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Approaching Accountability in African Agricultural Education: A contextualized review of evolving practice

Keith M. Moore, Virginia Tech

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Abstract

Project monitoring and evaluation (M&E) has become a routine component of development interventions. It is not only integral to our accountability culture, but also fundamental for learning organizations. The foundation for accountability is established at project start-up with a baseline and periodic data collection and analysis continuing through project close-out. Project learning has been momentarily captured and integrated into donor and implementer practice. However, systematic learning and the consequent improvement in practices remains largely external to the targeted organizations or systems. The historic development of Quality Assurance (QA) systems for higher education in Africa provides an excellent opportunity to rectify this practice.

This paper alerts donors, government officials, and agricultural education and training (AET) faculties to the possibilities for collaboration in developing the human and institutional capital for sustained agricultural development in Africa. It does so by contextualizing M&E for AET in a historically meaningful way that ensures the relevance, validity and reliability of assessment for multiple stakeholders. Furthermore, it responds to the call by Dichter, Joslyn, Moock, and Bellis (2015) for a "deeper understanding of context", steps back from the rush for quick, externally driven results, and cultivates an environment for sustained local improvement.

Using a comparative approach, the paper traces the roots of accountability in African tertiary education with a special focus on agriculture. Boven's accountability framework (forum, actors, conduct, and obligation) is adapted as a heuristic tool to standardize comparisons (Bovens, 2006). Recognizing that higher education in Africa today has been strongly influenced by European and American institutions and practices, the analysis begins with a review of how accountability evolved on those continents. This rendering is situated in the context of the converging knowledge economy (Castells, 1998) and the globalization of governance (Djelic & Sahlin-Andersson, 2006). It sets the stage for the examination of higher education in Africa and highlights the challenges of 'massification', declining budgets, and privatization for both accountability and quality improvement. Discussion of contemporary reform efforts clarifies the role and evolution of QA across the continent. Findings from the introduction of QA systems at the national level in Nigeria, South Africa, Ethiopia, Kenya, and Mozambique are examined before discussing the implementation of QA at tertiary agricultural education institutions in two West African countries: Liberia and Senegal.

The paper does not try to define benchmarks or indicators for assessment. Rather, it presents a context and process for their local negotiation and application. The concluding section reflects on the evolving QA framework for agricultural higher education in Africa, reviews issues central to effective implementation, and provides an accountability narrative justifying quality improvement interventions.

Acknowledgements

"the long road to education for development passes through the development of educational institutions. No one has yet found a shortcut or detour." (Thompson, 1976, p. 25).

"At the core, the contention is that asking an amorphous group of academics to identify their strengths and weaknesses and for an agency or ministerial department to send out a raiding party to pass summary judgment on the quality of provision may ensure compliance to policy or regulation or contribute to some form of control over the sector, and it may satisfy the illusion of accountability but has nothing to do with the essential nature of quality. It is a bureaucratic process quite removed from either the student learning or the creative research processes, which, it is argued, lies at the heart of quality in higher education." (Harvey & Newton, 2007, p. 226).

"To call a project successful can therefore mean either that it appeared to achieve what it was intended to achieve, in other words it met its objectives, or that it turned out well, in other words, produced a beneficial outcome. These are by no means identical, and some projects may achieve their objectives but not have any great impact on the community, while others may not achieve their objectives but nevertheless have a beneficial impact" (Smith, 2000, p. 200).

"Education is the means by which we thrive, individually and collectively. In recent times, the growing complexity and interconnectedness of our now global society has challenged the effectiveness of traditional education systems, which were designed for the needs of the industrial [colonial] era. The old model was built upon the idea that a worker's job was to apply the basic skills they'd learned in school to specific tasks. To thrive in the 21st century, however, we need to go beyond that—and teach people how to learn, engage, and create." (as cited in IDEO, 2016)

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Acronyms

AET	Agricultural education and training
AfriQAN	African Quality Assurance Network
AAU	African Association of Universities
ANAQ	National Authority for Quality Assurance (Senegal)
APLU	Association of Public and Land-Grant Universities
AU	African Union
BPR	Business Process Re-engineering
CAF	College of Agriculture and Forestry (University of Liberia)
CAMES	Council for African and Malagasy Higher Education
CFPH CHE	Professional Horticulture Training Center (Senegal)
CHE	Commission for Higher Education (Kenya)
CNAQ	Council on Higher Education (South Africa)
CNFTEF	National Council for Quality Education (Mozambique)
CPN	National Water and Forestry Training Center (Senegal)
CUE	Commission for University Education (Kenya)
DAAD	German Academic Exchange Service
ENSA	National Advanced School for Agriculture (Senegal)
ETQAA	Education Training Quality Assurance Agency (Ethiopia)
ERA	Education and Research in Agriculture (Senegal)
EU	European Union
FDA	Forestry Development Authority (Liberia)
FTI	Forestry Training Institute (Liberia)
GDP	Gross domestic product
HEI	Higher Education Institution
HERQAA	Higher Education Relevance and Quality Assurance Agency (Ethiopia)
HEQC	Higher Education Quality Committee (South Africa)
HICD	Human and institutional capacity development
HRK	German Rector's Conference
ICT	Information and communications technology
INQAAHE	International Network for Quality Assurance Agencies in Higher Education
IQA	Internal Quality Assurance
ISFAR	Institute for Advanced Rural and Agricultural Training (Senegal)
ISO	International Organization for Standardization
IUCEA	Inter-University Council for East Africa
LMD	License, Masters and Doctoral Degrees
LRCFP	Land Rights and Community Forestry (Liberia)
LTAEB	Emile Badiane Agricultural Technical School (Senegal)
M&E	Monitoring and Evaluation
MAS	Minimum academic standards
NACIQA	National Advisory Committee on Institutional Quality and Assessment (US)
NEPAD	New Partnership for Africa's Development
NBTE	National Board for Technical Education (Nigeria)
NCCE	National Commission for Colleges of Education (Nigeria)
NGO	Non-governmental organization
NUC	National Universities Commission (Nigeria)
PhD	Doctoral (research) degree

QA	Quality Assurance
ROR	Rate of return
SADC	Southern African Development Community
SINAQES	National System of Evaluation, Accreditation and Quality Assurance for Higher Education (Mozambique)
STEM	Science, technology, engineering, and mathematics
SWOT	Strengths, Weaknesses, Opportunities and Threats
UASZ	Assane Seck University (Senegal)
UCAD	Cheikh Anta Diop University (Senegal)
UEM	Eduardo Mondlane University (Mozambique)
UFR	Teaching and Research Unit
UGB	Gaston Berger University
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
USAID	United States Agency for International Development

Introduction

Accountability should not be an end-in-itself; it is a means to improve performance and to build the trust that ensures the support of society and its leaders. However, accountability mechanisms are not always effective, and some even have deleterious impacts. Because of the importance of agricultural higher education to economic development, particularly in the knowledge economy, the question is not so much a matter of whether the steering mechanisms or incentive systems of the new public management or reinvented government work as one of the above quotes suggests. Rather, the question that should concern us is how accountability can improve the quality of higher education for agricultural development. Consequently, to better understand the dynamics involved and implement accountability more effectively, this paper explores the "socio-cultural and political implications of the technologies [social practices] that are being used to hold people to account" (Shore & Wright, 2004, p. 103) in the context of African higher education for agriculture.

Project monitoring and evaluation (M&E) has become a routine component of development interventions. It is not only integral to our accountability culture, but also fundamental for learning organizations. The foundation for accountability is established at project start-up with a baseline and periodic data collection and analysis continuing through project close-out. Project learning has been momentarily captured and integrated into donor and implementer practice. However, systematic learning and the consequent improvement in practices remains largely external to the targeted organizations or systems. The recent development of Quality Assurance (QA) systems for higher education in Africa provides an excellent opportunity to rectify this practice.

Improving the quality of national agricultural education and training (AET) systems has had a varied history (Hansen, 2010). Although AET institutions and systems are critical to sustain development, most interventions in human and institutional capacity development (HICD) have focused on human capital (USAID, 2011). Within nations, the institutional responsibility for agricultural education has routinely slipped between the ministries of agriculture and of education (Maguire, 2017). Yet, the productive energies of the growing youth bulge need to be effectively channeled into the increasing employment opportunities of the agri-food system (Tschirley, Snyder, Dolislager, Reardon, Haggblade, Goeb, . . . Meyer, 2015). Recent World Bank studies have demonstrated the importance of high quality education in science, technology, engineering and math (STEM) for agricultural development leading to economic growth (Bloom, Canning, & Chan, 2006; Hanushek, Woessmann, 2008). Employers seek youth who are job ready with employable skills and the critical thinking necessary for the implementing the newest innovations (Mindi, Terblanche, Bashaasha, Madakadze, Snyder, Mugisha, 2015). For this to occur substantial improvements are needed in the quality of AET (Mindi et al., 2015; The World Bank, 2011). Consequently, QA for agricultural higher education in Africa is critical if we are to go beyond short-term, externally dependent project training models to sustain agricultural development.

This paper has two central objectives:

1. To raise awareness about the important, but currently neglected, role QA for AET plays in African agricultural development and the challenges faced by stakeholders implementing it.

2. To promote monitoring and evaluation for AET projects that articulates with and supports African national efforts to improve the provision of human resources and innovations for agricultural development.

The lessons of this review alert donors, government officials, and AET faculties to the possibilities for collaboration in developing the human and institutional capital for sustained agricultural development in Africa. The paper does not try to define benchmarks or indicators for assessment. Rather, it presents a context and approach for their local negotiation and application. It does so by contextualizing M&E for AET in a historically meaningful way that ensures the relevance, validity and reliability of assessment for multiple stakeholders. This effort responds to the call by Dichter, Joslyn, Moock, and Bellis (2015) for a "deeper understanding of context", steps back from the rush for quick, externally driven results, and cultivates an environment for sustained local improvement.

Approaching accountability in higher education in a contextual way involves following the evolution of its ancestors and origins to better understand the currently existing landscape. In this way, QA for AET is placed within the context shaped by the globalization of education, the political economy of agricultural development, and locally evolving African practices promoting QA for higher education. To better compare contexts, an adaptation of Boven's relational framework for the analysis and assessment of public accountability (Bovens, 2006) is applied. Accountability exists, he argued, when: "there is a relationship between an actor and a forum in which the actor is obliged to explain and justify his conduct. The forum can pose questions, pass judgments, and the actor may face consequences." He formulates this definition as relational in the principal-agent format, indicating the public character of accountability, involving informed discussion/debate, and raising the issue of whether the agent is acting in her/his own interests or those of the principal. As such, his definition is inclusive of and consistent with other contemporary definitions of accountability in higher education (Westerheijden, Stensaker, & Rosa 2007; Ewell, 2008; Stensaker, & Harvey, 2011).

Various forces and ideological perspectives have shaped QA systems over the years. Modern QA has its roots in both professional integrity and the welfare state. Recently, neoliberalism has come to play an important role in the development of contemporary QA. By neoliberalism I mean an ideological and policy perspective that values free market processes of trade and competition (Busch, 2010). It evaluates all phenomena in terms of market exchange. Markets are fundamental and assumed to be self-regulating; left to their own, they will provide the best allocation of resources for society. Consequently, policies reducing public expenditures, deregulation, and ultimately privatization promoting free market efficiency are preferred. The welfare state, on the other hand, is an ideological and policy perspective that values collectively shared goods and services, using tax dollars to ensure their supply. It assumes that market competition will not find providing such goods and services profitable without political and/or social regulation. Finally, professional integrity is an internal academic value system and policy perspective where peer review arbitrates quality in terms of scientific standards and the values defining a profession.

In the process of writing up these findings I've tried to ensure that the diversity of stakeholder voices is heard. Given the variety of stakeholders, each expresses different strategic and ideological interests with respect to QA. In that respect, my perspective stems from a tradition of US university-based development assistance professionals. Although this paper provides contextualization at the Africa-wide level, each nation and institution has its own particularities that need to be considered when

these systems are analyzed individually. I don't pretend to know the specifics of the multiple local systems of knowledge and learning that shape local adaptations, but hope this review provides a context for framing those local dialogs.

Recognizing that higher education in Africa today has been strongly influenced by European and American institutions and practices, the first section of the paper reviews how accountability evolved on those continents. This rendering, in the context of the converging knowledge economy (Castells, 1998), and the globalization of governance (Djelic, & Sahlin-Andersson, 2006) sets the stage for the application of the concept in Africa. The next section provides a synopsis of progress in African higher education to the turn of the 21st century identifying both global influences shaping accountability, as well as local challenges to quality improvement. The third section introduces Boven's framework for the analysis of accountability in higher education (Bovens, 2006). This framework standardizes a comparative analysis across a wide range of experiences and documented perspectives. The fourth section of applies this framework to the contemporary reform process and major attempts to introduce quality assurance (QA) to Africa. Then, findings from the introduction of QA systems at the national level are examined. The analysis continues with observations from implementation at tertiary agricultural education institutions in Liberia and Senegal. The final section reflects on this experience within the evolving accountability framework for higher education in Africa and addresses the implications for quality improvement in African agricultural education.

Evolving Global Accountability Regimes in Higher Education

Rosa and Amaral (2007) identified three models of accountability that were recognizable as early as the 13th century: the English model, where incompetent masters could be judged and removed by their colleagues (internal); the French model, wherein the University of Paris accounted to the authority of the Bishop of Paris (external); and the University of Bologna model where students had the power to hire, fire and discipline professors (external). The latter two involved a key distinction between forms of external obligations: hierarchical authority; or market/client relations.

Modern lineages of accountability stem from the late nineteenth century in the United States. Following the English model, accountability in higher education concerned a voluntary (internal) review process with a limited public of peers (Ewell, 2007, 2008). In 1885, the first regional association of colleges and universities was established in the northeastern US by higher education administrators, largely representing private institutions, who wanted to preserve their elite status and highlight the prestige of their institutions through a semi-autonomous externalization of traditional internal accountability. Public land grant institutions quickly joined the movement as other regional associations soon sprang up to establish their own fora and define standards of conduct for themselves (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2012). Professional and career associations also developed to define the standards of their professions and ensure that new entrants had the proper qualifications (Ewell, 2008). For the public-at-large, US tertiary institutions retained 'public trust' in the quality of their work based on deference to their reputations reinforced by these fora. Certainly, external influence could be

exerted, as when a patron felt their interests threatened by faculty perspectives, universities have been made to adjust.[1]

For a large part of the twentieth century, universities strived to maintain a medieval 'ivory tower' character, aloof from the economy and society. The general public appears to have been satisfied that universities were providing a valued service without need of independent supervision. Under these circumstances, governments financed colleges and universities, as did rich (private sector) philanthropists, and they grew enormously during the post-World War II era (Kerr, 2001). The end of World War II brought thousands of veterans back home; and subsidized university education was recognized as the means to ensure their integration into the national economy. This investment was followed by the Higher Education Act of 1965 that expanded federal aid to education and assured its identification as a public good (Ewell, 2008). By the last third of the 20th century, tertiary education had become an integral component of the welfare state with vast numbers of students and new institutions. As such, it came under greater government scrutiny.

