

# Capacity Development for Modernizing African Food Systems (MAFS) Working Paper

Evolving Skill Needs in the Food System of  
East and Southern Africa: Results from  
Agribusiness Company Interviews

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MAFS Working Paper No. 11  
June 2014

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The Modernizing African Food Systems (MAFS) Consortium

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## Background on the Modernizing African Food Systems (MAFS) Consortium

**Objective:** The MAFS Consortium aims to help African agricultural education and training (AET) institutions develop the technical skills and institutional capacity required to modernize African food systems.

### **MAFS Consortium Members:**

- Makerere University
- Michigan State University
- Stellenbosch University
- University of Pretoria

**Activities and Outputs:** The MAFS Consortium has assembled a technical team from four major agricultural universities to produce a series of empirical background studies that will provide evidence necessary for informing capacity development efforts in African AET institutions. Substantively, the activities center around the following four thematic areas.

*Theme 1. Food System Dynamics in Africa and Consequent Skill Requirements in the Private and Public Sectors*

*Theme 2. Models of AET Engagement with Private and Public Sector Employers*

*Theme 3. Existing Capacity of African AET: Case studies of African universities with regional footprints*

*Theme 4. Impact of past AET institution-building efforts in Africa*

### **Advisory Board:**

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- Dr. Maggie Kigozi—Formerly Executive Director of the Private Sector Foundation in Uganda

### **Funding:**

- The MAFS Consortium gratefully acknowledges financial support from the [International Fund for Agricultural Development](#) (IFAD).

## ABSTRACT

This study focuses on the skills requirements and the development thereof among 109 interviewed formal sector agribusiness companies in Nigeria, Kenya, Uganda, Mozambique, and South Africa. The study was conducted in the context of anticipated dramatic changes in Africa's food consumption patterns over coming decades, driven by rising incomes and urban populations, and the need for new and better skills in the workforce in order to satisfy this demand. Among the key findings are (1) except for South Africa, companies predominantly employ O-level graduates but (in all countries *including* South Africa) expect demand for graduates beyond A-Level to grow the fastest over the next five years; (2) while companies see a need for improved technical skills, "soft" skills were also seen as critically important and an area of relative dissatisfaction by the companies; (3) to improve the skills of their workforce, companies in four of the five countries dominantly rely on in-house training, and in three of those four, the option of paying for college or university training ranked 3rd or 4th out of four options; (4) results on relationships with vocational training institutions were varied, with companies in South Africa with a more technical or production related core business typically showing a strong relationship with them, whereas companies with a more financial core business showed a poor to non-existent relationship; and (5) a general concern seen most clearly in South Africa related the quality of primary and secondary education (especially as regards math and science), and the lack of practical and relevant industry experience of entry level employees after completing tertiary education.

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# 1. Introduction

Africa's food consumption patterns will change dramatically over the coming decades. Rising urbanization and growing per capita incomes will double the marketed volumes of foodstuffs and ramp up demand for high-value foods (dairy, meat and fresh fruits and vegetables), processed foods, packaged convenience foods and prepared foods. As fewer farm families support growing urban populations, farm productivity will need to increase in both crop and livestock production. Growing demand for packaged convenience foods will require substantial private sector investment in food processing technology. To scale up processing of cassava, maize, wheat, rice, sorghum, yam, banana and other products from artisanal to industrial scales, the food industry will need to undertake research on a wide array of technical topics such as the biochemistry of basic food fermentations, food safety and nutritional outcomes under alternative processing technologies, and others. Growth in demand for fresh perishable items will require huge growth in cold chains and the logistical demands they create. A steady flow of trained scientific and technical skills in support of farm production, feed industries, storage, supply chain management and food processing industries will be required to fuel necessary productivity increases in Africa's modernizing food system.

This study focuses on the skills requirements and the development thereof by prominent (formal sector) agribusiness companies in five countries: Nigeria, Kenya, Uganda, Mozambique, and South Africa. The study is a subtheme within MAFS Theme 1: "*Food Systems Dynamics and Consequent Skill Requirements in Public and Private Sectors*", within the main "*Capacity Development for Modernizing African Food Systems*" study. We first briefly explain the methods used to select and then gather information from the companies. Next, in section 3, we set the stage for the discussion of skill needs by summarizing and updating information from MAFS Working Paper #5 (Tschirley *et al* 2013) regarding the implications of changing consumption patterns for the structure of the food system; this section focuses on East and Southern Africa, which was the geographic focus of the consumption projection work and where most company interviews for this report were conducted. Section 4 presents the results of the company interviews, while section 5 concludes.

## 2. Methodology

The data for this report was obtained through in-depth interviews with 109 formal enterprises in Uganda (36), Kenya (28), Nigeria (25), Mozambique (8), and South Africa (12) during September to December 2013. Interviews focused on the kinds of skills that are needed in the future and possible constraints in generating a sufficient pool of individuals with these skills. Each agribusiness had to have significant operations in the country in which the interview took place but could be headquartered elsewhere. Companies interviewed in South Africa had to have current or imminent operations in Africa outside of South Africa, in addition to any operations they had in South Africa. Attempts were made in each country to ensure that the companies interviewed represented a diverse set of business activities including multinational chemical and biotechnology corporations, financial institutions, food and beverage manufacturers, agricultural input suppliers, agricultural trading companies, large-scale agricultural production enterprises, dairy processors, and a South African derivatives market<sup>1</sup>. South African companies had significant operations in Zambia, Tanzania, Uganda, Namibia, Zimbabwe, Nigeria and Ghana, with the greatest opportunities for growth

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<sup>1</sup>The actual companies cannot be named due to non-disclosure agreements.

expected in Zambia, Nigeria and Zimbabwe. Mozambican companies were the most oriented towards their local market, though some also operated regionally. Conclusions drawn from the analysis of the data were supplemented with results obtained by other relevant research. A copy of the questionnaire used during the interviews is provided in Annex A.

### 3. The evolving food system in East and Southern Africa

Tschirley *et al.* (2013) documented the likely effects on the food system of East and Southern Africa (ESA) of continued rapid urban population growth paired with the broad growth in per capita incomes that has been seen since the mid to late 1990s. Together these two patterns will, under a wide range of scenarios, drive a *diet transformation* – dramatic rises in the quantity and value of food moving through markets (how much people eat), and also dramatic change in the patterns of demand in markets (what people eat). They suggested that the value of the food market in the region (food purchased through markets) was likely to increase by a factor of 8 or 9 in real terms, paired with a strong shift towards fresh perishable foods (meats, dairy, eggs, fresh produce) and higher value-added processed foods.<sup>2</sup> Overall, processed foods would rise from their current 38% share of all consumed food to 49%, while the share of more highly processed foods among total processed foods would rise from their current 45% to 51%. The share of fresh perishable foods in total food consumption would rise from 26% to 33%, while food consumed away from home rises from 6% to 9%. Though these percentage rises may not appear large, they become huge when combined with the increase in the absolute size of the market.

