to the varying nature of national capacities in the different member countries, the Secretariat must also engage in capacity building. This will help beef up scaling up capabilities, especially in the less resourced NARS.

Therefore, the roles of ASARECA in scaling up are expected to be:

- Facilitating the sharing of available knowledge on new technologies and innovations
- Facilitating the development and sharing of scaling up methodologies
- Coordinating the sharing/movement of new technologies and innovations across borders
- Facilitation of networking amongst extension service providers in the sub-region
- Where possible, facilitating the development of agribusinesses along commodity value chains
- Advocating for a policy environment that will facilitate scaling up in all member countries
- Strengthening institutional and individual capacities for scaling up
- Mobilising and allocating resources for scaling up activities

Some of these roles are further elaborated in Figure 2. The figure is extracted from a concept paper prepared by the ASARECA Secretariat on the envisaged role of the knowledge and information hub.
A review of the performance of ASARECA under OP1 (2009–2013) found the following reasons for under-performance (as captured in OP2) in this area of technology dissemination and scaling up:

- Lack of sufficient participants with appropriate skills for dissemination and upscaling.
- Lack of partnerships with organisations and specialists with skills to support dissemination and upscaling.
- Inadequate planning to include dissemination activities as part of project implementation.
- Low public profile of ASARECA and its outputs.
- Short project duration, which did not allow sufficient time to adequately disseminate and up scale the technologies (Wellard et al. 2014).

The strategy must assume that the ASARECA Secretariat will work on these issues to ensure that they do not remain impediments to scaling up process.

On Knowledge Management, OP2 makes it clear that ASARECA not only has the potential, but also the responsibility to become a major information hub for sub-regional stakeholders, and a contact point for those from outside the sub-region who wish to invest, share or use such information or knowledge. As creation and functioning of a knowledge hub is likely to be an expensive and technically involving venture, the strategy assumes that adequate support and resources will be availed to realise this objective.

**Expected outcomes of the ASARECA scaling up strategy**

The design of this strategy is based on the desired outcomes of ASARECA interventions that will together lead to the attainment of its overall goal, as stated in OP2: Competitiveness of appropriate agricultural systems improved. The envisaged outcomes of ASARECA efforts include:

- Modalities and enabling environment for sharing research information and knowledge by stakeholders across the ECA and beyond established.
- Knowledge exchanges that stimulate uptake and scaling up of technologies and innovations by stakeholders fostered.
- Emergence of new agribusinesses that take advantage of gaps in commodity value chains facilitated.
- Adoption of new technologies and innovations by ongoing agribusinesses facilitated.
- Institutional and individual capacities for scaling up built.
- Efficient market linkages between farmers and consumers fostered.

The thinking and activities that will deliver these outcomes are organised into a strategic framework as depicted in Table 1.
Table 1: Strategic framework for ASARECA scaling up activities

<table>
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<td>Access to knowledge and information facilitated</td>
<td>Emergence of new agribusinesses facilitated</td>
<td>Partnerships with scaling up service providers enhanced</td>
<td>Capacity for enabling environment and skills for scaling up enhanced</td>
<td>Efficient market linkages between farmers and agribusinesses fostered</td>
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</table>

**A**
- Establish and maintain a database of available technologies and innovations
- Establish a database of all ASARECA-sponsored reports and publications, including a physical library

**C**
- Establish and maintain a meta-database of agricultural information in ECA
- Facilitate meta-database to act as a platform for exchange of information and experiences on scaling up
- Develop and disseminate theme-based knowledge products – posters, radio and TV messages, pamphlets, etc.
- Publish lessons learnt from scaling up activities in the ECA
- Build capacity for management of national databases

**T**
- Develop value chain products and innovations
- Collaborate with agribusiness incubator institutions to foster the emergence of new agribusinesses
- Collaborate with financial institutions in support of budding agri-enterprises
- Develop modalities for collaboration with business information providers

**I**
- Review available technologies to determine their scalability in partnership with NGOs
- Undertake a survey of extension NGOs working in ECA and their expertise
- Undertake a survey of extension agribusinesses in ECA likely to use ASARECA technologies in their supply chain
- Develop modalities for collaboration with interested NGOs and agribusinesses
- With AFAAS, develop a project to promote e-extension in ECA

**V**
- Generate methodologies and approaches for scaling up
- Train stakeholders in application of new scaling up methodologies and approaches
- Advocate for a policy environment that facilitates scaling up
- Develop modalities for farmer empowerment
- Identify capacity building needs for NARS
- Develop capacity building programme for NARS

**I**
- Undertake survey of current and potential service providers of market information in ECA
- Develop modalities for collaboration with existing service providers of market information
- Develop modalities for developing capacities of potential service providers of market information
Benefits of the strategy

The strategy:

- Establishes realistic goals and objectives that are consistent with the ASARECA mission and mandate.
- Will help communicate those goals and objectives to stakeholders and enlist their support.
- Will ensure the most effective use of the organisation’s resources by focusing on the stated goals and objectives.
- Will be a tool for fund raising.
6.1 KRA 1: Access to knowledge and information facilitated

This result area is about knowledge management and encompasses the processes and practices concerned with acquisition, archiving and sharing of knowledge. OP2 makes it clear that ASARECA should become an agricultural information hub for sub-regional stakeholders. This result is intended to deliver that hub. The strategy proposes that the hub should comprise the following components:

1. A database of technologies and innovations, which are available for dissemination to and uptake by farmers. These may include technologies and innovations generated through ASARECA research programmes and those generated by partners in ECA, especially NARIs and universities.

2. A database (including a physical library) of all reports and publications generated through ASARECA-sponsored research and analysis.

3. A meta-database of agricultural information available in partner institutions, especially NARIs and universities in ECA. A meta-database is necessary because of the practical difficulties that would be encountered in trying to assemble primary information from all the partners.

Creation of the first two components should be relatively straightforward. However, for the meta-database to be of value, the partner databases must themselves be properly organised and equipped to function as such.

As emphasised earlier, it will not be feasible for ASARECA to attempt to acquire primary data and information. This is because, besides challenges of gathering and processing information from many different sources, some of the partners may not be willing to completely and freely surrender all the useful information they have. A more feasible approach therefore is for ASARECA to seek partnership with institutional repositories, where they exist, and to facilitate their creation where they do not exist. In that case, ASARECA would operate a meta-database whereby the hub acts as a regional e-platform through which institutional primary databases can be accessed.
Therefore one of the roles that ASARECA should expect to play is to encourage, train and, perhaps in some cases, even provide the necessary resources to facilitate some of the partners in creating and managing functional databases. Only when this is done will the ASARECA meta-database serve its intended purpose.

To instil confidence in the information archived in and knowledge products that will emanate from the hub, mechanisms and processes for acquisition and processing of new knowledge must be transparent and well known. Furthermore, there should be a clear policy for handling intellectual property issues.

The ASARECA meta-database will not be the first one in the sub-region. The Kenya Agricultural Research Institute (KARI) already operates one, the Kenya Agricultural Information Network (KAINet), which is a platform that links several Kenyan research institutions—KARI up-county centres, universities and several other institutions within Kenya. The ASARECA platform would have similar architecture, but bring together national institutions—NARIs, universities, and any other willing institutions from ASARECA member countries. Box 1 provides a schematic representation of the architecture of such platforms.

