Skill gaps in formal higher agricultural education: A youth perspective

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This paper is submitted to the Future Agricultures Consortium and the Institute of Statistical Social and Economic Research (ISSER) in response to the forthcoming international conference on ***'Young People, Farming & Food: The Future of the Agrifood Sector in Africa***' to be held on 19-21 March 2012 in Accra, Ghana.

Abstract
Agriculture is changing, and with it, a revised set of skills is needed to address new challenges in agriculture. A number of prominent documents point to professionals in Agricultural Research for Development (ARD) with different characteristics than the ones universities 'develop' at present. The 'new professional' should, for example, be better able to work across different disciplines and in partnership with different stakeholders.

YPARD has contributed to this debate by bringing the voice of the youth to the table, their views and their experience. Including a diverse set of stakeholders' views provide a more comprehensive view to inform educational policy makers to modify the 'recipe' to enable educational institutions to 'produce' a young professional that can contribute to a sustainable and effective ARD with a more relevant set of skills.

What is YPARD?

The Young Professionals' Platform for Agricultural Research for Development (YPARD) is a global platform of young professionals under 40 years of age active in Agricultural Research for Development (ARD). YPARD serves as a medium for young professionals in ARD to voice their views, exchange perspectives and to contribute to sustainably improved livelihoods, worldwide, through a dynamic agricultural research for development.

YPARD was created in response to the young generations' increasing lack of interest in agriculture, insufficient participation of young professionals in dialogues addressing critical development issues and inadequate access to resources to address these problems. YPs bring innovation, fresh perspectives, new skills and knowledge to the sector. The movement intends to create a positive wind of change in ARD. Thus, YPARD's mission is to serve as a global platform through which young professionals can express their ideas and realise their full potential towards dynamic agricultural research for development.

The founders of YPARD are convinced that a responsible agriculture, able to meet global needs without depleting its resources, can only become a reality if young professionals are actively engaged in shaping the sector's future.

Introduction

There is recognition of a need to change the way that Agricultural Research for Development (ARD) is done and several people are making an active move towards a new ARD is more inclusive, multi-disciplinary and puts the smallholder farmer at the centre. As we move away from 'business as usual' in the ARD arena, so must we integrate this new way of thinking into educational institutions and agricultural curricula. As the job sector, attitudes and the expectations of agriculture have changed, there is evidence that the skills and competencies of graduates do not meet the needs of today's agricultural sector (Blackie et al., 2009; Ekwamu et al., 2009; IBRD, 2007; Yaye and Madakadze, 2009).

With increased attention to holistic and multi-disciplinary approaches to addressing challenges, agricultural professionals are expected to be able to integrate knowledge and practices from outside of their discipline and work within the 'multi-functionality' of agriculture (IAASTD, 2009). New areas of growth will become more knowledge intensive and will likely focus on agribusiness and export oriented growth; as those areas generally provide better remunerated employment in the agricultural sector (Sumberg, 2011).

At the same time, enrolment in agricultural education is dropping in a number of countries globally (Alluri, 2009). For those who do choose this area, it is often not their first choice, as they seek opportunities more conducive to urban lifestyles and perceived social status as well as improved work opportunities (IBRD, 2007).

YPARD's niche is a committed global network of youth working in ARD, who can link the ARD community to the youth and contribute the youth viewpoint on different ideas and approaches. With the declining interest among young people to enter into ARD related subjects, it is important that future careers reflect the ideas and aspirations of the youth in order to generate and maintain their interest in this field. The added insight of youth will help to place these profiles in a changing world with changing perceptions and priorities.

The Study

This study was commissioned by YPARD to contribute to the agricultural curriculum and policy reform discussion through uncovering those skill sets that are required in today and tomorrow's agricultural-related fields, which are not adequately being addressed in tertiary level agricultural education.

YPARD has provided new insight into this area with input from young professionals. Young professionals were asked to provide feedback on their recent and current experiences of how their agricultural education has prepared them for the job market, what they believe could have been done better and how we can better prepare future graduates.

Key documents in ARD were consulted to provide a set of guidelines for the skills gaps and assess the existing research in the literature. Many gaps have been identified and while many actors in ARD have

called for reformed agricultural educational curriculum, very few examples of reformed, multi-stakeholder contributions to curriculum development were found.

One clear gap that has been identified in several countries is the poor linkages between the different actors in ARD contributing to the development of curricula. Blackie et al. (2009) point out that all agricultural fields "require efficient and effective cross fertilization of ideas, and the networking of farmers with policymakers, researchers and engineers, nationally as well as internationally, as well among others". This is key if curriculum is to reflect the current and emerging needs in the different agricultural related sectors. Percy-Smith and Akkermans (2012) found that the literature indicates that in most countries, there are weak linkages specifically between the educational institution and the labour market and that employers are not or hardly involved in defining the learning contents and quality standards (Urutyan & Litzenberg, 2010; Blackie et al, 2009; Maredia, 2007).

