**ADDRESSING GENDER INEQUALITY IN HIGHER EDUCATION THROUGH TARGETED INSTITUTIONAL REPONSES: FIELD EVIDENCE FROM KENYA AND NIGERIA**

**By**

**OANDA, IBRAHIM**

**KENYATTA UNIVERSITY, KENYA.**

***AND***

**AKUDOLU, LILIAN-RITA**

**NNAMDI AZIKIWE UNIVERSITY, AWKA, NIGERIA.**

**Introduction**

Over the last two decades, studies have documented the glaring gender inequalities that characterize access and participation in African higher education. Most of these studies show that globally, though enrolments in higher education institutions have increased, average rates of participation for those of entrance age, still remains low at 25 percent ( UNESCO, 2009). For Sub-Saharan Africa, the participation rates in higher education remain among the lowest in the world, averaging less than six percent for most countries, although the region has experienced the highest rates of growth in terms of student enrolments (Morley, Leach and Lugg 2008).

This growth in enrolments has, however, been accompanied by gender disparities in access and participation. Female enrolments and participation in higher education in most countries of Sub-Saharan Africa range between 34 and 38 percent for most countries. These disparities reflect the lower participation and transition rates of female students from secondary to higher education. Available data shows that though expansion in secondary enrollment has led to reductions in gender disparities in most regions, the disparities remain larger in secondary than in primary education (UNESCO, 2009).

Analysis of gender patterns of access to degree programs, retention and completion rates in most African countries reveal that institutions are admitting slightly more female students through affirmative programmes or qualifying examinations. However, a higher percentage of this cohort are either placed in disciplines that have a lower premium in the labor market, are likely to drop out, or take longer to complete their studies due to various gendered factors. Policy efforts to increase the percentage of female students in higher education and address gender based barriers have so far focused on selective demand and supply factors. The increase in the number of higher education institutions has also increased places for female students, though this has not been the target. In fact studies show that affirmative action policies and increase in the number of higher education institutions have not comprehensively addressed the gender barriers that characterize access and participation in higher education.

Of greater concern is emerging evidence that despite the nominal increase in the number of female students accessing the institutions, the social class composition from where such female students are drawn has largely remained the same and restricted to those who can afford the rising costs of higher education(Morley Leach and Lugg, 2008). This means that existing affirmative policies as designed and implemented by the institutions have not addressed other intersecting barriers that limit the possibilities of the majority of the women accessing and participating in higher education. The needed institutional responses and initiatives are those that go beyond access and address the gendered cultures of higher education institutions, provide practical support mechanisms that enhance chances of retention and completion, and contribute to deepening gender responsive policies in higher education institutions. This chapter provides a comparative review of gender patterns of participation in higher education in Africa, with emphasis on Kenya and Nigeria, discusses the ‘new gendered zones’ of exclusion in African higher education and document some on-going institutional- level interventions to address the challenges.

**Transition of Female Students from Secondary to Higher Education in Africa**

Throughout Sub-Saharan Africa, the percentage of female students accessing and participating in all levels of education is increasing. Successful international campaigns for gender equity in education and social development coupled with adoption of gender responsive policies at national levels have contributed to this increasing trend in enrollments. Progress achieved in primary and secondary education influence access and participation patterns in higher education. Data from current surveys show that whereas most countries in Sub-Saharan Africa registered primary school net enrolment rates (NERs) of more than 70 percent, half of the countries have not achieved gender parity in enrollments, with fewer females enrolling and completing the primary school cycle (UNESCO, 2009). About 58 percent of countries in Sub-Saharan Africa have differences in primary school participation between males and females that are smaller than six percent (Lewin, 2007). Of concern, however, is that increased access and participation of female students at the primary school level is not necessarily translating to higher enrolments at secondary and higher education levels. Overall, the transition rate from primary to secondary schools in Sub-Saharan Africa was 62 percent in 2006, while that of female students was 57 percent (UNESCO 2009). Lewin (2007) shows that in most countries of the region, gender equity measured by the Gender Parity Index (GPI) at primary and secondary levels varies considerably. The GPI is more favorable to girls at primary than at secondary school in almost all the countries of the region except six (Lewin 2007).

Generally, most of the countries in Sub-Saharan Africa have female transition rates to secondary education level of less than 50 percent. Exceptions include Kenya and Nigeria, which record high female enrollment and participation rates in primary and lower secondary education, but high attrition rates in upper secondary education and transition to university. Available statistics show that by 2008, Kenya had achieved a transition rate from primary to secondary school of 58.5 percent for males and 61.1 percent for females (Kenya, Ministry of Education 2009). This indicates higher participation rates for females at the primary level. However, the GER for females at secondary level stood at 38.8 percent compared to 46.3 percent for males, while the NER was 27.9 percent for females compared to 38.8 percent for males within the same period (Kenya Ministry of Education 2009). These show the high rates of attrition for female students in secondary schooling and indicate an even lower transition rate to higher education. For Nigeria, UNESCO statistics indicate that the country had primary school completion rates of 81 percent for males and 66 percent for females by 2006 (UNESCO Statistics, 2006). However, GER for secondary schools stood at 38 percent for males and 32 percent for females within the same period (UNESCO, 2006).

