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Executive summary

Gross enrolment in higher education rose from 8.4% in 2008 to 12.2% in 2012, placing Ghana on a par with the wider African continent (11.6%) but below the average of lower-middle-income countries (22.9%).¹

The country's higher education landscape is diversifying as a number of international institutions set up in Ghana. India's Sikkim Manipal University, which established a campus in Accra in 2008, is one example. These, and other organisations such as the African Institute for Mathematical Sciences Ghana, are promoting co-operation across the African continent and beyond.

A number of bottlenecks remain in Ghana's higher education landscape. Improving existing quality assurance mechanisms and expanding overall access to tertiary education are key challenges. Moreover, funding mechanisms for higher education institutions could provide incentives that foster continuous improvement and innovation.

The expansion of higher education in Ghana presents a number of opportunities for improvement. These include further expansion of distance learning, which is already making strong inroads in Ghana, and online learning, which will have a better platform for growth as the country's energy and telecommunications infrastructure strengthens.

Growth in graduate numbers is outpacing growth of employment opportunities. To absorb the country's graduates, Ghana must continue to diversify its economy, while higher education institutions must work towards developing curricula that meet the requirements of the labour market.



Higher education environment overview

Social, demographic and economic background

The Republic of Ghana's has a population of 26m, and annual population growth has averaged around 2.5% in the past decade.² The country's population is young, with those below 15 years representing about 40% of the total; 57% are under the age of 25.³ Almost 1m 15 to 18 year olds are in secondary schools, set to enter higher education.⁴ As demand for education expands in the coming years, Ghana's Education Sector Plan 2010-20 foresees 200 new senior high schools being built nationwide.⁵

The World Bank classifies Ghana as a lower-middle-income country, with income per head of US\$1,850;⁶ it is growing fast, with average annual GDP growth above 8% in the past five years.⁷ Despite significant economic improvements in the past two decades, Ghana's industrial and service sectors remain underdeveloped, the economy remains reliant on primary commodities and rain-fed agriculture, and the application of science, technology and innovation in the economy remains at an early stage—factors that hamper the absorption of higher education graduates into the workforce. Natural resources such as oil and gas, gold and cocoa are likely to underpin economic growth in the immediate future.

To ensure continued economic expansion, Ghana may need to take measures to increase productivity in strategic economic sectors such as commodities, to diversify the economy and to expand employment. Enhancing education and skills in the country has the potential to pave the way for sustained economic growth.⁸

Although education has played a central role in Ghana's development policies since independence in 1957, the nation has further invested in policies inspired by the UN Millennium Development Goal of achieving education for all. These policies have helped to increase basic school enrolment, retention and attendance by children in many rural communities. Now, as Ghana's new senior high schools open, demand for higher education is likely to rise further.

Institutions, policy and governance

The higher education sector in Ghana is largely framed by the recommendations of the Government White Paper on the Reforms of the Tertiary Education System (1991) and the subsequent recommendations of the Universities Rationalisation Committee. Nevertheless, Ghana lacks both a coherent higher education policy and overarching mechanisms or a detailed strategy for the implementation of the government's long-term plans.⁹

The National Council for Tertiary Education (NCTE) is the country's principal higher education body, responsible for policy, funding allocation and administration for all public higher education institutions (HEIs). Still, the NCTE is not empowered with sufficient authority to fulfil elements of its mandate such as regulating the establishment of new institutions.¹⁰



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The National Accreditation Board (NAB) accredits public and private HEIs for specific learning programmes and monitors technical aspects of the institutions' operations. It follows strict and highly standardised accreditation criteria.¹¹ The NAB board determines, in consultation with each HEI, the requirements for the proper operation of that institution and for the maintenance of acceptable standards. Programmes are accredited for a fixed period and must be reassessed periodically.

Meanwhile, technical and vocational tertiary education in Ghana is overseen by the Council for Technical Vocational Education and Training (COTVET) and the National Board for Professional and Technician Examinations (NABPTEX).

Quality assurance mechanisms in Ghana's higher education sector are coming under growing pressure as the number of HEIs expands, as programmes become more diverse and as student enrolment continues to rise. "[Mass enrolment] is a threat to the quality of higher education in Ghana," one NAB official states. "We need to develop systems to check any compromise to quality," he says. "There is need for a standard in monitoring what the various institutions do and how they do it." These challenges are compounded by the inadequate authority granted to supervisory authorities such as the NCTE.