A broad theme that further emerges in the literature on agricultural education is a lack of focus on soft skills, such as communication, writing and other non-technical skills. Yet these are skills that employers are voicing the need for in their new recruits (Lopokoyit 2011, Urutyan & Litzenberg, 2010). The study by Blackie et al. (2009), points out that with a more market led and knowledge-intensive agricultural development agenda, new graduates will need to address these issues more effectively.

Those graduates with the right skills will be more effective in their work and in higher demand by employers. YPARD supports the outcomes from this study to be put into place on a global scale, to support emerging young professionals and enable them to be strong leaders in the future of ARD.

However, curriculum development is only one aspect of changes that need to bring higher agricultural education more in line with current needs. Blackie et al, (2009) conclude that others include addressing the problems of overcrowded classrooms, a lack of placements for internships, transport problems for field trips and a lack of access to information including library facilities etc.

Results

A questionnaire was created for the study, where respondents were required to rate different competencies on level of perceived importance. Five general competence groups were identified: interpersonal, communication, research, business and technical and within each group, further competencies were identified (ie. The communication competencies were broken down into: internet, scientific writing, oral presentation skills, teaching and social media).

This survey was shared with over 2000 young professionals and from this 140 useable responses were obtained. The target group was young professionals active in Agricultural Research for Development and particularly those recently graduated or enrolled in graduate programs. The aim was to get a diverse group of respondents from around the world. A smaller group of 14 useable responses were obtained for a slightly modified version targeted to employers of young professionals.

Respondents were asked to rate these competencies and their importance now and in five years' time. Results were analysed according to time (now and in 5 years) and region to see if there were statistically significant differences. Regions that were selected for analysis include: India, Kenya, Nigeria, Europe, Australia and North America and Others.

Only a selection from the study has been included below to highlight some of the major differences and trends.

The data section below is an excerpt of the study 'Working towards a generation of young professionals in ARD', undertaken by YPARD commissioned consultants Alex Percy-Smith and Leonoor Akkermans.

To read the full document please go to xxxx

General Competence Groups

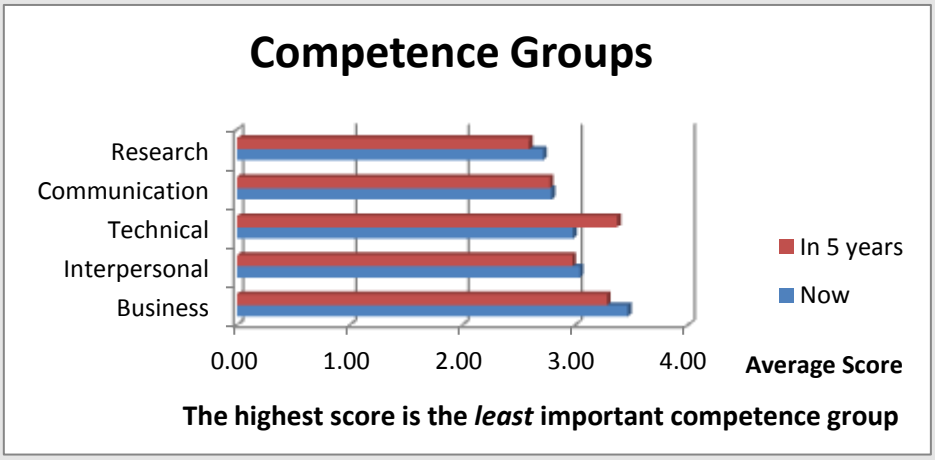
This covers a range of groups of five competencies: Interpersonal, Communication, Research, Business and Technical.

Communication and Research skills are considered more important than Business skills at present. In 5 years' time Communication and Research skills are also perceived as being more important than Technical skills.

Business skills are rated more important by young professionals than by employers, both now and in 5 years' time.

At present, respondents from "Western" countries perceived Technical skills as being significantly less important (3.88 out of 5.00 – 5 being least important) than as perceived by "Other" respondents (3.25).

Interpersonal skills were, perhaps somewhat surprisingly, not ranked significantly different than other competence groups.