The basic elements of accreditation in higher education were established during this period: self-study, site visits by peer reviewers, and a formal accreditation/non-accreditation decision (Ewell, 2008; Kells, 1983). Accreditation decisions were made largely based on 'fitness for purpose' by regional and professional accrediting associations across the US as determined by a range of quantitative and qualitative measures. "Purpose" was loosely formulated so that assessments could be adapted to institutional missions and professional circumstances.

The National Commission on Excellence in Education's report, A Nation at Risk, and the US News and World Report rankings of universities (both first published in 1983) signaled the transition to more overt and externally driven processes of accountability in higher education. Numerous commissions were established in both the US and Europe (Westerheijden et al., 2007; Ewell, 2008). New public actors were emerging as relevant fora changed the accountability relationship (the form and direction of the obligation). This was consistent with the neo-liberal transition in governance and its redefinition of public utility. New approaches to management in the public sector (new public management, reinventing government) were being introduced (Bleiklie, 1998; McKenzie 2004; Brandl, & Glenna, 2014). In addition, a wave of private tertiary institutions was emerging. Higher education had been formerly defined as a public good, an engine of economic development and social welfare, but questions concerning the quality of student learning began to be raised (Ewell, 2007). Market forces, as indicated by magazine rankings, were expecting a certain quality of output – graduates who were fit for employment at the right price (Dill, & Soo, 2005). A process of de-regulation/re-regulation of higher education was set in motion re-aligning the accountability algorithm. In the process, higher education as a "public good" became a contested concept (Guzman-Valenzuela, 2016).

In the US, governments and state legislatures responding to the theme of return on investment and the market-based valuation of public goods began to ask universities to demonstrate their accountability as state budgets shrank. While legislatures began pushing issues of administrative and

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[1] For example, in the firing of E.A. Ross from Stanford in 1898 which led to the establishment of the American Association of University Professors [27]. This is an example of the exception that proves the rule.

financial conduct as relevant accountability measures, universities were looking for ways to improve the quality of teaching and learning as an internally driven process (Ewell, 2007). By the 1990s, standards-based assessment of student outcomes was becoming common throughout the states although separate from the existing regional, association-based, accreditation systems (Ewell, 2008). During this period the priority accorded to professionally oriented (internal) accountability diminished as tertiary institutions became more responsive to external fora; and multiple publics struggled to legitimize themselves as the official forum of accountability.

There was, however, faculty push back. Consequently, administrators often developed formal reporting procedures that insulated faculty from what amounted to an administrative assessment process. In part driven by mounting student loan defaults but also in response to diminishing trust, Congress set up the National Advisory Committee on Institutional Quality and Assessment (NACIQA) in 1992. It was to be responsible for supervising regional accreditation agencies and to ensure that comparative statistical performance measures were being reported. However, by the turn of the century, budget cuts due to recession and general anti-taxation politics minimized the 'steering' capacities of these procedures and thereby reduced their effectiveness. Although this period of intensified accountability was short-lived, the number of actors involved in assessment increased dramatically, including federal and state policymakers, business and civic leaders, as well as leaders of higher education (Ewell, 2008).

In Europe, a slightly different history was unfolding (Huisman & Currie, 2004). Lacking a culture of private universities, the prestige and reputation of national universities held sway for somewhat longer under the auspices of the welfare state. Nevertheless, during the 1980s the bureaucratic controls on the continent and the more autonomous approach in Britain were under direct attack in the face of neo-liberal discourse and the 'massification' of higher education (Rosa & Amaral, 2007). The privatization and marketization of higher education advanced. There was a shift from ex-ante government control through legislation to ex-post justification through quality assurance measures (Neave, 1998). New mechanisms of university governance for accountability were instituted involving university associations, national student unions, national QA and accreditation agencies (Westerheijden, 2007)

The burden of assessment increased as new layers of policy tools were introduced responding to the concerns of a growing variety of public stakeholders. Increasingly, accountability became expressed in terms of student learning as measured by quality assessment, accreditation and rankings (Bleiklie, 1998; Ewell, 2007; Westerheijden, 2007). A process of intensified government management of institutions of higher education occurred across Europe (Bleiklie, 1998; Shore & Wright, 2004). The impacts and adaptations varied from country to country, as strong administrative states like France, Germany and Italy were more resistant to these managerial styles of educational governance (Bovens, 2006). Nevertheless, as Frederiks, Westerheijden, and Weusthof (1994) noted, in the Netherlands these self-assessment processes brought together faculty members to discuss their study programs often for the first time in many years.

These changes occurred in the context of socio-economic restructuring, internationalization, and the globalization of education markets which led European education ministers to begin collaborating on the development of a standardized European educational framework. The Bologna Declaration of 1999 emerged as the mechanism to increase international competitiveness, assure

comparable and transferable credits, and promote QA facilitating the movement of students and graduates across a single European labor market (Obasi & Olutayo, 2009; Westerheijden, 2007). Individual nations translated the Bologna process according to their own priorities, but a substantial consensus on the accountability agenda had been obtained.

Higher Education in Africa

Although the history of higher education in Africa extends back to the universities of Alexandria, Ethiopia, Al-Azhar, and Timbuktu, modern African universities began in the colonial era (Ajayi, Goma, & Johnson, 1996; Teferra & Altbach, 2004). Fourah Bay College was established in Freetown, Sierra Leone in 1827 and Makerere University in Kampala, Uganda in 1922, but it wasn't until the end of the colonial era (1950s and 1960s) when universities were established across Africa (Sawyerr, 2004). Except for Liberia College (1852) and University College of Addis Ababa (1951), these universities were affiliated with a European university for academic support and quality assurance. Independence didn't change these relationships at first (Samoff & Carrol, 2004). For example, the University of Dakar (1957) was still managed as part of the French higher education system into the 1970s (Eisemon & Salmi, 1993; Shabani, 2007). Affiliation included the awarding of degrees (and hence the associated accreditation) by the European institution. Metropolitan faculty and donor subsidies helped sustain these universities in the early years of post-colonial rule (Hayward, 2006).

The 1950s and 1960s are looked back on as an idyllic period for African academia. The new national higher education systems would train Africans to replace the departing expatriates, manage the state bureaucracy, promote economic development, and reproduce national culture. Initially, these were high cost/low output colonial models for elite education (Eisemon & Salmi, 1993). The number of universities grew from sixteen in 1950 to forty-one in 1962, and from 2,270 to 16,580 students over the same period in Sub-Saharan Africa (less South Africa and the Portuguese colonies) (Samoff & Carrol, 2004). There were differences among these institutions (Ajayi et al., 1996). For example, the British had invested more in them than the French. To this day, Anglophone countries have a relatively larger proportion of their national budgets invested in higher education than francophone (Collins, 2013). Nevertheless, the idea of the African 'developmental university' was taking shape (Yesufu, 1973). Africanized, and relevant to the needs of African development focusing on high-level skills rather than Western liberal arts education. This goal was supported by high national aspirations and public resources (Samoff & Carrol, 2004; Sawyerr, 2004).

The transition of tertiary education from colonial rule was not immediate with independence. A truly 'African identity' did not appear until after the establishment of the Association of African Universities (AAU) in 1967 and their meeting in Accra in 1972 (Sawyerr, 2004). Building African university capacity also involved a growing diversity of partners including USAID support for US university partnerships and scholarships, as well as support from the Carnegie, Ford and Rockefeller Foundations and other nations including Britain, France, the Soviet Union, China and other west and east European countries (Gaillard & Busch, 1993; Samoff & Carrol, 2004). The core justification

expressed during this transition was that tertiary education was a 'public good' for African national development.

The enthusiasm and optimism of the first generation of African university faculty was dashed in the 1970s with the fiscal crisis of the state stemming from the decrease in commodity prices that sustained African economies, on the one hand, and the loss of university autonomy stemming from increasingly authoritarian regimes overseeing the critical voice of faculty in political affairs, on the other (Aina, 2010; Ajayi et al., 1996; Samoff & Carrol, 2004; Sawyerr, 2004). These political and economic factors kicked in just as the implementation of the developmental university was set in motion. Debates over how to fulfill the university's developmental role (Coleman, 1994), became mute as institutions were overwhelmed by increasing student numbers.

The growing public of secondary school leavers eager to participate in national development pushed expansion in the number of and enrollment in universities across Africa. Political leaders unwilling to face rioting school leavers supported this expansion despite the lack of funds. Student enrollments increased from 180,000 in 1975, to 660,000 in 1985 to 1,750,000 in 1995, a nearly 10-fold increase in 20 years and these numbers are still on the rise. Meanwhile, Africa continued to lag far behind other continents with substantially lower gross enrollment ratios in tertiary education (Sawyerr, 2004), and declining recurrent public expenditures per student (from $6,800 in 1980 to $1,200 in 2002, and recently $981) (The World Bank, 2009)

It was at this point that the neo-liberal transition in political economy began to shape events and circumstances for higher education in Africa. The World Bank had determined that government expenditures were too high and set in motion Structural Adjustment Programs, a process which compelled African governments to curtail expenditures in return for the loans that covered balance of payments deficits and current government expenditures. The World Bank was particularly concerned with the high cost of public funding for education that resulted in too many unemployed graduates (Samoff & Carrol, 2004). Largely justified based on a 1985 paper (Psacharopoulos, 1985) indicating that, while private rates of return (ROR) for tertiary education were positive, the public ROR were poor and far below those for primary education, World Bank policy decoupled tertiary education from primary and secondary education (The World Bank, 1988). The impact on agricultural education was significant, the World Bank cut back on training by a third and USAID by two-thirds over the decade of 1987-97 (Eicher, 2006). Consequently, the World Bank set in motion a policy environment that undermined support (among donors and governments) for tertiary education that has since been repudiated, but nevertheless sustained a decades-long crisis (Collins & Rhoads, 2008; Saints, 2004).

Meanwhile African academic leaders were attempting to address the multiple challenges of: (1) diminishing government resources, and increasing enrollments; (2) adapting the academic core for the developmental agenda; and (3) assuring the autonomy to govern higher education professionally (Aina, 2010, 2010b; Sawyerr, 2004; Teferra & Altbach, 2004). For the most part, however, the efforts resulted in little more than maintaining the existence of tertiary education without enhancing the quality of its output.

Although circumstances varied from one country and institution to another, the economic crisis hit higher education in two ways (Samoff & Carrol, 2004; Teferra & Altbach, 2004). Since tertiary education was largely state financed, institutional budgets declined relative to student numbers, effectively reducing and often delaying payment of faculty and staff salaries. This hampered effective

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management and had a demoralizing effect. On the other side of the equation, worsening economic conditions reduced students' ability to pay tuition, in addition to the often-subsidized room and board. This led to a reconsideration of the role of the state in higher education Eisemon & Salmi, 1993). Some countries with strong state revenues, like Nigeria and Botswana, could withstand this shock. Others began to explore privatization, most notably Makerere University in Uganda, which not only sought out fee-paying students, but also promoted competition among departments for those students (Aina, 2010b). Most institutions have continued to cope as academic infrastructures and resources degraded, and talented faculty members left for more lucrative employment opportunities (within ministries, the private sector or abroad) or devised alternative livelihood survival mechanisms (moonlighting, consultancy contracts, etc.).

As demand for tertiary education grew across Africa the ideology of neo-liberalism offered a solution – the privatization of higher education (Sawyerr, 2004; Teferra & Altbach, 2004). The 1990s witnessed dramatic increases in the numbers of private institutions of higher education. The size of enrollments, however, has been low. While 80-90 percent of tertiary students are still served by public institutions, privatization has had an impact on the way many of them do business (Oanda, Chege, & Wesonga, 2008; Sawyerr, 2004). Research also shifted from a largely publicly funded endeavor to free market contracts with a consequent shift in QA from peer review to market forces (Waast, 2001).

Marketization of higher education (Varghese, 2006) emerged in two dimensions: fees for services; and commercial enterprises. Many African governments who regarded tertiary education as a benefit to the nation (a 'public good') had been covering all student expenses (tuition, room and board). Each country varied somewhat, but increasing pressure for higher education and decreasing budgets have forced governments to charge fees, introduce loans, and reduce social benefits (Oketch, 2016). These changes have not come without challenge and student riots have occurred (Materu, 2007).

This new market for tertiary education emerged with certain characteristics. Private institutions concentrated in population centers (not rural areas), served students that could afford the charges, and found a profitable niche in the fields of information and communication technologies (ICT), business, and the humanities (Oanda, Chege, & Wesonga, 2008; Sawyerr, 2004; Teferra & Altbach, 2004). These fields were perceived as providing immediate employment opportunities. STEM education was not promoted as part of the privatization business model. The proliferation of for-profit and faith-based tertiary institutions occurred without a concomitant increase in the supply of qualified teaching faculty. This expanded market for instructors drew less qualified personnel into the system as well as increased the workload on existing faculties. Given the opportunity to increase their meager incomes, faculty at public institutions began moonlighting in substantial numbers (Sawyerr, 2004; Teferra & Altbach, 2004; Waast, 2002). The best and the brightest have often been picked off by businesses, NGOs, other better paying universities, or the government itself [63]. Furthermore, the modality for the new tertiary institutions involved no changes in pedagogical methods, and lacked any role for knowledge production. Consequently, questions of quality arose (Mamdani, 2007; Materu, 2007; Oanda, Chege, & Wesonga, 2008).

"Massification", or increasing enrollments, overwhelmed the faculty and infrastructure of tertiary institutions. Over the decade 2000-2010 in West Africa alone, student enrollments tripled and quadrupled with comparable increases in gross enrollment rates (Martin, 2014). This has created the greatest tangible challenge to African tertiary education raising questions of access and equity, as well

as QA. Despite increasing enrollments, there is still considerable unmet demand for higher education from the growing youth bulge and previously unrepresented social classes and ethnic groups. Consequently, there has been increased political pressure for growth in the number of programs and institutions, as well as increased enrollment in existing institutions. Increased pressure, however, has not reduced the various forms of social exclusion: gender, language, level of parental education, etc. (Sawyerr, 2004; Teferra & Altbach, 2004).

In addition, the consequent increase in university graduates has not generated substantial increases in post-graduate employment. More students did not lead to increases in numbers of faculty, nor change the quality of academic core programs. Furthermore, most existing faculty were not adapting to the developmental agenda of more science and critical thinking skills. Indeed, with few journals, poor library facilities, and underfunded laboratories, faculty had difficulty performing other development roles such as conducting research or publishing scholarly works. Efforts to support research by donors have largely backfired, drawing the best faculty away from their core academic mission and reducing focus on needed pedagogical and curriculum changes (Aina, 2010a; Coleman, 1994; Samoff & Carrol, 2004; Sawyerr, 2004; Teferra & Altbach, 2004).

Perhaps most damaging, however, was the fact that the morale of faculties and administrators had deteriorated. African academics experienced a loss of control over the destiny of their institutions. Higher education institutions were targets of corruption or perceived corruption as political control over leadership positions (e.g., appointment of Vice Chancellors by the President or Minister) undermined the academic freedom and autonomy that allows new ideas to emerge and be tested. Combined with a lack of organizational effectiveness due to poorly trained and remunerated staff and archaic administrative processes and procedures, African higher education was adrift when it was needed most.