These changes in consumer demand will drive structural changes in the food economy of the region (Figure 1). We have already discussed the increased market share of processed foods (shown in the figure) and fresh perishable foods. Additionally, the modern retailing sector is likely to expand from its current 3%-10% of marketed food to as high as 30% to 40%. Note that, while this indicates substantial growth, it still leaves the so-called traditional sector with 60% to 70% of the food market in 30 years' time; the “modern revolution” will not displace the so-called traditional sector and will in fact help spur a “quiet revolution” in that sector.

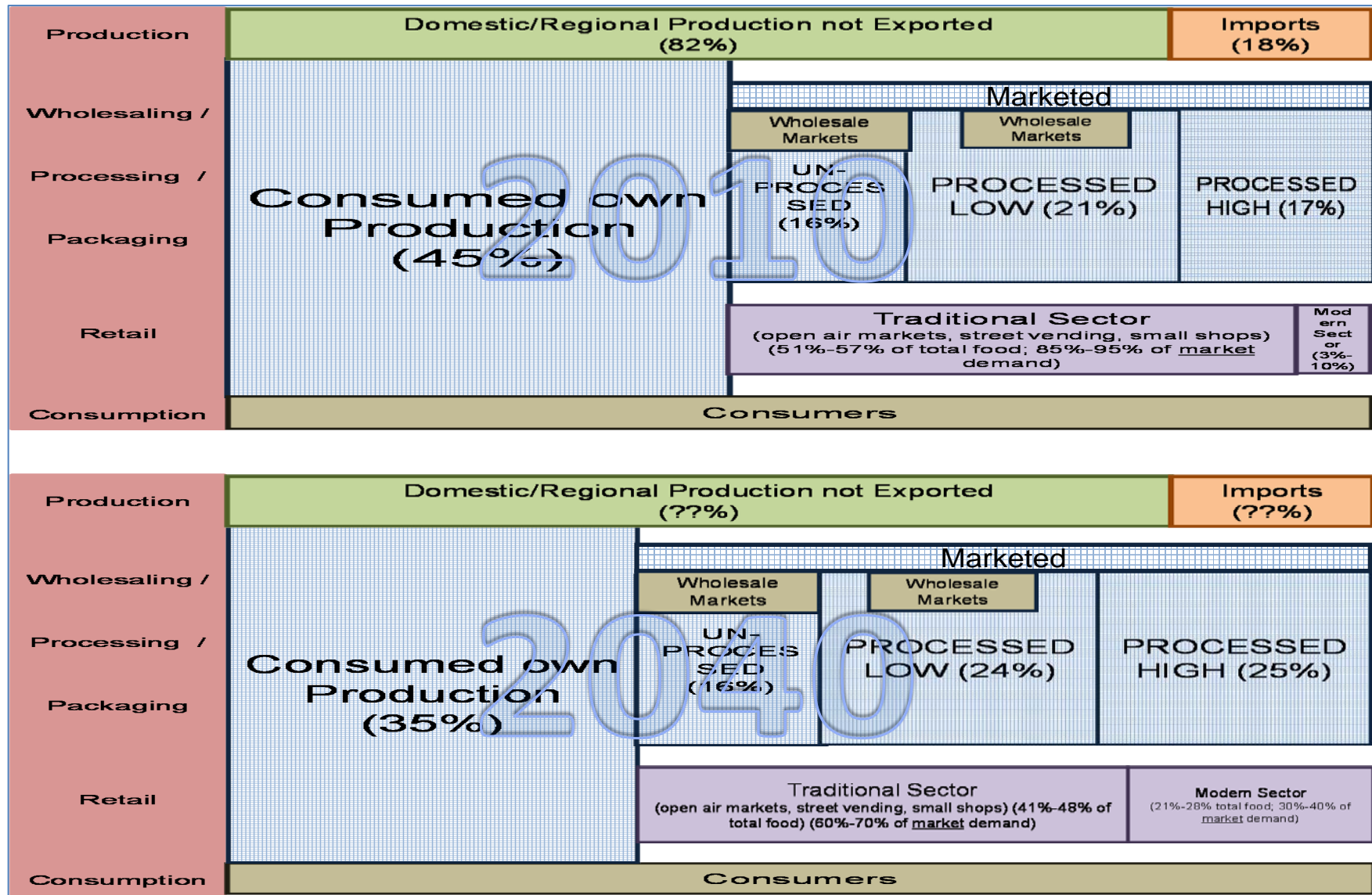
These structural changes in the food system, driven by changes in the pattern of consumer demand for food, together with the sheer magnitude of increase in total food demand, will drive major changes in the levels and types of skills needed in the food system, modern and traditional combined. Examples of the types of skills that are likely to be needed in much greater degree and with much greater depth of expertise in the future include:

- *Engineering for food processing*, to design and build the food processing plants of the future;
- *Supply chain logistics*, to create supply chains that can be sustainable in the future environment of more scarce energy and water resources, all while moving food longer distances to market;
- *Food science and nutrition*, to design new processed food products that meet consumer demand in healthy ways;

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<sup>2</sup> See Tschirley et al (2013) for methods. Results presented in this current paper are based on an expansion of earlier results to a broader area encompassing over 80% of the population of developing ESA, and a refinement of the definitions of types of processed foods.

Figure 1. Current (2010) and projected (2040) structure of food system in East and Southern Africa (source: author calculations from projection models)



- *Packaging expertise*, to maintain food freshness and reduce loss in transport;
- *Urban planning specialists* who can integrate urban food systems into urban planning;
- *Civil engineers and architects* who can work with stakeholders to design and build wholesale and retail markets that meet consumer and trader needs at low cost;
- *Food scientists , economists, lawyers, and others* who can work in the public regulatory agencies that will have to deal with a dramatically broader set of challenges than they do currently;
- Soft skills featuring a problem orientation and integrative thinking that brings a variety of knowledge to bear in a team setting to solve real production, processing, distribution, or other problems.