Furthermore, new private HEIs are required to be mentored by an established public institution for ten years before obtaining accreditation. Final approval is based on the evaluation of criteria such as definition of admission requirements, specification of courses and rules for student performance.¹² Experts voice concerns over the soundness and integrity of such a mechanism, pointing out that it may give rise to circumstances under which a relatively stronger private institution is dependent on a relatively weaker public institution.

Allocation of resources

Total government expenditure on tertiary education as a proportion of GDP amounted to 1.44% in 2010, positioning Ghana favourably relative to other West African countries.¹³ Although public expenditure per pupil as a percentage of GDP per head has declined from 293% in 2005 to 148% in 2009, according to the latest available data from the UN Educational, Scientific and Cultural Organisation (UNESCO), this decline reflects strong growth in student numbers. Total education expenditure as a percentage of public expenditure has been rising, reaching 28.8% in 2012, up from 22.3% in 2009.¹⁴ National expenditure on tertiary education was around 18% of the total education budget in 2012.¹⁵

Ghana operates a cost-sharing system in funding for higher education. The terms of the cost-sharing system were established in 1997, under which the government would provide 70% of the funds for higher education, with the remaining 30% coming from internally generated funds, private donations and student tuition fees.¹⁶ In addition, in 2000, parliament founded the Ghana Education Trust Fund (GETFund) to finance the expansion of the country's education infrastructure by increasing value-added tax by 2.5%.¹⁷ The state currently provides 61% of higher education funding, the GETFund 9%, internally generated funds 29% and donor support 1%.¹⁸



Private universities are predominantly financed from student fees and from their investment portfolios. Ashesi University, a small not-for-profit private university in Berekuso, around an hour's drive from the capital, Accra, is funded by students, if they are able to pay, and by a US charity. Many faith-based private institutions such as Valley View University, Central University College and the Methodist University College Ghana also receive financial support from their churches.

Budgeting of higher education in Ghana until recently used a "normative unit costs" approach, based on pre-established student teacher ratios by discipline and recommended costs of goods and services (as opposed to actual costs).¹⁹ The observed consequences of assigning funds based on such "notional" costs were, on the one hand, increased enrolment levels, but also, on the other hand, the development by HEIs of financial requirements that could not be met realistically. As reported in 2013, standards for resource allocation have been abandoned and the process now involves the HEIs submitting proposed budgets at the start of the fiscal year and a negotiation process between the NCTE and the Ministry of Finance and Economic Planning. Under such a scheme, budget allocation for HEIs is incremental and has no apparent ceiling.²⁰

However, the higher education sector is reportedly in the process of moving towards a performance-based funding mechanism.²¹ Such a mechanism would tie budget allocation to specific outputs, such as the number of research publications, and policy objectives. As a result, institutions would have greater incentives to strive for institutional improvement. A relevant policy brief is awaiting approval by the Ministry of Education.

The higher education landscape

The tertiary education sector in Ghana has seen enrolment increase more than tenfold in the past two decades.²² This has been accompanied by a proliferation of new HEIs, in particular private institutions. Moreover, a 2007 law allowed polytechnics to train middle-level skilled manpower and to award the Bachelor of Technology (B.Tech) degree, the highest obtainable professional qualification with a strong practical component. However, International Growth Centre research finds that a bottleneck is emerging in Ghana's higher education sector as polytechnics shift their emphasis from vocational training to business-related areas.²³

Government figures indicate that 142 accredited HEIs were operating in Ghana as of July 2013.²⁴ Public universities enrol the largest number of students, taking 45.3% of the total 283,506 students in 2012/13, followed by private tertiary institutions (19.5%) and polytechnics (18.7%).²⁵

As the number of HEIs in Ghana has multiplied, they have become more diverse, too. A further 48 unaccredited local institutions form part of Ghana's higher education environment, and a number of foreign institutions including India's Sikkim Manipal University, which established a campus in Accra in 2008, Shepherd University (West Virginia, US), Atlantic International University (Hawaii, US) and Cyprus International University (Nicosia, Cyprus). Five of the accredited private institutions are affiliated with universities outside Ghana, for example All Nations University College (linked with SRM University, India), and Quality Distance Learning Limited (University of Leicester, UK). Officials raise



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Distribution of higher education institutions in Ghana

	2010-11	2011-12
Public universities/university colleges	7	6
Public specialised/professional colleges	7	9
Chartered private tertiary institutions	3	3
Private tertiary institutions	51	55
Polytechnics	10	10
Public colleges of education	38	38
Private colleges of education	3	3
Public nursing training colleges	13	10
Private nursing training colleges	4	5
Public colleges of agriculture		3
Total	136	142

Source: Ministry of Education, "Education Sector Performance Report", July 2013.

concerns about how to oversee the offering of the growing number of international providers and how to ensure that their offering is aligned with Ghana's development objectives.

