



# Demographics of African Faculty

A PIONEERING PILOT IN GHANA



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### ANALYSIS OF GHANAIAN UNIVERSITY CAPACITY AND POLICY ENVIRONMENT

Student enrolment is surging at tertiary education institutions across Sub-Saharan Africa, driven by a combination of population growth, economic development and increased participation rates. These institutions have a difficult road ahead to ensure sufficient and relevant faculty to meet national education policy goals. There are few existing national, regional, or continental systems on which to model planning for the size and specialization of faculty in accordance with anticipated student enrolment growth and policy goals. Failure to adequately staff tertiary education institutions could hinder individual, economic and societal development and increase risks of social unrest and migration.

“For Sub-Saharan tertiary education institutions to seize their opportunity and more importantly for their countries to reap a demographic dividend rather than disaster, the tertiary education sector needs to place a far greater emphasis on building both the capacity and capability of faculty.”

— PROFESSOR ETIENNE EHILE —  
SECRETARY GENERAL, ASSOCIATION OF AFRICAN UNIVERSITIES

The Association of African Universities (AAU), an institutional membership organization headquartered in Ghana, and Education Sub-Saharan Africa (ESSA) have the long-term objective to advance structural change in African tertiary education. Both institutions anticipated that demographic analysis of faculty by age and field, conducted in collaboration with the Population Reference Bureau (PRB), would be a means of identifying gaps in meeting the need for academic research and teaching staff.

ESSA, AAU, and PRB decided to test the feasibility of analysing faculty by age and field in Ghana, drawing on consultations with key partners in Ghana’s education sector and AAU’s working relationship with Ghana’s National Council for Tertiary Education (NCTE). Policymakers in Ghana see tertiary education as a key enabler for economic growth, and administrators expressed interest in an analysis of the need for faculty by field. Also, the range of tertiary institutions in Ghana

offered an opportunity to include key institutions such as technical and vocational training colleges in the analyses. NCTE provided access to the required data, in-depth knowledge of these data, and assistance with special tabulations. The work was conducted between February and August 2018 based on available data that covered the 2014/2015 to 2016/2017 academic years.

The objectives of Demographics of African Faculty pilot in Ghana were to:

1. Establish an analysis of the current “demography of African faculty”, i.e., the numbers of faculty by age, gender, field/department, role and rank in Ghana.
2. Suggest projections of future possible supply and demand for faculty for Ghana.
3. Contribute to laying the ground for evidence-based policy planning in this area for Ghana.
4. Establish a methodology that can be replicated and used to extend the analysis to other African countries.

The anticipated outcomes of a Demographics of African Faculty project are to support institutions in:

- Improving data management to enhance government planning, particularly in faculty recruitment and retention.
- Developing rational and targeted faculty recruitment and retention strategies.
- Responding to data requests from national regulatory bodies as well as regional and continental organizations.

### LEVERAGING ADMINISTRATIVE DATA FOR POLICY PLANNING

The pilot drew on three components to analyse the current demographics of faculty: stakeholder meetings and interviews, an overview of the policy context, and existing administrative data collected by NCTE. Using existing administrative data collected by NCTE, we assessed the number of enrolled students relative to research and teaching faculty, and their distribution across fields, considering policy goals set for publicly funded tertiary institutions. The team also looked ahead to the potential challenges in meeting these existing policy goals in an environment of rising student enrolment.

Leaders from a cross-section of tertiary education institutions in Ghana attended stakeholder meetings at the beginning and end of the research. At the initial meeting, team members introduced the project and discussed the methodology with the stakeholders. The AAU conducted guided interviews with selected stakeholders (representing the distinct types of higher education institutions in Ghana) to elaborate the context and understand factors that might need to be included in the methodology. Preliminary results were also shared and discussed with the stakeholders in July.

National policies affect demand for faculty skills and the number of faculty needed. Such policies may define credentials, shape strategic investments in specific education fields to meet development goals and deepen commitment to expanding both access to education and to the population's level of education. Description of the policy environment provides the basis for alternative scenarios under which projections of faculty supply and demand can inform planning nationally and at the university level.