As can be seen from this list, new, more, and better skills will be needed in both the public and the private sectors. It is absolutely the case, however, that the rate of growth in employment will need to be much higher in the private sector than in the public; recall that we project that the total size (by value) of the food market in East and Southern Africa is likely to increase by a factor of eight- to nine over the next 30 years. Compare this to only a projected doubling (95%) of total population during this period and even to the projected increase of 3.2 times in the region's urban population; employment growth to meet this new demand could be very rapid. We therefore turn to the results of interviews with private companies across the region regarding their skill needs and strategies for filling them.



## 4. Results and Discussion

### 4.1. Current and Anticipated Levels and Areas of Education

**Level of Education:** Few respondents were able to provide specific figures on the numbers of current employees with different skills. However, two trends emerged from the responses. First, *companies in South Africa stand out in employing a relatively larger share of university graduates*. In Kenya, Uganda, and Nigeria, O-level secondary school graduates<sup>3</sup> were the single most commonly employed, while in Mozambique employees with primary education or less predominated. Respondents in Uganda, Kenya and Nigeria indicated that O-level graduates were cheaper for the company, and that they adapted satisfactorily to company practices. In South Africa, almost all companies employed university graduates specializing either in economics, agricultural economics, engineering or science. Chemical and biotechnology companies tended to employ graduates in engineering and science, whereas financial institutions focused on economics and agricultural economics.

Note that the educational level of company employees in Kenya, Uganda and Nigeria, and likely also though to a lesser extent in South Africa, reflect a subset of workers with much higher formal education than the average. In the first three countries, informal employment is likely currently to account for 55% to 60% of all employment outside of own-farm production (World Bank, 2014), with the less educated generally remaining in that sector while the more educated – and indeed the luckiest of these – are the most likely to obtain the kind of formal wage employment that these companies provide. For example, World Bank (2014) reports that the educational attainment of workers in household enterprises (not included in this study) is “only somewhat better” than those working in smallholder agriculture, and that “completion of primary or additional education becomes the norm only ... in the (formal) wage sector” (p. 70; parentheses added).

Second, and despite the current differing profile of employee educational levels across the countries, *companies in all countries expected demand for graduates beyond A-Level (whether vocational/technical or university) to grow faster over the next five years than for lower education levels* (Figure 1). Even in Mozambique, the least developed country in the sample, companies expected demand for employees with O-Level and vocational/technical after O-Level to remain steady and not rise. In South Africa, demand for employees with vocational or technical training after A-level showed the most expected growth among the education levels below university, with only one respondent expecting a decline in demand. Most companies were not able to comment reliably on future demand for the three lowest levels of education (no formal, primary only, and O-level), yet available data indicates the most sluggish growth prospects in this area: negative for all in South Africa, and negative in Mozambique for those with no formal education.

**Areas of Education:** The key finding here is that *general education with no specific technical training predominated in current employment in all countries*. Technical areas that employed significant numbers were supply chain management and logistics, and

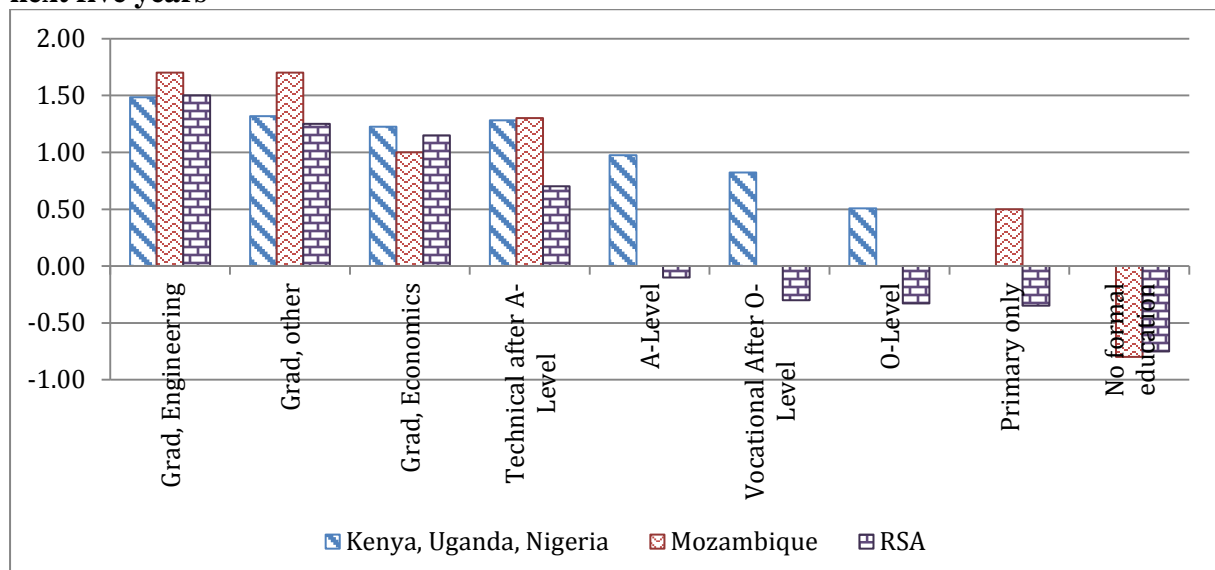
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<sup>3</sup>Secondary education in the study countries can be divided into O-level and A-level education. O-level education is equivalent to South Africa’s Grade 10, whereas A-level education is equivalent to the final Grade 12 or Matric. A-level education is required to gain access to University level education.

technical production skills including agronomy, horticulture and animal science. Law graduates were the least employed in all countries studied.