To construct and operate the platform, ASARECA will need to work with partners to achieve the following ground rules for the operation:

• Agree on harmonised institutional policies that support open access to information.
• Develop appropriate information management skills at the hub and in each of the primary information centres.
• Ensure that there are similar or comparable quality assurance protocols in each of the primary information centres.
• Install compatible systems (both hard and software) at the hub and in primary information centres.

Furthermore, in the process of setting up the hub, and besides the investments in infrastructure, ASARECA will need to develop policies and procedures that will support the functioning of the hub, as follows:

**Internal:**

1. Have capacity to receive information and archive it in appropriate formats.
2. Set policies and standards for internal quality assurance.
3. Have capacity to synthesise information and create knowledge products targeted at different stakeholders.
4. Efficiently manage some knowledge dissemination platforms—websites, intranet, newsletters, bulletins, etc.
Box 1A: KAINet as an example of a meta-database

KAINet is a KARI initiative to facilitate access to scientific and technical literature that has been generated by researchers in Kenyan institutions—KARI itself with its up-country centres, universities and other interested institutions. As a platform for information sharing, KAINet connects and facilitates access to primary information centres located in several institutions. The schematic is a representation of KAINet:

With KAINet, KARI staff and stakeholders are able to access scientific and technical information from all the primary information centres through this one-stop shop.

Box 1B: Schematic architecture of the envisaged information sharing platforms within the ASARECA knowledge hub
External:
1. Undertake a survey of partner institutions to assess their potential to contribute to the ASARECA knowledge hub as primary information centres.
2. Negotiate with potential contributors on the mutual benefits of belonging to the ASARECA knowledge hub.
3. Ensure there are harmonised institutional policies that support open access of information.
4. Ensure that appropriate equipment, software and information management skills are available in each of the primary information centres.
5. Ensure each primary information centre has comparable or similar quality assurance protocols.

Figure 2 is a conceptual representation, as envisaged by the ASARECA Secretariat, of the expected functions and outputs of the knowledge and information hub once it is fully functional.

6.2 KRA 2: Emergence of new agribusinesses facilitated

Swanson (2008) observes that markets, and not technology, are increasingly becoming the drivers for agricultural development in many countries. Other observers (e.g. Bomba 2012) believe that part of the reasons why the agriculture sector in sub-Saharan Africa lags behind is the lack of entrepreneurship and financing for the sector. He argues that the emergence of small and medium size enterprises that are based on agriculture, especially on value addition to agricultural produce, would help stimulate economic growth even for rural communities.

The message here is that ASARECA should be putting more emphasis on research activities that can deliver value chain products and innovations (product development), and on nurturing the resulting products into fully-fledged agribusinesses. This result area is about how ASARECA could approach this challenge.

First, as a strategy, ASARECA will need to focus more on value chain product development in its research activities. Second, the approach will require collaboration with agribusiness incubator institutions whereby ASARECA will “sell” its products of research to these institutions which will help create entrepreneurial opportunities out of the products. The initiative will also need the support of financial institutions to assist in providing the capital for the new ventures.

Agribusiness incubation is a mechanism by which a product or innovation from a research process is assessed for suitability and adapted for commercialisation. The goal of an agribusiness incubation process is to develop and commercialise a new product, technology or service.
Delivering equitable access to AR4D knowledge and information: A conceptual framework

The thinking behind this approach is that if the product or technology is part of an agricultural commodity value chain or supply chain, its commercialisation helps increase demand for the commodity and therefore improve farmer outputs. The improved outputs would result from farmers responding to the market incentive that comes with the commercialisation. If this is realised, the adoption and scaling up process will be faster, more widespread and more sustainable. Figure 3 presents a simplified framework of how a research product can move through a business incubation process to become an agribusiness enterprise. Box 2 presents a practical example of an agribusiness incubation initiative.

Financial institutions are key to any development process. As shown in Figure 3, an important element of the business incubation process is the capitalisation or financing of agribusiness. All innovations require start-up funds. Whereas part of the incubation process is the assessment of whether a product has potential to succeed as a long-term enterprise, the initiative can only go forward if there is adequate funding (capital) to invest in starting up the enterprise. Raising such capital requires that entrepreneurs have access to microcredit, which is managed in a sustainable and accessible way.
Therefore, to deliver on this result area, ASARECA will need to work closely with business incubator institutions and with financial institutions in the sub-region. Working with business incubators will facilitate emergence of new agribusinesses. Financial institutions will help mobilise capital for financing the budding enterprises. Doing this successfully will enable ASARECA to directly contribute to making the agriculture sector in ECA more competitive.

To deliver on this result area, ASARECA will need to do the following:

1. Review the technologies on hand to determine those that have the potential for scalability through business incubating processes.

2. Scan the sub-region for the presence and expertise of business incubator institutions and their interest in the technologies and innovations ASARECA has available.

3. Pursue partnership arrangements with incubator institutions that show interest in ASARECA’s new technologies and innovations.

4. Pursue partnerships with financial institutions in the sub-region to develop financial products appropriate for supporting budding agribusinesses.

6.3 KRA 3: Partnerships with scaling up service providing institutions enhanced

Dissemination of information and scaling up of technologies and innovations are complex and, in some cases, specialised processes which ASARECA cannot undertake alone.
Box 2: Example of agribusiness incubation

Since agribusiness incubation is a new concept in the sub-region, not many institutions have carried it out successfully. However, the potential for the activity appears high, as shown by the example of AfriBanana Products Limited. This is a business incubator company operating under the sponsorship of Kyambogo University. Its business is to nurture budding entrepreneurs who wish to turn products of the research and development process into commercial ventures. In this case, AfriBanana Products works with budding entrepreneurs’ business development plans—feasibility studies, market research and investment options. Once production starts, the company obtains the right certifications.

At the time of this study, AfriBanana Products Limited was working with five groups of entrepreneurs that are commercialising banana-based products. The activities of the three successful groups are described below. The groups and their products were as follows:

1. **Production of renewable energy from banana stems.** The entrepreneurs make and market briquettes from banana stems. To commercialise this product, the group had acquired two small industrial machines, one for chopping the banana stems and the other for pressing the chopped stems into briquettes. Once dry, the briquettes are sold as an alternative to charcoal. At the time of the study, this product was already on sale, albeit in small quantities.

2. **Production of products from banana fibre.** At the time of this study, this team was already producing paper, lamp shades, beads, baskets and table mats, all made from banana fibre. The entrepreneurs had acquired all the necessary equipment—threading and dyeing machines, hand looms and knitting gear, and employed all the necessary labour. All the mentioned products were already on the market, both local and international.

3. **Production of fresh matooke.** Fresh matooke is a company that vacuum seals peeled cooking bananas and exports the product to Europe and America. At the time of the study, the company was exporting several tonnes of matooke per week.

In all these cases, according to AfriBanana Products Limited, the entrepreneurial groups were in the process of registering the companies and actually graduating from the incubation process. The enterprises were each directly employing at least 10 people, and were developing into small and medium sized enterprises, all based on the banana value chain.