A Framework for Analyzing Accountability

Accountability has become an increasingly common concept associated with good governance. It exudes characteristics of transparency, responsiveness, effectiveness, and trustworthiness. Given the association with governance it is useful to begin by distinguishing between 'control' and 'accountability'. This distinction is at the crossroads of current issues in the evolution of QA in African higher education. Control refers to hierarchical, financial and legal mechanisms which constrain future behavior. Accountability, on the other hand, involves mechanisms for consideration, explanation, and justification of past behavior. The distinction highlights the line demarcating the professional autonomy of African institutions of higher education. Often, this line is blurred and contested.

In order to provide a standardized perspective for this review of quality assurance practices, an adaptation of Boven's relational framework for the analysis and assessment of public accountability is applied (Bovens, 2006). Accountability exists, he argued, when: "there is a relationship between an actor and a forum in which the actor is obliged to explain and justify his conduct. The forum can pose questions, pass judgments, and the actor may face consequences." He formulates this definition as relational in the principal-agent format, indicating the public character of accountability, involving informed discussion/debate, and raising the issue of whether the agent is acting in her/his own interests

or those of the principal. Bovens (2006) dissects his relational framework into four elements: the forum; the actors; the conduct; and the obligation. These elements are retained for the analysis but their contents have been adapted specifically for accountability regimes in higher education. The following definitions clarify the terminology used throughout this paper.

A **forum** is to whom an actor renders account (i.e., the principal). There may be many different publics interested in or impacted by the activities of higher education institutions. A forum acts on behalf of one or more of those stakeholder publics. Some publics have greater capacity than others to influence behaviors; some may even have the power to control future behaviors. Three types of fora are relevant: administrative; professional; and social.

> *Administrative* fora are watchdogs often linked to government bureaucracies. Quasi-governmental agencies charged with quality assurance tend to represent the public-at-large, although certain stakeholder groups may be more significant than others. Administrative fora often report to ministries or government offices which have direct budgetary and other hierarchical relationships with the actor in question. Government units directly within the chain-of-command do not constitute fora because they lack operational autonomy although they may attempt to function in that role (see hierarchical actors below).

> *Professional* fora include various groupings of peers. These include professional associations interested in promoting their professional interests, codes of ethics, and standards of acceptable practice. They could also be associations composed of tertiary institutions that have joined together to uphold their common values. Professional fora may have the legal capacity to certify individuals, programs, or institutions in their profession. Peer-reviewed professional journals are examples of this type of fora for individuals.

> *Social* fora include interest groups and other stakeholders arising from civil society, businesses, corporations, NGOs, community groups, as well as students and parents. Even when formally structured, these fora seldom have the capacity to formally sanction. However, they may be able to express their concerns through market relationships or indirectly through lobbying/electing government officials.

There are two primary types of higher education (HE) institutional **actors** that will be considered in the following sections: corporate; and hierarchical. Individuals will be largely left out of the discussion[2]. Who is responsible for the actions, outcomes, and/or impacts of higher education institutions which the various publics are concerned? The assignment of responsibility implies independence of action and largely involves the level of autonomy (from the government) of the actor called to account.

> *Corporate* actors are organizations that constitute independent legal entities. Private tertiary institutions with independent legal status are the most obvious examples. However, public institutions to the extent they have independent legal status may be included as well.

> *Hierarchical* actors are more complicated in that the actor operates within a 'chain-of-command'. Thus, middle-level management positions could be considered both actor (to those up the hierarchy) and forum (to those lower in the hierarchy). This is the case for many public institutions where control and accountability are not operationally distinct. As public tertiary

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[2] *Individual* actors are involved in those situations in which individuals can be held personally accountable for their professional activities. The most common examples of this involve malpractice by a medical doctor or a lawyer.

institutions become more organizationally autonomous, they function more like corporate actors. Departments, colleges, and other units lodged within an institution are still considered hierarchical actors.

The **conduct** for which the actor renders account is the object of QA in tertiary education. It involves the performance of tasks or procedures as well as the achievement of outcomes. Such conduct can be categorized as either content or procedural.

Conduct focusing on *content* most often addresses professional issues of scientific or technological rigor, curriculum and pedagogy, faculty capacity, or student learning. This is outcome-oriented and often discussed in terms of the academic core.

Procedural or process conduct involves administrative and financial management. Administrative issues concern efficiency and effectiveness of bureaucratic processes and procedures for achieving specified outcomes. Financial issues address both value for money and the mismanagement and misappropriation of funds.

The **obligation** to render account for one's conduct may be either *internal* or *external*[3]. The critical issue addressed in this paper is the source of the obligation: is it motivated by concern for quality improvement in oneself or one's professional grouping; or is it drawn out by demands of an external public? For academics and scholars, the intrinsic dimension of quality has traditionally characterized academic accountability. External forms of accountability are currently associated with the neo-liberal agenda.

As we will see below, these elements and their interrelationships have varied historically within and between nations. However, three broad trends can be discerned. Increasingly fora are being called into question by their publics. As priorities and concerns in the environment change, new publics, actors and fora emerge. A learning process has evolved whereby actors and fora increase the sophistication of their explanations and questioning procedures. The weakness of the analytical framework is that it does not provide an indicator for the extent of power and influence of various publics/stakeholders and their perspectives in any particular institutional context. Ultimately, it is this power that must be mobilized when deciding on or implementing AET policies.

Reforming Higher Education in Africa

In the next three sections, we will investigate the current evolutionary state of QA in African higher education at the regional, national, and agricultural institution levels, respectively. Bovens' adapted framework and terminology allow us to elaborate the relational dynamics of accountability and to standardize comparisons between accountability regimes. In this section, we summarize evolving global and African accountability relations and describe regional actions to promote QA. In the following section, five national QA systems are characterized with respect to the framework, and in the last section the framework structures the analysis of the implementation of QA for programs at the institutional level.

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[3] Bovens [2] characterizes this in relational terms: horizontal, vertical, and diagonal. However, most observers of higher education speak in terms of internal and external.

Summary so far

In the golden age of African higher education there was little distinction between internal and external. Accountability was internal to the university but external to Africa. Metropolitan accreditation and mentorship characterized the colonial and immediate post-colonial periods. Indeed, this was the time when new publics emerged with the democratization of higher education as a public good after World War II. Up to this point in Europe and the US tertiary institutions had been largely responsible to themselves, although some professional groups had established accountability mechanisms and accreditation bodies had been created in the US.

Decolonization meant Africanization of the universities; and the primary outputs were African candidates for government service. Initially, the hierarchical relationship between government and university was close. Every government wanted their own university, not only for the staffing of ministries, but also for the status it provided to their nation. But as nation-building proceeded single-party states and rising dictatorships found the universities to be the major source of articulate opposition to their regimes. Partisan politics provided the context for university accountability. The conduct of most significance to political leaders was regime support. Issues of public trust seem to have been co-opted by political dynamics. In as much as tertiary education was under the administration of the ministries, hierarchical actors with little autonomy were most common. However, the political nature of oppositional relationships often personalized accountability. Donor support for tertiary education worked largely through university partnerships where accountability was, as in the past, indirect.

As that story was playing itself out, structural adjustment asserted itself. External accountability was growing, articulated in neo-liberal terms, and bringing with it a substantial increase in the number of stakeholders involved. Accountability came into vogue with a new conduct focused on financial matters, essentially the cutting of 'wasteful' government spending. Governments and donors, following the World Bank (The World Bank, 1988) agreed that higher education expenditures should be cut. Restricted budgets meant no hiring for either governments or universities. Graduates could no longer assume direct employment by the government and few had the necessary skills for employment in the competitive private and non-governmental organization (NGO) sectors. The university, as seen by many emerging publics, was an excess. Yet independent fora to call tertiary education to account were only beginning to be imagined. Thus, the crisis in African higher education was framed in the 1980s and 1990s.

Privatization took up some of the slack from the increasing numbers of students. Most significantly, however, privatization introduced the need to develop a formal system of academic accountability to protect consumers and the public-at-large. By the turn of the 21st century, parallel debates over quality and accountability of higher education were occurring globally. This coincided with the emergence of the knowledge economy (Castells, 1998), and revitalized the focus on the academic core debates over the developmental agenda around instrumental (service and skills) versus engine of development (knowledge production for innovation) perspectives (Maassen & Cloete, 2010)

From Arusha to Bologna

There was a growing awareness that the quality and relevance of tertiary education was in desperate need of transformational reform (Aina, 1995; Ajayi et al., 1996; Mamdani, 1993; Mohamedbhai, 2008; Sawyerr, 2004), but it was the establishment of private tertiary institutions that stimulated a reconsideration of policy assumptions (Materu, 2007), and a reconfiguration of governance mechanisms (Varghese, 2013). The proximate concern involved the growing "diploma mills" that came with opening higher education to market forces (Hayward, 2006; Okebukola, 2010). Once tertiary institutions could introduce new educational programs outside of the government hierarchy, new mechanisms were needed to ensure the quality of these new curricula. Policy changes usually began with procedures and structures to evaluate private sector institutions. However, this gradually led to measures governing the establishment and evaluation of all new educational programs in both the public and private sectors (Hayward, 2006). Public trust in the 'dejure' accreditation of state-decreed institutions was eroding.

The rise of national higher education councils and commissions (sixteen of them established across Africa by 2007) (Materu, 2007), and the implementation of QA audits and accreditation practices at the institutional and program level (Hayward, 2006; Martin, 2014) manifested these public and private concerns. As quality assurance regimes emerged, the type of actors and their interrelationships changed. The once strict hierarchy of bureaucrats within a Ministry of Education chain of command was giving way to a corporate model characterized by leaders of (often private, for-profit) tertiary institutions and quasi-governmental regulatory bureaucrats. This change coincided with the growing number of publics to which tertiary education systems had to respond (Sall & Oanda, 2014). Included among these were relatively privileged families wanting to assure their children received the best education possible and had the means to pay for it. Students, mobilized through strikes, have also become increasingly significant fora; as have employers seeking qualified employees (Martin, 2014; Sawyerr, 2004).

In large part, these changes had been made possible by the reversal of World Bank higher education policies for Africa (Bloom, Canning, & Chan, 2006; Saint, 2004; The World Bank, 2009), leading to increased support from the donor community. This reversal supported African Union (AU) efforts to promote African higher education and to harmonize institutional standards. Since 1981, African leaders had worked to align higher education qualifications across Africa. The foundation for this standardization was the Arusha Convention for the Recognition of Qualifications in Higher Education in Africa. Unfortunately, only 20 of 53 countries had signed on by 2007 (Obasi & Olutayo, 2009). In part, the late translation of the Convention into French (only made available in 2003) slowed adoption among francophone states. Although governments were still largely operating in control mode (e.g., imposing national curriculum and conducting inspections within strict hierarchical regimes), the African Credit Transfer System for inter-Africa student mobility had been prepared for approval in 1997. Momentum for change was building (Okebukola, 2014).

In 2005, the New Partnership for Africa's Development (NEPAD) held a workshop renewing the commitment to African higher education and reviving the idea of the African "developmental university" (NEPAD, 2005). The Arusha Convention was amended in 2003 and again in 2006, with each step taking greater account of the Bologna Process into (Obasi & Olutayo, 2009). It was becoming accepted among

African leaders that the objectives of harmonization of African higher education espoused in the Arusha Convention were consistent with the European concern for standardized accreditation and QA of the Bologna Process. The blending of these two policy initiatives has made a natural fit whether or not one agreed with all that has been implied in the process (Kelfaoui, 2009; Shawa, 2008).

Declaring 2006-2015 the Second Decade of Education for Africa, AU heads of state signed a MOU with the Association of African Universities (AAU) to be the implementing agency for harmonizing accreditation and building national QA capacities and agencies across the continent (Obasi & Olutayo, 2009). Despite the formal agreement of African governments to increase budgetary support for agriculture, a similar commitment to the transformation of higher education has been meager. Consequently, donor support was a critical element in maintaining QA momentum. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has been central to this effort through provision of technical and financial support to the AAU, the AU Commission, and sub-regional organizations. In addition to promoting regional centers of excellence, setting up Pan-African University hubs, and holding multiple conferences and workshops on quality assurance and accreditation, two guides have been produced to provide standards of reference: one on QA in higher education in Africa in collaboration with the German Academic Exchange Service (DAAD) and the German Rectors' Conference (HRK); and the other a guide to effective teaching and learning in higher education with on-line modules (Kayombo, 2015; Okebukola, 2014; Shabani, Okebukola, & Oyewole, 2014).

In an important contribution to capacity building in QA, the AAU set up the African Quality Assurance Network (AfriQAN) in 2009. The mission of AfriQAN is to assist national programs in setting benchmarks and minimum standards, establishing a regional accreditation mechanism, and strengthening institutional quality (Kayombo, 2015; Okebukola, 2014; Shabani, 2013). AfriQAN has also established collaborative relations with the International Network for Quality Assurance Agencies in Higher Education (INQAAHE). For its part, the AU Commission has been promoting the political framework for implementing the Arusha Convention on HE harmonization, surveying Nigerian and South African QA mechanisms, and supporting the Tuning Africa Project (see below).

Two sub-regional organizations (IUCEA, CAMES) were also mobilizing their own QA systems and standards. Formed in 1968, the Council for African and Malagasy Higher Education (CAMES) has been providing quality control for francophone Africa through the accreditation of diplomas and degrees since 1972 and the evaluation of faculty qualifications since 1982 (CAMES, 2014). In addition to providing training in QA for national leaders in higher education, CAMES has taken on the task of promoting the LMD component of the Bologna Process among member states (Shabani et al., 2014). The objective of the LMD program is to standardize degree equivalents for License[4], Masters and Doctoral degree programs running three, five and eight years, respectively. Begun in 2006, the LMD program addresses the most fundamental structural change in francophone higher education degree programs needed to pursue regional harmonization. Although there are intergovernmental resolutions among CAMES member states supporting the transition to the LMD system, uneven stakeholder involvement at the institutional level, lack of QA mechanisms and data to ensure comparability of degrees have stymied the process (Shabani et al., 2014).

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[4] In the European system, License is equivalent to a US Bachelor's degree.

The Inter-University Council for East Africa (IUCEA) was revitalized in 2002 as a legal body of the East African Community. As of 2013, it represented 96 member universities across five countries of the Community (Burundi, Kenya, Rwanda, Tanzania, and Uganda). The IUCEA has been developing a regional quality assurance system since 2005. This work involved collaboration with the EU (Germany and the Netherlands) and development of a QA handbook (see below). IUCEA has been raising awareness of QA throughout East Africa, but is still meeting resistance to change arising from disparities in existing curricula, variations in teaching and learning quality, and budgetary problems (Shabani et al., 2014).

Introducing Quality Assurance on a Regional Scale

Complementing the neo-liberal concern with administrative and financial management, African educational leaders have been most focused on revitalizing the content of higher education (Cloete & Maassen, 2015). This conduct involves the academic core, ensuring its relevance and contribution to national development, that is, fitness for purpose (Sawyerr, 2004). To address these quality concerns, new fora needed to be established within the national systems. These will be discussed in the next section; here, two major European-supported QA projects to build capacity are presented.