Some institutions, including the University of Ghana, offer distance learning programmes through learning centres spread across the country. Enrolment in these programmes has grown substantially in recent years, reaching 63,296 in 2011.²⁶ The University of Education, Winneba operates ten distance learning centres in district capitals. Kwame Nkrumah University of Science and Technology (KNUST) and the University of Cape Coast are also present in various regions of Ghana. The government is currently assessing how distance learning can improve access to learning and is drawing up a strategy with the support of the UK's Open University.²⁷ Although online education remains hampered by poor Internet access, especially in rural areas, and by poor public perception, it offers significant potential to improve access to higher education.

A further example of the growing diversity in Ghana's higher education landscape is the regional partnership underpinning the African Institute for Mathematical Sciences (AIMS) Ghana. The institute, located in the coastal town of Biriwa in the Central Region, specialises in training students from all across the African continent in mathematical sciences. With further campuses in Cameroon, Senegal, and South Africa, AIMS operates as a partnership between a number of universities in Africa and beyond.²⁸



The education function

Education offering

Ghana's HEIs offer a diverse range of programmes. The University of Health and Allied Sciences, for example, specialises in health-related courses including public health, basic and biochemical sciences, pharmacy, dentistry and medicine. The University of Education, Winneba trains teachers and managers for the education sector. The KNUST offers science and technology programmes. Another specialised HEI is the University of Mines and Technology.

The government of Ghana prioritises science and technology programmes in the higher education sector. Both public and private institutions are turning to market-driven courses in emerging fields such as oil and gas. Still, many institutions are flouting NCTE norms that require enrolment in science/technology and arts/humanities in the ratio of 60:40. Of 283,506 students enrolled in HEIs in Ghana for 2012/13, 91,013 (32%) were studying science/technology/applied science programmes and 191,877 (68%) were pursuing arts/business/social science disciplines.²⁹

Enrolment, access and equity

Gross enrolment rose from 8.4% in 2008 to 12.2% in 2012—a level that places Ghana on a par with the wider African continent (11.6%) but compares unfavourably with the average of all lower-middle-income countries (22.9%).³⁰ Student enrolment in polytechnics rose from 47,294 in 2011/12 to 53,078 in 2012/13.³¹

According to the National Union of Ghana Students, many students enrol in higher education to obtain a profession, to earn higher income, or to enhance their mobility. One local academic notes that many prospective students hope to compete more effectively for the limited job openings available.³² His work suggests that economic mobility via employment is the primary motivation for entering higher education. Fewer students aspire to technical vocational education and training (TVET), reflecting perceptions that such training leads to careers that are less prestigious and less lucrative.³³

HEIs are located in all administrative regions of Ghana. Whereas the country's ten polytechnics are evenly distributed—one in each of the ten administrative regions, with most located in the regional capitals—universities, public nursing training colleges and colleges of education are less evenly distributed across the country.

Indeed, data indicate that significant barriers exist to participation in higher education.³⁴ Geography is one. Students from rural schools are under-represented in most, if not all, higher education programmes. The situation is reportedly worse in a number of specific programmes including medicine and electrical engineering, where admissions are dominated by students from a select group of senior high schools.



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Another barrier is income. Enrolment statistics show relatively more children of white-collar parentage enter tertiary education.³⁵ In 2005/06, 9.6% of the students in public HEIs came from the lowest income quintile, while 66.9% came from the highest. Even in cases where tuition is free, annual costs for an average student in the applied sciences can reach US\$2,655³⁶—higher than current GDP per head.³⁷ Many students from poorer backgrounds have to depend on loans and bursaries.