The Association will need to partner with other service providers some of whom may have comparative advantages in certain areas and/or situations. In other words, partnerships should be central to the Association’s work if significant scaling up of technologies and innovations is to be realised. Some of the categories of potential partners for ASARECA to work with in scaling up of agricultural technologies and innovations are discussed in the following sections.

### 6.3.1 Non-governmental organisations

The world over, NGOs are key agents in supporting agricultural producers. The ECA region has many extension NGOs that could support the ASARECA scaling up efforts. NGOs do not only facilitate adoption and scaling up of new technologies and innovations, but
they also deliver business management services through coaching and training. Some even deliver farm inputs, including new ways of doing farm work.

Examples of candidate NGOs working in the ECA include:

• Farm Africa, which offers advisory services to farmers, including grants and loans for farm improvement or starting up agribusinesses.

• Heifer International, which provides extension services on livestock management.

• Care International, offering advisory services to farmers on improved production methods and on post-harvest and value addition technologies.

• SNV—the Netherlands Development Organisation—also extends many services (such as entrepreneurship training and livestock production extension services) to farmers.

Partnerships between ASARECA and such NGOs will definitely be of mutual benefit, in that the partnerships will scale up ASARECA technologies and innovations. The partnerships will also help the NGOs achieve their institutional objectives.

6.3.2 Commodity agribusiness value chains

In market driven economies such as those found in ECA, the private sector drives commodity value chains. The public sector can and does support private sector action, but it cannot substitute it. As emphasised earlier, financial returns are ultimately the most important incentive that drives the value chain. By creating market opportunities for smallholder farmers in the agribusiness value chain, the business encourages farmers to increase their productivity and hence increase their income. Box 3 provides an example of how a commodity value chain can benefit farmers and encourage them to increase their farm production.

6.3.3 Seed value chains

The problem with rural smallholder agriculture is that farmers mostly rely on the traditional way of acquiring seed for planting—saving from a previous harvest, “borrowing” from a friend or neighbour or buying uncertified seed from the local shop. Often, however, such seed are of inferior quality in many respects and therefore do not germinate well, or if they do, they give poor yields. Yet, improved seed varieties have the potential to increase productivity several fold, and therefore to increase farmer incomes.

Experience shows that the private seed sector is most efficient at producing and distributing improved seed (for example, see EASEED Newsletter 2013). This presents a great opportunity for ASARECA to partner with the seed industry in the dissemination of new seed technologies.
Box 3: Example of upscaling through agribusiness linkage with farmers

SABMiller is one of the largest beer-making companies in the world. It owns breweries in all the five continents. It goes as Nile Breweries in Uganda, Kenya Breweries Limited in Kenya and as SAB in Mozambique.

Whereas globally, beers are made from barley, the beer company has tried to adopt innovations that use local ingredients—sorghum in Kenya and Uganda, and cassava in Mozambique—to produce its product. In all cases, the company has partnered with local farmer groups and encouraged them to grown the variety of sorghum or cassava needed in beer making. In effect, the company has created market opportunities for smallholder farmers in its agribusiness value chain, which has led to scaling up of the particular varieties of sorghum or cassava.

In Uganda, SABMiller is so far working with 9,000 sorghum farmers while in Mozambique it is working with 1,500 cassava farmers.

Commodity agribusiness value chains such as this have the potential to transform the livelihoods of many smallholder farmers if they are many.

The ASARECA contribution in this kind of endeavour should comprise:

- Developing technologies and innovations that can be used by existing agribusinesses, especially for import substitution of raw materials, as is the case with SAB.
- Facilitating the emergence of new agribusinesses around commodity value chains.

To realise this partnership, ASARECA will need to be active in “selling” its seed technologies to as many seed companies working in the sub-region as possible. The Association should also seek to resolve any lingering intellectual property issues around the commercialisation of seed technologies.

6.3.4 African Forum for Agricultural Advisory Services

The principal service delivery mechanisms of the African Forum for Agricultural Advisory Services (AFAAS) are the national forums and regional forums comprising anyone interested in issues of agricultural advisory services.

The roles of national and regional forums include:

- Convening of national or regional fora to discuss pertinent issues affecting delivery of advisory services.
- Organising agricultural exhibitions, plant clinics, farmer field schools and information marketplaces
- Organising policy dialogues.

Partnership with AFAAS will avail ASARECA the opportunity to interact with and “market” its technologies and innovations to members of AFAAS and their associates, and through them to farmers. The AFAAS national fora could also be used for dialogue
on issues that constrain technology adoption, especially at national level, and to feed the emerging recommendations into national policy processes.

More specifically, ASARECA and AFAAS have expressed interest in working together to promote e-extension in ECA.

The role of agriculture in economic development is well acknowledged. In sub-Saharan Africa about 80% of the population live in rural areas and thrive on agriculture. Improving their welfare requires that:

- Farmers’ productivity is improved by enabling them to grow more food and cash crops.
- Enabling them to receive fair prices for the produce they sell.

The rural and often remote nature of some of these communities sometimes makes it hard for them to receive timely extension support for their farming activities or market information for their produce. This gap in extension results in low crop yields, increased wastage and reduced marketing opportunities, leading to loss of income and therefore loss of opportunities for self-development. Therefore information is critical for social and economic activities that translate to the development process.

Against the backdrop of an extension system that is under-resourced and therefore under-performs, the growth of information and communication technology (ICT) presents an alternative. The growth of the mobile phone telephony in the ECA presents an opportunity for using it as a means of information and knowledge transfer to rural communities for agricultural extension (so called e-extension). Using a mobile telephone, farmers can receive the desired information in real time. This helps them make decisions on agri-related issues for day-to-day guidance. The approach is already practised in countries such as China and India where its impact in transforming rural community livelihoods has been amply demonstrated.

ASARECA and AFAAS have an opportunity to work together in promoting this type of extension in ECA. As stated earlier, the public extension system in most ASARECA member countries is under-resourced and ineffective. Many rural communities are hard to reach owing to poor or non-existent road infrastructure and yet it is such communities that need the services of agricultural extension most. On the positive side, however, is the widespread penetration of mobile telephone technology even in these hard to reach areas. Clearly, there is an opportunity to introduce e-extension services, which the partnership between ASARECA and AFAAS should exploit.
To deliver this result area, ASARECA will need to do the following:

1. Review the available technologies and innovations to determine their potential for scalability through partnerships with NGOs, private sector or through e-extension.
2. Scan the sub-region for the presence and expertise of extension providing NGOs and identify those whose interests potentially complement those of ASARECA.
3. Similarly scan for agribusinesses that have the potential to include ASARECA technologies in their supply chains.
4. Pursue partnership arrangements with organisations whose interests are complementary to those of ASARECA.
5. Participate in exhibitions, meetings and other fora organised by AFAAS, seed companies, national agricultural shows, etc., to “market” technologies and innovations that can be upscaled.
6. Develop modalities for collaboration with AFAAS in application of e-extension.
7. Develop a policy on intellectual property and commercialisation of products of research.