In the Joint Capacity Development project, the IUCEA collaborated with the German Academic Exchange Service (DAAD) and the German Rectors' Conference (HRK) to introduce a regional QA framework for higher education in East Africa. The project ran from 2006 through 2011 involving five national regulatory agencies (Hansert, Kuria, & Nkunya, 2012; Shabani et al., 2014). The process involved broad stakeholder dialogue at national events leading to the participatory development of a regional QA Handbook in four volumes: "Road Map to Quality: A Handbook for Quality Assurance in Higher Education" (IUCEA/DAAD, 2010). The handbook was designed to instruct QA trainers and reviewers. Hundreds were trained (particularly peer reviewers) in an 18-month, multipart training course involving three fulltime workshops of 7-10 days each, plus assignments completed at their home institutions. Training materials covered the nature of QA, how to carry out self-assessments and external assessments at the program level, and how to establish internal quality assurance systems at the institutional level. The Handbook was piloted in 45 institutions involving both internal and external evaluation of 47 programs. Fifty-two of the 57 external reviewers involved were from East Africa.

The Tuning Methodology is another program developed in Europe to implement the Bologna Process for harmonization, and curricular and pedagogical reform. Tuning Africa began with a Feasibility Study in 2010 allaying initial concerns about ownership, inclusiveness, leadership and strategy. The project objective was to close the gap between higher education and Africa's human resource needs. The pilot project (2011-13) involved 57 African universities in five subject matter areas (including agriculture, civil and mechanical engineering, medicine, and teacher education) across five regions (Hahn & Teferra, 2013). The Tuning process involves five steps: (1) a stocktaking of program elements (duration, core and specialized content, credit system, and professional degree entitlements, etc.); (2) investigation of the stakeholder landscape, including ministries, accreditation and QA agencies, professional associations, other similar programs, public and private employers, unions, students etc.; (3) examination and discussion of the generic and subject-specific competences and their sequencing; (4) a survey of students, alumni, academic staff and employers is conducted to rate the importance, achievements and ranking of each competence; and after further discussion, (5) a meta-profile of the

programs is created providing a frame of reference for reform. Project partners found high levels of stakeholder involvement that initiated a paradigm shift to outcome-oriented learning, but the pilot phase was deemed too short (14 months). Subsequently, Tuning Phase II (2014-2020) involves a scaling up to seven subject areas and 120 universities and integration with Erasmus Mundus programs (Shabani et al., 2014).

National Experiences with Quality Assurance

African governments have been taking an increasing interest in QA mechanisms for tertiary education. By 2012, 21 countries had established QA agencies with a dozen or more on the way (Shabani et al., 2014). Quality assurance agencies can perform several functions: assess institutions or programs; approve public and private tertiary institutions; approve new academic programs; establish minimum academic standards, carry out annual performance reviews; and monitor and accredit institutions and programs. Standard program parameters are described before looking at specific programs.

National quality assurance may target either institutions or programs. Two types of QA assessment are carried out. Although variations in terminology exist, they all refer to similar processes. Audits (as used here) refer to an institution's own standards; whereas, accreditation focuses on standards external to the institution. Given the level of financial and human resource constraints, QA agencies have been normally charged with institutional accreditation (Cloete, Maassen, & Bailey, 2015; Hayward, 2006). Program evaluation is often left to self-study by the targeted institutions and those results incorporated into institutional quality assurance and accreditation reports and reviews. Professional associations also provide QA in the form of certification of professional competence independent of government and higher education hierarchies. These certifications are critical for employment in medicine and engineering, and often target specific programs in these fields.

The basis for accreditation rests on a process and benchmarks. The general outline for the process has become quite standardized around a set of procedures (drawn from Western practice) which include but are not limited to: a self-study; an external peer review; a site visit; a site-visit report; and a resulting accreditation decision (Hayward, 2006). This process usually takes from a year to 18 months before a final report is completed and a decision reached. Benchmarks have been more difficult to specify and have led to considerable debate (Aina, 2010a; Cloete et al., 2015; Obasi & Olutayo, 2009). Given the diversity of institutions, their histories, resources levels, capacities and objectives, audits, and consequently accreditation, have been tailored to assess each individual institution's 'fitness for purpose', where an institution's mission and goals define a set of behavioral expectations. To the extent they have been applied, external benchmarks have often been some combination of European or American standards adapted to national conditions (Cloete et al., 2015). Okebukola (2010) and Shabani et al. (2014) have provided a frame of reference for these standards focusing on three measurement categories: inputs; processes and outputs.

With this brief overview, let's review how Nigeria, South Africa, Ethiopia, Kenya, and Mozambique have implemented quality assurance for higher education. These national examples are

organized with respect to Boven's framework and based on a triangulation of findings from journal articles, reports by professionals having experience in these systems, and national agency websites. It should be noted that these accounts are based on insider perspectives. As all systems are evolving in a continent-wide learning process, no definitive case studies exist.

Nigeria:

Nigeria was one of the earliest adopters of QA. Accustomed to an external examiner system for program quality since before independence, the Nigerian government established the National Universities Commission (NUC) as a statutory body in 1974 (National Universities Commission [NUC], 2015). This was followed by the National Board for Technical Education (NBTE) in 1977, which conducted its first formal accreditation process in technical education in 1981 (Hayward, 2006). The National Commission for Colleges of Education (NCCE) was established in 1989 (Okebukola, 2010). Within this system, Nigerian university faculties were largely accountable to their peers.

It wasn't until 1985 that the decree formalizing the accreditation of undergraduate programs was promulgated and the NUC empowered (1988) to establish minimum standards (Odum, 1996). The forum for this QA was administrative and the actors involved (whether public or private) were considered as part of the administrative hierarchy. The professional councils (also established by law) coordinated with NUC accreditation panels. The publics represented by the government were employers, the international community and the general public. Students and faculty members were not considered part of the stakeholding public. Subsequently, students protested the tighter requirements and faculty objected to the loss of autonomy. The minimum academic standards (MAS) of conduct focused on the academic core, emphasizing knowledge and competence in thirteen broad disciplinary areas as well as administrative efficiency vis-à-vis student progress. The obligation was external, stressing purpose and transformation. A summative quality control report for each audited program was submitted to the NUC, and the Joint Admissions and Matriculation Board, Nigerian Employers Consultative Association, Nigerian Student Loans Board, and various federal and state scholarship boards informed (Wangenge-Ouma & Langa, 2011).

Program-level accreditation began in 1990 with 837 programs of which over a fifth were fully approved and 10 percent denied accreditation (Council on Higher Education, 2012). These numbers improved by 2008, with almost 90 percent of the 2,936 identified programs accredited. An organizational learning process was occurring. This process was not merely a bureaucratic exercise. Okebukola (2010) recounts a struggle to clamp down on 'degree mills' beginning in 1999, ultimately involving the police shutting down illegal universities. From 1995-2001, it was estimated that 15 percent of 'graduates' had been from 'degree mills'. Many of these were from 'institutional' affiliates or satellite campuses of formally approved Nigerian or foreign universities.

The Magna Charta Universitatum enacted in 1998 and amended in 2003 reduced direct government control of public universities (Varghese, 2013). With this increased autonomy, universities gained the responsibility for appointing key officers, determining staff working conditions, student admissions, academic curriculum and financial management, as well as being held to stricter enforcement of NUC accountability measures. In 2004, the NUC (in collaboration with the World Bank) conducted labor market surveys that provided employers with a platform to express their concerns,

among them that graduates lacked practical, technical, analytic, and critical thinking skills, and that the curricula should promote modern content, a reading culture, and entrepreneurship.

This realignment in accountability indicates a shift in relationships from hierarchical to corporate actors. The conduct to be reported on by self-study audits focused on inputs (students, teachers, facilities, curriculum, etc.), processes (teacher/learner interaction, internal efficiency, research, evaluation procedures and management practices), and outputs (employability of graduates, system's external efficiency, new knowledge and service, etc.). By 2010, NUC was pilot testing institutional accreditation procedures in a 14-step process leading to an accreditation decision and a continuous improvement plan (Okebukola, 2010). The obligation, while formally external, increased the importance of peer review panels involved in the QA process. The need for considerable pre-visit training for QA review panelists was noted (Okebukola, 2010).

South Africa:

With its generally more developed systems of tertiary education, South Africa was also an early adopter of QA. The Committee of Technikon Principals completed its first accreditation of technical education in 1986 (Hayward, 2006). However, system-wide quality assurance policies were only legislated after the end of apartheid (1994) to implement a national policy of transformation in tertiary education. The Council on Higher Education (CHE) was established in 1997 to promote QA and provide policy advice to the Minister of Education. Its Higher Education Quality Committee (HEQC) was constituted in 2001 as the forum for both institutional audits and program accreditations (Council on Higher Education, 2006).

The first cycle of institutional audits began in 2004 and was completed by 2011. Twenty-three public and eleven private higher education institutions were audited (Council on Higher Education, 2012). An integrated and on-line system for the accreditation of academic programs at public and private higher education institutions was launched in 2005 (Council on Higher Education, 2006). Program accreditation involved the peer-reviewed audit process followed by a CHE accreditation decision. CHE-led consultations with stakeholders were an essential part of developing norms and procedures for these processes. As they evolved, further consultations were held, as well as frequent training activities, at the national and institutional levels. However, stakeholders appear to be limited to the targeted institutions, their internal constituents (academics, black caucus, student council, department heads, etc.), with the Ministry of Education representing the South African public-at-large. South Africa has maintained a largely administrative forum with limited autonomy in that the CHE reports directly to the Minister although it is not part of the academic or financial hierarchy. Nevertheless, staffing, committees, and peer review panels drew heavily on academics (Botha, Favish & Stephenson, 2008; Council on Higher Education, 2016; Cross & Naidoo, 2011).

QA, in combination with a new funding framework and three-year rolling plans for authorized enrollments, was identified to steer higher education in the post-apartheid era (Botha et al., 2008). This suggests at least some limited institutional autonomy. In any case, the South African government was very clear and consistent concerning the conduct for which they were holding their higher education institutions accountable. Transformation was the political imperative. Higher education was essential to transforming South African society with an emphasis on access and equity for disadvantaged groups, increasing the numbers of women and black researchers, and improving retention rates throughout the

system (Hayward, 2006). The problems of tertiary education in South Africa, and AET in particular, were officially defined as: inequality; access; inefficiency and ineffectiveness; irrelevant program content; lack of AET curriculum responsive to policy and extension; and poor research productivity (Botha et al., 2008; Council on Higher Education, 2016). However, the conduct (as measured) for which institutions were being held accountable was largely procedural. Application of this accounting mechanism led to the criticism that maximizing income from the funding framework was counterproductive for QA (Muller, 2017; Wangenge-Ouma & Langa, 2011).

An analysis of the experiences of three universities during the first cycle of audits concluded that the audit preparation process (i.e., the self-study) was the most valuable part of the exercise (Botha et al., 2008). Each institution shaped the process to its own circumstances and found it to be a useful learning and developmental experience. However, analysis of the recommendations raised questions concerning whether institutional quality management systems adequately addressed core academic processes of teaching, learning, research and community engagement. Much of the work mediating the process at the institution level was conducted by administrative staff on the committees drafting the report for the HEQC. Indeed, faculty participants critiqued the process for 'creeping managerialism' and for overlapping with on-going organizational restructuring.

Another study investigated the program accreditation process focusing on teacher education at the master's degree level (Cross & Naidoo, 2011). Critical learning and developmental benefits were gained by both program faculty and peer reviewers. The experience helped to translate intuitive practices into conscious and rational procedures. However, the study highlighted questions concerning the peer review process. In particular, how to deal with contestation of findings among reviewers? While differences in race, gender and institutional mix stimulate learning and restrain incestuous practices among panel members, conflicting perspectives may also lead to errors of commission and omission, as well as inaccuracies. How can political, academic, professional and stakeholder (student and employer) concerns be balanced? And, how does one deal with the epistemological battles which invade the debate over quality? The lessons learned suggested that: (1) tighter standardization of reports may reduce problems resulting from the lack of consensus; (2) better training and preparation of peer reviewers is required; and (3) there is a need to apply criteria with sensitivity and understanding of local context.

Ethiopia:

Ethiopia is a more recent adopter of QA. Rapid expansion in the number of students and of public higher education institutions began in 1992 in response to calls for increased access and equity, and to support economic development. This led to deterioration in quality due in large part to the lack of sufficient faculty and under-resourced institutions (Semela, 2011). Subsequently, the Higher Education Relevance and Quality Assurance Agency (HERQAA) was established in 2003 by government proclamation to assure quality in the rapidly expanding system (Teshome & Kebede, 2010). The proclamation also allowed for the establishment of private higher education institutions and block-grant funding for public institutions, stressing autonomy and accountability.

HERQAA provides an administrative forum for QA. Prior to 2003, the Ministry of Education was the governing body for all tertiary education except for Addis Ababa and Haramaya Universities (Varghese, 2013). Since students and employers have no mechanism to participate, the government

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remains the principle stakeholder representing all publics. In 2009, HERQAA became part of the Education and Training Quality Assurance Agency (ETQAA) responsible for all education levels with the Minister of Education assuming the role of Head of the management board (Ashcroft & Rayner, 2011). This proclamation also stipulated that tertiary institutions should develop internal quality enhancement systems (Semela, 2011). Although schematically, universities are now out of the direct chain of command, the relationships between actors in the system involve inspectorates (including private sector institutions) and appear more hierarchical than corporate in nature (Ashcroft & Rayner, 2011).

QA in tertiary institutions was driven by the government's concern that the quality of education for the increasing numbers of students be demonstrated. In that regard, they also made changes in the governance system, introducing Business Process Re-engineering (BPR) to restructure institutions from a collegial model to a managerial one (Varghese, 2013). This approach drew attention to operational processes as measures of conduct and focused more on inputs than outcomes (Ashcroft & Rayner, 2011; Tadesse, 2014). Nevertheless, the processes of accreditation and external quality audits launched a learning process (Teshome & Kebede, 2010). Training workshops were held for faculty and administrators on quality management including self-evaluation, student assessment, teaching and learning, research, and outreach activities with assistance from South African and Dutch QA practitioners. Tertiary institutions were encouraged to develop internal quality enhancement teams.

The obligation for QA in Ethiopia is external. Although dialog has begun concerning self-study and self-improvement, the focus of the reported efforts is on satisfying the government's need for justification of its higher education policies (Kayombo, 2015). A quality culture focused on student learning has yet to evolve and the additional burden of QA seems to have had a negative impact on faculty trust and respect (Tadesse, 2014).

Kenya:

The Commission for Higher Education (CHE) was established in 1985, making Kenya an early adopter of QA in Africa (Wangenge-Ouma & Langa, 2011). However, Kenya took the process in a different direction, more closely associated with the neo-liberal agenda and a high proportion of private institutions (Munene, 2013; Varghese, 2013). Accreditation in the early years, as elsewhere, focused solely on private institutions. Public institutions were already accredited *dejure* through acts of parliament. It wasn't until the Universities Act of 2012 when CHE became the Commission for University Education (CUE) that public universities were subject to accreditation procedures (Commission on University Education, 2017).