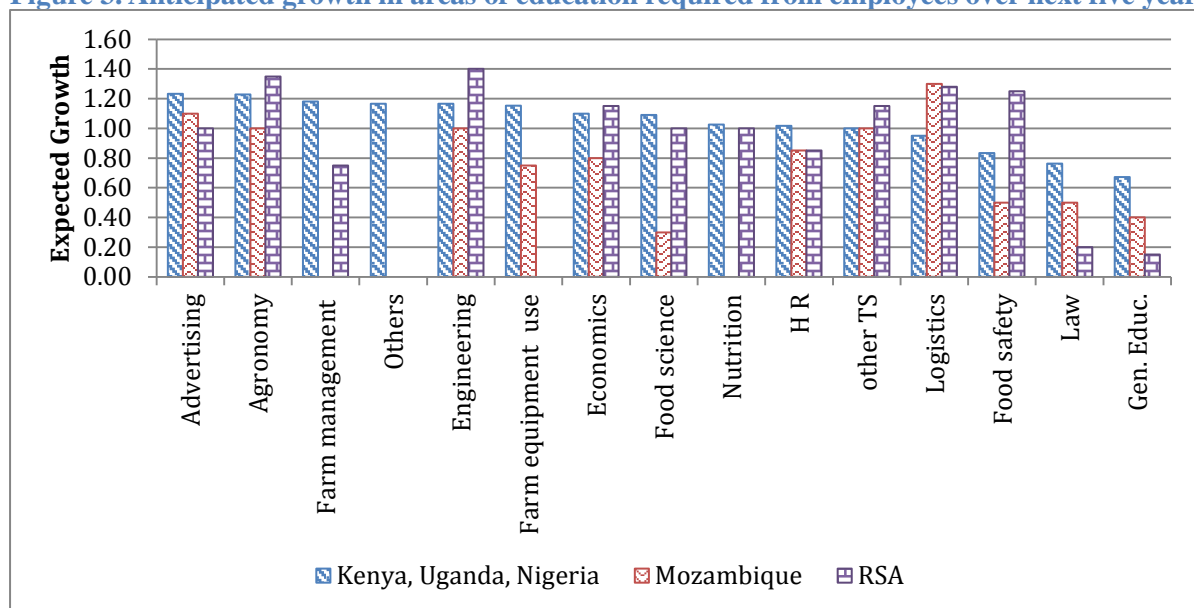
Results were consistent across countries in suggesting that *law and general education would see the least growth but varied quite a bit regarding the areas that would grow most* (Figure 2). Engineering and agronomy were expected to grow the most in South Africa, and were near the top in the rankings in Kenya, Uganda, and Nigeria. Logistics was near the top in South Africa and Mozambique, while food safety was near the top in South Africa but near the bottom in the other countries, perhaps reflecting the lower incomes of consumers in those countries and the lesser profile that food safety has taken to date in their purchase decisions. Interestingly, advertising ranked at the top in expected growth in Kenya, Uganda, Nigeria, and Mozambique but was only in the middle of the pack in South Africa.

**Figure 2: Anticipated growth in the level of education required from employees over the next five years**



Note 2=grow rapidly, 1=grow slightly, 0=remain steady, -1=decline

**Figure 3. Anticipated growth in areas of education required from employees over next five years**



In South Africa, responses regarding training in specific fields of study varied according to the nature of businesses interviewed. Companies in the financial sector typically required graduates with training in agricultural economics or general business, whilst companies in the input supply and food processing companies more often required graduates with technical and marketing qualifications. All companies interviewed in South Africa expected growth in their business and hence at least moderate growth in the demand for graduates with these qualifications. Similarly, companies in Kenya, Uganda and Nigeria expected growth in their business and also to expand in Sub-Saharan Africa over the next five years. Respondents frequently indicated a desire to expand their business in neighbouring countries, not just in their home country.

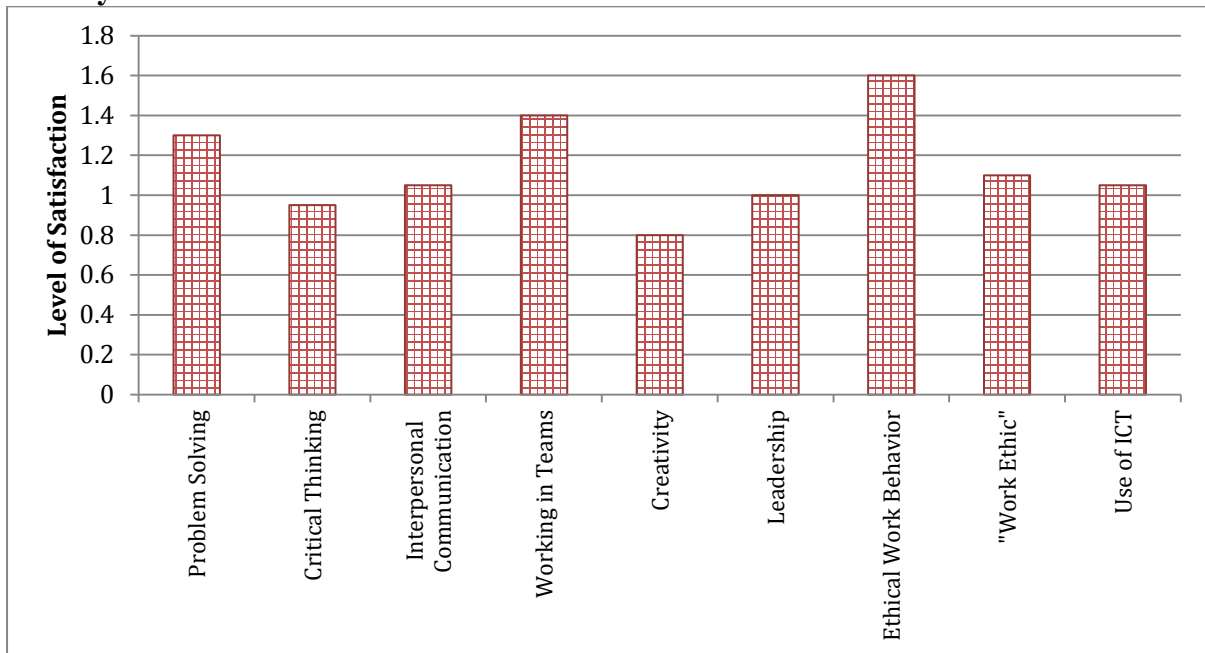
**Satisfaction with “Soft” Skills:** Overall, on a three-point scale (2=very satisfied, 1=somewhat satisfied, 0=not satisfied), *companies were only “somewhat satisfied” with their employees’ “soft skills” (see Figure 3), believing that these needed to be improved.* Employers are most satisfied with their employees’ ethical work behaviour and their ability to work in teams, while they see the biggest room for improvement in creative and critical thinking skills. Employers indicated the highest anticipated need for persons with training in creativity, leadership and information communication technologies (ICT’s). The high expected need for workers with training in ICT’s, together with the relatively high level of current satisfaction, could be indicative of a greater importance of technology within these businesses in future.

Figure 3 gives a clear indication of the relative importance of each of the soft skills listed but does not shed light on the relative importance of soft skills versus other skill sets. This was tested for in the 2011/12 Agricultural Management Aptitudes and Skills survey (AgriMASS; Van Rooyen et al, 2012) in South Africa. AgriMASS focused on the aptitudes and skills required of entry, middle and executive management levels by South African agribusinesses. A total of 73 CEO’s and HR-managers of various companies in the value chain were interviewed via an electronic survey. The study found that *interpersonal and communication skills are the most important among the categories tested*, as reflected in Figure 4. It is reasonable to assume that this result also holds within the current study given the similar industries interviewed, regardless of the management focus of AgriMASS study.