6.4 KRA 4: Capacity for enabling environment and skills for scaling up enhanced

To maintain its sub-regional reach and support to all its members, ASARECA must continue to engage with NARS, particularly the less resourced ones, to enhance their capacities for technology adoption and scaling up. This is so because as a membership organisation, ASARECA is obliged to ensure that the benefits of its activities are reflected in all its member countries. Moreover, even the better resourced NARS may have capacity needs for improving the policy environment or gaps in skills for technology dissemination and scaling up, hence the need for a result area of capacity building.

First, an important area in which ASARECA intervention will continue to be sought is the development of methods and approaches for scaling up. Conventional public sector approaches have failed to deliver the desired outcomes and impact, and therefore investigations must continue to find new tools and approaches that can make a difference. ASARECA, through its KMUS Programme, is well placed to spearhead the research effort into the development of new approaches and methods; to learn lessons from the experience; and to use the lessons in building the capacities of member NARS. Second, in many of the ASARECA member countries, technology transfer and scaling up are still largely the responsibility of public institutions, especially NARIs and national agricultural advisory systems. Many of these institutions are characterised by top-down structures, inadequate funding (especially for field level programmes), and inadequate and sometimes inadequately trained staff. Therefore it will be essential for ASARECA to work with these institutions and try to develop their capacities.
However, a few NARIs have made substantial advances in scaling up agricultural technologies and innovations, and from which lessons could be drawn about their experiences. A case in point is KARI which has prioritised scaling up and has several initiatives for the purpose. Box 4 illustrates what KARI has put in place to scale up technologies and innovations that emanate from its research efforts. Clearly, KARI represents efforts that other NARIs and national agricultural advisory systems could emulate or learn from, especially with facilitation from ASARECA.

Third, to scale up technologies and innovations, ASARECA should not restrict its partnerships and capacity building efforts to the conventional partners. For example, one of the most effective ways of achieving agricultural transformation is by mobilising farmers into farmer-based and farmer-run organisations. Such farmer organisations help farmers not only to learn from one another, but also to voice their concerns and aspiration more emphatically. Hence, ASARECA should endeavour to build the capacities of farmer organisations so that they in turn mobilise the farmers and train them. It is through such efforts in capacity building that ASARECA interventions will become more widespread and sustainable.

**Box 4: KARI Department of Outreach and Partnership as an example of a good initiative for scaling up**

**Roles:**

- To promote the visibility of KARI, its mandate, products and services
- Promote upscaling and out-scaling of KARI products and services
- Promote establishment of strategic partnerships along the research and development continuum
- Enhance communication, foster partnership and promote the institute’s public image
- Identify, coordinate and strengthen capacity for dissemination of KARI products and services
- Promote clients’ access to knowledge and information
- Liaise with various extension service providers in the public and private sector

**Programmes:**

- Adapting technologies to farmers’ circumstances and obtaining feedback
- Establishing and managing Innovation Platforms and overseeing their operations
- Cataloguing local innovations and recording experiences
- Packaging of technologies for dissemination
- Undertaking outreach activities—shows, seed fairs, farmer field schools, etc.
- Information management—publication service, library service, ICT, including KAINet
Therefore, to deliver on this result area, ASARECA will need to undertake the following:

1. Identify capacity building needs for scaling up in NARS.
2. Undertake an inventory of potential partners, specifically farmer organisations and their capacity needs for scaling up.
3. Design a capacity building programme to address the identified skill gaps in both the NARS and farmer organisations.
4. Engage high-level policy makers on issues of technology adoption and scaling up, especially the need for greater capacity and a conducive policy environment.

6.5 KRA 5: Efficient market linkages between farmers and agribusinesses fostered

For smallholder farmers in rural areas, the lack of market information is a significant impediment to market access. It substantially increases transaction costs and reduces market efficiency. The marketing chain often consists of multiple middlemen, each taking a profit margin at each stage of the chain. Price variations in space and time are often large and erratic.

The farmers who have to deal with markets that are neither competitive nor transparent are greatly disadvantaged, especially those in remote areas. Consequently, the farmers have no incentive to increase production, and so continue to live in abject poverty. These constraints represent a significant impediment to adoption of new technologies and are responsible for the sustained low production by smallholder rural farmers.

Experience from, for example, India shows that provision of market information can greatly assist such farmers to choose what commodities to produce, what production technologies to apply, when to produce, and indeed for whom to produce. In other words, for smallholder farmers to change their situation and improve their livelihoods, provision of market information to them will be key to their transformation.

Therefore for ASARECA to get its technologies adopted and scaled up by smallholder farmers, the farmers not only need to be informed about the technologies or innovations themselves, but also the market opportunities for what they produce.

ICT has the potential to deliver market information to these rural farming communities. It has been described as any device, tool or application that permits the exchange or collection of data through interaction or transmission (McNamara et al. 2012). ICT is an umbrella term that includes anything, ranging from radio to satellite imagery and to mobile telephones. Their affordability has resulted in their spread and use even in rural areas.
Mobile telephone technology in particular has the potential to radically transform smallholder farmers’ access to critical and timely information. New agricultural services are being developed that allow a farmer to call a helpline for advice from an agricultural extension service provider or receive daily agricultural alerts through short message service (SMS) or voicemail. Farmers can exchange up to date information about pests and diseases, seed varieties, inputs, weather, market prices, etc.

Box 5 is an illustration of what is already happening in this area in the sub-region. It not only illustrates the potential for this approach, but also shows that there is capacity and institutions for ASARECA to partner with in helping create market linkages between these rural farmers and agribusinesses.

### Box 5: Private sector companies engaged dissemination of agricultural production technologies and market information

In Kenya, the Kenya Agricultural Commodity Exchange (KACE) Limited, a private sector firm, is operating a market information system designed to link smallholder farmers to better markets. The market information system involves harnessing ICT to empower the farmers with low-cost and timely information on available markets for their produce.

For example, KACE in partnership with Safaricom, a leading mobile telephone service provider, have developed a mobile telephone SMS market information service branded SMS Sokoni. Farmers anywhere in the country covered by Safaricom can access market information like commodity prices in different nearby markets, who is buying and who is selling.

Similarly, KACE in partnership with the Kenya Broadcasting Corporation (KBC) broadcast price information via radio for some commodities in selected markets daily except on Sunday. An estimated five million people, most of whom would be rural farmers, listen to the broadcasts every day.

Mukhebi (2004) observed that when equipped with information provided through KACE, farmers are empowered to bargain with the buyers for better prices and even to seek alternative buyers.

AgriNet Uganda is attempting to provide the same type of service in Uganda.

This example illustrates the potential of ICT in the dissemination of agricultural information that can lead to more efficient markets for rural farmers in ECA. ASARECA should seek partnerships with such companies where they exist, and possibly even encourage the emergence of others where they do not exist. Use of ICT in linking farmers to markets is an opportunity ASARECA should not miss.