In addition, the transition rate of female students from secondary to university- level education is much lower than the transition rates from primary to secondary schools in much of Sub-Saharan Africa. In Kenya, for example, in 2005, female enrollment in public universities stood at an average of 35.3 percent of total enrollment compared to about 46 percent at the secondary school level in 2005 (Republic of Kenya, 2006). Female students constituted an average of 32.9 percent of total enrollment in the seven universities studied in the Pathways research project in East Africa (Griffin, 2007). In Nigeria, female students comprised 31.2 percent of the students enrolled in 23 federal universities (Pereira, 2007) and in Rwanda, from 2001 to 2005, they constituted an average of only 26.8 percent of students enrolled in public universities (Huggins and Randell, 2007). Data for the overall tertiary education sector for Kenya and Nigeria show that Kenya had a gross female enrollment of 38 percent and Nigeria 41 percent by 2006 (UNESCO, 2006). Hence, female enrollments in the public university sector for Kenya and Nigeria were much lower compared with the overall data for the tertiary sector as a whole.

The trends observed in most Sub-Saharan African countries require that interventions to expand access of female students to higher education should address factors that contribute to higher rates of female attrition in secondary schools. Indeed, attrition rates remain a critical problem despite increasing gross enrolment rates. In addition, primary/secondary transition is a striking problem. In the case of Kenya and Nigeria, data show that trends towards exclusion of female students from accessing higher education or channelling them to gendered disciplines in higher education begins at the upper secondary level. It is here that the majority of students either drop out or underperform due to socio-economic factors.

Comparative studies and data have documented gendered patterns of access and participation by female students in basic education in Sub-Saharan Africa. However, comparative data on transition and participation in higher education is not as comprehensive. A study by Morley, et al (2006) on gender equity in selected commonwealth universities shows that the culture of higher education institutions deepens gender inequities. The study documents four themes that have dominated literature within the commonwealth on this matter. These are 1) descriptive accounts of the underrepresentation of women in higher education, where recent literature has examined the access and participation patterns of female students in Science and Technology programmes in higher education institutions; (2) the socio-economic and material conditions that characterize and limit female access to higher education; (3) strategies for inclusion; and (4) the relationship between access and wider socio-economic transformations. The study points out that while government-initiated policies within most countries of the commonwealth have led to an increase in the number of women accessing higher education institutions, the manner by which the institutions have introduced and implemented the policies has not redistributed access opportunities equitably among all the social groups. As evidenced in Table 5.1, there is a common trend in the percentage of women accessing educational opportunities within the various levels of the education ladder.

TABLE 5.1**:** *PROPORTION OF WOMEN ENROLLED IN PRIMARY, SECONDARY AND TERTIARY EDUCATION, 2000-2001*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Nigeria** | **South Africa** |  | **Tanzania** | **Uganda** |
| Primary | 42.9 | 49 |  | 50 | 48 |
| Secondary | 47 | 52 |  | 45 | 39 |
| Tertiary | 39.9 | 53 |  | 24 | 34 |

Source: UNESCO, Institute of Statistics Global Education Digest 2003, as quoted in Morley et al 2006, p2

**Access, Participation and Completion Patterns for Female Students to Higher Education**

The key determinant of access patterns for female students to higher education institutions are performance and transition rates from primary and secondary schools respectively. In Nigeria, access to higher education depends on a candidate’s performance in the competitive examinations organized by the Joint Admissions and Matriculation Board (JAMB). Female enrollments in Nigeria universities for 2000-2001, 2001-2002, 2002-2003, 2003-2004 and 2004-2005 academic sessions stood at 35 percent, 38 percent, 38 percent, 32 percent and 36 percent respectively (Federal Office of Statistics, Nigeria, 2007). In the same vein, female enrollments in Kenya Public Universities stood at 54 percent, 53 percent, 54 percent, 52 percent and 60 percent for 2003-2004, 2004-2005, 2005-2006, 2006-2007 and 2007-2008 academic sessions respectively.

In the case of Nigeria, the percentage female enrollment is often higher in states from the Southern zone than in those from the Northern zone. A study by Omoike (2009) involving universities in the south shows that most of the universities have female enrollments above 40 percent. In fact, in the 2002 admissions, Akwa- Ibom State recorded 50.1 percent for females compared to 49.8 percent for the males (Omoike, 2009).

Though no similar study is available for university admission in the North, the rate of female university admission is much lower in the Northern zone than in the Southern zone. For instance, the summary of higher education enrollments in Jigawa State (a Northern state) shows 89 percent male and 11 percent female for 2005-2006, 88 percent male and 12 percent female for 2006-2007 as well as 88 percent male and 12 percent female for 2007-2008 (Federal Republic of Nigeria, Jigawa, State Education Strategic Plan, 2008). The data on Nigeria indicates that the rates of females’ participation in higher education differ according to states and regions with the Northern states having lower rates than the Southern states. Consequently, policy interventions to promote females’ access to education are more pronounced in the Northern states than in the Southern states. For instance, all the six target states under UNICEF Africa Females’ Education Initiative (AGEI) are from the Northern zone.