Gender is a further barrier to entry to tertiary education in Ghana. Between 1999 and 2011, the male gross enrolment ratio rose from 4.28% to 14.92%; although growth in female enrolment was stronger, with the enrolment ratio rising from 1.52% to 9.24%,³⁸ a wide disparity remains: Of all the students in higher education in 2012/13, 37.3% were women, and of all the post-graduate students, 30% were women.³⁹

The World Bank (2010) documents a series of initiatives designed to address disparities in access to tertiary education in Ghana. For example, institutions including KNUST, the University of Ghana, and the University of Cape Coast have adopted quota-based admission systems aimed at securing access for students from Ghana's 303 less-endowed secondary schools. Between 2003 and 2010, around 1,948 such students enrolled at KNUST.⁴⁰ A number of initiatives are also aimed at improving access for female students to the University of Ghana and the University for Development Studies based on facilitated admission.⁴¹

Several financial assistance programmes aim to help students in Ghana; in some cases, these programmes prioritise students from less-endowed secondary schools. Between 2005 and 2011, the University of Ghana provided 992 scholarships for students from relatively needy backgrounds and from less-endowed secondary schools.⁴² The state-backed Student Loan Trust Fund provides credit to students in private and public universities and in polytechnics.⁴³ Furthermore, the financial assistance programmes of various institutions prioritise students from less-endowed secondary schools, for example the MasterCard Foundation Scholars Programme at KNUST.⁴⁴

The role of infrastructure and ICT

Among Ghanaian HEIs, many have expanded their facilities in recent years, including with the financial support of the GETFund. Still, research indicates that physical capacity has failed to keep pace with growing demand, causing a sharp decline in the quality of teaching and research. Both faculty staff and students believe that teaching, learning and research facilities need more support.⁴⁵ Research into student satisfaction with facilities finds that much equipment is unavailable, insufficient or unsatisfactory. For example, 67% of students say that they are not satisfied with lecture hall conditions, while 34% are dissatisfied with library facilities.⁴⁶

A study by the International Growth Centre (2013) that examines the adequacy of infrastructure among 40 education departments in public and private institutions finds 47.5% of them challenged by infrastructure issues. Of the 19 departments that report problems, 89.5% report a lack of office space for lecturers, 73.7% a lack of reading rooms, 68.4% a lack of IT infrastructure, 57.9% low library stocks, 52.6% inadequate lecture halls and 42.1% a lack of availability of research centres.



These challenges are more pronounced in public institutions than in private institutions.⁴⁷

“Overcrowding in lecture halls is a common problem,” comments one faculty member at the University of Education, Winneba interviewed for this research. “In some cases there are about 200 students in one lecture hall at the same time.” Not only does this negatively affect teaching, learning and interaction between students and lecturers, the faculty member points out, but it also hampers the “opportunity to research and participate in activities such as debating, workshops and classroom discussions that will help them [the students] build social competences such as assertiveness and taking defensible positions”. Space limitations are also reflected in student-teacher ratios in public universities that fall short of recommended NCTE standards. In certain programmes this ratio can be as high as 100:1, compared with a desirable 27:1.⁴⁸

Inadequate information and communications technology (ICT) facilities, particularly in rural areas of Ghana, also act as a constraint on higher education. In line with the national ICT for Accelerated Development (ICT4AD) policy that aims to promote education through ICT tools, the Ministry of Education’s 2006-16 education plan includes the development of an ICT platform linked to education agencies including the NCTE. The plan also provides for the commencement of an ICT project in teacher training colleges to facilitate distance education for teachers and the implementation of an agreement with Intel to computerise universities.⁴⁹

Despite facing a number of ICT challenges, the bulk of Ghana’s HEIs offer e-learning and distance learning facilities. The University of Education, Winneba, for example, has drafted in alternative methods of delivering distance learning using a Modular Object-Oriented Dynamic Learning Environment (Moodle), an open source course management system that enables course materials to be uploaded onto the university’s learning management system server.⁵⁰

Nevertheless, power outages and power rationing continue to place strains on higher education—including distance learning—in Ghana. Similarly, low Internet penetration and unreliable Internet access, especially in rural areas, are obstacles to the continued development of tertiary education.⁵¹