Market linkages can be fostered through the use of even the more traditional channels, of which there are many. Table 2 illustrates the wide array of potential channels and their service providers that ASARECA can partner with in the dissemination of agricultural information, including market information.
Table 2: An illustration of the variety of communication channels available to ASARECA for dissemination of agricultural information, including market information

<table>
<thead>
<tr>
<th>Type of service</th>
<th>Tools used</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print media</td>
<td>Newspapers, flyers, captions, booklets advertisements</td>
<td>Farmers, policy makers, agribusinesses</td>
</tr>
<tr>
<td>Electronic media</td>
<td>Radio, TV talk shows, video, jingles, announcement; websites</td>
<td>Farmers, policy makers, agribusinesses</td>
</tr>
<tr>
<td>NGOs/civil society</td>
<td>Meetings, workshops, brochures, flyers, fact sheets, reports, exhibitions</td>
<td>Policy makers, farmers, agribusinesses</td>
</tr>
<tr>
<td>Public institutions</td>
<td>Acts, by-laws, circulars, meetings, decrees</td>
<td>Farmers, extension agents, agribusinesses</td>
</tr>
</tbody>
</table>

For ASARECA to deliver on this result area, it will need to undertake the following:

1. Undertake a survey of current and potential service providers of market information in ECA. This should include both conventional and emerging tools for information dissemination.
2. Engage with exiting service providers for collaboration.
3. Where necessary, engage with potential service providers to enable them develop capacity to provide the service.

Table 3 presents a logical framework showing the different key result areas and the respective indicators for measuring performance. The logical framework is part of the overall M&E system (Section 7) for the strategy. For each key result area, the logical framework shows the activities to be monitored during implementation.
<table>
<thead>
<tr>
<th>Key Result Area</th>
<th>Activities/Deliverables</th>
<th>Indicators</th>
<th>Means of Verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>KRA 1 Access to knowledge and information facilitated</td>
<td>• Establish and maintain a database of available technologies and innovations&lt;br&gt;• Establish a database of all ASARECA sponsored reports and publications, including a library&lt;br&gt;• Establish and maintain a meta-database of agricultural information in ECA as a platform for exchange of information and experiences on scaling up&lt;br&gt;• Develop and disseminate theme-based knowledge products—posters, radio and TV messages, pamphlets, etc.&lt;br&gt;• Publish lessons learnt from scaling up activities in the ECA&lt;br&gt;• Build capacity for management of national databases</td>
<td>- At least 50 proven technologies and innovations available in the database&lt;br&gt; - At least 100 publications available in the database&lt;br&gt; - Library established&lt;br&gt; - At least 10 links to other databases established&lt;br&gt; - At least 10 different types of products produced&lt;br&gt; - Quality of products produced&lt;br&gt; - At least 10 lessons learnt publications published&lt;br&gt; - At least 11 database managers trained</td>
<td>- Reports&lt;br&gt; - Reports&lt;br&gt; - Direct observation&lt;br&gt; - Reports&lt;br&gt; - Reports&lt;br&gt; - Evaluation&lt;br&gt; - Reports&lt;br&gt; - Reports</td>
<td>- Funds to finance the activities are available&lt;br&gt; - Potential partners agree to partner with ASARECA&lt;br&gt; - The right policy environment exists</td>
</tr>
<tr>
<td>Key Result Area</td>
<td>Activities/Deliverables</td>
<td>Indicators</td>
<td>Means of Verification</td>
<td>Assumptions</td>
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<tr>
<td>KRA 2: Emergence of new agribusinesses facilitated</td>
<td>• Develop value chain products and innovations</td>
<td>- Number of VC products /innovations developed.</td>
<td>- Reports</td>
<td>- Funds to finance the activities are available</td>
</tr>
<tr>
<td></td>
<td>• Collaborate with agribusiness incubator institutions to foster the emergence of new agribusinesses</td>
<td>- Number of collaborative agreements established</td>
<td>- Reports</td>
<td>- Potential partners agree to partner with ASARECA</td>
</tr>
<tr>
<td></td>
<td>• Facilitate existing agribusinesses to innovate and adopt new value chain products</td>
<td>- Number of concluded collaborative agreements</td>
<td>- Reports</td>
<td>- The right policy environment exists</td>
</tr>
<tr>
<td></td>
<td>• Collaborate with financial institutions in support of budding agri-enterprises</td>
<td>- Number of concluded collaborative agreements</td>
<td>- Reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop modalities for collaboration with business information providers</td>
<td>- Number of concluded collaborative agreements</td>
<td>- Reports</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 continued.

<table>
<thead>
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<th>Means of Verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>KRA 3: Partnership with scaling up service providers enhanced</td>
<td>• Review available technologies to determine their scalability in partnership with NGOs</td>
<td>- Database of extension NGOs available</td>
<td>- Reports</td>
<td>- Funds to finance the activities are available</td>
</tr>
<tr>
<td></td>
<td>• Undertake a survey of extension NGOs working in ECA and their expertise</td>
<td>- Database of agribusinesses available</td>
<td>- Reports</td>
<td>- Potential partners agree to partner with ASARECA</td>
</tr>
<tr>
<td></td>
<td>• Undertake a survey of extension agribusinesses in ECA likely to use ASARECA technologies in their supply chain</td>
<td>- Number of concluded collaborative agreements</td>
<td>- Reports</td>
<td>- The right policy environment exists</td>
</tr>
<tr>
<td></td>
<td>• Develop modalities for collaboration with interested NGOs, agribusinesses and public institutions for use of ASARECA products in their supply chain</td>
<td>- Number of concluded collaborative agreements</td>
<td>- Reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• With AFAAS, develop a project to promote e-extension in ECA</td>
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</table>
Table 3 continued.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>KRA 5: Efficient market linkages between farmers and agribusinesses fostered</td>
<td>• Undertake survey of current and potential service providers of market information in ECA</td>
<td>Database of service providers of market information available</td>
<td>Reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop modalities for collaboration with existing service providers of market information</td>
<td>Number of concluded collaborative agreements</td>
<td>Reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop modalities for developing capacities of potential service providers of market information</td>
<td>Number of concluded collaborative agreements</td>
<td>Reports</td>
<td></td>
</tr>
</tbody>
</table>
A n appropriate monitoring and evaluation (M&E) system is one that captures performance information at different operational levels and documents progress towards achievement of higher-level objectives, outcomes and impact of ASARECA’s scaling up activities. Hence, the M&E plan shall have the following objectives:

1. To track implementation of scaling up activities and effectiveness of delivery for each key result area.
2. To track the outcomes and impacts of ASARECA scaling up efforts.
3. To facilitate lesson learning.

**Monitoring of scaling up activities**

At the beginning of the implementation of the strategy, the KMUS Programme Manager in collaboration with the ASARECA Monitoring and Evaluation Expert shall prepare a scaling up monitoring plan that shall be the basis for tracking key milestones and other performance indicators of scaling up activities. In addition, the Programme Manager and M&E Expert shall prepare annual scaling up work plans that indicate the expected progress towards attainment of the key milestones. Subsequently, every six months the manager and the expert shall prepare a performance report highlighting progress towards attaining the milestones and other performance indicators.

After approval by ASARECA Management, the report shall be shared with stakeholders, including the Board of Directors and development partners.