In the 1990s, the Kenyan government embarked on a neo-liberal inspired public sector reform based on a system of results-based management (Varghese, 2013). Performance contracting between public institutions of higher education and the Ministry of Higher Education, Science and Technology was first introduced in 1989 and then updated in 2003 (Wangenge-Ouma & Langa, 2011). While CHE (later CUE) was the administrative forum for QA, tertiary institutions were treated just like any other public service agency. Consequently, the actors were all characterized as administrative (public servants), despite a certain autonomy created by the introduction of performance contracting (Varghese, 2013). ISO 9001:2000 (later ISO 9001:2008) provided the guiding principles for assessing performance quality (Commission on University Education, 2017). The conduct of central interest was procedural (service delivery and efficiency in resource use) designed to institutionalize a culture of

quality public service for customer satisfaction. No consultative process with faculty, students or other stakeholders was involved (Munene, 2013).

A university performance contract could include compliance with budget and strategic plan, cost savings, and curriculum review in exchange for government guarantees of monthly release of allocated funds, prompt communications and policy reviews, and review of capitation allocations (Wangenge-Ouma & Langa, 2011). Although university autonomy allowed for more competitive hiring of senior management and greater scope in union negotiations, it was not clear that quality was improving (Varghese, 2013). University administrators had lobbied for quarterly release of funds as more efficient and effective for university management, but to no avail (Wangenge-Ouma & Langa, 2011).

Kenyan tertiary institutions were apparently becoming more financially independent and entrepreneurial. An externally-driven neo-liberal obligation for QA in higher education has apparently strengthened the market orientation of Kenyan society. This seems to be without the traditional academic and collegial involvement of faculty who feel disempowered as issues of foundational knowledge, pedagogy, and student learning fall by the wayside (Munene, 2013).

Mozambique:

In 1993, the government of Mozambique granted a degree of autonomy to public higher education institutions as it set up the basis for accrediting private higher education institution (HEIs). However, application of these laws was haphazard and involved little follow-up with accredited institutions (Wangenge-Ouma & Langa, 2011). Government concern with issues of QA didn't arise until 2003, but the National System of Evaluation, Accreditation, and Quality Assurance of Higher Education (SINAQES) was not approved by the council of ministers until 2007. By 2013, the National Council for Quality Education (CNAQ) only employed half the proposed staff and was directly accountable to the Minister of Higher Education, Science and Technology (Zavale, Santos, & Dias, 2015).

QA in Mozambique has a national administrative forum, the CNAQ, but the situation is quite fluid. The SINAQES framework was designed more with improvement in mind than accountability. Tertiary institutions in Mozambique are autonomous, acting as corporate actors where the relevant publics have no clear channels for articulation of their expectations for higher education outside of routine party politics. It is within this context that the rector of Eduardo Mondlane University (UEM) in conformance with SINAQES established an Internal Quality Assurance (IQA) system to improve performance and enhance the international reputation of UEM in 2013 (Zavale et al., 2015). The obligation driving QA at UEM was both internal and external. The CNAQ was beginning to stress the importance of quality nationally and with increasing enrollments the quality of UEM programs was being questioned. Internally, the new rector saw providing leadership for QA as part of his job and acquired external funding for the effort.

His initiative appears to have been critical in mobilizing faculty QA efforts, which began with a commission to study QA at UEM and develop a methodology for implementation. Once a plan had been formulated, a couple of the commission members formed the IQA unit and the auditing process was initiated. Key components of the process included data collection, data and SWOT (strengths, weaknesses, opportunities and threats) analyses, self-assessment report writing, and the development and diffusion of improvement plans (Zavale et al., 2015). Nineteen of the 93 undergraduate programs were assessed. The content for accountability focused on inputs (students and academic staff),

processes (academic management), and outputs (graduates). Department level coordinators were appointed to implement each assessment. Internally, administrative decision makers and departmental report writers were mobilized; externally, a survey of graduates and employers was attempted, funds accessed from donors, and guidance from the CNAQ. The process took two years to complete.

One of the key lessons learned was that there was no overall funding strategy. This was an issue at two levels: for the implementation of the assessments; and for the implementation of the identified improvements. Lacking a strategy for linking QA findings with funding risked transforming the exercise from one of improvement to one of evaluation. Beyond the funding issues, two practical problems were identified. Faculty needed to be trained in QA self-assessment issues, processes and procedures, as well as qualified for peer review. The second problem was that while the CNAQ provided an assessment framework, there was little guidance as to indicators and minimum standards to be measured against. The latter problem was compounded by the lack of data (from the programs themselves, from the surveys of employers and graduates, etc.). The IQA unit found it very difficult to define minimum standards without data (Zavale et al., 2015).

Implementing Quality Assurance

The discussion now turns to an examination of AET accountability at the institution and program levels in Liberia (2010) and Senegal (2011-2015). This analysis of the QA processes is structured around Boven's framework and concludes with a reflection on my participant observer experiences facilitating implementation of institutional and program self-assessments (audits).

Contextualizing the Experience

These QA audits were conducted under the auspices of USAID projects: the Land Rights and Community Forestry Program (LRCFP) in Liberia (USAID/Liberia, 2010); and the Education and Research in Agriculture (USAID/ERA) in Senegal (USAID/ERA, 2016). In Liberia, the purpose of initiating self-assessments was to ensure capacity to develop the human resources necessary to advance the project's goal of improved policy and practice of community-based land and forest management. In Senegal, self-assessments were a major component building human and institutional capacity for agricultural education, discovery, and outreach in Senegal's tertiary institutions. My roles involved initiating discussion and introducing a methodology for self-assessment, facilitating the process as resource person, helping to prepare draft reports, and acting as an external reviewer.

Institutional and program audits were promoted as intrinsically valuable for each institution. These project-driven self-assessments were designed to provide a basis for each institution's administration and faculty to learn about the strengths and weaknesses of their programs in a systematic and reflective manner with respect to external standards. They would provide a basis for planning program growth and enhancement as well as improve student learning. The resulting report could also be used to build stakeholder support, facilitate the development of local, national, and international partnerships, and find sources of funding. While not an accreditation exercise, the process is similar and would prepare each participating institution for such an eventuality.

The process was initiated with an introduction to self-assessment objectives and procedures at each institution. Depending on institutional readiness, this involved a single workshop, or a series of meetings. Administrators and faculty were assured that the reports would be their own to use as they see fit. Institutional engagement is indicated by the institution's administration appointing a faculty self-assessment committee. In collaboration with a project supported external assessment team, these committees developed implementation plans for documenting current programs and drafting a written report to explain the findings. Self-assessment procedures involved documenting current conditions as measured by six standards adapted from the *Guidelines for Accrediting Educational Programs in Professional Forestry* (Society of American Foresters, 2010). Data collection and analysis was guided by a set of pre-established tables and a set of structured questions (adapted to the institutional context) that helped to (1) guide the explanation of the tabular and qualitative findings, (2) document the issues raised during the team's self-reflection on the findings, and (3) express a vision for how the self-assessment committee views future development of the program.

Collecting and collating the data to document current institutional conditions and drafting a report explaining these findings was the most time consuming and challenging part of the process for the faculty committees and often involved considerable interaction with the external assessment team. Completing a draft report could take as little as four months to over a year, with starts, stops, and re-writes along the way. Once completed the tables and report were then submitted for review to the external assessment team and formed the basis for a site visit to the institution, conducted in an open workshop format (report presentation to the faculty and subsequent discussion).

During the workshops, collaborating US university partners (accompanied by local counterparts) validated the self-assessment and gathered information on less documentable items such as morale, motivation, leadership, cooperation, and the learning environment. The team's function was to help the committee identify the program's strengths and opportunities for improvement, the quality of its performance, the effectiveness of its procedures, and the adequacy of its resources for sustaining its performance. In a final step implemented only in Senegal, the external assessment team helped the institution consolidate the findings, revise their final report, and present it to their public and private sector stakeholders in a follow-up workshop where feedback was encouraged and next steps for improvement were formally identified.

The modality for introduction and implementation of self-assessment activities and outputs evolved with project, language, and institutional contexts. In part this was a result of our own learning about how to adapt the tool to local circumstances, but also in response to reactions and suggestions from our institutional collaborators (faculty, staff and administration). It is important to recognize that the QA self-study modality requires adaptation in each instance of its application. In part this a function of adapting to 'fitness for purpose', but is also a matter of adapting to the current moment of institutional development.

The above description of the process is generally consistent across institutions. Deviations along two dimensions should be noted, however. The first is that the role (in both leadership and implementation) of the self-study committee grew over time, probably due to a growing maturity on our part. The second is the inclusion of more external stakeholders, with an emphasis on the private sector. This latter was more a matter of our project pressure than an institution-driven initiative. In Senegal, we

also joined forces with the national QA agency (ANAQ), merging our very similar methodologies and complementary institutional foci (see below) (Cissé, Maiga, Moore, & Archibald, 2016).

Framework Analysis

Creating a Forum and the Actors Involved

Although the USAID project context for a QA forum for AET might seem rather artificial, in the eyes of institutional partners such a project-driven activity is expected to have resources behind it and consequently some level of participation and accountability. In the first instance, USAID support for each national government to pursue improved agricultural and forestry development made it an interested public. However, government ministries constituted the administrative forums of major significance in both Liberia and in Senegal. The extent to which there was a distinction between accountability and simple control through the direct chain of government command was clearly an issue. Let's consider these nuances on a case by case basis.

In Liberia, the forestry industry and international NGO sector were major professional publics interested in both the Forestry Training Institute (FTI) and the College of Agriculture and Forestry (CAF). Their interests were mediated through the Liberian Forestry Development Authority (FDA). The Ministry of Education pays the salaries of the CAF faculty, but due to irregular payment of salaries authority appeared rather fluid. The Ministry had transferred authority for the FTI to the FDA. In either case, the forum could be characterized as loosely administrative. In practice, given the early stage of post-conflict reconstruction of both the FTI and CAF, the Virginia Tech team constituted the forum of immediate significance.

Although initially reticent to participate in the activity until there was a clear signal from the University President, the CAF Dean requested that all departments in the college (not just forestry) participate in the self-assessment process. The intrinsic value of self-study was quickly recognized, at least administratively. On the other hand, the FTI Director enthusiastically embraced the opportunity for self-improvement presented by the self-assessment process. FTI faculty and administrative personnel were all mobilized for report preparation and a representative of the FDA invited to participate in the final workshop.

In Senegal, the project began with a national labor market survey of employers (public and private) to determine demand for human capital in agriculture focusing on work preparedness, types and levels of skills and knowledge expected, and a rough estimate of demand by labor category (Bravo-Ureta, Maas, Diouf, & Ndoye, 2012). In late 2011, a workshop was held with thirteen participating tertiary agricultural education institutions to share the results of the survey and begin the dialog linking supply with demand for human capital in agriculture. Individual institutions were later contacted to initiate institutional and/or program self-assessments.

Senegal's more institutionally dense environment provided a range of AET institutions with which to work. Self-assessments were initiated in the following order at the Institute for Advanced Rural and Agricultural Training (ISFAR), the National Advanced School for Agriculture (ENSA), Assane Seck University (UASZ), the National Water and Forestry Training Center (CNFTEFCPN), Emile Badiane Agricultural Technical School (LTAEB), the Professional Horticulture Training Center (CFPH), and later, in collaboration with ANAQ, Gaston Berger University (UGB) and Cheikh Anta Diop University (UCAD).

At the outset, it was found that the existing accountability forums for tertiary education were legislated by decree and that the lead ministry was responsible. In practice, this meant that the QA mechanisms remained largely dormant, with only a few oversight bodies ever meeting, and then only when top-down institutional reforms were being implemented. These administrative forums were composed of ministry officials and they found it more efficient to directly manage these institutions in control mode. The universities were under the Ministry of Higher Education and Research. Technical schools were supervised by one or more technically-relevant ministries: Environment and Sustainable Development; Agriculture and Rural Equipment; Vocational Training for Craftsmen and Artisans; Women, Family and Youth; and Education.

Institutional autonomy and independent accountability were lacking. Representatives of local development agencies, government officials, NGOs and private enterprises were relevant publics, but had no formal mechanism to express their interests. However, just as the project began, the Senegalese government established an independent agency for the accreditation of higher education institutions: the National Authority for Quality Assurance (ANAQ). ANAQ was formally established in August 2012 to support the Ministry of Higher Education and Research as an independent forum for quality assurance in Senegalese higher education (*Autorité Nationale d'Assurance, 2017;* CAMES, 2014). It is in this transition period that the self-assessment process evolved and USAID/ERA and ANAQ came together in 2014 to collaborate in building QA capacity in agricultural education. Nevertheless, the practical forum for the self-assessment activities described below was the Virginia Tech team, often assisted by Ministry officials and local stakeholders including local officials, NGO representatives, and an occasional entrepreneur.

The Conduct Being Assessed: Six Standards

Reporting institutional or program conduct was structured according to six standards, each associated with a tabular presentation of relevant data and a set of questions. Some ten tables document courses and curriculum organization, faculty qualifications, experience and course loads, student numbers, distribution and graduate placement, as well as sources of external support. In Senegal, employer priorities derived from the labor market survey were integrated into curriculum data collection tables. A list of questions accompanies each standard to assist in describing program characteristics, explaining current practices, and promoting reflective consideration of strengths and weaknesses. Often specific elements of these tables and questions would be adapted to better conform to the institutional context. The six standards are summarized here:

Standard I: Mission, Goals, and Objectives – How does the institution/program define itself and the direction in which it is headed? The mission, goals and objectives must be clearly stated and documented in publicly available references. These materials should stress rationale, purpose and professionalism. Evaluation of subsequent standards is dependent upon a thorough explanation and understanding of a program's educational objectives (i.e., establishing fitness for purpose).

Standard II: Curriculum – What subject matter does the program offer and how is it presented? The program must document that general education subject areas (math, humanities, biophysical and social sciences) are included in the curriculum, and that plans are in place to assure that students will be introduced to communication skills, issues of gender and ethics, and become computer literate. Pedagogical practices must be described. Further, the program must document depth, breadth, and balance among major professional subject matter categories.

Standard III: Organization and Administration – How is the institution/program structured to deliver the services and fulfill its mission? The program must document policies, procedures and processes for managing administrative, faculty and student issues and concerns. It must further document: that there are resources available for this organization and its administration; how outcome assessment procedures meet academic and professional goals; and that the interests of students and outside constituents are represented.

Standard IV: Faculty – Who are the program faculty and does their training support the curriculum? The program must document that faculty have a diversity of experiences and education relevant to program areas, including part-time and adjunct faculty. Time allocation and course assignments for all faculty members must also be documented, as well as procedures for faculty support and implementation of personnel policies.

Standard V: Students – Are graduates finding employment in the fields for which they trained? The program must document student enrollment, graduation rates, and graduate placement by gender and other measures of diversity. In addition, the role and importance of student advising should be described.

Standard VI: Parent Institution Support – Does the institution/program have sufficient resources to complete its mission? The program must document parent institution support for facilities, faculty, and students to allow the program to attract and retain highly qualified faculty, staff, and administrators, and to provide for elements critical to the learning environment such as computers, libraries, specialized laboratories, research opportunities, and field instruction.