The Nigeria Federal Ministry of Education (FME) notes that one of the challenges to access to tertiary education in Nigeria is inability of prospective entrants to possess the basic admission requirements of having credit in five subjects including English and Mathematics in the Senior Secondary Certificate Examination (SSCE) or its equivalent. The FME maintains, “Only 23.7 percent of candidates passed SSCE with credit in Mathematics and English between 2000 -2004” (Federal Ministry of Education, 2009: 56)”.

In Kenya, the performance of females in the secondary school, Kenya Certificate of Secondary Education (KCSE), form four examination is a key factor to their access to university education and admission to professional degree courses. Data collected show how performance in the KCSE examination continues to adversely impact the number of females joining universities and their admission into various degree programs. The insistence of universities in using KCSE performance as the singular indicator/determinant for admission accentuates disparities in access between male and female students. Table 5.2 below summarizes trends from Kenya related to females’ performance in the qualifying examination within a four-year period (2004-2008). Analysis of the data corroborates that of Morley *et al*. (2006), with regard to the percentage of female students who attain qualifying grades for admission to the universities.

TABLE 5.2: KENYA CERTIFICATE OF SECONDARY EXAMINATION CANDIDATES WITH GRADE C+ AND ABOVE

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | Candidature | A | A- | B+ | B | B- | C+ |
| 2004 | Total No of Candidates Scoring Grade | 544 | 3,025 | 6,660 | 10,764 | 15,859 | 21,369 |
| % of Female | 34.5 | 29.65 | 32.0 | 35.62 | 38.9 | 42.3 |
| 2005 | Total No of Candidates Scoring Grade | 611 | 3,947 | 7,923 | 12,475 | 17,712 | 25,362 |
| % of Female | 29.29 | 28.63 | 29.72 | 34.81 | 39.06 | 42.6 |
| 2006 | Total No of candidates scoring grade | 1165 | 4280 | 7369 | 11,217 | 16,102 | 22,971 |
| % of female | 33.9 | 32.1 | 34.2 | 37.1 | 40.0 | 43.3 |
| 2007 | Total No of candidates scoring grade | 1157 | 5094 | 9129 | 14,363 | 21,875 | 30,516 |
| % of female | 30.3 | 24.1 | 28.0 | 33.5 | 39.5 | 43.4 |
| 2008 | Total No of candidates scoring grade | 817 | 5161 | 9365 | 13,369 | 18,423 | 25,514 |
| % of female | 40.1 | 33.8 | 34.4 | 35.8 | 40.1 | 42.5 |

*Source: Kenya National Examinations Council, performance statistics for various years*

In Kenya, candidates qualifying to study science, mathematics and technology based courses have to score between grade A and A- in the form four qualifying examination. The examination does not however provide for compensatory mechanisms for disadvantaged students such as females. Consequently, as shown in Table 5.2, the cumulative percentages of female students who score above grade B+ is more to those that score within the A and A-, which means that chances of a majority of women joining the professional courses are limited.

The data from Kenya and Nigeria mirrors participation trends in other Sub-Saharan countries indicating a consistent stagnation of female access to universities fluctuating between 35 and 40 percent, with the average mean being 35 percent. There is also another dimension of access, though, that characterizes inequities in access to higher education by female students in Sub-Saharan Africa, i.e., access to science and technology and other professional programmes in the universities. Transition of female students from secondary level to science, mathematics and technology based academic programmes in higher education institutions is particularly lower than transition for males. Low transition for female students is pronounced in engineering and other technical courses.

In Nigeria, for example, in the 1999-2000 session, there were zero enrollments for females in technical courses such as mechanical engineering, plumbing, fabrication and welding (Federal Ministry of Education, Nigeria, 2005). Similarly, in Nigeria, in 1999-2000, female students constituted only 27 percent of those in science and technology programs in the universities. Moreover, while lack of role models for secondary school female students is cited in the literature as part of the reasons contributing to low achievement in science and mathematics courses at secondary schools, science education programs at the universities do not seem to attract high number of female students. In Kenya, data for 2002-2003 to 2004-2005 show that out of the 1,815 bachelor of education students who specialized in science, mathematics and technology-related subjects, only 470 or 25.90 percent were female, representing only 17.52 percent of the female students enrolled in education (Bunyi, 2006).

Female students from marginalized backgrounds are even more disadvantaged particularly in the critical fields of science and technology. Female disadvantage is more apparent at the post-graduate level. In the case of Kenya, data tracking access, participation and completion of female students in science and mathematics programmes in higher education is not comprehensively up-to-date. Institutions usually capture students profiles based on gender but not by area of study. However, studies on these themes reveal that female students are not only the minority in terms of access to education, (see Table 5.3 below), but fewer enter science and mathematics based programs and an even higher percentage of them fail to complete these programs compared to their male counterparts( Griffin, 2007). This is because children from poor/marginalized backgrounds (most of whom are female) generally attend poorly resourced schools; they do not perform as well as the others even when they meet the university admission criteria and for those who access universities in different academic programs, university environments and academic programmes have not been made gender responsive. To the contrary, female students often encounter gender-biased environments and course content that results in drop out or underachievement (Griffin 2007). Since admission into professional courses is also competitive and dependant on performance in specific cluster subjects, most female students end up being placed in general Arts and Humanities courses.