**Evaluating outcomes and impact**

To assess achievements of outcomes and impact, periodic reviews of ASARECA’s scaling up activities will be undertaken. A review could be undertaken by an internal team of ASARECA staff or by an external consultancy. In either case, to initiate the process, the KMUS Programme Manager in conjunction with the M&E Expert shall prepare Terms of Reference for the evaluation and submit them to ASARECA Management for approval. Once the Terms of Reference have been approved, the review shall be commissioned. Such evaluations are usually field based.
The evaluation shall assess whether the outputs as prescribed in the logical framework were attained; whether they are of the anticipated quality; and the outcomes and impact of the intervention. The effectiveness of budget utilisation and value for money will also be assessed.

A comprehensive report of the evaluation shall be prepared, indicating the achievements so far, the lessons learnt and best practices observed.
Financing the Strategy

As the foregoing discussion clearly demonstrates, scaling up of agricultural technologies and innovations is complex, requiring a multifaceted approach and an intensive action plan. Accomplishing what is proposed in this strategy will therefore require resources in terms of time, skilled personnel and, of course, finances.

Moreover, for ASARECA, failure in this regard is not an option. The expectation from its stakeholders, especially the Board of Directors and development partners, is that the technologies and innovations generated in ASARECA research programmes should be disseminated to farmers for uptake and scaling up. This will enable farmers to benefit from the outputs of research through the betterment of their livelihoods.

Implementation of this strategy must therefore be high priority for ASARECA personnel and in allocation of financial resources. To reflect the commitment of ASARECA to implementing the strategy and ensure that financial resources will not be a limiting factor, this strategy proposes that a special “scaling up fund” should be created to ensure that scaling up activities proceed uninterruptedly. The advantage of having such a fund is that donors and philanthropists interested in scaling up activities can directly support the fund. The budget accompanying this strategy gives a rough amount of the scale of funding that such a fund requires.
ANNEX 1: Action plan and budget for implementation of the ASARECA upscaling strategy

INTRODUCTION

The need for ASARECA to develop a strategic plan to enhance the scaling up of agricultural technologies and innovations has been highlighted in the strategy itself. The strategy takes a holistic view of the organisation and articulates overall approaches that will deliver the organisation’s mission. However, the strategy does not spell out its implementation modalities. Such tactics are normally spelt out in an action plan. An action plan therefore should prioritise those activities that have the most potential to help the organisation achieve its mission; it should indicate who will be responsible for undertaking those activities; and should also indicate the resources (human, financial, time) needed. Finally, the action plan should indicate the various milestones and timelines needed for the ultimate achievement of the organisation’s purpose.

This action plan attempts to fulfil these expectations. The KRAs mentioned in the action plan are those developed in the strategic plan, and similarly the priority areas are essentially those identified in the strategy. Each activity has been costed and the time frame for its implementation estimated in broad terms; the responsible unit within the ASARECA Secretariat has also been identified. The conditions for delivery of each KRA are discussed in sub-sections.

KRA 1: ACCESS TO KNOWLEDGE AND INFORMATION FACILITATED

The overall objective of this result area is to ensure that ASARECA establishes a functional knowledge and information hub which stakeholders can access and acquire information from. The information will be, for example, on proven technologies and innovations available for scaling up, on methods and approaches to scaling up, experiences gained so far in scaling up, etc. In addition, the knowledge hub is expected to be a useful source of information not only for researchers, but also for those wishing to invest in the sub-region.

Successful implementation of this activity will enable ASARECA to render a unique kind of service, and therefore not only transform ASARECA into a unique institution, but also tremendously raise its profile.
Priority areas for delivery on this result area are:

- Establishing and maintaining a database of available technologies and innovations
- Establishing a database, including a physical library, of all ASARECA sponsored reports and publications
- Establishing and maintaining a meta-database of agricultural information in ECA
- Facilitating the meta-database to act as a platform for exchange of information and experiences on scaling up
- Developing and disseminating theme-based knowledge products—posters, radio and TV messages, pamphlets, etc.
- Publishing lessons learnt from scaling up activities in ECA

The activities to deliver the result area will include:

**Internal to ASARECA Secretariat**

1. Acquire hardware and software appropriate for a knowledge hub. It is expected that the hub will also serve as a platform for exchange of knowledge and information by all ASARECA stakeholders.

2. Develop capacity to receive and archive information in appropriate formats. Such information should include technologies and innovations that are available for upscaling, their attributes and where and how they can be accessed. The information should also include proposals, reports and publications of all ASARECA sponsored research and analysis.

3. Develop capacity to manage the database, both as a primary information source and as a meta-database.

4. Develop policies and standards for quality assurance of information received before archiving.

5. Develop capacity to synthesise information to create a range of knowledge products targeted at different stakeholders.

6. Use database information to publish and promote outputs with newsfeeds, enhanced content of websites, social media, and in journals and books.

7. Undertake a stakeholder survey to determine those that should be the target of ASARECA communication products.

**External (with partners)**

1. Undertake a survey of partner institutions to assess their potential as participants in the ASARECA knowledge hub as primary information centres.

2. Advocate to potential primary information centres the benefits and responsibilities of being part of the ASARECA knowledge hub.
3. Develop negotiated protocols for harmonised institutional policies that support open access to information.

4. Build capacity in partner institutions (both human and infrastructure) to enable them become functional primary information centres.

5. Develop negotiated quality assurance protocols.

Given the centrality of this result area in the overall programme of ASARECA, the Association should endeavour to have the knowledge hub fully functional by the end of the second year of the second OP, i.e. by the end of 2015.

However, a modular approach in the development of the hub is recommended, whereby all activities related to the Secretariat’s database should take priority and be accomplished as soon as possible (by the end of the first year of OP2, i.e. by end of 2014). Those related to the creation of the meta-database will be expected to take longer because of the multiplicity of participants and the negotiations that will be needed. Nonetheless, it is recommended that the meta-database should also be fully operational by the end of the third year of OP2, i.e. by end of 2016.

**KRA 2: EMERGENCE OF NEW AGribusinesses FACILITATED**

Markets, and not technology, are increasingly becoming the drivers of agricultural development in many countries. The message here is that ASARECA should be place more emphasis on research activities that can deliver value chain products and innovations (product development) and on nurturing the resulting products into new agribusinesses or as part of supply chains of existing agribusinesses. This result area is about how ASARECA could approach this matter. Successful private sector driven scaling up has the effect of providing markets for farm products, which in itself acts as an incentive for increased farm output.

The overall objective of this result area is to enable ASARECA contribute to the emergence of new agribusinesses. The areas to deliver this result area will include:

1. Development of value chain products and innovations.
2. Collaboration with agribusiness incubator institutions to foster the emergence of new agribusinesses.
3. Collaboration with financial institutions in nurturing and financing of new agribusiness.

The activities to deliver this result area will include:

1. A deliberate effort by ASARECA research managers to re-orient research toward product development.
2. Assessment of all available technologies and innovations for their potential to be part of product value chains, i.e. if they could constitute a business venture.

3. Undertaking a survey of business incubator institutions in ECA and assess their interest in available technologies and innovations.