#### **4.2. Ways of meeting skills**

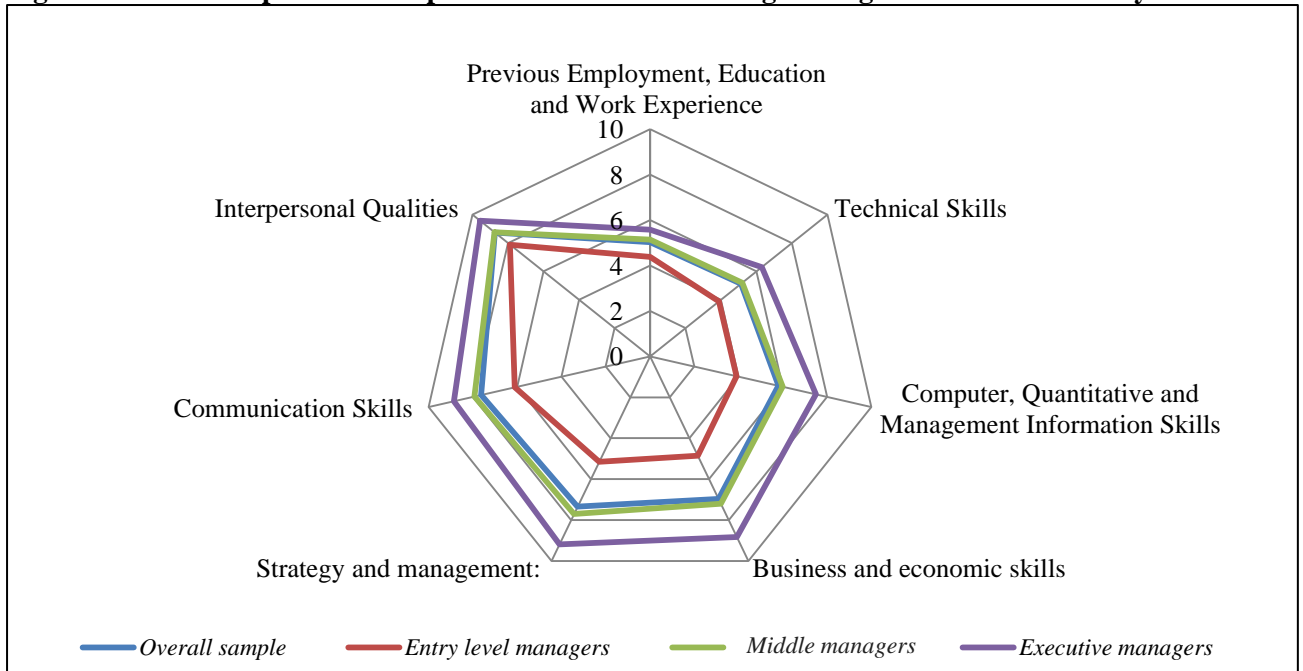
Three patterns emerge when examining the approaches that companies use to meet their skill requirements (Figures 5 and 6). First, *South African companies conduct more training than companies located in other countries.* On a scale of 0-2 in frequency of use, RSA had no score below 1.3, and an average of 1.55. In contrast, Mozambique with the least apparent training had scores of zero and 0.1, and an average of only 0.53. Kenya, Uganda, and Nigeria ranked in the middle. Second, *in-house training courses presented by company staff were the most frequently used approach in every country, with the exception of Mozambique;* this approach was also judged most effective in every country except Mozambique. Third, *in three of the four countries, college or university ranked 3<sup>rd</sup> or 4<sup>th</sup> out of four options, and in Nigeria had a score of zero.* The exception was Mozambique, where companies ranked this first and also rated it as their most effective approach. *Understanding the reason for this wide divergence – especially between Nigeria and Mozambique – may provide insights as to the role that colleges and universities might play in capacity building for private sector* and whether Mozambique’s reliance on this option reflects the strength of that sector or rather reflects the lack of development of other options.

**Figure 4: Satisfaction with current soft skills and anticipated needs thereof over the next 5 years.**



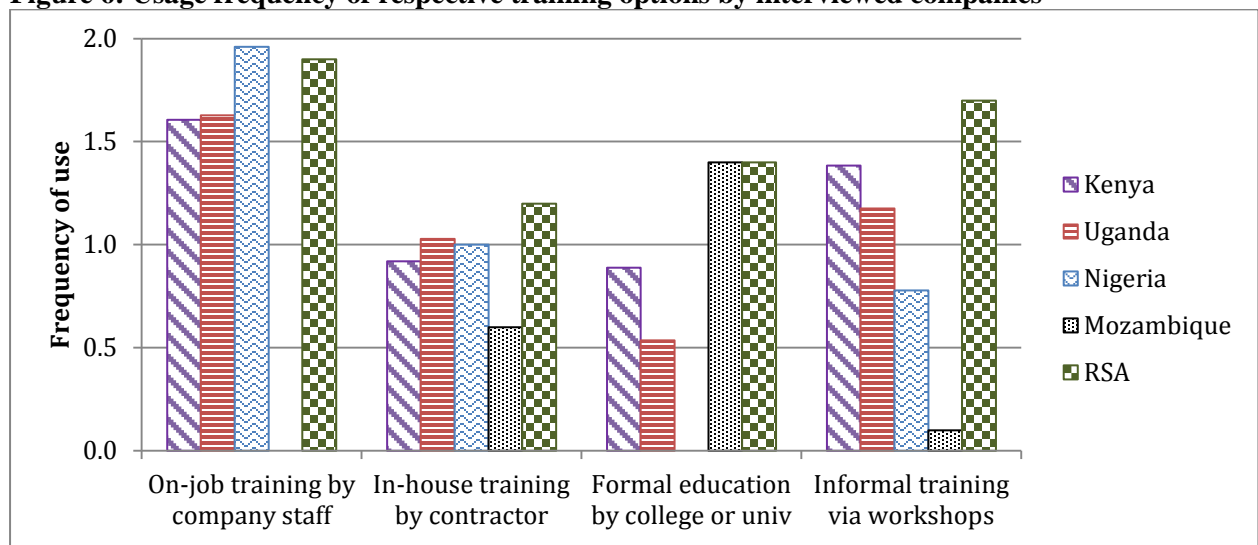
Note: 2=very satisfied, 1=somewhat satisfied, could be improved, 0=not satisfied, needs improvement