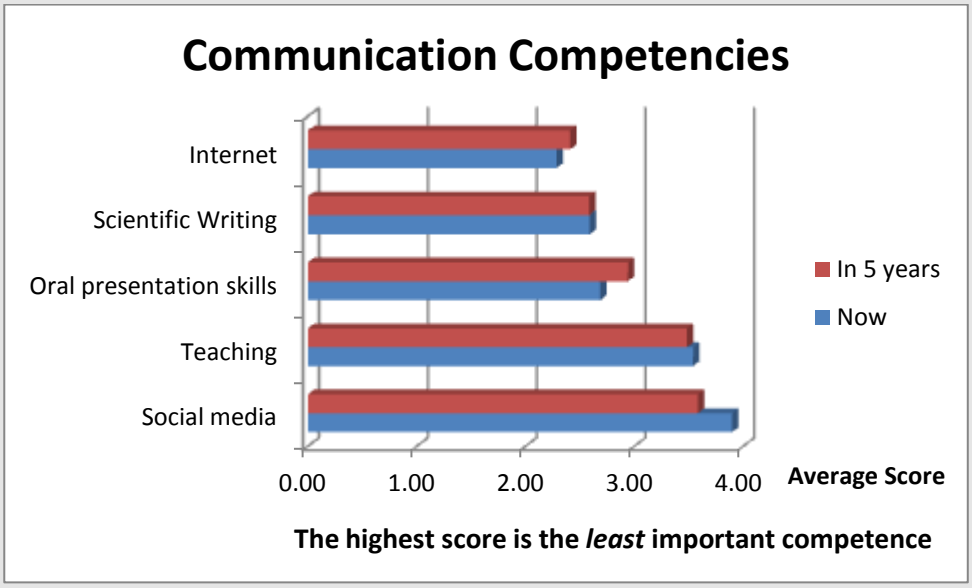
Communication Competencies

This covers five skills: Internet, Teaching, Scientific Writing, Oral Presentation skills and Social Media.

For young professionals, Social Media and Teaching are less important than Internet skills, Oral Presentation skills and Scientific Writing.

Employers, however, do value Social Media skills in 5 years' time, ranking number 2. However, it is likely that training in the use of Social Media and even use of the Internet is not part of curricula, but something that is learnt outside the education system as needed. Nevertheless these skills could be built into parts of curricula.

At present, Teaching was valued as significantly less important by respondents from "Western" countries (4.17 out of 5.00 – 5 being least important) versus "Other" respondents (3.37). Oral Presentation skills are considered less important by respondents from Sub Saharan Africa (2.93) compared with "Other" respondents (2.44).



Research Competencies

This question asks for ranking of five skills: Analytical skills, Proposal writing, Monitoring & Evaluation, Multi-sectorial skills and skills in Research Methodology.

At present, Analytical skills, Research Methodology and Proposal writing (in order of importance), are significantly more important than skills related to Multi-sectorial partnerships and Monitoring & Evaluation.

Multi-sectoral partnerships are considered significantly more important by employers than by young professionals, whereas employers do not consider Monitoring & Evaluation as being as important as young professionals do.

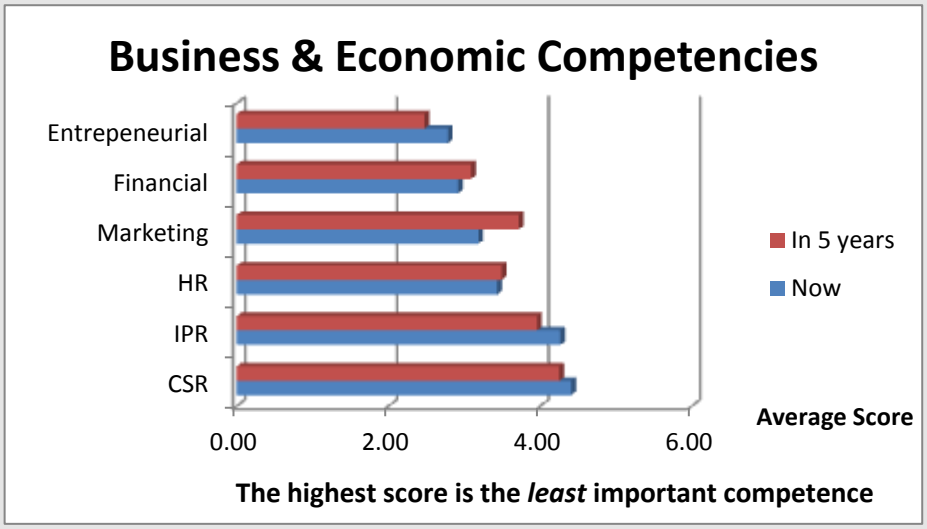
Respondents from Sub Saharan Africa scored Proposal writing skills significantly higher (2.31 out of 5.00 - 5 being least important) than "Other" respondents (2.89).

Business and Economic Competencies

This question includes six skills: Financial Skills, Marketing, Entrepreneurial Skills, Intellectual Property Rights (IPR), Human Resource Management and Corporate Social Responsibility (CSR).