The Obligation

What is it that motivated these administrators and faculty members to take the time and effort to collect the data to complete these tables and answer multiple questions? This is difficult to judge for a new experience under relatively artificial circumstances. Certainly, we encouraged them to do it for the benefit of their programs and institutions. The internal, intrinsic value of self-assessment is self-improvement, at the heart of both learning and scientific advance. The FTI, ISFAR, LTAEB, and CNFTEFCPN appeared to have been the most self-motivated actors. One could feel the spirit of learning, but also the recognition that self-improvement would increase their access to resources.

Led by a committed director, FTI faculty was proactive in making the most of the experience and ultimately used the final report on repeated occasions over the ensuing years as a marketing device. Similarly, LTAEB under the leadership of another strong director presented their report to an assembly of local officials, enterprises, NGOs and a representative of the Ministry of Training and Apprenticeship for Technical and Artisanal Professions. In so doing, LTAEB recognized their local stakeholders as their most important external obligation. ISFAR faculty was slower to get on board. Reflective practice took some initial learning. Ultimately, ISFAR programs became the first agricultural programs to become accredited by ANAQ, but the process also led to improvements directly addressing student learning outcomes (with additional project coaching). The motivation of CNFTEFCPN was clearly instrumental. Self-improvement was important, but rigorous documentation of programs and conditions allowed for making the case to the Ministry of Environment and Sustainable Development for increased resources.

CAF at the University of Liberia and the CFPH seemed overwhelmed by the experience. Faculty at these institutions were less motivated, appearing to be going through the motions. Completion of the self-assessment process was probably motivated by obligation to the project. Lack of time and resources, and a general lack of understanding of quality assessment made their experience more arduous. UASZ had an equally difficult time, but lack of faculty (only 2-3 permanent) was probably their

greatest constraint. The obligation in the case of UASZ was administrative as there was considerable faculty turnover.

Most interesting was that the more research-oriented faculties appeared to be the least motivated. Faculties at ENSA, UGB, and UCAD did not complete reports during the project. The obligation was perceived as largely external and consequently of less interest to faculty at relatively better endowed institutions. More convincing appeared to be necessary. ANAQ has engaged each of these institutions in the self-study process for program accreditation.

Participant Observation of Quality Assurance

Certainly, the most significant factor influencing responses to QA initiatives was the lack of resources available to AET institutions. This directly impacts individuals, their morale, and ultimately their behavior. Nevertheless, committed individuals repeatedly demonstrated that this predominant impediment to improved AET need not prevent progress given the opportunity. These experiences suggest that leadership matters. That said, the first reaction of faculty to the introduction of a QA self-assessment is resistance. This may be expressed in various ways but stems from two sources: (1) the invasion of the faculty domain (public scrutiny of their programs and professional routines); and (2) the added workload for already overworked faculty members that any such effort may entail. After self-assessment reports had been completed, however, many of those same faculty members noted benefits of the process. Most frequently cited was that the self-study stimulated discussion among faculty that had not previously occurred. Specifically, that they had begun to compare the content of their courses, leading to the removal of duplications and the identification of gaps in student learning.

Logistical Issues of Implementation

The management information systems of the collaborating institutions were weak. None were computerized. Nevertheless, data was being collected and maintained. Student assessment through completion of their course units and exams by semester/training period was occurring. However, course identification for curriculum tracking purposes was frequently unclear. Descriptive course names could evolve from one year to the next, no numbering system seemed apparent in many of the institutions reviewed. While course catalogs were non-existent, documents listing courses existed (if not readily available to students). Cross-walking from one listing to another for the same program could be challenging. Continuity appeared to be maintained by the fact that all students experienced the same courses/curricula within any specific year. The significance for quality assessment was that it was difficult to systematically document program content. This difficulty was compounded by the lack of course syllabi. Information on student placement was also sparse.

Self-studies involve a serious investment of time from administrators, staff and program faculty. Although an institutional or program assessment may be completed by consultants in a few weeks to a couple of months, our self-assessments took a minimum of 4 months (when project personnel were most heavily involved in drafting the reports). The self-assessments completed by the institutional teams in Senegal took a minimum of a year from initiation to final restitution before a stakeholder workshop.[5] Scheduling with respect to the academic calendar taking faculty and administration

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[5] Program accreditation self-studies in the US often involve an academic year of preparation.

workloads into account was most effective. Trying to rush completion only resulted in frustration. With the new ANAQ accreditation process, the institution initiates the process and has more control over the timing.

Formation and staffing of the self-study committees was the key to a successful self-assessment. Institutional commitment was indicated by the assignment of faculty and administrative staff. Creation of the self-study committee demonstrated that the institution wished to engage the process, but it was the composition of the committee that sealed the commitment. Assignment of the director of studies was critical for effective implementation of committee activities. This hierarchical position had the authority to mobilize faculty and commit resources to the data collection, analysis and drafting tasks. Leadership played a critical role in the subsequent quality and value of the self-study activities.

Given the importance of the faculty in assessing their own institution and its practices, finding the time to do so was crucial. However, understaffing of programs and institutions was common across these institutions. This was manifested in various ways. One program was so understaffed that it had to hire part-time/adjunct instructors for over three-quarters of its courses. Another lacked permanent core program faculty for the first two years of foundation courses. A reliance on part-time faculty, in fact, was found to be endemic in Senegalese institutions of higher education in agriculture. The implications of this understaffing were varied. The lack of permanent faculty increased the workloads of existing faculty and required staffing courses with instructors having inappropriate specializations. This put considerable burden on the director of studies and department heads who, in addition to an increased teaching load, spent considerable time in recruiting and managing the logistics of non-resident faculty. Most significant for QA was that many program instructors were adjuncts and consequently not involved in the self-assessment process.

No formal budgetary resources were committed to these institutional self-study activities. The budgets of these tertiary agricultural institutions were extremely tight, focused primarily on salary and other personnel costs. Budgetary support for materials, laboratories, computers, and other institutional services was negligible. This meant that routine administrative data gathering and storage were rudimentary and poorly supported functions. Consequently, committee members conducted primary and secondary data collection for report preparation. The project only covered workshop-related expenses after the data had been collected, analyzed, and the self-study report written.

Understanding Quality and QA

Since the objective of self-assessment is to improve the quality of the institutions and their practices, it is worth considering how quality and quality assurance procedures were understood. There was considerable confusion in this regard. The introduction and review of each standard and its associated questions raised issues concerning the form and structure of the curriculum and its implementation. Clarifications and adjustments were made and the instruments adapted to the organization and purpose of the targeted institution. However, the full import of the issues raised was only recognized during interactions with consultants after the first round of data collection and reporting.

After initial data collection in Liberia, project consultants and the self-assessment committees jointly drafted the self-assessment reports. Post-war re-construction meant that much of the infrastructure and curriculum was decades out of date. Within that context, the FTI faculty presented

and discussed their strengths and weaknesses, particularly with respect to individual courses. The FTI Director was highly involved in animating reflective discussions and drafting the report. Considerable energy went into drafting a precise mission statement to guide them. It became clear that although active teaching and learning methods were espoused, the curriculum was dated and lacked overall coherence. Consequently, the faculty prepared a plan for revising the curriculum, involving stakeholders, and recruiting additional staff. Despite minimal resources the FTI identified ways to improve the quality of their programs and to attract stakeholder investment.

CAF faculty had recently initiated a similar exercise, but continued honing was necessary. Academic challenges abounded as they were just re-building their departments after 17 years of war. Curricula were last revised in the 1970s. Some departments prepared clear mission statements to guide themselves. However, many of the faculty had been out-of-touch with their fields of study for decades. To them, quality improvement meant going back to the old ways. Furthermore, most entering students were not prepared for tertiary studies. A few recently trained faculty members had new programmatic ideas. However, without a critical mass of similarly trained colleagues, they were not able to move a quality agenda forward. The self-assessment report provided a baseline for assessing progress with some suggestions for next steps.

The experience in Senegal was different. Reported mission statements were drawn from the decree establishing the institution. These were presented as the way things were. In fact, it seemed that bureaucratic capture of the institutions constrained pedagogic innovation. Institutional self-study committees struggled with translating the legal mission of the institution into specific learning objectives for critical skills, knowledge and capabilities. It took some time to draw out reflexivity in quality assessment and make it transparent. In response to questions on recent behavior, faculty and administrators would at times fall back on the law to describe behavior; other times, they told about what they planned to do next. Planning for future practice is positive, but it was not clear that it was always based on an analysis of past behavior. Forcing documentation required that self-assessment go beyond just talking.

Most of these institutions had recently undergone curriculum revision for LMD harmonization. Although Senegalese university faculty were not enthusiastic about additional exercises to document their curricula, they could discuss the curriculum in terms of competences. However, many faculty members lacked the capacity to articulate issues of pedagogy. Experiential learning was espoused by faculty and administrators, but was limited to internships or using equipment and laboratories that were not readily available or easily maintained. An application of Bloom's taxonomy (integrated into the curriculum tables to help classify educational learning objectives) suggested that program content was organized by subject matter categories rather than to ensure skills attainment. For the most part, classes were conducted in lecture format with few printed materials. Success in exams was based on memorization of lecture material. Discussions of quality with respect to active student learning in this context was limited. Promoting critical thinking skills and student assessment of faculty were not on the agenda. At the technical institutes, modules furnished by lead Ministries were difficult to integrate with the LMD system. At the university level, instructional units used to aggregate student credit hours could combine courses on different subjects, obscuring the assessment of specific knowledge or skills. The introduction of LMD seems to have had considerable impact, but largely one of form over content.

Overall the self-assessments were effective in opening up discussions of quality and indicated that the route to quality improvement had many starting points.

From an external quality assessment perspective, few institutional linkages with the private sector were identified and faculty had a poor understanding of the 'job ready' expectations employers had for new employees. The technical institutes were better linked to both public and private sector employment opportunities through internships. The consciousness created by these linkages ensured greater success in job placement for the technical institutes.

From the individual instructor-researcher perspective quality improvement involves incentives. Instructor-researchers (a designation created in 2007) were paid a single salary for 200 credit-hours of classes. It was assumed that they also conducted research. However, there were limited resources for conducting research. When a talented instructor-researcher won a research grant or contract there was no mechanism to compensate them or the institution for the time taken away from teaching (i.e., reduction in course-load). Nevertheless, there were personalized benefits for bringing in research funds, conducting technical assistance, or teaching at other institutions. No complementary incentive mechanism supported the teaching mission of the institution. There were only intrinsic rewards; and these rewards count little when one feels under paid and undervalued. Consequently, instruction suffered, as did the motivation for improving it.

Post-Script on QA in Senegal

With the establishment of ANAQ, the Senegalese government also instituted a set of policy reforms. Tertiary institutions have been given more autonomy and more responsibility. Along with the LMD changes, the old faculty assemblies had been replaced by administrative and management councils, and faculty members have been organized into Teaching and Research Units (UFR). The private sector and local government representatives are now being included on review councils. The new control mechanism involves performance contracts concluded between the Ministries and each tertiary institution. The self-assessments completed by the participating AET institutions have provided them with a solid basis to negotiate these performance contracts.

QA in African AET

There is momentum behind the process of QA in African higher education. We've seen national and regional buy-in, individuals, institutions and governments increase their knowledge and skills for implementation, and multi-lateral and bi-lateral donor support. Unfortunately, the national focus on QA for agricultural education and training has been light. Despite the need for multifold increases in the number of skilled and knowledgeable agricultural employees and entrepreneurs in the next decades (Annor-Frempong, & Jones, 2014), promotion of QA has an urban bias. The CAMES report on QA in Senegal (CAMES, 2014), failed to include the many public sector tertiary institutions outside of Dakar where agricultural studies are prevalent. Indeed, when we began collaborating with ANAQ, they too, were not focusing on AET institutions. An institutional review in the Southern African Development Community (SADC) region indicated that while all countries have QA frameworks, "superficial compliance" is limiting potentials (Madadadze, Masamvu, Terreblanche, & Minde, 2014). The importance of quality assurance for tertiary agricultural institutions needs to be reinforced.

With this in mind, the final section of this paper assesses how accountability can improve the quality of higher education for agricultural development. We begin by reviewing the findings on the evolution of QA in Africa: who is being held to account for what behavior by whom, as well as the extent to which the process is being driven internally or externally. Next, we reflect on how to demonstrate the role of QA for the improvement of AET and develop a supporting narrative for AET accountability, improvement, and impact. This discussion is followed by a review of issues central to effective implementation: controversies over the content of the academic core; faculty incentives and professionalism; the governance system; and financing quality assurance. We end by highlighting three technical issues that can be practically addressed in future support projects: strengthening peer review capacity; improving data quality and availability; and establishing benchmarks.

Approaching Accountability

Quality assurance has its origins in the practices of US universities during the mid-20th century. Since then the global context for tertiary education has transformed and QA is routinely expected. In Africa, the number of tertiary institutions has exploded and they face increasing demands for access as well as program relevance. These changes have been driven by an increasing division of labor and technological sophistication in production, processing and distribution, and a shift to the knowledge economy. Furthermore, globalization in the economic sphere has been shadowed by globalization in governance. On one hand, external accountability to a range of publics, channeled largely through AfriQAN and the donor community, has been introduced; on the other, national leaders have been promoting educational reforms that better supply their nations with the human and institutional capital and technologies for competitive success, resilience in globalized markets, and cultural revitalization. For the most part, faculties have been involved in a holding action of passive resistance.

In the decades after independence, the insular self-governing model of academic professionals in Africa disintegrated. The obligation of the first and second generations of African faculty to produce bureaucrats for the government faded with the collapse of economic growth. By the 1980s, the external obligation was minimal involving little more than the occasional arbitrary interference of politicians. Resources allocated to higher education decreased, internal quality assurance deteriorated, and the requirements of the national economies shifted.

"Massification" transformed elite-oriented tertiary institutions from providing government employees and national leaders into overcrowded institutions expected to produce technologically competent and employable graduates for their national economies. In the case of AET, these graduates are expected to serve agribusiness value-chains, as well as maintain and enhance the natural resource base. The increasing complexity of production systems and the rapidity of technological change transformed AET objectives and the practices to achieve them. Mastery of static subject matter and expert-centered education no longer suffices. New pedagogical practices for active student learning are now required to provide a nation's agricultural human capital. Consequently, the steering mechanism for AET institutions, as all tertiary education in Africa, must adapt to this new reality.

Command and control of AET institutions by ministry officials is no longer viable. AET administrators and their faculties are coming under increased scrutiny by multiple publics: businesses, NGOs, donor organizations, parents and students, as well as ministry officials. This new scrutiny and

associated expectations have been formalized through new fora. Traditional academic leadership in AET, once languishing under the control of government bureaucrats, is being acknowledged and granted increased institutional autonomy. However, to counter balance this new academic freedom, accountability to the various publics is being assured through the creation of quasi-governmental QA agencies and their accompanying accreditation apparatus.

The historical process by which this occurred has varied by country, but was significantly shaped by the neo-liberal agenda. The introduction of private sector institutions into higher education created a new dynamic. The relationship between these new corporate actors and the QA agencies provided a model for public institutions to become more independent. For the most part, however, for-profit institutions are not otherwise relevant to our discussion of improved AET. They are overwhelmingly urban-based and do not specialize in the publicly needed, but unprofitable, STEM and agricultural specializations. Market-based practices, on the other hand, still have a role to play in promoting AET as a public good.