4. Pursuing partnership arrangements with incubator institutions.

5. Pursuing partnership arrangements with financial institutions to support budding agribusinesses.

**KRA 3: PARTNERSHIP WITH SCALING UP SERVICE PROVIDERS ENHANCED**

ASARECA neither has the personnel nor the financial resources to undertake scaling up activities that will have impact in all corners of ECA. To have the desired impact therefore the Association must work with partner institutions in its member countries. The sub-region has many NGOs working in the agriculture sector. Although they may have varied incentives and approaches, the bottom line is that they do scale up agricultural technologies and innovations, and have the capacity and resources to do it well. In most cases, these organisations work directly with farmers or with agribusiness entrepreneurs, and therefore the outcome of their work can be felt fairly quickly. Being on the ground, they can have a comparative advantage in reaching ASARECA stakeholders.

The first objective of this result area is for ASARECA to forge collaboration with such extension service providers, so that they participate in promoting adoption and scaling up of ASARECA technologies and innovations.

The second objective is to collaborate with AFAAS in promoting the use of e-extension in the sub-region.

The broad areas to deliver this result will include:

1. Development of modalities for collaboration with appropriate NGOs.

2. Development of modalities for collaboration with regional organisations, especially AFAAS in establishment of e-extension.

The activities to deliver this result area will include:

1. Undertaking an inventory of potential partner NGOs in scaling up of agricultural technologies and innovations in ECA.

2. Analysis of the available technologies and innovations to determine those that can be “sold” to the NGOs.

3. Stimulating interest in the NGOs and other value chain actors for the available technologies and innovations.
4. Developing modalities for collaboration with NGOs and other value chain actors.
5. With AFAAS, initiating a project on e-extension.

**KRA 4: CAPACITY FOR ENABLING ENVIRONMENT AND SKILLS FOR SCALING UP ENHANCED**

To maintain its sub-regional reach and support all its members, ASARECA must continue to engage with NARS, supporting and facilitating them to undertake technology adoption and scaling up activities. In so doing, ASARECA will ensure that the benefits of dissemination and scaling up of technologies and innovations are reflected in all member countries. Hence, capacity building for scaling up must be a priority.

The less resourced NARS will probably need their capacities developed in a whole range of aspects—in terms of skills and expertise for scaling up—as well as institutional development in terms of enabling policies and regulations. The more resourced NARS could benefit by acquiring tools and methodologies developed by ASARECA, and learning lessons from ASARECA’s experiences in scaling up. In other words, capacity building must be central to ASARECA initiatives in scaling up technologies and innovations.

To that end, ASARECA, working with partners, shall engage in the following capacity enhancing activities:

1. Support research to generate approaches and methods for scaling up technologies and innovations.
2. Train appropriate personnel from NARS to equip them with knowledge and skills for scaling up.
3. Train stakeholders in application of new scaling up methodologies and approaches.
4. Where they exist, advocate for elimination of policy constraints to uptake, dissemination and scaling up of new technologies and innovations.
5. Develop modalities for farmer empowerment though farmer organisations.

The specific activities will be:

1. Commission and participate in research for innovative ways of scaling up agricultural technologies and innovations.
2. Undertake a capacity needs assessment for scaling up in NARS.
3. Design a training programme to fill the identified gaps.
4. Undertake a study of the policy environment for scaling up in ASARECA member countries to identify policy constraints where they exist.
5. Advocate for elimination of policy constraints in ASARECA member countries.
6. Develop a collaborative programme with regional and national farmer organisations to mobilise and build capacities of farmers at sub-national level.

**KRA 5: EFFECTIVE MARKET LINKAGES BETWEEN FARMERS AND AGRIBUSINESS FOSTERED**

Private sector driven upscaling initiatives tend to succeed mainly because of the underlying profit incentive. The same can be said of initiatives by NGOs, with the added underlying incentive of wanting to be seen as relevant and able to add value.

To deliver this result area, ASARECA will need to do the following:

1. Development of modalities for collaboration with appropriate (ICT) institutions for dissemination of market information.
2. Development of modalities for collaboration with appropriate agribusinesses in linking with farmers.

The specific activities will be as follows:

1. Undertake a survey of current and potential service providers of agricultural information, especially market information to farmers.
2. Engage with current service providers for collaboration in information delivery to farmers.
3. Engage with potential service providers to develop their capacity to provide the service on a sustainable basis.

**EXPECTED OUTCOMES AND IMPACTS**

The strategy and its implementation provide the framework for scaling up of generated technologies, innovations and management practices (TIMPs), most of which were generated in OP1. This strategy therefore is the focus of the second ASARECA medium-term operational plan (MTOP). The expected outcomes and impacts are drawn from the OP2 results framework, while the stated indicators and targets are based on the overall low medium-term OP funding scenario.

The main impacts anticipated from the scaling up activities include, but are not limited to the following:

- At least 5% annual increase in agricultural productivity of selected commodities. This is marginally below the target growth rate stated under CAADP. This is mainly because some of the targeted areas as within low to medium agricultural potential.
- The number of households whose income is expected to increase due to successful scaling up intervention is estimated at 1.8 million. With the anticipated increase in income through adoption of selected TIMPs, about 5.5 million people in ECA are expected to be moved above the poverty line of US$ 1.5 per day.
On improvement of nutrition, the number of people in ECA whose nutrition level is expected to improve through the research and scaling up interventions is expected to be 11 million (with a ratio of 5 (men)::3 (women)). Within this group of targeted individuals, at least 5.5 million children under 5 years old are expected to be reached and supported to access foods of nutrition standards.

In support of the above impacts, the following key outcomes are also anticipated from the interventions:

- At least 15% change in water use efficiency by men and women farmers (5:3 respectively), contributing to the targeted improved productivity mentioned above.
- At least 30 million stakeholders are targeted to benefit from the information and knowledge disseminated and shared through activities of the knowledge and information hub. The hub is major intervention under the first key result area.
- It is also anticipated that the scaling up interventions will further benefit at least 25% of the stakeholders adopting selected TIMPs, as well as introduce or connect at least 1.1 million stakeholders to access new markets.

Annex Table 1 shows the implementation framework and budget for the KRA.