The study team drew on existing data aggregated by institution type for academic years 2014/2015 to 2016/2017 and policy norms to analyse how a growing student population, an aging faculty, and changing higher education policy affect demand for research and teaching faculty. The resulting projection of faculty demand and supply undertaken for the Ghana pilot provides a method for examining the relative effects of policies that are rolling out over the next couple of decades.

We have made projections at the national level by institution types and field. It is possible to adapt this process, particularly demand for faculty, to make estimates at the institutional level. Given the level of disaggregation at which NCTE collects the data, it is also possible to define sectors and fields differently as the policy environment changes.

## GHANA'S CURRENT SITUATION

In 2018, the tertiary education sector in Ghana has 213 institutions, including public and private universities as well as public specialised universities, technical universities, education colleges, nursing and midwifery colleges, and agricultural colleges. There was a total of 353,045 students enrolled in all institutions in 2016/17 supported by a total faculty of 11,906.

Despite the growing number of private universities in Ghana (81 in total in 2016/2017), their share of students' enrolment from 2014/2015 to 2016/2017 does not match the proportionate increase in students' enrolment in the 9 traditional public universities which accounts for over 47 percent of enrolment. The Ghanaian Government has set out a series of progressive and ambitious policy goals for the higher education sector in the country. These include:

- Growth in enrolments of 5% per annum in public universities.
- Overall student to teacher ratio of 27 in Humanities and 18 in Sciences for its public universities.
- Gender balance among students (i.e., 50:50).
- All faculty at public universities should hold PhDs.
- A 60:40 student enrolment ratio, 60% of students in science subjects and 40% in humanities and social sciences.

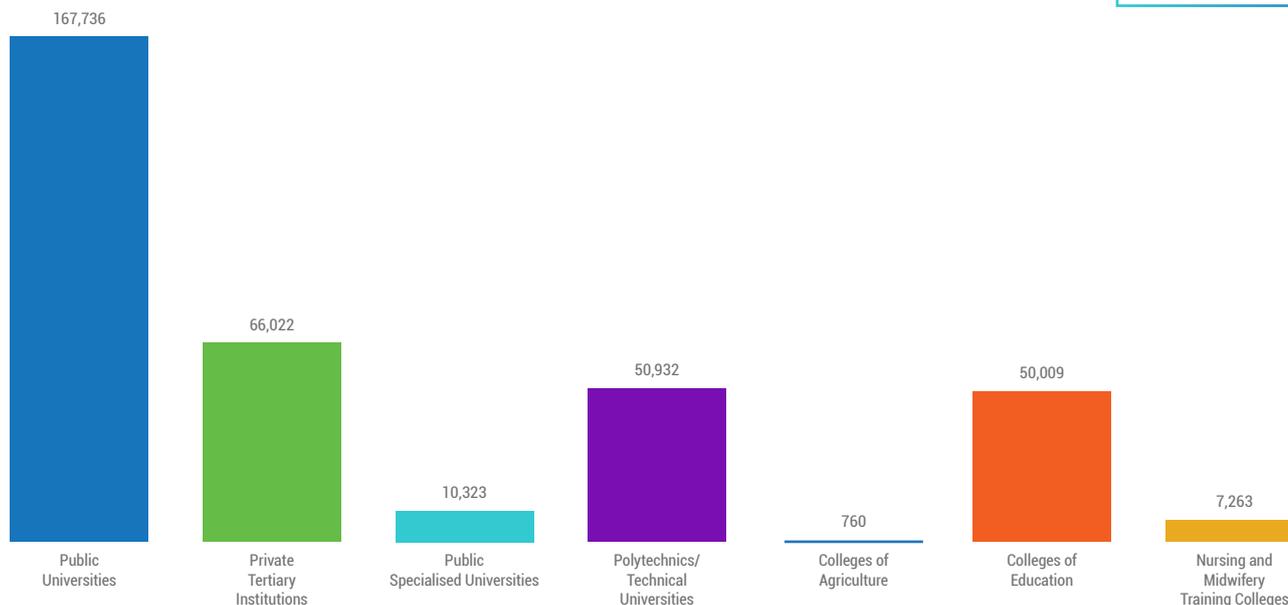
Other than growth in enrolment, there is still some way to go before achieving these goals.