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Higher education outputs

Research

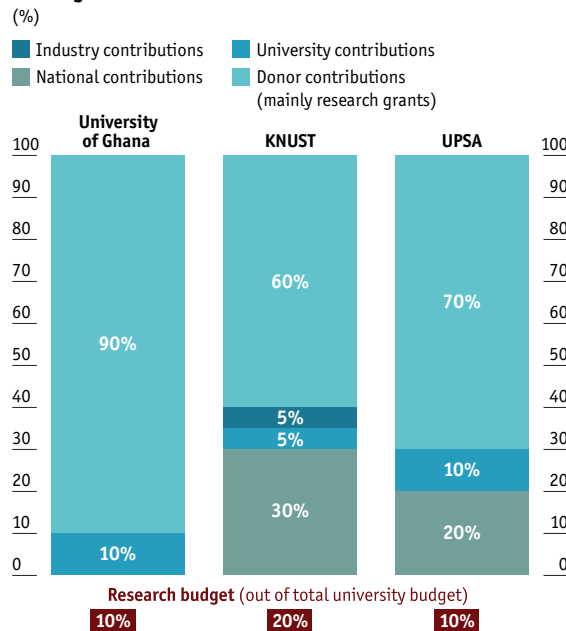
Research is part of the core mandate of all publicly funded universities and polytechnics in Ghana. However, according to a 2011 report by the UN Conference on Trade and Development (UNCTAD), academic staff at public universities publish fewer than one article each a year in peer-reviewed journals.⁵²

OECD research notes that capacity for research, management and dissemination in Ghana is improving. For example, the University of Ghana established an Office of Research, Innovation and Development in 2010 and has drawn up research policies and appointed research development officers. And the University of Professional Studies, Accra (UPSA) has established a research fund and introduced mechanisms to define research priorities. Some universities are also taking steps to improve transparency and accountability in the practice of research management.⁵³

However, collaboration between non-university research bodies and universities appears limited. An UNCTAD report (2011) notes that one barrier to research in Ghana is the absence of interaction between higher education institutions, other research institutions and the private sector; as a result, research output does not feed efficiently into Ghana's local industry.⁵⁴

Research budgets at key HEIs vary between 10% and 20% of total institution budgets, with the

Funding of research in Ghanaian universities



Note. Based on survey results.
Source: Otieno Jowi, J. et al., "Governance of higher education, research and innovation in Ghana, Kenya and Uganda". OECD.

university's contribution to their annual research budget ranging from 5% to 10% of the total.⁵⁵ Faculty staff receive an annual allowance to conduct individual research. In turn, faculty staff are expected to contribute to knowledge in all their teaching, research and extension activities, which also form the basis for their career advancement.⁵⁶ However, the NCTE argues that inadequate funding has generated a serious research capability problem⁵⁷ and authorities are discussing scrapping annual research allowances in favour of a funding pool that would enable research resources to be allocated based on the quality of the research proposal. The University Teachers Association of Ghana has threatened to strike over the planned changes.⁵⁸

However, it is donors that provide the



majority of funding for research—as much as 90% of the total in the case of the University of Ghana. The Remote Sensing Applications Unit at the university was established with the assistance of the UN Development Programme (UNDP) and the Danish International Development Agency. The Noguchi Memorial Institute of Medical Research, established at the same university with funding from the Japan International Co-operation Agency, is a base for medical research co-operation between Ghanaian and Japanese scientists.

Much research conducted by public universities is commissioned by organisations that are funded by donor agencies,⁵⁹ which often introduces an element of international co-operation to the research. At KNUST, for instance, research units such as the Department of Housing and Planning Research, the Bureau of Integrated Rural Development, the Dairy/Beef Cattle Research Station, the Kumasi Centre for Collaborative Research in Tropical Medicine and the Land Resources Centre undertake research in collaboration with foreign partners.

Besides such funding from donor agencies, the GETFund also provides financing for research through the NCTE, based on criteria such as student enrolment in tertiary education institutions.⁶⁰ The Ministry of Education's Sector Performance Report 2013 notes the establishment of a Central Research Fund with seed money of GH¢2m⁶¹ (around US\$1m) provided by the GETFund.⁶² The Science and Technology Research Endowment Fund also supports research in tertiary education, albeit with limited resources: 90% of its US\$500,000 budget in 2011 was allocated to operational costs rather than research expenditure.⁶³