The conduct for which AET institutions are now being held accountable is multidimensional, involving both academic content and administrative procedures. The range and scale of assessment have broadened as publics, and their fora become more sophisticated in conduct specification and measurement. Initially it was felt that addressing issues of 'fitness for purpose' was sufficient for institutional accreditation. However, the need for educational reform has led to questions about program specifics. Internal QA assessments increasingly address academic core issues concerning critical subject matter changes, improved pedagogical practices, student learning, proper resourcing, and student placement. Self-assessments and accreditation provide both a process and structure for faculty, students, and administrators to discuss program strengths and weaknesses, present rationales justifying their behavior, and identify opportunities for improvement. Interpretation and analysis of assessment findings has been facilitated by the Shabani et al. (2014) framework to organize indicators (inputs, processes, outputs). However, questions of benchmarking have continued to challenge practitioners.

Contemporary AET institutions are now faced with complex obligations to multiple publics. Administrators are coming to terms with how the quality of their students is perceived by an array of market-based actors. Market-based and ICT adjustments for increased numbers of students are also being made. Building or restoring the public trust in AET institutions has required that administrators and faculty become more transparent and effectively communicate their professionalism to skeptical publics. However, faculty members are still reticent to participate and have been highly critical of QA exercises (Martin, 2016). They feel their professional identities questioned and sense the creeping managerialism of the neo-liberal agenda that has little to do with quality AET. At the same time, many of them have found their skills and knowledge are highly marketable as consultants. These frustrations, contradictory demands, and new incentives are transforming the roles of AET faculty members.

Still there are unanswered questions. How do we incentivize improved student learning? How do we build those incentives into the core of AET institutional practices? How do we reinforce pedagogy and generate a quality culture? To what extent will new contracting mechanisms between ministries and AET institutions provide a complementary tool?

Improving the Quality of AET

Accountability is the steering mechanism assuring that AET stakeholders' interests are taken into account by the professionals responsible for supplying the human capital and technologies for sustained agricultural development. The obligation for accountability is both external and internal. A combination of internal and external QA is how transparency, effectiveness, and trust can be cultivated. AET professionals must seek to improve the quality of their practices. Effective communication is required for actors to explain and justify their conduct, for fora to pose the right questions and pass judgements, and for stakeholders to participate in negotiated solutions for continued improvement. Mutual respect and understanding are critical to achieving lasting results.

Stakeholder interests are not immutable, but are historically and locally variable. Nevertheless, even in an era of adaptive management and active learning (Annor-Frempong & Jones, 2014), certain parameters can be expected. AET institutions are faced with overcrowding, the knowledge economy, and the complexities of rapid technological change that shape their efforts to populate local systems with competent entrepreneurs and employees on a sustained basis. Mindi et al. (2015) in their analysis of careers in the evolving African agri-food systems tell us that in order to stimulate innovation and productivity gains AET institutions need to develop students with practical problem solving skills. This will require further investments in tertiary AET institutions, faculty re-training, and links to the private sector. Most importantly, they tell us that AET needs to shift "from a didactic, lecture-based format to a teaching approach that utilizes a continuously updated information loop system of real world information" (Mindi et al., 2015, p. 163). Memorizing facts is no longer sufficient; student learning must involve the integration of theoretical knowledge with practice so that graduates have the capacity to adapt from job-to-job, business-to-business, as the market changes. Active student learning appears to be the pivotal process on which improvements hinge.

Two major studies were behind the World Bank's most recent revision of their education policy (The World Bank, 2009). The first demonstrated the relationship between investment in higher education and an improvement in gross domestic product (GDP) in Africa (Bloom, Canning, & Chan, 2006). The second was a critical review of longitudinal econometric studies to explore the causal processes involved in the relationship between education and development by Hanushek and Woessman (2008). They found that: (1) cognitive skills development in developing countries is substantially more important for economic growth, individual earnings and income distribution, than the mere quantity of schooling; and (2) cognitive skills improve income levels mainly through speeding up technological progress (see Figure 1). These findings were determined to be highly robust having been evaluated from multiple theoretical perspectives and methodologically tested with alternative sampling, models and measurement specifications. Cognitive skills were measured by standardized math and science scores. Quantity of schooling was measured by years of schooling. Their use of math and science test measures for cognitive skills stresses the importance of STEM for technologically led economic growth. They concluded that "policies must pay more attention to the quality of schools [not the duration of schooling]" (Hanushek & Woessman, 2008, p. 658).

This is consistent with the major message of the Association of Public and Land-Grant Universities Deep Dive into HICD, that HICD is about institutional strengthening, moving away from the narrow focus of training individuals toward improving the potentials of the environmental conditions (Association of Public and Land Grant Universities [APLU], 2015, P. 113). However, strengthened institutions need to be populated with properly prepared teachers. Two recent surveys of the African higher education community rank the quality of faculty as the number one (Okebukola, 2014) and number two priority challenge, along with funding and infrastructure (Hoba, Mba, & Alemneh, 2013).

Noting that a full institutional reform cycle could take 20 to 30 years, Hanushek and Woessmann (2008) stressed the need for policies to incentivize improved student performance. However, they (and others) have noted that current measures of program quality rely on input measures that are not systematically related to student learning (Nygaard & Belluigi,

Figure 1: Linking AET to Economic Growth
(adapted from Hanushek and Woessman, 2008)

2011). Furthermore, once a measure has become identified as an evaluative indicator, its usefulness tends to decline (Goodhart, 1981); and not all indicators are equally valuable for both external and internal QA, that is for both "guaranteeing" quality, and for "enacting" it (Ansah, 2015). Despite these challenges, quality indicators provide the best steering mechanism for QA in AET.

The elusive nature of quality education was analyzed by Alexander in an extensive review of measurement and indicators (Alexander, 2008). Alexander opens the epistemological black box of educational quality, focusing on the fundamental confusion between indicators and measures, and their relationship to validity and reliability. The two are not equivalent. Measurement involves quantification, whereas indicators may be either quantitative or qualitative. He notes that in practice measurement prevails as it is easier to aggregate. This is certainly the case for external reporting. The problem is that while inputs and outcomes are easily measured, process rarely is. Yet, pedagogy is the core educational *process* wherein student learning takes place. Consequently, input measures have routinely become proxy indicators for pedagogy. Although more reliable, they have validity issues and create biased incentives for faculty and institutional behavior (Cheng, 2017). This is the steering mechanism dilemma in trying to achieve quality education. Languille (2014) addressed the issue with her research on the technology of quantification for educational evaluation in Tanzania. She concluded that:

> "the global quest for standardized measurement denies the contingent and
> evolving character of learning objectives: the features of quality education are the
> outcome of locally and historically specific political negotiations." (Languille,
> 2014, P. 57)

Managing this dilemma requires recognition that "indicators for comprehensiveness and validity" and "measures for reliability and impact" are both necessary (Alexander, 2008). Indeed, valid indicators can improve the quality of reliable measures. Furthermore, the reciprocity between accountability and improvement roles in quality assurance may serve different levels of the educational system that need
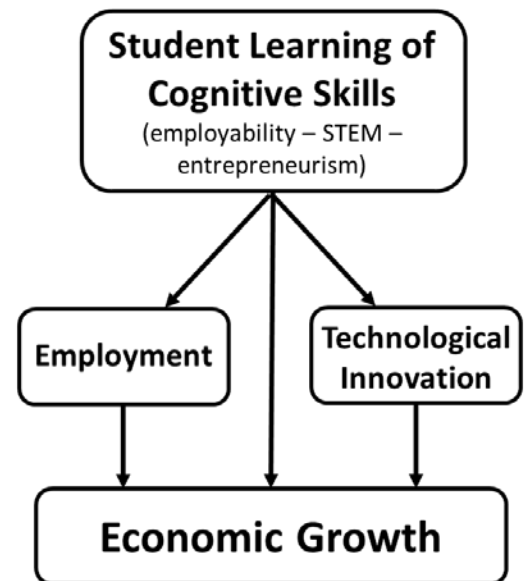
different types of information on quality performance to guide the steering mechanism (Ansah, 2015, p. 121). The task of improving the quality of education, therefore, involves much closer attention to description and analysis of indicators, than measurement studies suggest. This is the work of internal QA (self-studies).

The Quality Assurance Narrative

What are we to make of all this? QA is clearly complex and contested, but has a growing track record. The combination of internal and external QA strengthens steering by blending an external evaluative mission into an opportunity for positive improvements to ensure sustained quality and impact. The combination of internal and external QA:

- provides data collection for benchmarking (in a fashion for national comparison)
- resolves the problem of process indicators (linked to student learning)
- brings autonomous decision-making to the institution (within the limits of the possible)
- allows for local innovation (building on local capacities and resources)
- allows learning for improvement to be interactive (negotiated and transparent).

Let's walk through the narrative about the role of accountability for improving AET for agricultural development. The narrative begins with the causal relationship described by the econometric research above (Figure 1). Quality student learning leads to employment, technological innovation, and economic growth. We insert this relationship into the model in Figure 2 below as it pertains to achieving sustained agricultural development. Student learning doesn't just happen. It must be nurtured through agricultural education and training by professionals who are responsive to their professional standards of conduct and the expectations of various interested publics and the ministry. The quality of this pedagogy and the associated research is initially verified through institutional and/or program accreditation and, subsequently, by periodic assessment.

These on-going processes and structured assessments are the key to assuring up-to-date agricultural knowledge, its generation, and transfer. This dynamic steering mechanism provides reliable external accountability, while assuring local ownership and validity. The national QA agency channels external expectations concerning conduct (benchmarks); while internal QA is managed locally by faculty self-study committees. Peer review provides the mechanism for validating progress, sharing successes and exchanging national best practices. With a clear and mutual understanding of institutional capabilities and improvement potentials, contracts can be negotiated between the ministry and the institution. Implementation of annual contracts renews the generation of high quality agricultural leaders and labor force leading to sustainable impacts: increased incomes, technological innovation and agricultural development.
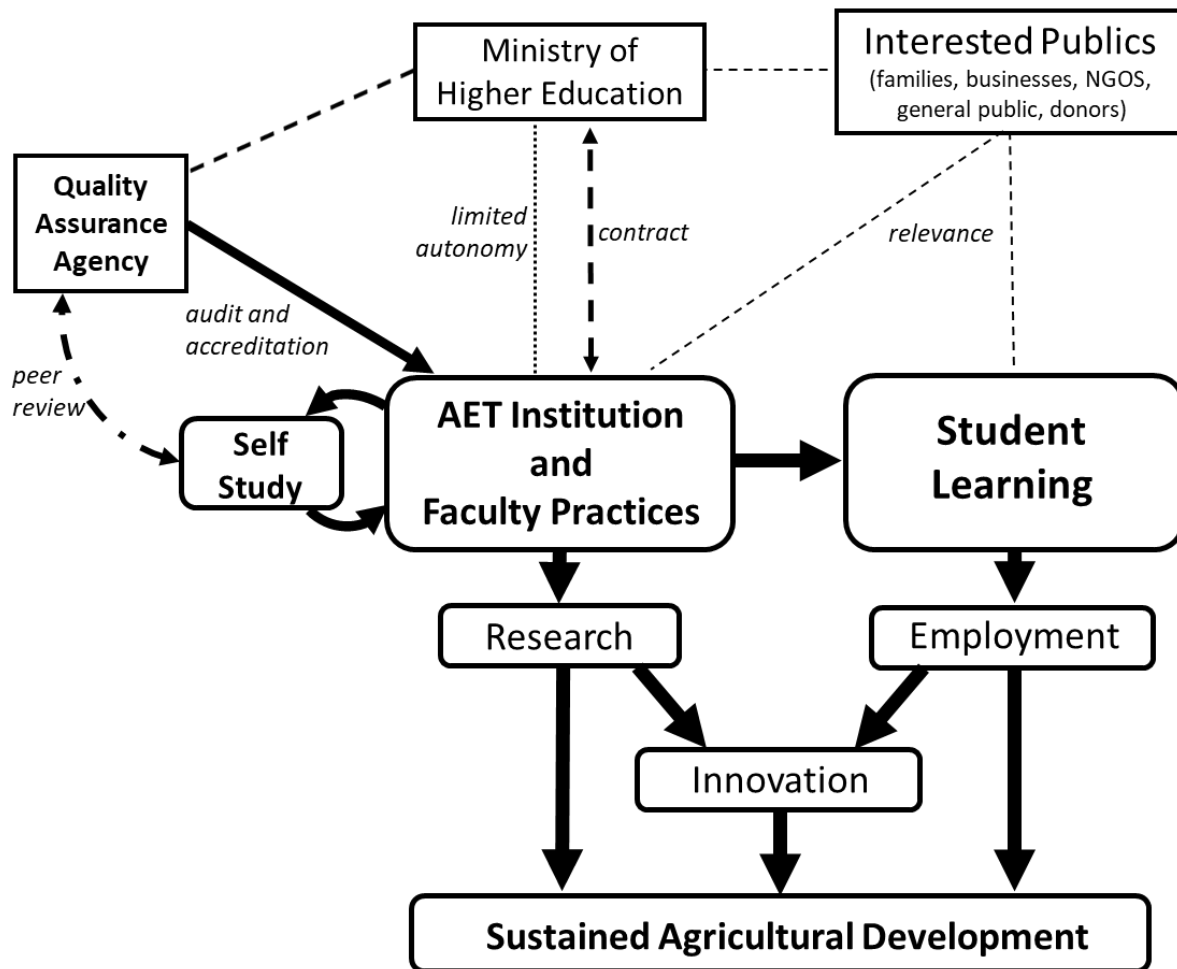
Figure 2: Quality Assurance for Sustained Agricultural Development

Challenges Along the Pathway to Quality Culture

When conducting self-assessments, one quickly realizes that the pathway to improvement not only consists of curriculum development and pedagogical practices, but that the underlying working conditions, incentive structures, and governance systems are intimately involved. In this section, I will highlight four themes identified in this review to keep in mind when working with quality assurance in agricultural education. This discussion of themes does not contain once and for all solutions; however, the issues raised will be invoked by local partisans negotiating the next improvement. Each theme plays a foundational role in the development of a culture of quality. Those themes are: (1) the character and content of the academic core; (2) faculty practices and self-perceptions; (3) governance structures and incentives; and (4) infrastructure and financial resources. The first two of these are intimately interdependent in that both the content and the techniques of instruction for which faculty are responsible are changing. The latter two will drive the motivations for improved performance.

The Academic Core

Recently, discussions concerning the contents of the academic core have taken a backseat in the press of accountability in terms of procedural conduct and measurable outcomes. This emphasis on form over content is unlikely to provide the knowledge and skills needed to educate the current youth bulge. Although it may record early successes, the consequences of not engaging faculty in the relevance of their subject domains and how they can contribute to a prosperous and vibrant society is likely to create further alienation. Fortunately, African leaders of higher education have been thinking about how to make their curriculum more relevant (Sawyerr, 2004). Unfortunately, no clear consensus about how to go about this has emerged.

In an influential lecture at the University of Western Cape, Castells (2009) outlined the six foundational functions of higher education which arose in historical succession: (1) production of values and social legitimation; (2) selection of elites; (3) training of the labor force; (4) production of scientific knowledge; (5) elevating the level of education of the population at large; and (6) entrepreneurial production of innovations. He linked these functions to the African debates over the developmental university. He stressed the contemporary evolution in university functions toward interdisciplinarity and the importance of learning to learn.