The chart on overall age distribution of faculty appears reasonably balanced. However, a deeper look reveals that gender inequality persists among academic subjects and levels of seniority. In the 2016/2017 academic year, only 10 out of 120 faculty with rank of professor at public universities were women. Additional faculty would also be required to meet the policy norms in the current year. To achieve desired student teacher ratios, for example, would require hiring an additional 3,410 faculty.

# CURRENT SITUATION

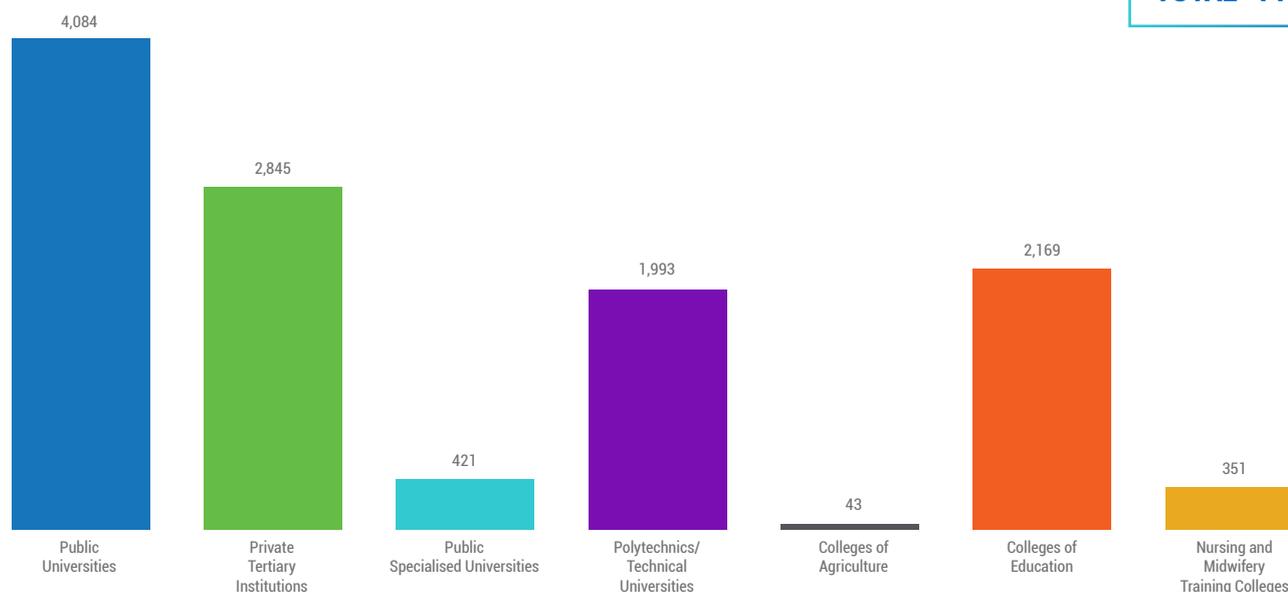
## STUDENT ENROLMENT BY TYPE OF INSTITUTION IN 2016/2017