Table 5.3 shows enrollment trends by gender and course at the University of Nairobi for the academic years 1996-97 to 2004-05. Though this data is not up-to-date, it serves to illustrate the pattern of female students’ restricted access to science and mathematics based academic programs.

TABLE 5.3: ENROLMENT TRENDS BY GENDER AND COURSE AT THE UNIVERSITY OF NAIROBI

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course/Degree | 1996/97 | | | 1998/99 | | | 2000/01 | | | 2002/03 | | | 2004/05 | | | Total % | |
|  | M | F | | M | F | | M | F | | M | F | | M | F | | M | F |
| Architecture &  Engineering | 201 | 1,478 | | 229 | 1,333 | | 219 | 1,404 | | 235 | 1,498 | | 277 | 1,546 | | 14.4 | 85.6 |
| Agric/food technology | 144 | 695 | | 190 | 660 | | 143 | 455 | | 156 | 491 | | 197 | 570 | | 22.6 | 77.4 |
| Veterinary medicine | 43 | 201 | | 30 | 177 | | 45 | 188 | | 54 | 233 | | 88 | 323 | | 18.4 | 81.6 |
| Biological/physical sciences’ | 299 | 1,187 | | 244 | 989 | | 292 | 977 | | 381 | 1,106 | | 492 | 1,313 | | 23.2 | 76.8 |
| Education | 515 | 1,064 | | 587 | 947 | | 591 | 900 | | 527 | 836 | | 651 | 947 | | 41.2 | 58.8 |
| Health Sciences | 275 | 771 | | 322 | 724 | | 398 | 717 | | 368 | 748 | | 393 | 716 | | 32.2 | 67.8 |
| Humanities | 1,444 | 3,271 | | 1,338 | 2,689 | | 1,486 | 2,858 | | 1,692 | 2,563 | | 2,504 | 3,201 | | 36.4 | 63.6 |
| Computer science | 16 | 87 | | 16 | 112 | | 15 | 122 | | 13 | 144 | | 19 | 121 | | 12.4 | 87.6 |
| Total | 2,937 | 8,754 | | 2,956 | 7,631 | | 3,189 | 7,621 | | 3,426 | 7,619 | | 4,621 | 8,737 | | 29.8 | 70.2 |
| Percentages | 11.691 | | | 10,587 | | | 10,810 | | | 11,045 | | | 13,358 | | | 23.6 | 76.4 |
| Average female % | 27 | | 73 | 24 | | 76 | 26 | | 74 | 26 | | 74 | 29 | | 71 | 26.4 | 73.6 |

Source: Griffin, 2007

As indicated by statistics from table 5.3, female composition as a total of the students admitted to the institution and as a percentage of the students in key science and mathematics- based courses remained low within the period. The highest total of female composition was in the 2004-05 academic year when they constituted 29 percent of the students enrolled. In terms of courses enrolled, cumulatively, females were concentrated in education (41.2 percent) and humanities (36.4 percent). Their enrollment in science and mathematics courses remained low, averaging below 20 percent, other than in health sciences, which recorded 32.2 percent.

However, since these statistics are not aggregated by socio-economic and regional considerations, one is not able to comment conclusively on the equity implications. Besides, the slightly higher enrollment of female in health, sciences may be attributed to their high enrollment in nursing sciences. However, data in Table 5.4 capture information up to the 2004-05 academic year. It serves to indicate trends in female enrolment in science and mathematics courses. A Similar trend exists in Nigeria as can be seen from data on students enrolment by discipline presented in Table 5.4 below for the University of Ibadan.

TABLE 5.4: STUDENT ENROLMENTS BY DISCIPLINE AND GENDER AT THE UNIVERSITY OF IBADAN, NIGERIA 2004- 2005

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faculty** | **Female** | **Percentages** | **Male** | **Percentages** | **Total** |
| Arts | 656 | 51.7 | 614 | 48.3 | 1,270 |
| Social Sciences | 477 | 36.6 | 828 | 63.4 | 1,305 |
| Law | 208 | 38.7 | 329 | 61.3 | 557 |
| Science | 248 | 36.3 | 1138 | 63.7 | 1,786 |
| Technology | 120 | 11.5 | 923 | 88.5 | 1,043 |
| Agriculture and Forestry | 473 | 42.6 | 637 | 57.4 | 1,110 |
| Basic Medical Sciences | 129 | 40.8 | 187 | 59.2 | 316 |
| Clinical Sciences | 464 | 41.5 | 655 | 58.5 | 1,119 |
| Dentistry | 59 | 44.0 | 75 | 56.0 | 134 |
| Pharmacy | 120 | 56.6 | 92 | 43.4 | 212 |
| Vet Medicine | 210 | 38.7 | 332 | 61.3 | 542 |
| Education | 682 | 50.8 | 658 | 49.1 | 1,340 |
| Public Health | 67 | 55.4 | 54 | 44.6 | 121 |
| Total | 4,313 | 39.8 | 6,522 | 60.2 | 10,835 |

Source: Odejide, Feminist Africa: 2007:46

Table 5.4 illustrates trends in the limited access of female students to professional degree courses in Nigeria. From this example, percentage female admission is highest in Pharmacy (56.6 percent) and lowest in Science (36.3 percent) and Technology (11.5 percent).