At present, Entrepreneurial, Financial and Marketing skills (in order of importance), are considered more important than CSR and IPR by young professionals. CSR and IPR may not be considered as relevant for researchers.

Entrepreneurial skills are considered as clearly being top priority by young professionals. Employers rated Entrepreneurship at present at number 2, but in 5 years' time they consider it as more important than everything else as well, and score it even significantly higher than the young professionals.



Taken from Percy-Smith and Akkermans (2012)

Some Analysis

This information can be useful for examining the ways that we can work together to create a group of young professionals who are better prepared to contribute to a new dynamic agriculture in Africa.

Some of the trends related to teaching, proposal writing and entrepreneurship have been highlighted here.

Teaching skills were not considered to be very important by young professionals, as many mentioned that "teachers are very much theory-based and lack hands-on or student-centred teaching methodology" (Percy-Smith and Akkermans, 2012). This points to a need to work on reform of curricula, but also teaching methods through which the delivery of such information is provided. Furthermore, more modern ICTs such as social media and online learning can be increasingly used in teaching to provide some additional skills to agricultural graduates, without having to make more room within the agricultural curricula.

> *"With the little experience in teaching at higher level, I have realized that students develop greater interest in the courses that are practical and that provide them with problems and thought provoking challenges. Lecturing on how to plant a maize seed is rather ineffective as compared to allowing the student plant the seed. In the same way, lecturing to students the management of agricultural data is rather ineffective as compared to allowing them manage some agricultural dataset."*
>
> *Maxwell Mkondiwa, Malawi*

An interesting competency that was highlighted by African graduates specifically was the importance of proposal writing. This was scored significantly higher in Africa than other regions. Percy-Smith and Akkermans (2012) suggest that this may be explained that in the region, much of the ARD work is dependent upon donors for the funding of research and thus, graduates are required to also engage in this as part of their work.

> *"I am a research scientist who as part of my duties develops winning proposals to attract funds for research. With good skills in proposal writing I will be in a better position to execute my job. Unfortunately this lacked in my education both in first and second degree."*
>
> *Michael Osei, Ghana*

Focus on entrepreneurship

Youth make up about one fifth of developing and emerging economies. While unemployment of adults in LDC countries has hovered around 4% for the past decade, unemployment among youth has consistently exceeded 10% (ILO, 2011)[1]. The number of young people of working age is increasing while this same group faces unemployment rates well above those of their older counterparts.

Entrepreneurship came out very strongly in the study. In the business and economic competence group, entrepreneurship skills were rated as the most important, both now and in five years time. The current economic situation and increased uncertainty in the workplace can be suggested as factors that contribute to the search for increased economic livelihood through entrepreneurial activities. Percy-Smith and Akkermans (2012) point out that educational institutes should take a role in the stimulation and supervision of potential (social) entrepreneurs, and provide the example of a business incubator to support them.

[1] page 7 Report of the ILO for the Fourth UN Conference on the Least Developed Countries 9-13 May 2011 – Turkey)

"The ARD school curricula could become more relevant and of greater interest to young people by inclusion of entrepreneurship knowledge in the curriculum. This is important to at least arouse the desire for innovation, self-reliance and private practice of agricultural skills."

Julius Naligwu Ingweye, Nigeria

Some schools are starting to catch on and are increasingly looking at providing real-life experiences for students. In Chile's Santiago School of Business and Economics, where, in the students' final year, instead of writing a thesis, the students must come up with a business idea and implement it. (Gray, 2012). Also, Earth University in Costa Rica has a community development programme as part of their masters program, where students engage in off-campus, community work with farmers, cooperatives, governments and small agribusinesses. (Earth University, 2012).

In the absence of a thriving agricultural sector, youth will need to make their own way through agricultural entrepreneurship. Youth need to create their own opportunities in the current economic climate and job uncertainty. Thus, business and entrepreneurship skills are particularly relevant and should be recognised as so in curriculum development.

Conclusion

Increased investment in agriculture and rural development and an increased effort to attract youth to the agricultural sector could serve to create employment for youth and spur growth in an ageing sector. The large numbers of youth provide an opportunity for economic growth through agriculture and poverty reduction, yet they are often ignored and undervalued when developing priorities in the agricultural sector. A new approach is needed for engaging with young people, to use their insight to contribute to new and innovative approaches to problems.

The first step is to engage with young people and enable them to be part of determining their future in agricultural development. By integrating the outcomes of this study into the university curriculum, it better reflects the interests, experiences and aspirations of youth, making the program more attractive to potential applicants. It will also serve to 'create' graduates better attuned to the needs of the workplace and thus, more successful in their fields, working towards an improved Agricultural Research for Development.

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