**TOTAL=353,045**



## DISTRIBUTION OF FULL-TIME FACULTY IN 2016/2017

**TOTAL=11,906**

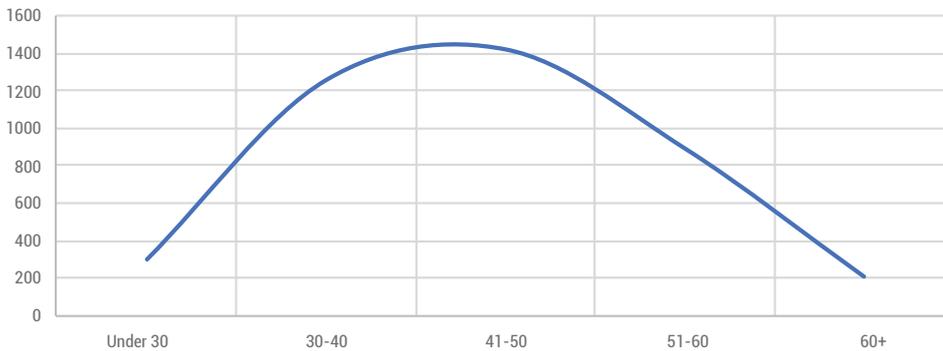


## POLICY NORMS VS. REALITIES IN PUBLIC UNIVERSITIES (2016/2017)

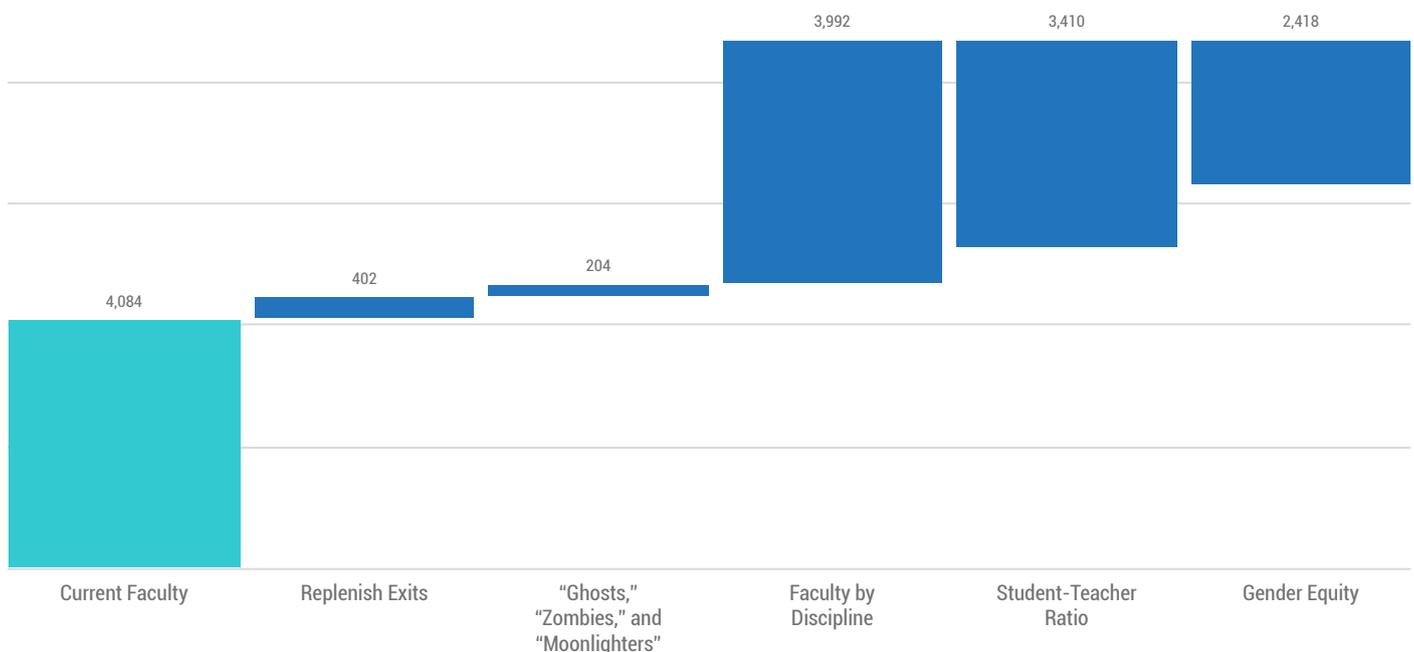
	POLICY NORM	CURRENT
Student-Teacher Ratio in Social Sciences & Humanities	27:1	49:1*
Student-Teacher Ratio in Sciences	18:1	33:1
Gender Ratio (Male: Female) in Student Enrolment	50:50	64:36
Ratio of Faculty and Student Enrolment in Disciplines: Science : Social Sciences & Humanities	60:40	41:59

\*Ratio estimated for a category comparable to "Social Sciences & Humanities/Business Administration" in policy norms document.

## AGE DISTRIBUTION OF FULL-TIME FACULTY MEMBERS IN PUBLIC UNIVERSITIES



## FACULTY NEEDED TO MEET POLICY GOALS IN CURRENT YEAR (2016/2017)



### LEGEND

**Current Faculty:** Number of full-time teaching staff in public universities

**Replenish Exits:** Faculty needed to replace those who leave their positions in 2016/2017 (assumes that 5% of professors and 10% of academic teaching staff leave each academic year).

**"Ghosts," "Zombies," and "Moonlighters":** Faculty needed to account for those who are on payroll of universities but cannot be verified (ghosts), those who are not productive (zombies), and those who hold multiple teaching/research jobs (moonlighters) (assumes that current faculty are overestimated by 5% for these reasons).