A related issue is the percentage of female students who enroll and successfully complete science and mathematics based courses. Again, comprehensive statistics for all the public universities in Kenya, showing rates of retention by gender in science and mathematics academic programmes are not available. Overall, there are studies pointing to a higher rate of female dropout from universities compared to male students. At Moi University, one of the public universities, 4.6 percent of female students dropped out compared to 0.3 percent male students between the 1999-2000 and 2003-04 academic years. In the school of medicine, the male dropout rate was 13 percent compared to 21.3 percent for females within the same period (Griffin, 2007). This shows that female students are not only fewer in terms of enrollment in science and math courses, but their completion rates are also lower compared to those of male students. Again, if this data is aggregated by socio-economic profiles, then a clear picture emerges of how expanding higher education institutions in Africa are creating new zones of exclusion for female students.

Data from Kenya showing the percentage of females working in key research institutes can be used as a proxy indicator of the nature and percentage of female students successfully completing post-graduate programmes within time. The data, compiled by African Women in Agricultural Research and Development (AWARD), reveal that in 2008,  five  of  Kenya’s  largest  agricultural  research  agencies  together  employed  967  professional  staff,  of  which  25 or  26 percent were  female.  The  share  of  female  professional  staff  increased  from  21 percent  in  2000  to  26 percent  in  2008  (ASTI/AWARD, 2008).  This  increase  is  largely  due  to  an  increase  in  the  share  of  professional  women  employed  at  the  Kenyan  Agricultural  Research  Institute  (KARI)  during  the  eight‐year  period.  In  contrast,  the  share  of  female  professional  staff  decreased  from  33  to  25 percent  at  the  University  of  Nairobi’s  Faculty  of  Agriculture,  and  remained  low  and  constant,  at  about  15 percent,  at  the  Faculty  of  Veterinary  Sciences(ASTI/AWARD, 2008).  Furthermore, of  the  professional  staff  at  the  agricultural  research  and  higher  education  agencies,  22 percent  of  those  with  Ph.D.  degrees,  28 percent  of  those  with  M.S  degrees,  and  38 percent  of  those  with  B.S  degrees  were  female  (ASTI/AWARD 2008).

The data further reveal that in  2007,  female  students  accounted  for  about  32 percent  of  the  total  student  population  in agriculture and veterinary sciences at the University of Nairobi and Jomo Kenyatta University of Agriculture and Technology(JKUAT), (ASTI/AWARD, 2008).  Notably,  there  was  a  relatively  higher  proportion  of  women  among  the  total  number  of  students  undertaking  Ph.D.  degrees,  but  a  relatively  low  proportion  of  female  students  actually  graduated.  In  total,  39  women  and  55  men  were  enrolled  in  Ph.D. degree  training  in  2007, while two  female   and  15  male students  graduated  that  year ( ASTI/AWARD, 2008). This data shows three trends related to female students participating in and completing science and technology courses. First, the number of female students decreases as they proceed into higher academic levels. Second, completion and transition rates for female students are lower compared to male students. Third, female students take longer to complete their graduate programs compared to male students. More importantly, there is no indication that female students perform differently compared to males. This is perhaps a strong reason to advocate for institutional interventions to enable female students complete their programs within time.

In a study examining democratic access to higher education in Ghana and Tanzania, Morley, Leach and Rosemary Lugg (2008, contend that policy interventions aimed at widening access to higher education should show that increased participation rates in public and private higher education reflect greater social inclusion. They argue that students in higher education in Sub-Saharan Africa are predominantly male, with female students represented in much smaller numbers and concentrated in low status non-science subjects. Both female and male students are also largely from socio-economically advantaged backgrounds and from elite secondary schools. Students' retention, performance and completion rates reflect this unequal access, which relates directly to access to social and economic positions of influence in society. In the case of female students, considering all these factors is important when designing alternative affirmative policies for widening access.

**Interventions to Address and Enhance Female Access and Participation**

Students who qualify can access higher education opportunities in Kenya through two avenues. The first is through regular admissions where students qualify for government loans, scholarships and bursaries. The majority of students who qualify through this mode however are those from high cost public schools and private academies, which indicates that regular admissions are skewed towards students from higher socio-economic income groups. The second avenue is through private sponsorship. These students pay tuition fees and associated higher education costs at market rates as a requirement for admission. The implication here is that both access avenues work to the advantage of students from high socio-economic income groups. If gender and socio-economic factors are correlated with these trends, then gender bias in favour of male students is evident.

Affirmative action has been the policy most to increase female access to higher education in Kenya. This is also true of most countries in Sub-Saharan Africa. However as evidence from Kenya shows, affirmative action has certain limitations. Affirmative action policy benefits qualified female students who cannot get admission to the institutions due to competitive access requirements. While this slightly increases female enrolments in the institutions, it does not ensure their entry into professional science and math based courses. The policy also does not require higher education institutions to initiate linkages with secondary schools in order to address the low transition rates of female students from secondary schools to higher education institutions. Developing such links will be critical to address the low transition rates and enrolment of female students in science and maths-related courses. As UNESCO (2009) documents, much of the gender, disparities evident in higher education in Africa stem from access and participation dynamics in primary and secondary schools. Affirmative policy again needs to go beyond just increasing the number of female students to understanding other socio-economic factors that limit female student participation in higher education. Only then can the institutions develop equity-based affirmative interventions for female students.