### Annex Table 1: Implementation framework and budget

<table>
<thead>
<tr>
<th>KRA 1: Access to knowledge on up scaling technologies and innovations facilitated</th>
<th>Task (What will be done?)</th>
<th>Responsibility (Who will do it?)</th>
<th>Initial resources/funds needed (US$)</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acquire hardware and software appropriate for a knowledge hub, including a physical library</td>
<td>ICT</td>
<td>50,000</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>2. Develop capacity to receive and archive information in appropriate formats</td>
<td>ICT</td>
<td>50,000</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>3. Develop capacity to manage the database, both as a primary information source and as a meta-database</td>
<td>ICT</td>
<td>50,000</td>
<td>Immediate with continuous review</td>
<td></td>
</tr>
<tr>
<td>4. Develop policies and standards for quality assurance of information received before archiving;</td>
<td>KMUS</td>
<td>100,000</td>
<td>Immediate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task (What will be done?)</th>
<th>Responsibility (Who will do it?)</th>
<th>Initial resources/funds needed (US$)</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Undertake a stakeholder survey to determine those that should be the target of ASARECA communication products</td>
<td>KMUS &amp; ICU</td>
<td>50,000</td>
<td>Immediate and continuous</td>
</tr>
<tr>
<td>6. Synthesise information to create a range of knowledge products targeted at different stakeholders</td>
<td>KMUS &amp; ICU</td>
<td>500,000 over 5 years</td>
<td>Immediate and continuous</td>
</tr>
<tr>
<td>7. Use database information to publish and promote outputs with newsfeeds, enhanced content of websites, and in social media</td>
<td>ICU</td>
<td>300,000 over 5 years</td>
<td>Immediate</td>
</tr>
<tr>
<td>8. Undertake a survey of partner institutions to assess their potential as participants in ASARECA knowledge hub as primary information centres</td>
<td>KMUS</td>
<td>50,000</td>
<td></td>
</tr>
<tr>
<td>9. Advocate to potential primary information centres the benefits and responsibilities of being part of ASARECA knowledge hub</td>
<td>KMUS</td>
<td>100,000</td>
<td>By end of 1st Year</td>
</tr>
<tr>
<td>10. Develop negotiated protocols for harmonised institutional policies that support open access of information</td>
<td>KMUS</td>
<td>150,000</td>
<td>By end of 1st Year</td>
</tr>
<tr>
<td>11. Build capacity in partners institutions (both human and infrastructure) to enable them become functional primary information centres;</td>
<td>KMUS</td>
<td>1,000,000 over 5 years</td>
<td>Immediate and continuous</td>
</tr>
<tr>
<td>12. Develop negotiated quality assurance protocols</td>
<td>KMUS</td>
<td>100,000</td>
<td>By end of 1st Year</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>****</td>
<td><strong>2,500,000</strong></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>Responsibility</td>
<td>Funds needed (US$)</td>
<td>Time frame</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>1. Assess all available technologies and innovations for their</td>
<td>KMUS</td>
<td>300,000 over 5</td>
<td>Immediate and</td>
</tr>
<tr>
<td>potential to be part of product value chains, i.e. if they could</td>
<td></td>
<td>years</td>
<td>continuous</td>
</tr>
<tr>
<td>constitute a business venture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Undertake a survey of business incubator institutions in ECA and</td>
<td>KMUS</td>
<td>300,000 over 5</td>
<td>Immediate and</td>
</tr>
<tr>
<td>assess their interest in available technologies and innovations</td>
<td></td>
<td>years</td>
<td>continuous</td>
</tr>
<tr>
<td>3. Engage with promising incubation institutions to make them</td>
<td>KMUS</td>
<td>500,000 over 5</td>
<td>Immediate and</td>
</tr>
<tr>
<td>pick up ASARECA products</td>
<td></td>
<td>years</td>
<td>continuous</td>
</tr>
<tr>
<td>4. Pursue partnership arrangements with financial institutions for</td>
<td>KMUS</td>
<td>500,000 over 5</td>
<td>Immediate and</td>
</tr>
<tr>
<td>support of agribusinesses</td>
<td></td>
<td>years</td>
<td>continuous</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1,600,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

**KRA 3: Partnership with scaling up service providers enhanced**

<table>
<thead>
<tr>
<th>Task</th>
<th>Responsibility</th>
<th>Funds (US$)</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Undertake an inventory of potential partner NGOs and other</td>
<td>KMUS</td>
<td>100,000</td>
<td>Immediate</td>
</tr>
<tr>
<td>agribusiness value chain actors in scaling up of agricultural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>technologies and innovations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Analyse the available technologies and innovations to determine</td>
<td>KMUS</td>
<td>200,000 over 5</td>
<td>Immediate and</td>
</tr>
<tr>
<td>those that can be &quot;sold&quot; to the NGOs or other value chain actors</td>
<td></td>
<td>years</td>
<td>continuous</td>
</tr>
<tr>
<td>3. &quot;Sell&quot; to interested NGOs and other actors the available</td>
<td>KMUS</td>
<td>200,000 over 5</td>
<td>Immediate and</td>
</tr>
<tr>
<td>technologies and innovations</td>
<td></td>
<td>years</td>
<td>continuous</td>
</tr>
<tr>
<td>4. Developing modalities for collaboration with these institutions</td>
<td>KMUS</td>
<td>200,000 over 5</td>
<td>Immediate and</td>
</tr>
<tr>
<td>5. With AFAAS, initiate a project on e-extension</td>
<td></td>
<td>years</td>
<td>continuous</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2,700,000</strong></td>
<td></td>
</tr>
</tbody>
</table>
## KRA 4: Capacity for enabling environment and skills for scaling up enhanced

<table>
<thead>
<tr>
<th>Task</th>
<th>Responsibility</th>
<th>Funds (US$)</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Commission research in innovative ways of scaling up of agricultural technologies and innovations</td>
<td>KMUS</td>
<td>2,000,000 over 5 years</td>
<td>Immediate and Continuous</td>
</tr>
<tr>
<td>2. Undertake a capacity needs assessment for scaling up in NARS</td>
<td>KMUS</td>
<td>100,000</td>
<td>Immediate</td>
</tr>
<tr>
<td>3. Design a training programme to fill the identified gaps</td>
<td>KMUS</td>
<td>500,000 over 5 years</td>
<td>Immediate and continuous</td>
</tr>
<tr>
<td>4. Undertake a study of the policy environment for scaling up in ASARECA member countries</td>
<td>PAAP</td>
<td>100,000</td>
<td>Immediate</td>
</tr>
<tr>
<td>5. Advocate for elimination of policy constraints in ASARECA member countries</td>
<td>PAAP</td>
<td>500,000 over 5 years</td>
<td>Immediate and continuous</td>
</tr>
<tr>
<td>6. Develop a collaborative programme with regional and national farmer organisations to mobilise farmers at sub-national level</td>
<td>KMUS</td>
<td>1,000,000 over 5 years</td>
<td>Immediate and continuous</td>
</tr>
<tr>
<td>7. Support research into new approaches and methods for scaling up</td>
<td>KMUS</td>
<td>1,500,000</td>
<td>Immediate and continuous</td>
</tr>
</tbody>
</table>

**Total** 5,700,000
KRA 5: Efficient market linkages between farmers and agribusiness fostered

<table>
<thead>
<tr>
<th>Task</th>
<th>Responsibility</th>
<th>Funds in US$</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Undertake a survey of current and potential service providers of market information to farmers.</td>
<td>KMUS</td>
<td>100,000</td>
</tr>
<tr>
<td>2.</td>
<td>Engage with current service providers for collaboration</td>
<td>KMUS</td>
<td>300,000</td>
</tr>
<tr>
<td>3.</td>
<td>Engage with potential service providers to develop their capacity to provide the service</td>
<td>KMUS</td>
<td>1,000,000 over 5 year</td>
</tr>
</tbody>
</table>

Total 1,400,000

GRAND TOTAL 13,900,000
References


Jonasova M and Cooke S. 2012. Thinking systematically about scaling up World Bank supported agriculture and rural development operations: The case of competitive
grant schemes for agricultural research and extension. World Bank Discussion Paper 53. The World Bank, Washington, DC, USA.


ASARECA Strategy for Scaling up Agricultural Technologies and Innovations: 2014–2018
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