**Figure 5: Overall importance of aptitude & skills sets: Average rating scores 2011/12 survey**



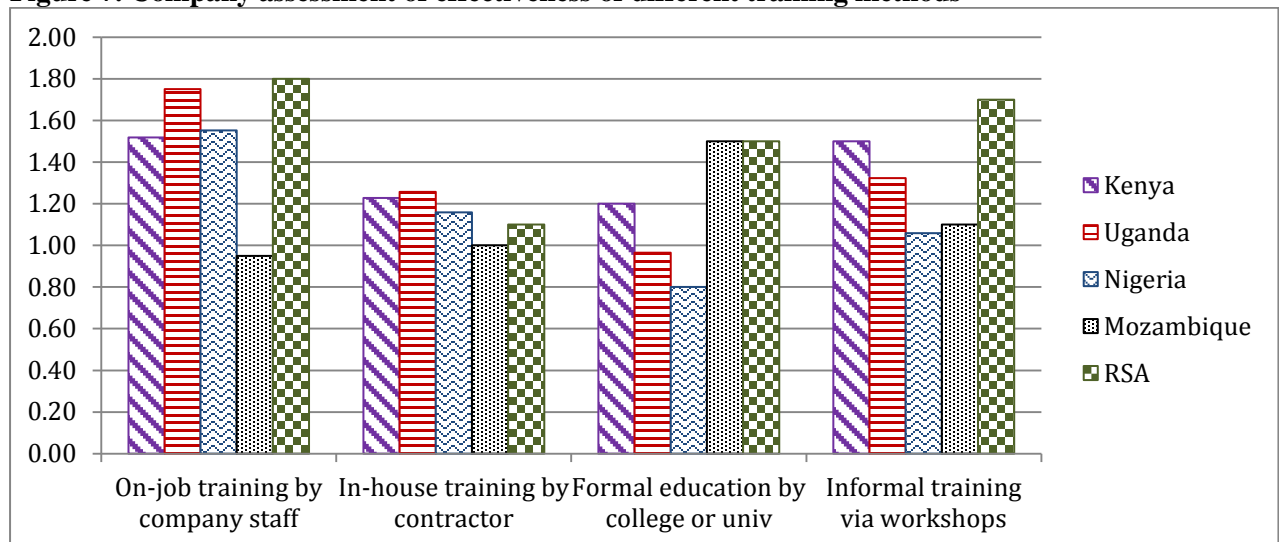
South Africa, with its more advanced economy and with truly multi-national companies, may provide special insights. Respondents in South Africa indicated that in-house training initiatives take place on a regular basis with the purpose of maintaining and expanding the skills base of their employees. A number of respondents have in-house training departments and some even run a dedicated internal training facility. Some companies also run introduction programmes for new employees which range in duration from a number of weeks to months. Respondents in this country indicated that workshops and academic conferences are mainly used to expand the technical skills base of employees and are utilised on an *ad hoc* basis according to the perceived needs. A training expert from one of the companies interviewed noted that they follow a mixed training approach due to the dynamic nature of the skills needed – different training methods are used that are not necessarily planned in advance and vary considerably from year to year.

**Figure 6: Usage frequency of respective training options by interviewed companies**



Note: 2=use frequently, 1=use occasionally, 0=don't use

**Figure 7. Company assessment of effectiveness of different training methods**



Note: 2=very effective, 1=somewhat effective, 0=not effective

### 4.3. Relationships with the education systems

***Respondents in every country had the strongest relationship with full universities or university colleges.*** Vocational training institutions ranked second or third in every country except Mozambique, where surprisingly secondary education ranked second, and South Africa, where vocational training ranked last in strength of relationship. In South Africa, relationships with universities and colleges were typically through general financial contributions, sponsorships of institutes, centres or bureaus, and/or the provision of bursaries to students. Some companies in that country also sponsor research projects and conferences depending on the relevance of these to their core business.

Results in Nigeria are somewhat consistent with earlier results regarding the lack of use of universities or colleges in training. Though full universities ranked first in Nigeria in terms of level of development, the overall score given by Nigerian companies – 1.14 – was barely above “somewhat developed.” Scores on this aspect were higher in all other countries.

The results in South Africa regarding vocational training – this ranked last among companies in that country - must be considered surprising. These results do, however, conceal a high degree of variance in the responses received. ***Companies in South Africa with a more technical or production related core business typically showed a good relationship with vocational training institutions, whereas companies with a more financial core business showed a poor to non-existent relationship.*** Interestingly companies with an existing relationship with these more applied institutions also indicated that they would like to improve their relationship.

Most companies do not have a strong relationship with primary and secondary education institutions. One company in South Africa, however, has started to invest in talented secondary school learners. These individuals are supported whilst at school and are provided with bursaries to study towards a tertiary education; the bursary is supplemented with specific skills training through a tailored graduate program. Companies in all countries also expressed a low interest, on average, for improving relationships with primary and secondary institutions, citing budgetary constraints and their focus on tertiary institutions due to these institutions’ greater applicability to their core business.

South African companies’ comments regarding the country’s general education system yielded answers within two broad themes. The first is that the primary and secondary education system needed to improve, especially in the subject areas of math and science. The second comment related to the employability of graduates. Respondents noted that graduates lacked practical and relevant industry experience, and that the burden increasingly falls on companies to train these entry-level employees upon appointment in order to ensure their productivity.

## 5. Conclusions

The companies interviewed for this study consisted of some of these four countries' largest food- and agribusinesses, many of which were multi-national companies with considerable interests in Africa beyond their home country. The nature of these companies reflected the anticipated skills and the level of education sought from employees over the next five years.

The main storyline emerging from these interviews is as follows. First, general education with no particular technical training predominates among current company employees in all four countries, yet demand for such education is expected, along with law, to grow the least in coming years. Second, also in all countries, including those as diverse as South Africa and Mozambique, companies expected demand for graduates beyond A-Level (whether vocational / technical or university) to grow faster over the next five years than for lower education levels. Third, no particular area of technical expertise predominated in expected growth, depending instead on the type of activities in which a company was engaged. Fourth, these surveys indicated that companies were generally not fully satisfied with their employees' "soft skills", and that these therefore needed to improve; interpreting this finding in light of results from the AgriMASS surveys in South Africa, which rated interpersonal and communication skills as the most important among the categories (including technical categories) tested, clearly suggests the importance of improvement in this areas. See below for further thoughts on this issue.

Two more findings relate to approaches that companies currently use to improve employees' skills. First, in-house trainings were most frequently used and were judged the most effective approach in every country except Mozambique. Second, companies' relationships with the educational system were consistently strongest at university and college level, but in three of the four countries, this level ranked 3rd or 4th out of four options as a mechanism to improve employees' skills. We suggest that this combined finding should not be considered a surprise: companies have a vested interest in collaborating with universities both to conduct research and to ensure better quality graduates, but will find it more cost-effective for the broad mass of their employees – once they have completed whatever formal education they have - to conduct in-house training on specific topics and with shorter duration, rather than supporting the financial cost and long time horizon of further university education. Even so, the contrast in this regard between Nigeria, where university training had a score of zero, and Mozambique, where it was rated the top and also the most effective option (in stark contrast to other countries), deserves further investigation.