**Student-Teacher Ratio:** Faculty needed to meet disaggregated policy norms for student teacher ratios by 2016/2017 (18:1 in Sciences, 27:1 in Humanities and Social Sciences).

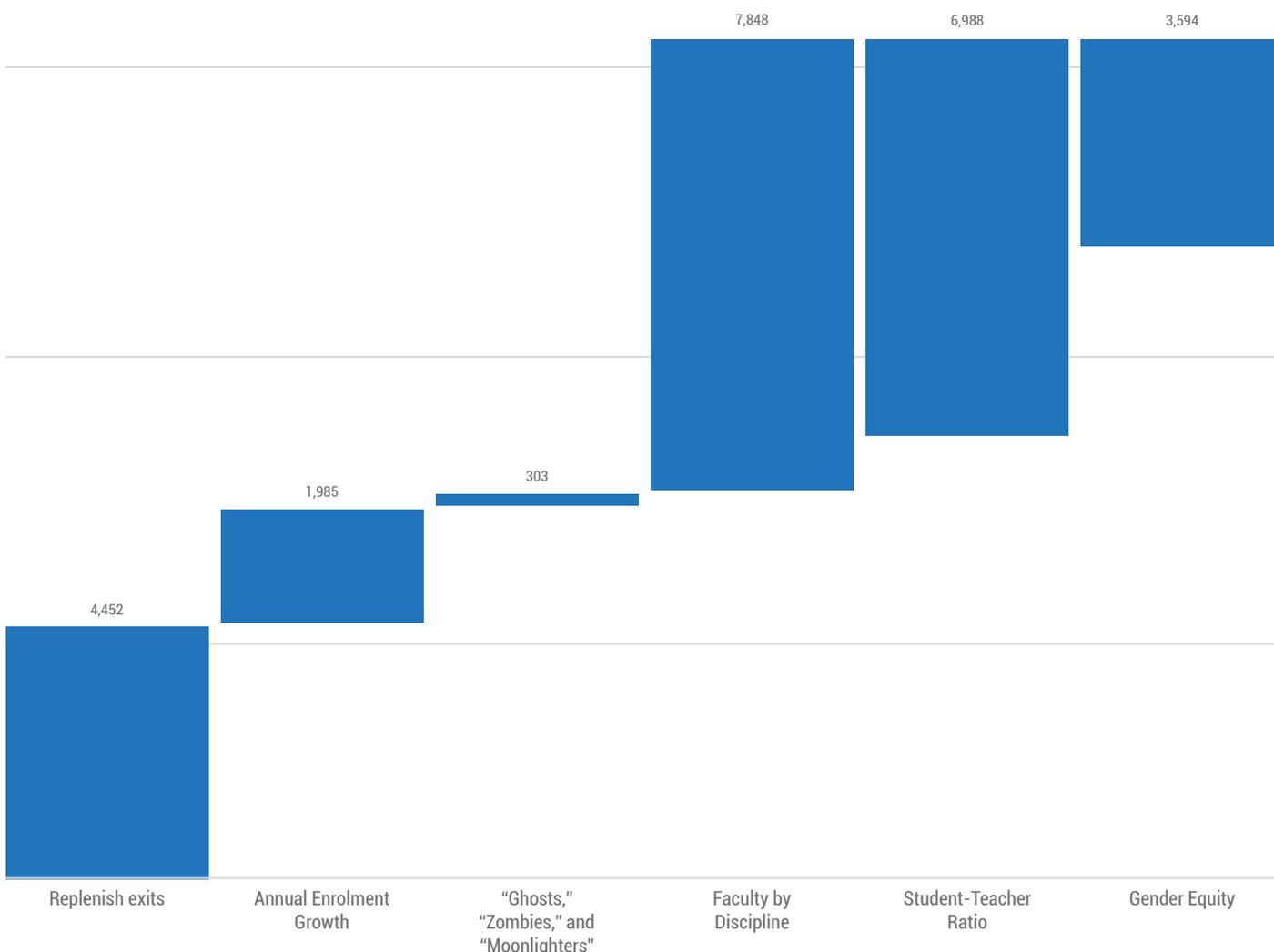
**Faculty by Discipline:** Faculty needed to meet policy norms on the distribution of students across disciplines by 2016/2017 (60% of students in Sciences and 40% in Humanities and Social Sciences) and achieve Student-Teacher Ratio policy norms.