The current affirmative policy not only disregards the socio-economic status of students but also does not have mechanisms of getting students into professional programmes. As studies have shown, various factors, besides gender determine access to higher education in most African countries. These other factors are place of residence, level of education, family income and ethnicity or religion. Both female and male students are also largely from socio-economically advantaged backgrounds and from elite secondary schools. Student retention, performance and completion rates reflect unequal access (Morley, et al 2008). Holistic affirmative programmes should therefore address all these bases of gender inequities in higher education.

It is evident from table 5.2 that affirmative action benefited approximately four percent of the eligible female cohort. Since the socio-economic status of those who benefited is disregarded, it is possible that affirmative action in Kenya is not a measure for equitable distribution of access opportunities for women in Kenya’s higher education system. The intervention merely allows female access and students are placed mostly into general degree programmes. The universities have not developed any institutional interventions to enhance the students’ academic qualifications to access professional degree programmes. In Nigeria, current admission status is “between 33-39 percent in favour of females” (Federal Ministry of Education, 2009:58).

Nigeria has no concessional admission for any category of students and relies completely on the JAMB-controlled admissions. The federal and state governments in Nigeria with the assistance of some international agencies notably UNICEF, have been initiating actions to close gender gap and increase female access to education. Most of these externally assisted policy interventions are geared towards promoting females’ access to primary and secondary school education. In 2001, Nigeria joined the UNICEF Africa Females’ Education Initiative (AGEI), which aims among other things at using the avenues of public awareness campaign, rallies and seminars to raise national awareness of female education. To demonstrate the commitment of UNICEF to the acceleration of female education in Nigeria, the organization made female education a priority in its 2005-2007strategic plan. The Nigeria Country Office (NCO, 2007), reports that in July 2003, the Federal Government of Nigeria (FGN) and UNICEF launched the Strategy for Acceleration of Females’ Education in Nigeria (SAGEN); this project resulted in the launching of Females’ Education Project (GEP), a joint initiative between FGN, DFID and UNICEF aimed at eliminating gender disparity in all levels of education no later than 2015. Evaluation of the GEP programme in 2006 revealed improvement in the percentage of females attending school. According to the NCO report, females’ enrollment increased by 15 percent with more than 25 percent actual attendance indicating that the GEP resulted in about 12,000 more females attending schools regularly than before. The report affirms that gender gaps were reduced to about two thirds of what they used to be. While acknowledging that gender gap has narrowed from 12 to ten points, the NCO affirms the existence of wide variations of gender gap in female access to education across the states in Nigeria with the worst situations existing in states in the North Central and North West geo-political zones.

In an effort to achieve the goals of Education for All (EFA), most of the Northern state governments have instituted a free lunch policy, which involves not only giving pupils’ free lunch in schools but also the provision of free writing and reading materials as well as free uniform and free textbooks. However, these initiatives are increasing females’ access to education at the primary and secondary school levels. They have not remarkably increased female access to higher education in these states. The percentage of females gaining admission into higher institutions is still low. For instance, in Niger State which is one of the states in the North Central geo-political zone of Nigeria where the free lunch policy is being implemented, the State Government recognizes “gender imbalance at all levels of education” as one of the sectoral challenges (Niger State of Nigeria 2007:42). The document reveals that to face this challenge, the state Government not only supports the UNICEF GEP project, but also offers free education to females at all levels of education. In addition, to ensure that lack of financial resources does not prevent any qualified student from taking external examinations at the end of senior secondary education, the government pays their examination fees directly to the relevant examination bodies such as the West African Examinations Council (WAEC) and the National Examinations Council (NECO). Despite these institutional interventions, the overall data on enrollment patterns in Nigeria public universities show that in higher education, female enrollment in science and mathematics-based programmes is still low

**The Need for Widening Access Coupled with Redistribution of Opportunity**

The number of female students entering universities as private students has actually increased. This increase has not however been based on broad social access criteria. Rather, it represents an increasing number of women workers and women from wealthy families who are now accessing university education locally (Oanda, Fatuma and Wesonga, 2008) and has masked the plight of poor female students and female high school graduates who cannot access university education. Even when women and other disadvantaged students from poor backgrounds access universities, either through the regular or parallel programs, there are no institutional programs to support the academic progress of these students.

Second, affirmative policies implemented from the 1990s for women and students from disadvantaged backgrounds are not being enhanced because of the false picture created by the above growth in enrollments. Third, institutions have not put in place mechanisms to help them cope with the stress of academic life and complete their studies. Emerging evidence shows that more of these students fail their examinations and some drop out before they complete their courses or take longer to complete them. Data collected for this study in Kenyan public universities showed that Kenyan female students enjoy little support to complete their academic programmes. Female students from poor backgrounds in need of financial help drop out of university after being involved in relationships that end in motherhood. Many female students under such circumstances find it expensive and time–consuming minding their babies while attending classes. The introduction of cost-sharing has left young women from poor socio-economic backgrounds disadvantaged. In Kenya, the public universities have included in their strategic plans and mission statements a reaffirmed commitment to improving student welfare services as a benchmark to improving the quality of the learning environment.