The importance of vocational training institutions varied as expected by the type of company: companies with a technical or production related core business typically showed a good relationship with such institutions, while those oriented towards finance showed a poor to non-existent relationship.

Results from questions relating to the South African education system yielded concerns over the quality of primary and secondary education (especially as regards math and science), and the lack of practical and relevant industry experience of entry level employees after completing tertiary education. Reason for concern about the quality of education at primary and secondary level in Africa is vividly documented in Word Bank (2014), which paints a

picture of huge increases in school enrolment at this level accompanied by sharp declines in quality, as verified by many studies. To take only three examples out of many:

- 80% of Malian 3<sup>rd</sup> graders and 70% of Ugandan 3<sup>rd</sup> graders “cannot read a single word”<sup>4</sup>
- 43% of 6<sup>th</sup> graders in Tanzania and 74% in Mozambique “did not get beyond basic numeracy”,
- 76% of South African 9<sup>th</sup> graders and 79% of Ghanaian 8<sup>th</sup> graders “did not surpass the lowest benchmarked level of mathematics proficiency” (pp. 77-78).

Companies see these problems as a major constraint due to the costs involved in training entry level employees and the opportunity cost of their delayed functionality in the business. Thus, though in-house training is used by all and can be expected to continue being used regardless of the effectiveness of incoming formal education, company responses can be interpreted to suggest that too much of the training they have to do is remedial, rather than adding specific required skills to an already solid educational base.

It is therefore clear that steps will have to be taken to address the disjuncture between the skills demanded by food and agribusinesses and the ability of the education system in South Africa and other countries to supply them. Possible solutions include the inclusion of compulsory internship programmes in tertiary courses. This would require a greater degree of cooperation between industry, the tertiary education system and the State in order to overcome practical constraints relating to the funding, the provision of suitable accommodation, and administration of such programmes.<sup>5</sup> Of equal importance will be a move towards teaching methods that stimulate, promote, and reward engagement, questioning of received wisdom, creative application of knowledge in team frameworks to solve concrete problems, and related dynamic soft skills. Yet the inculcation of such skills is not an area of strength in today’s formal education systems at any level, and improving it poses a major challenge for them.

In closing, we note that this study did not focus on the skill needs of the microenterprises of the informal sector that account for the majority of non-farm employment now and that will continue to absorb large shares of the workforce in the future. Yet the “quiet revolution” that we refer to earlier in the paper will require substantially improved skills among workers in that sector, as well. Most of these are likely to continue leaving school without tertiary and even secondary education for many years to come. Meeting the skill challenges of this sector requires major improvement in education at primary and secondary level, and may require a different mix of skills than revealed in this study of formal sector agribusiness companies. Further study regarding the skill needs of this sector is urgently required.

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<sup>4</sup> This report uses the United States’ nomenclature for level of schooling.

<sup>5</sup> For more information see Van Rooyen et al (2014).



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**Annex A:  
INTERVIEW GUIDE FOR FOOD COMPANIES IN SUB-SAHARAN AFRICA**

Michigan State University (US), University of Pretoria (SA) and Makerere University, with financing from the International Fund for Agricultural Development (IFAD), are conducting a survey on major agri-food businesses in sub-Saharan Africa (SSA). The main objective is to identify key skill requirements that your company has, any difficulties that you have in finding those skills, and any training that you as a company are conducting to ensure that your staff has the needed skills. The data collected in this survey will be used only for the purpose of this study and will be treated confidentially.

**COMPANY INFORMATION**

Company Name: \_\_\_\_\_

Contact details for respondent

Name: \_\_\_\_\_

Tel: \_\_\_\_\_

Position in Company: \_\_\_\_\_

Please indicate if your company is involved in each of the following activities:

- |   |     |    |
|---|-----|----|
| 1 Agricultural production                         | Yes | No |
| 2 Farm service provision                          | Yes | No |
| 3 Variable input supply (seeds, chemicals, other) | Yes | No |
| 4 Machinery supply                                | Yes | No |
| 5 Food wholesaling (no processing)                | Yes | No |
| 6 Commodity storage services                      | Yes | No |
| 7 Food processing                                 | Yes | No |
| 8 Food retailing                                  | Yes | No |
| 9 Transport                                       | Yes | No |
| 10 Other agri-food-related activities (specify)   | Yes | No |

Please indicate which of the above is your PRIMARY BUSINESS, and please DESCRIBE your primary business in more detail (e.g., what specific products do you work with, what inputs do you sell, or what specific services do you provide?)

\_\_\_\_\_

\_\_\_\_\_

Please indicate the percentage of your company's worldwide sales that takes place in Sub-Saharan Africa (SSA)

- |          |                 |
|----------|-----------------|
| 1 100%   | 3 50-74%        |
| 2 75-99% | 4 less than 50% |

Of your total sales in SSA, what percentage takes place outside of South Africa? (*Most relevant for South African companies but could apply to others that operate there*)

- |          |                 |
|----------|-----------------|
| 1 100%   | 3 50-74%        |
| 2 75-99% | 4 less than 50% |

Current operations in SSA:

Please list the COUNTRIES of SSA in which your company currently operates	Please indicate for each country the type of agri-food business activity your company is involved in 1 Agricultural production	Approximate percentage of this company's total sales that take place in _____ 1 100%
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	2 Farm service provision 3 Input supply (seeds, chemicals, other) 4 Machinery supply 5 Food wholesaling (no processing) 6 Commodity storage services 7 Food processing 8 Food retailing 9 Transport 10 Other agri-food-related activities (specify)	2 75-99% 3 50-74% 4 less than 50%)

**AGRI-FOOD EXPANSION PLANS/BUSINESS OPPORTUNITIES**

Please describe your current capacity in this country:

- We are at full capacity, need to expand
- Our capacity is about right for now
- We have excess capacity we cannot use

Please choose one: Over the past 5 years, my business in this country has:

- Expanded rapidly
- Expanded slowly
- Stayed about the same
- Grown smaller

Does your company have plans to expand operations in SSA over the next 5 years?