**Gender Equity:** Faculty needed to have gender equity among full time teaching staff by 2016/17 (assumes that there is no decrease in the number of male faculty).

**Source for all graphics:** Analysis of data from National Council for Tertiary Education, 2017.

**Note:** The waterfall chart reflects the analysis for public universities only due to both data limitations and the fact that it is primarily the public universities that are bound by policy norms.

## ADDITIONAL FACULTY NEEDED TO MEET POLICY GOALS IN 2025



### LEGEND

**Replenish Exits:** Faculty needed to replace those who leave their positions (assumes that 5% of professors and 10% of academic teaching staff leave each academic year).

**Annual Enrolment Growth:** Faculty needed to meet the growth in student enrolment (assumes a constant annual 5% increase in enrolment).

**"Ghosts", "Zombies", and "Moonlighters":** Faculty needed to account for those who are on payroll of universities but cannot be verified (ghosts), those who are not productive (zombies), and those who hold multiple teaching/research jobs (moonlighters) (assumes that current faculty are overestimated by 5% for these reasons).

**Student-Teacher Ratio:** Faculty needed to meet disaggregated policy norms for student teacher ratios (18:1 in Sciences, 27:1 in Humanities and Social Sciences).

**Faculty by Discipline:** Faculty needed to meet policy norms on the distribution of students across disciplines (60% of students in Sciences and 40% in Humanities and Social Sciences) and achieve Student-Teacher Ratio policy norms.

**Gender Equity:** Faculty needed to have gender equity among full time teaching staff (assumes that faculty projections for 2025 will maintain the current gender ratio and that an additional increase in female hiring is needed to achieve parity).

**Source for all graphics:** Analysis of data from National Council for Tertiary Education, 2017.

**Note:** Enrolment numbers are inherently constrained by the current capacity of the tertiary education system; there is an opportunity to explore the demand side more comprehensively. The waterfall chart reflects the analysis for public universities only due to both data limitations and the fact that it is primarily the public universities that are bound by policy norms. The analysis assumes annual increases of 5% in enrolment and corresponding increases in faculty associated with student distribution across disciplines and student-teacher ratios by discipline.

## CHALLENGES AHEAD FOR HIGHER EDUCATION

To describe the challenges facing higher education in Ghana moving forward, we have addressed the following questions in detail:

- What would be the numbers of extra faculty required today be to be able to meet individual and aggregate policy objectives?
- How would faculty demand evolve if progress towards meeting these policy objectives from now to 2025 was linear and there was modest enrolment growth?

As can be seen there are significant challenges ahead in terms of recruitment, retention, development, management and financing. As the charts suggests, meeting the policy goals today requires doubling the number of faculty. Meeting the goals by 2025 and assuming some modest enrolment progress may require five times the number of faculty. The current levels of PhD graduates (149 in public universities in 2016/17) fall far short of being able to satisfy such demand. Alongside investment in faculty, significant investment will also be required in a range of other supporting activities and facilities. Addressing these challenges, however, will likely create a large number of high-quality jobs for PhD graduates. More importantly, it will support growing student enrolment in tertiary education and contribute to broader economic and societal development for Ghana.

## NEXT STEPS – DEMOGRAPHY OF FACULTY IN GHANA

In Ghana, NCTE and AAU will lead efforts to increase awareness of the issue and support the development of the right set of policy and investment responses.

- Develop a range of materials for communication with government stakeholders and policymakers, to assist in shining a light and creating and changing the discourse on this strategically important topic.
- Learn from the pilot and secure funding to develop planning tools at an individual and system-wide level both for Ghana and beyond.
- Consider options for scaling and replicating the pilot on a country or regional basis.
- Consider developing an academic paper.

## ACKNOWLEDGMENTS

This study was supported by funding from the Mastercard Foundation. It would not have been possible without the assistance of staff in Ghana's National Council for Tertiary Education and interns working with the Association of African Universities. The study team also benefited enormously discussions and insights of stakeholders who attended the meetings organized by the Association of African Universities.

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