One of the consequences of not coupling widening access policies with other support mechanisms is that implementation of the policies does not conclusively address gender inequality in terms of access and participation in higher education. Affirmative policies, such as those implemented in Kenya do not critically consider the underlying constraints. Hence, rather than address inequities in access and participation in higher education, they introduce an alternative form of disparity. This creates new bottlenecks for the targeted students as regards to their participation and completion of academic programs. Thus, institutional interventions need to focus beyond numbers and target initiatives that not only increase female student participation, but also enroll them into science, mathematics and technology academic programs. Some institutions have introduced some of these interventions but they need to complement them by other support services. For example, Nigeria allocates 60 percent of admissions to higher education for Science, technology and mathematics disciplines (Morley et al., 2006: 82). At Kenyatta University, a donor funded research project has been running in the last five years targeted at enhancing access for females in secondary schools to science and mathematics- based courses in the Universities.

In Kenya, current policies in the education sector tend to acknowledge the need for a broad based affirmative policy, linking admission of students to skills needed for socio-economic development. The 2005 session paper for the education sector notes that there still exists inadequate capacity for access to universities, that there is a mismatch between skills taught at universities and demands of industry, a continuing imbalance between students studying science and arts- based courses, and persisting regional and gender disparities in access to the institutions (Republic of Kenya, 2005). The public universities have also reaffirmed a commitment to improving student welfare services as a benchmark to improving the quality of the learning environment in their strategic plans and mission statements. Kenyatta University has, for instance, emphasized that student welfare services play critical part in ensuring student completion rates and strengthens the quality of counselling and pastoral care (Kenyatta University, 2005:56). The Nigerian Federal Ministry of Education has reaffirmed commitments to eliminate or reduce disparities in gender participation in tertiary education (FME, 2009). In this regard, one of the turnaround strategies to be adopted by the Nigerian government is to “ensure continuous gender-focused education programmes by considering policies such as quota- based admission, fees reduction, scholarships and other incentives based on gender” (FME, 2009:58).

In the public universities in Kenya and Nigeria, some level of institutionalization of academic and social mentorship programs for students is taking place. The public universities also have the traditional guidance and counseling units, but student numbers have overstretched the services, and do not focus on gender specific concerns. Since universities do not profile students and lectures, it is difficult to develop services geared towards individual student needs. Besides, the guidance and counseling services do not have an academic component but gear more to addressing disciplinary problems among students. It is imperative institutions adopt holistic approaches when designing interventions to increase female access to higher education. This will require that higher education institutions forge linkages with secondary schools, develop programs for enhancing girls’ participation in science and mathematics and enhance mentoring and academic advising to increase the rates of female participation and completion, especially in science and mathematics based programmes.

In the long-term, universities need to establish linkages with secondary schools, especially those for female students, as a strategy to strengthen the teaching of mathematics and sciences. As a short-term measure, universities can replicate the interventions of the University of Dar es Salaam that have increased female access into the university and entry into science and technology-based courses. The University has operated a Pre-entry Programme (PEP) in science and mathematics for female students since 1997, first as a pilot scheme under a Teacher Education Assistance in Mathematics and Science (TEAMS) project managed collaboratively by the Faculty of Education and the Faculty of Science. The emphasis of the program is to provide bridging courses for female students who do not qualify to enter university, to enable them qualify and join science and mathematics oriented courses. The Ministry of Education and the University have created a dedicated budget to ensure long-term sustainability of the program. The program is sustained through advocacy for third-party sponsorship by local and external organizations. In this regard, positive response has been received from Sida/SAREC (Sweden), NORAD (Norway) and Carnegie Corporation of New York (USA). Since 2001-02, the annual female student intake has been boosted by guaranteed sponsorship to 50 eligible female applicants by the University’s Female Undergraduate Scholarship Programme (FUSP) created in partnership with the Carnegie Corporation, guaranteed for a period of nine years to 2009/10 (Luhanga and Mashalla, 2005).

Nevertheless, interventions to increase access and participation must be accompanied by other welfare support services for female students to ensure their persistence and completion. Since poverty and other socio-economic factors determine female participation in higher education, increased access and finance aid policies should complement each other. Institutions such as Kenyatta University have a student aid office, that assists students from less privileged backgrounds to get through college. However, identifying needy students readily is hindered by the fact that most higher education institutions in Africa do not have in place policies profiling students in terms of socio-economic background. Again, the fact that government budgets for higher education do not force institutions to commercialize their activities, limits the financial outlays they have to redress the situation of female students who are needy.

More importantly, it is imperative that institutions inculcate a culture of academic mentoring and advising as part of their academic programs. Currently, most institutions do not consider the services as core to the academic culture and offer them on a voluntary basis. In others, what exists are the traditional guidance and counseling services, which sometimes only reach a few students, often when it is too late to positively intervene in a student’s academic progress. Consequently, given the rapid institutional expansion in enrollments that has taken place, the number of academic staff trained to act as academic mentors and advisors is inadequate. The institutions should explore strategies to address such gaps, including use of ICT for virtual mentoring and advising.