- Yes
- No

If yes, please indicate:

Countries of SSA in which you plan to EXPAND OPERATIONS (include <u>this country</u> if you plan to expand here)	Type of investment (industry?) your company will be making (e.g., manufacturing plant, wholesale distribution network, retail stores, etc.)	Approximate percentage of this company's total sales expected to take place in this country, if known
		1 100% 2 75-99% 3 50-74% 4 less than 50%

Please choose one response: Speaking of the African continent as a whole over the next 5-10 years, we expect SSA to offer:

- MAJOR prospects for growth of your agri-food business
- SOME prospects for growth for your agri-food business
- FEW prospects for growth for your agri-food business

In which COUNTRIES do you see the greatest growth opportunities for your business?

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In what agri-food BUSINESS ACTIVITIES do you see the best growth opportunities for your business?

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(For companies that have business outside of SSA) Please choose one response: Over the next 5-10 years,

SSA offers my company's best prospects for growth, compared to other regions of the world

Other regions of the world offer better prospects for growth than SSA

Please explain:

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**HUMAN SKILL NEEDS**

Level of education of current employees and anticipated growth

	CURRENTLY, how many of your employees have this type of training? (PLEASE GIVE NUMBERS)	Over the NEXT 5 YEARS, do you expect your need for employees with training to these levels to:  1=decrease 2=stay the same 3=grow somewhat 4=grow rapidly
Educational level		
No formal education		
Primary level education only		
O level leavers		
Vocational/technical education after O level		
A level leaver		
Vocational/technical education after A level		
University graduates in ENGINEERING or SCIENCE (including Food Science)		
University graduates in Economics or Agricultural Economics		
Other university graduates		
Other, specify		
<b>TOTAL number of employees in your firm (all countries in SSA only)</b>		

Areas of educational/training preparation of current employees and anticipated growth

Area of Education	CURRENTLY, how many of your employees have this type of training? (PLEASE GIVE NUMBERS)	Over the NEXT 5 YEARS, do you expect your need for employees with education/training in this area to:  1=decrease 2=stay the same 3=grow somewhat 4=grow rapidly
General education (no technical expertise)		
Engineering		
Agronomy/horticulture/animal science (technical production training)		
Farm management		
Food Science (value-added processing, post harvest technology)		
Farm equipment use, repair, & maintenance		
Food Safety		
Nutrition		
Other technical science (e.g., chemistry, microbiology, etc.)		
Law		
Economics/Agricultural Economics/Agribusiness		
Supply Chain Management/logistics		
Human Resources		
Advertising/marketing		
Other, specify		

Areas of general competencies of current employees and anticipated growth

Area of General Competency (Soft Skills)	In general, how satisfied are you with the current level of these soft skills in your workforce?  1 not satisfied/needs serious improvement 2 somewhat satisfied, could be improved 3 very satisfied	Over the NEXT FIVE YEARS, do you expect your need for employees with training in this area to:  1=decrease 2=stay the same 3=grow somewhat 4=grow rapidly
Problem solving		
Critical thinking		
Interpersonal communication		
Working in teams		
Creativity		
Leadership		
Ethical work behavior		
Work ethic (e.g. promptness, reliability, flexibility, commitment)		
Use of Information communication technologies (ICT)		
Other, specify		

**MEETING YOUR HUMAN SKILL NEEDS**

Over the next five years, how do you anticipate meeting your company’s skill needs (check all that apply)

	Current Workers				Hire new employees with the needed skills
	Informal training via workshops, seminars, conferences institutes, etc.	In-house/on-the-job training conducted by company staff	In-house training developed and delivered by an outside contractor	Company funding of formal education by a technical school, college or university	
Technical Skills					
Engineering					
Agronomy/horticulture/animal science (technical production training)					
Farm management					
Food Science (value-added processing, post-harvest technology)					
Farm equipment use, repair, & maintenance					
Food Safety					
Nutrition					
Other technical science (e.g., chemistry, microbiology, etc.)					
Law					
Economics/Agricultural Economics/Agribusiness					
Supply Chain Management/logistics					
Human Resources					
Advertising/marketing					
Other, specify					
<b>General Competencies</b>					
Problem solving					
Critical thinking					
Interpersonal communication					
Working in teams					
Creativity					
Leadership					
Ethical work behavior					
Work ethic (e.g. promptness, reliability, flexibility, commitment)					
Use of Information communication technologies (ICT)					
Other, specify					

Use and Effectiveness of Training Methods Listed Above

Use/Effectiveness	Training Method			
	Informal training via workshops, seminars, conferences institutes, etc.	In-house/on-the-job training conducted by company staff	In-house training developed and delivered by an outside contractor	Company funding of formal education by a technical school, college or university
<p>Do you currently use these training methods in your company? (use the following key to rate each training method)</p> <p>4=frequently 3=occasionally 2=don't use (no plans to do so) 1=plan to use</p>				
<p>How would you rank the effectiveness of these training methods (use the following key to rate each training method)</p> <p>3=very effective 2=somewhat effective 1=not at all effective</p>				

Relationship with the Educational System

Use/Effectiveness	Educational Sector				
	Primary Education	Secondary Education	Vocational/Technical Training	University College	Full University
<p>How would you characterize your company's CURRENT RELATIONSHIP with this educational sector? (use the following key to describe the relationship )</p> <p>3=well developed 2=somewhat developed 1=not at all developed</p>					

If you rated your company's relationship with a particular educational sector as *well developed* or *somewhat well developed*, please briefly describe that relationship; how do you relate to this sector?

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If you rated your company's relationship with a particular educational sector as not at all developed, please briefly give reasons why?

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Interest in establishing/enhancing your company's relationship with this educational sector?

	Educational Sector				
	Primary Education	Secondary Education	Vocational/Technical Training	University College	Full University
<p>How would you rate your interest in ESTABLISHING/ENHANCING YOUR COMPANY'S RELATIONSHIP with this educational sector? (use the following key to rate your interest )</p> <p>3=very interested 2=somewhat interested 1=not at all interested</p>					

If you rated your interest in establishing/enhancing your company's relationship with a particular educational sector as **very interested** or **somewhat interested**, please list some of the reasons why

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If you rated your interest in establishing/enhancing your company's relationship with a particular educational sector as **not at all interested**, please list some of the reasons why

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Is there any particular program in your country's educational system that you find **especially useful** to your business? If yes, please describe the program, including the school/university that operates it

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Is there any particular program in your country's educational system that you find **especially disappointing/not useful** and that should be terminated? If yes, please describe the program, including the school/university that operates it

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What is your **most important recommendation** to your country's educational system to improve its relevance to your business and to the country's agri-business sector in general?

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Any other comments

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**THANK YOU FOR YOUR COOPERATION**