In addition to carrying out research, the research centres of a number of public universities provide consultancy services for third parties. For example, the National Centre for Research into Basic Education at the University of Education, Winneba provides research and consultancy services for organisations including the UN Children's Fund (UNICEF), USAID, the African Development Bank, the Ministry of Education and non-governmental organisations (NGOs) such as the British Council. And KNUST has founded a Technology Consultancy Centre, which "undertakes community impact and enterprise focused research and development, often working in collaboration with other departments of KNUST as well as external partners".⁶⁴

Workforce

Ghana's labour participation rate is 69.2%, according to 2012 World Bank data, well above the average of 58.5% for countries in the World Bank's lower-middle-income country group. Although agriculture remains the largest employment sector in Ghana, accounting for 42% of all employment, this figure falls below many countries in Sub-Saharan Africa.⁶⁵ The total number of graduates from higher education in 2012 was 72,071, according to UNESCO data. Of this total, 39.4% were women. The highest proportion of graduates in 2012 were in the social science, business and law programmes (48.2%) and the education programmes (30.4%).⁶⁶

After leaving higher education, most graduates that find jobs do so in the public sector. The public sector is the biggest employer of graduates in Ghana, accounting for 52.9% of total graduate employment, while the formal private sector accounts for 32.1% of graduate employment and



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the informal private sector 11.1%.⁶⁷ Since 2000 graduate employment has grown strongly in the formal private sector but has declined in the informal private sector. Many graduates struggle to find employment, however: Around 50% of graduates of HEIs will not secure jobs for two years after national service.⁶⁸

A key barrier to graduates entering the job market is the pace of growth in the number of graduate jobseekers, which is faster than the pace of growth of the economy; in practical terms, Ghana's industry is reportedly not growing fast enough to absorb the graduates that the country's HEIs are producing.⁶⁹ Considering these circumstances, it is also worrying that preparation for self-employment, such as entrepreneurial training, is underprovided.

Another barrier is the gap between the skills that employers need and the skills that graduates offer, especially in promising sectors such as mining, natural resources and other commodities. In oil and gas, for example, Ghana needs more specialists such as geologists, geophysicists and engineers.⁷⁰ IMANI, a Ghanaian social policy think-tank, says that "we need more technical people, yet even Kwame Nkrumah University of Science and Technology has more arts and humanities students than science and technology students". A curriculum audit is needed to realign higher education to the needs of the world of work and society at large.

A further obstacle to graduates entering the job market is a lack of non-technical skills among graduates. A 2013 survey of 62 Ghanaian firms found that employers are most likely to demand analytical, problem-solving and decision-making skills. Yet employer satisfaction with graduates' skills is lowest in these areas.⁷² It is common for employers to invest in further training for graduates.

Improved co-ordination and communication between higher education institutions and the private sector may go some way towards addressing these issues. Concerns over the adequacy of linkages between tertiary education and industry have increased with the emergence of Ghana as a lower-middle-income country. The NCTE notes that higher education cannot be carried out in isolation from the labour requirements of industry.⁷³ The government has initiated discussions about how to strengthen linkages between higher education and industry.

Yet HEIs generally lack the incentive to change their programme offering to reflect the needs of the private sector. Peter Darvas, Senior Education Economist at the World Bank, describes the situation as follows: "HEIs may recognise the need to involve the private sector's needs to adjust the curriculum, but there are no public policy and public financing incentives to change the structure of programs, curriculum or to update." He sees private institutions such as Ashesi University or Ghana Technology University College tailoring their offering to labour market demand more effectively than public HEIs.



Policy levers—interventions

Cases of structural reform or transformation

Ghana has implemented a number of policies aimed at enhancing its tertiary education sector. These include the Ghana Vision 2020 (1995–2013), which outlined the national vision for achieving middle-income country status. It placed emphasis on the development of science and technology to better align education with Ghana's national aspirations. The Ghana Poverty Reduction Strategy (GPRS) I (2002–05), GPRS II (2006–09) and the Ghana Shared Growth and Development Agenda (GSGDA; 2010–13) together provide a framework for realising the nation's development goals. These policies include infrastructure development and the promotion of linkages between education and industry.⁷⁴

Beyond these policies, there are further indications that the government of Ghana has begun to recognise the need to involve the private sector in education policy. In May 2013 the Ministry of Education hosted a two-day national policy dialogue on education in which participants called for greater alignment between higher education and the needs of industry. The meeting concluded that Ghana needs a national vision and plan for tertiary education that addresses the challenge of graduate employability, including providing "a policy framework that would encourage and foster participation of the private sector in skills development for the teeming youth of the country".⁷⁵

The science, technology and innovation policy component of the GSGDA aims to promote the application of those disciplines in the economy and promote the development of scientific and technological research. Strategies to achieve these aims include encouraging technology transfer, promoting the establishment of national science and technology theme parks, promoting national systems of innovation, establishing a science and technology fund to support research, providing support for businesses to adopt research and development, and providing incentives to strengthen research and industry linkage.