**Conclusion**

Higher education is critical to development and poverty alleviation. However, in most of Africa, equity considerations have not accompanied expansion of higher education institutions. Female students from poor backgrounds are not only accessing the institutions in fewer numbers, but they are also finding it difficult to enroll in science and mathematics-based courses. National and institutional policies articulated to increase access have most often not considered the gendered dynamics involved in accessing and participating in higher education by female students.

The discussion here shows that equity interventions have not accompanied policies for expanding access to the institutions. Instead, such interventions have had three limitations. First, interventions have firstly not been comprehensive and holistic enough to enhance participation and transition from basic education to higher education in a manner that the two levels synergize each other. Higher education policies for widening participation of female students target only those who have finished secondary schooling and have no linkages to basic and higher education institutions. Second, policy interventions have targeted quantitative increases in female enrollment in higher education rarely addressing some of the qualitative gendered contexts in higher education institutions that circumvent female retention and completion. Policies have inadvertently created gendered higher education contexts resulting in ‘new frontiers of exclusion’. Third, there has been limited theorization of access, not only in Nigeria and in Kenya, but also generally in Sub-Saharan Africa. Treating women as a seamless category ends up giving women from higher socio-economic backgrounds enhanced chances of access higher education while widening the gap for women from poor socio-economic backgrounds who cannot even complete secondary education, let alone access higher education. It is therefore critically important that policies targeting widening participation for female students also ensure that disadvantaged female students access such opportunities.

**References**

ASTI/AWARD(2008). Women’s Participation in Agricultural Research and Higher Education: Kenya Fact Sheet, *International Food Policy Research Institute*, Washington, USA/ Viale delle Terme di. Caracalla, Italy

Bunyi, G. W. (2006*). Gender Equity in Higher Education in Kenya*. A background paper prepared for the Public Universities Inspection Board, Nairobi, Kenya.

Federal Ministry of Education (2009). Roadmap for the Nigerian Education Sector: Consultative Draft, Abuja, Federal Republic of Nigeria

Federal Ministry of Education (2007) Statistics of Education in Nigeria: 1999-2005. Abuja, Statistics and NEMIS Branch, Federal Ministry of Education Nigeria.

Federal Republic of Nigeria (2008) Jigawa State Education Strategic Plan (SESP) 2009- 2018, Draft.

Griffin, Anne-Marie (2007), Education Pathways in East Africa: Scaling a Difficult Terrain, Kampala, Association for the Advancement of Higher Education and Development (AHEAD), Kampala, Uganda

Huggins, A. & Randell, S. (2007). ‘Gender Equality in Education in Rwanda: What is Happening to Our Girls?’Paper presented at the South African Association of Women GraduatesConference on “Drop-outs from School and Tertiary Studies: What is Happening to ourGirls?”, Cape Town, May 2007.

Kenya, Ministry of Education (2009) Ministry of Education, EMIS Statistics

Kenyatta University, (2005), Strategic and Vision Plan, 2005-2015

Lewin, Keith (2007). Improving Access, Equity and Transition in Education; Creating a Research Agenda, CREATE, Research Monograph No 1

Luhanga, M.L. and Mashalla, Y.J.S. (2005). Reforms and Innovations in Higher Education: A Reflection on the Initiatives and Lessons at the University of Dar es Salaam in Tanzania, 1994-2004, Paper prepared for the Nuffic Conference ‘A Changing Landscape’, The Hague, 23-25 Ma.

Morley, L., Leach, F. and Lugg, R. (2008) ‘Democratizing Higher Education in Ghana and Tanzania: Opportunity Structures and Social Inequalities’, International Journal of Educational

Development 29(1): 56–64.

Morley, L. Gunawardena, C., Kwesiga, J., Lihamba, A., Odejide, A., Shackleton, L. and Sorhaindo, A. (2006). *Gender Equity in Selected Commonwealth Universities.* Research Report No. 65 , London, Department of International Development (DFID)

Nigeria Country Office (2007) Information Sheet: Girls’ Education. Accessed 2nd March 2009 at <http://www.unicef.org/wcaro/WCARO-Nigeria-FactSheets-Girls> Education.

Oanda Ibrahim, Fatuma Chege & Wesonga, Daniel, (2008). Privatization and Private Higher Education in Kenya: Implications for Access, Equity and Knowledge Production, CODESRIA, Dakar Senegal

Omoike, Don (2009). Sensitizing the Female in University Admission in South-South Geo-political Zone forAassurance of Sustainable Development in Nigeria. Accessed 11th October, 2009 at <http://ozelacademy.com/EJES-v1n2-Omoike.pdf>

Pereira, C. (2007). *Gender in the Making of the Nigerian University System.* Ibadan: Heinemann Educational Books.

Republic of Kenya (2006). *Transformation of Higher Education and Training in Kenya to Secure Kenya’s Development in the Knowledge Economy. Report of the Public Universities Inspection Board*

UNESCO (2009). *EFA Monitoring Report: Overcoming Inequality: Why Governance Matters*, UNESCO Publishing/Oxford University Press

UNESCO (2006). *EFA Global Monitoring Report 2007: Strong Foundations: Early Childhood Care and Education*, Paris, UNESCO

UNICEF (2009) Girls Education in Nigeria. Accessed 20th May, 2009 at <http://bellecollege.edu/liberlarts/sir/images/Nigeriafinal.pdf>