Cloete and colleagues (Cloete, Bailey, Pillay, Bunting, & Maassen, 2011; Cloete et al., 2015; Maassen & Cloete, 2010) have documented the diversity of these perspectives in their study of higher education as a development tool at eight African flagship universities. They identified four 'notions' of the role of knowledge and universities in development (Cloete et al., 2011). Figure 3 presents the two dimensions (whether the university was perceived to have a role to play in the national development strategy; and whether there was a central role for new knowledge in the national development strategy) defining these notions. What they found was that the traditional (teaching established knowledge) and the institutional development (based on research collaborations with the North) orientations where universities were not part of the national development strategy were giving way to orientations where the university had a central role: either instrumentalist or engine of development. Instrumentalist notions see the university role as providing services of capacity building or expertise exchange through consultancies and direct involvement with communities. The engine of development notions see the university as building an entrepreneurial and technical foundation for the emerging knowledge economy through production of relevant skills and user-oriented knowledge. At the national and institutional levels, the greatest tensions were found between the institutional and the instrumentalist orientations.

University role in development strategy	Role of new knowledge in development strategy	
	No or marginal role	Central role
Not part	Ancillary/traditional	Institutional development
Part	Instrumental	Engine of development

Figure 3: Four notions of the role of knowledge and universities in development
(adapted from: Cloete et al, 2011, p. 22)

Support for the knowledge economy perspective was weak among university leadership, only supported by a few government stakeholders who may have been more instrumentalist in their orientations. Each institution and national system will have its specific priorities. Nevertheless, it is within this context that stakeholder calls for improved skills (in science, technology, engineering, mathematics, communication, collaboration, critical reasoning, and creative problem solving) and new subject matter areas (innovations systems and networks, entrepreneurialism, climate change adaptation, conservation and evergreen agriculture, etc.) are situated. How do specific skill/knowledge content areas fit into the locally defined development plan for which the AET institution is being held accountable?

Faculty Practices and Perspectives

As the relationship between actor and fora changed, the self-perception of tertiary institutions and their faculty members also evolved. The self-identity of the internally accountable, autonomous professional, driven by concerns of academic quality was being remade. New roles were evoked by the state and/or market place. The relationship ranges from one of government employer-employee (a civil servant or bureaucratic identity) to a market-based relationship of NGO-private contractor (a freelance, entrepreneurial identity).

Figure 4 provides a visualization of the potential identities an AET faculty member may hold of themselves. While an individual can hold multiple identities without being considered schizophrenic, the tendency is for one or another to dominate depending on the intrinsic or extrinsic incentives. Let's consider some of the forces at work driving faculty behavior and perspectives. The extent to which individual faculty members adapt to their new roles will largely depend on their foundational education and training, technical skills, and career incentives. AET leaders have identified appropriate personnel as a critical problem. They realize the need for personnel with research degrees (PhDs), those who understand the independent pursuit of new knowledge. This is often seen as involving a cultural shift for the individuals and institutions concerned. Recruitment, or long periods of additional training, is the only way to obtain faculty with such technical skills and cultural orientations. This transition will be slow. Technical skills can be introduced to faculty through short-term training, however, this is unlikely to provide the foundation for adapting to a new role without additional reinforcements in the institutional environment.
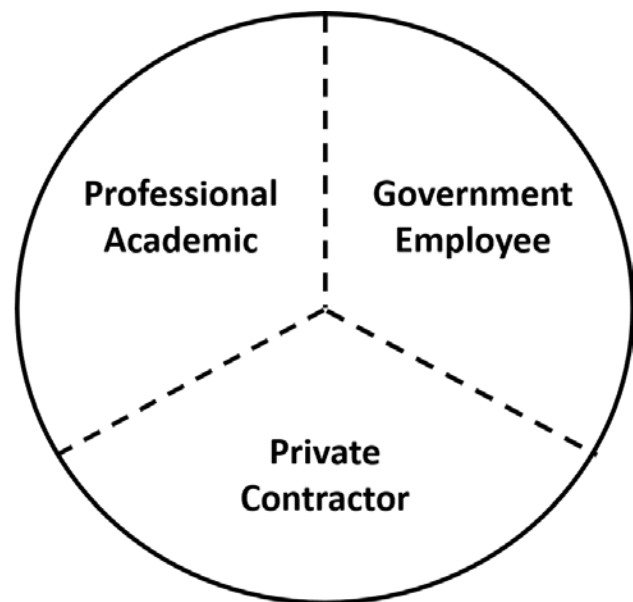

Figure 4: Self Perceptions Driving Faculty Behavior

Career incentives may provide quicker and sustained changes in faculty behavior and perspectives. Such incentives may be: financial, personal, or professional. Increased income or improved benefits come first to mind, but are often considered budget busting. Still, these have a proven track record; although high levels of moonlighting can mitigate quality improvements. As indicated above,

leadership makes a difference (Muriisa, 2014). Good leadership, involving personal encouragement, guidance, respect and autonomy, can mobilize and sustain. Professional incentives could include improved infrastructure and resources, degree training scholarships, research funding, or engagement opportunities. However, all of these incentives need to be clearly linked to the type of behavioral and attitudinal changes sought. As has been noted, QA procedures (particularly when seen as a neo-liberal managerial approach) don't resonate well with academic culture. The changed behavior must be perceived as integral to a larger professional mission and personal identity. An AET quality culture is needed.

One of the surprise findings from the self-assessments we conducted in Senegal was the lack of responses to ethics questions concerning the curriculum. The few responses we got were references to the law. Neither faculty members nor administrators provided the ethical underpinnings for their services. Similar findings were reported in Ethiopia (Ashcroft & Rayner, 2011). Ashcroft and Rayner noted that:

> "This transformation of students to clients also transforms academics into contractors, and as such they lose their previous aura of disinterested dedication to teaching and research, becoming venal contractors." (Ashcroft & Rayner, 2011, p. 186)

A touchstone for professional competence and ethics is needed. In the US and in Europe, disciplines and interdisciplinary groups have professional associations that provide mutual support, role models (outside of one's own institution), shared syllabi and teaching materials, and informal sharing and critique of research. This professionalizing experience is lacking in much of Africa. Apart from medicine and engineering, when the professionalism of faculty is challenged in their own institution, they have no alternative forum to re-affirm their professional identities.

The Governance System

This paper has described the evolution of governance in higher education over the last century. The steering mechanism in Africa is shifting from control to accountability. Initially, the state had translated and focused stakeholder interests in AET. The state negotiated a set of standards and programs with academics that became the legal framework by which it regulated educational practices. However, as market forces in the African political economy expanded, the regulatory control mechanism failed to provide guidance for needed changes in AET institutions. Now, the forces driving accountability are more complex and stem from the interaction of: (1) academic concerns (professionalism, science, and student learning); (2) market forces (value-for-money, employability, and innovation); and (3) state priorities (developmental and/or welfare) (Burke, 2005).

Although the state has been slow to release the control mode, tertiary institutions have become increasingly autonomous. If trust between principal and agent is established and maintained, then normative, tacit voluntary accountability based on internal mechanisms could prevail. But skeptical public scrutiny of AET institutions has increased and public voices have multiplied. As the accountability system grows, new methods are needed to translate stakeholder quality priorities. Consequently, governments across Africa are in the process of establishing semi-autonomous government QA agencies to channel these new voices and assure quality outcomes.

As trust declines, instrumental tools of external accountability are invoked based on objective, quantifiable measures that indicate predictable and rationalistic performance outcomes. Often these are linked to financial resources (state budgets or payments for services) and/or academic accreditation (legal certification by the state). African governments are beginning to link AET budgetary resources with contracts for specified performance outcomes. Ewell (2007) found that such 'consequentiality' ensures engagement of the institution, but quality is most likely to be achieved when the state is clear about what it expects, allows significant institutional discretion and flexibility, and uses a quasi-governmental third party QA organization. Public interests are best served when quality approaches such as these are open, transparent, and provide meaningful public information. Trust is important between all levels.

If responsible action is expected, individuals and institutions need to be treated as responsible. Indeed, this is the emerging trend in development assistance. InterAction is signaling a shift toward country ownership in international development assistance and local ownership in evaluation (*Interaction*, 2016; Levine, & Giñó, n.d.). They argue that local ownership is more effective and impactful because it recognizes the importance of international aid beneficiaries' judgements concerning success or failure of interventions. USAID's Local Systems Approach also endorses strong local accountability relationships as essential components of durable and adaptable local systems (USAID, 2014).

Financing Quality

Among all commentators and analysts of QA in Africa one common theme is always stressed, the abysmal underinvestment in the tertiary education system. There needs to be a substantial increase in the recurrent expenditures per student. To attain societal improvements in the information economy, African governments need to increase the share of annual budgets that go to tertiary education. Without resources, good leadership is severely hampered. Furthermore, although increased funding is critical, it needs to be targeted in a way that simultaneously encourages improvements in both (1) performance, and (2) morale. Neither can be ignored.

In this regard, QA has an important role to play in identifying (1) the behaviors leading to improved student learning that need to be changed and (2) how those improvements can be successfully achieved. The performance issues to be addressed may be identified through either internal or external QA, but solutions need to be locally meaningful. Only a functioning internal QA system can ensure the latter. Although QA is not a major educational budget line item, it is a critical one. Budgetary support for QA is also required at the institutional and program levels as well as nationally.

Three Technical Tasks

Although there are substantial challenges that only local system actors can resolve, foreign assistance interventions could help to reinforce the long-term viability of QA systems for AET. QA experts in Africa over the past two decades as evidenced in this review have repeatedly identified weaknesses involving:

- properly trained peer reviewers,
- quality data for documenting performance, and
- standards for benchmarking performance.

Peer Reviewers

Quality assurance is a new idea. Despite years of experience in monitoring and evaluation consultancies among AET faculty, recent QA experiences have demonstrated that there is considerable

need for faculty training in QA processes and procedures. Reviewer skills must deal with two distinct sets of interactions: those with program faculty; and relationships within the external review panel. Both sets of relationships can be sensitive and highly politicized as issues of power are involved. Training and building a cadre of experienced reviewers is critical for the successful institutionalization of internal and external QA.

Unlike journal reviews, QA reviews are not blind. Being constructive, and helping to facilitate program improvements must be balanced with objective assessment of existing conditions and dynamics. Otherwise, program faculty can see the results as punitive evaluation rather than a means to improvement. Touchy issues of academic freedom and institutional autonomy must be reconciled with stakeholder, professional and political concerns. Successful reviewer panels should be diverse (discipline, gender, ethnicity, etc.). However, while such diversity leads to important conversations and insights, differences in paradigms, professional orientation, interpretation of evidence, and varying sensitivity to local context can also complicate panel management. The proper role for reviewers must be learned and ultimately adapted to each institutional context. Practical experience and role models will accelerate this learning.

Data Availability and Quality

Evidence-based decision making for accountability and program improvement needs quality data on current performance (inputs, processes and outputs). Unfortunately, these data are frequently lacking at the program and institutional levels, and consequently, at the national level as well. Student records and program parameters should be readily available. Reports prepared for donor agencies are often better documented than official reports. This suggests that data collection may not be the major problem, rather that standardized storage and retrieval systems with properly trained personnel are what is needed. Solutions may not be simply a matter of digitization, but the specifics would need to be determined locally.

There are some data that are not normally collected. Few institutions or programs maintain an alumni database. Alumni experience, feedback and resources can be exceedingly valuable for demonstrating outcomes and impacts and achieving program improvements. Tracer studies are often very difficult and expensive to complete even in developed countries. Perhaps more effective would be to maintain contact with graduates and with their most common employers on an informal basis. Beyond tracer studies, a more forward looking approach would be systematic labor market surveys that examine not only current conditions, but also expected industry or sector changes. This information needs to be periodically updated and available to the internal QA unit for program planning.

Establishing Benchmarks

Benchmarking standards provide a frame of reference and are important to managing overall AET system performance. However, achieving global standards has been challenging, even for African flagship institutions. Only one Sub-Saharan African university is ranked among the top 500 universities in the world. Consequently, the African Union has launched the African Quality Rating Mechanism as part of its harmonization strategy. The European Union and the World Bank have also been supporting benchmarking activities (Mohamedbhai, 2016).

Such activities are valuable, but are often not yet meaningful for most tertiary African AET institutions. Many argue for context-based benchmarks and certainly national standards should match

budgetary supported levels. At the program and institution levels, it would be valuable to hold seminars and workshops to discuss realistic indicators and targets that are appropriate for contemporary AET institutional challenges and potentials. Such assistance would help in the development of both internal and external QA objectives, processes, and procedures.

Conclusion

This review has contextualized the problem of QA in African AET at the tertiary level. African institutions of higher education face challenges of massification, declining budgets, and privatization. Although showing signs of economic dynamism, African societies still face poverty and a growing youth bulge. These challenges were decades in the making and will take decades to overcome. Nevertheless, the African agri-food system is ready to hire job ready, problem solving youth to stimulate innovation and productivity gains. It is time for AET institutions to step up. To do this they will need resources and links to the private sector, good leadership, faculty re-training, and a steering mechanism. QA is that steering mechanism.

QA for AET plays a critical, but until now relatively neglected role in African agricultural development. The QA narrative indicates the pathway for renewed investment in AET. When AET institutions provide students with the instruction to actively learn and experiment with new ideas increased incomes, technological innovation, and sustained agricultural growth and development follow. The quality of this student learning and the associated research is dependent on faculty members who are responsive to their professional standards of conduct and the expectations of various interested stakeholders. This narrative for the generation and transfer of agricultural knowledge and skills is supported by a dynamic steering mechanism involving various publics, government officials, administrators, a QA agency, and the faculty. Accountability is both internal through peer review and collegial criticism, and external through reference to benchmark standards and institutional contracts. African AET faculties need new pedagogical models and the opportunity to adapt their institutions and individual instructor practices. Such a transformation in AET toward STEM, critical thinking and entrepreneurship skills will involve substantial investment in human capital. This cannot be sustainably achieved without investing in the accompanying institutional capital. Mobilizing faculty for this transformation implies strong leadership and a governance system that restores faculty morale and increases autonomy. Of course, given the time horizon for this development, multiple publics will also need to be assured that progress is being made. Two-way transparency must be achieved. Contracts are necessary to specify inputs and output expectations. However, it is the recognition and application of the combined internal and external QA systems that will build the trust to sustain accountability and performance improvement.

For quality improvement in AET to occur, underinvestment in agricultural tertiary education must be reversed. A substantial increase in the recurrent expenditures per student is required. As illustrated in this paper, three ideological and policy perspectives have driven models of accountability in higher education. While neo-liberalism has come to dominate higher education governance and finance with some positive effects, privatization has not been supportive of rural, agricultural and STEM-based education. Public resources are still needed to address the youth bulge and stimulate sustained, innovative and entrepreneurial agricultural development in Africa.

While investment and recurrent expenditures in faculty development will be required to transform AET, three activity areas where donor technical assistance could most profitably facilitate the development of QA in local contexts include: properly training peer review personnel; developing adequate data storage and retrieval systems and training data management personnel; and establishing context-based standards for benchmarking.

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