Private-sector involvement

A number of private-sector initiatives have also aimed to drive change in Ghana's higher education landscape. For example, an initiative between COTVET and the Japan International Co-operation Agency between 2007 and 2011 was aimed at facilitating the involvement of the private sector in TVET delivery.⁷⁶ And the Ghana Industrial Skills Development Centre included the Association of Ghana Industries (AGI) and the Ghana Employers Association in the improvement of skills training.⁷⁷ Besides those initiatives, the Ministry of Environment, Science, Technology and Innovation emphasises its policy to "institutionalise regular interaction between research institutions/universities and the private sector".⁷⁸

The 2010–13 GSGDA strategy envisages research sustainability through partnering with the private sector and NGOs to identify and adopt innovative approaches to agricultural research funding and



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commercialisation. Part of the strategy is to establish a Science and Technology Fund to support research activities in private and public HEIs and research institutions. The private sector has also established industrial attachment programmes to support the development of hands-on skills, where state policy on industrial attachments is not well defined.⁷⁹

One high-profile initiative currently under way is the World Bank's Africa Higher Education Centres of Excellence Project. The objective of the project is to promote regional specialisation among participating universities in areas that address regional challenges and strengthen the capacities of these universities to deliver quality training and applied research. Ghana will receive funding of US\$24m.⁸⁰ The three Ghanaian institutions selected for the programme—the West Africa Centre for Crop Improvement, the West African Centre for Cell Biology of Infectious Pathogens at the University of Ghana and the Regional Centre of Excellence for Water and Environmental Sanitation at KNUST—will have the opportunity to promote research and build capacity in plant breeding, molecular biology of infectious diseases, and water and sanitation.

In addition, in response to emerging concerns voiced by the AGI and the Ministry of Trade and Industry about the quality of higher education in Ghana, the NCTE plans to rank Ghanaian HEIs based on the relevance of their programmes to the country's national development. And in its 2010-14 strategic plan, the NCTE further seeks to formulate policy on applied research in tertiary education institutions in key areas for national development.



Conclusion

The higher education landscape in Ghana is experiencing growth and diversification, including the entry of international institutions and the expansion of online and distance learning. Yet tertiary education continues to face a number of challenges that threaten to weigh on the country's long-term social and economic development.

Not least, the number of employment opportunities in the country's economy are not growing as fast as the number of graduate jobseekers; although enrolment in tertiary education continues to increase, it remains low relative to other lower-middle-income countries; access to higher education is not yet available to all parts of society, particularly the needy, and public funds for higher education are not spent efficiently.

In addressing these and other challenges in higher education, policymakers must define a coherent higher education strategy that aligns with Ghana's economic and social development priorities. Furthermore, the government must promote a more active culture of quality assurance and improved budgetary efficiency at higher education institutions, for instance, through the encouragement of their own income-generating activities.



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Endnotes

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⁹ Bawakyillenuo, S. et al. (2013), "Tertiary Education and Industrial Development in Ghana. Working Paper July", International Growth Centre. URL:<http://www.theigc.org/sites/default/files/TERTIARY%20EDUCATION%20AND%20INDUSTRIAL%20DEVELOPMENT%20-%20FINAL%20PAPER.pdf>

¹⁰ Ibid.

¹¹ National Accreditation Board official website. Accessed May 2014. URL:<http://investinkumasi.com/wp-content/uploads/2013/09/Road-Map-to-Accreditation.pdf>

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¹³ This figure compares with 0.83% in Benin, 0.72% in Burkina Faso and 0.31% in Cameroon. Data retrieved from UNESCO for 2012. URL:<http://data.uis.unesco.org/>

¹⁴ Ministry of Education, Republic of Ghana. (July 2013): "Education sector performance report".

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